



# Evaluation of COVAX Facility and AMC and COVAX Pillar Delivery Efforts

## Final Report

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## Management and Implementation of the Evaluation

The Gavi Secretariat on behalf of and with participation of The Coalition for Epidemic Preparedness Innovations (CEPI), Gavi, the Vaccine Alliance (Gavi), the World Health Organization (WHO), and the United Nations Children’s Fund (UNICEF) commissioned the evaluation. RTI International (RTI) was contracted to conduct the evaluation, with support from Itad and Genesis.

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## Disclaimer

The views expressed in this report are those of the evaluators. They do not represent those of Gavi, UNICEF, WHO, CEPI, or any of the individuals and organizations referred to in this report.

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## LIST OF ACRONYMS

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ACT-A	Access to COVID-19 Tools Accelerator
AEFI	Adverse events following immunization
AFRO	WHO regional office for Africa
AIDS	Acquired immunodeficiency syndrome
AMC	Advance Market Commitment
APA	Advanced purchase agreement
AVMA	African Vaccine Manufacturing Accelerator
BCG	Boston Consulting Group
CBO	Community based organizations
CCE	Cold chain equipment
CCS	Country case studies
CCT	Country communications teams
CDC	Centers for Disease Control and Prevention
CDS	Country Delivery Support
CEPI	Coalition for Epidemic Preparedness Innovations
CET	Centralized Evaluation Team
CHAI	Clinton Health Access Initiative
COVAX	COVID-19 Vaccines Global Access
CoVDP	COVID-19 Vaccine Delivery Partnership
CRD	Country Readiness and Delivery
CSO	Civil society organization
DAC	Development Assistance Committee
DEPG	Delivery Evaluation Partnership Group
DHIS	District health information system
DTP	Diphtheria, tetanus toxoid and pertussis vaccine
EAC	Evaluation Advisory Committee
EPI	Expanded Programme on Immunization
EQ	Evaluation questions
FGD	Focus group discussion
FoC	Firm order commitment

Gavi	Gavi, the Vaccine Alliance
GHS	Global Health Security
HCW	Health care workers
HIC	High-income countries
HML	Health Media Lab
HPV	Human papillomavirus
HQ	Headquarters
HR	Human resources
i-MCM-Net	Medical Countermeasures Network
IASC	Inter-Agency Standing Committee
IAVG	Independent Allocation of Vaccines Group
INB	Intergovernmental Negotiating Body
IRB	Institutional Review Board
JAT	Joint Allocation Team
KII	Key informant interviews
LIC	Low-income countries
LMIC	Lower-middle-income countries
LTA	Long-term agreements
MOH	Ministry of Health
NCD	Non-communicable disease
NDVP	National Deployment and Vaccination Plan
ODA	Official Development Assistance
PAHO	Pan American Health Organization
PCU	Project Coordination Unit
PHC	Primary healthcare
PHEIC	Public Health Emergency of International Concern
PHU	Peripheral Health Units
PMO	Project management office
PPPR	Pandemic prevention, preparedness, and response
PPR	Pandemic preparedness and response
RAG	Regulatory Advisory Group
RFP	Request for Proposal

RI	Routine immunization
RM	Resource Mobilization
SAGE	Scientific Advisory Group of Experts on Immunization
SCO	Strategic Coordination Office
SFP	Self-Financing Participants
TOC	Theory of Change
ToR	Terms of reference
UMIC	Upper-middle-income county
UNDP	United Nations Development Program
UNICEF	United Nations Children’s Fund
USAID	U.S. Agency for International Development
VIRAT	Vaccine Introduction Readiness Assessment Tool
WB	World Bank
WHO	World Health Organization
WSC	Work Stream Conveners



## **EXECUTIVE SUMMARY**

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## Introduction

COVID-19 Vaccine Global Access Facility (COVAX), the vaccines pillar of the Access to COVID-19 Tools Accelerator (ACT-A), was launched at the end of April 2020 under immense pressure during the COVID-19 pandemic to deliver vaccines worldwide, introducing an unprecedented procurement mechanism at a global scale. COVAX was co-led by the Coalition for Epidemic Preparedness Innovations (CEPI), Gavi, the Vaccine Alliance (Gavi), the United Nations Children’s Fund (UNICEF), and the World Health Organization (WHO). COVAX represents a partnership of 193 countries coordinating resources to secure access to a portfolio of COVID-19 vaccine candidates, aimed to provide participating countries with early access to vaccine doses sufficient to vaccinate up to half of their populations. At the core of COVAX is the Gavi COVAX Facility and Advance Market Commitment (AMC), which provides an innovative financial instrument that enables 92 lower- and middle-income countries (AMC92) to gain access to COVID-19 vaccines for the most vulnerable populations.

Building from the COVAX Facility and AMC is the COVAX Delivery Pillar which played a central role in providing guidance, funding, policy and advocacy support, and technical assistance to enhance countries’ domestic funding and improve COVID-19 vaccine delivery efforts. Additionally, this Pillar contributed to the regulatory aspects of vaccination and immunization by facilitating safety monitoring and securing regulatory authorizations. It also supported the evaluation of vaccine impact. From 2020 to 2022, the Country Readiness and Delivery (CRD) workstream aimed to ensure country readiness to accept vaccines and support for the deployment of COVID-19 vaccine doses. CRD leveraged lessons learned from WHO’s experiences preparing countries and delivering vaccines through the A(H1N1) Pandemic Influenza Vaccine Deployment Initiative and the International Coordination Group for emergency vaccine provision to deliver on this new scope. COVAX shifted from a supply-driven to a demand-driven allocation model in late 2022 to address evolving challenges, including supply and demand fluctuations,

### Methods

This evaluation used a non-experimental, theory-based design with a systems lens to address the evaluation questions (EQs) posed by Gavi, WHO, UNICEF, and CEPI. The theory-based approach compares COVAX’s intended goals and implementation with its actual outcomes. This design allows for an assessment of the program’s design, adaptations, and results across diverse contexts, countries and organizational structures at global, regional, and country levels.

The evaluation employed a mixed-methods approach for data collection and analysis that combined existing data with primary sources including:

- Part A: 31<sup>a</sup> key informant interviews (KIIs) and 102 documents
- Part B Global/Regional: 36 KIIs and 93 documents
- Special Studies: Supply Chain<sup>b</sup>, Equity, and Fragile and Conflict Contexts (Somalia)
- Web survey: 133 participants in 62 countries
- Country case studies (CCS): Cameroon, Cote d’Ivoire, Guyana, Indonesia, Uzbekistan, and Zambia

<sup>a</sup> Five KIIs informed both Part A and Part B

<sup>b</sup> This special study provides a deeper understanding of vaccine supply chain within the COVAX Pillar delivery documenting the supply chain management and practices. Findings from both the Supply Chain and Equity special studies are incorporated into the main report.

political pressures, and vaccine access disparities. In response to lagging vaccination rates in certain countries, the COVID-19 Vaccine Delivery Partnership (CoVDP) was launched in 2022 to provide intensified support to 34 countries with coverage below 10% to accelerate uptake. In line with publication of the WHO and UNICEF interim guidance in July 2022, COVAX began to work with countries on integrating COVID-19 vaccinations into routine immunization programs. By May 2023, the WHO Director General declared an end of the COVID-19 public health emergency of international concern and outlined a new strategic preparedness and response plan which supported countries to transition from emergency response to longer term prevention and management of COVID-19. In addition, the Gavi board approved the 2024-2025 COVID-19 vaccine program.

This evaluation provides insights for a broad public audience—including the Gavi Secretariat, COVAX partners, governments, and civil society—guiding the design, and implementation, of future pandemic prevention, preparedness, and response (PPPR) programs and global strategies. It focuses on the challenging context in which COVAX emerged, reflecting the shared interests of the Gavi, WHO, UNICEF, and CEPI in learning from the past to inform future global partnership efforts. This evaluation could inform the Interim Medical Countermeasures Network (i-MCM-Net), a WHO-led initiative aimed at enhancing collaboration for timely and equitable access to medical countermeasures during pandemics and it may provide valuable insights to support the ongoing work of the Intergovernmental Negotiating Body (INB) in shaping a global pandemic agreement.

This evaluation consists of two components: Part A, focusing on the COVAX Facility and AMC activities from 2022–2023, and Part B, evaluating the COVAX Delivery Pillar efforts from 2020 to the end of 2023. The first two years of COVAX Facility and AMC (2020–2021) were evaluated through the *COVAX Facility and AMC Formative Review and Baseline Study*<sup>c</sup>, and this evaluation builds upon that work. Importantly, this evaluation includes country perspectives, which are crucial for understanding if and how COVAX addressed their needs to inform recommendations to improve effectiveness of future responses. By evaluating COVAX Facility

## Evaluation Questions

### Part A

- How successfully was the COVAX Facility and AMC implemented, relative to overarching objectives and the changing implementation context?
- How effectively were COVAX Facility and AMC risks and challenges managed during implementation?
- To what extent have the intended results of the COVAX Facility and AMC been achieved?

### Part B

- Was the implementation framework for the COVAX Delivery Pillar appropriate to achieve overarching objectives?
- How well was the COVAX Delivery Pillar implemented and adapted as needed, in line with overarching objectives?
- To what extent have the intended results of the Delivery Pillar been achieved?

### Part A and Part B

- What lessons can be learned from the evaluation of the overall COVAX Facility and AMC Delivery Pillar that can inform similar initiatives in the future?

<sup>c</sup> For ease, throughout this report we refer to the *COVAX Facility and AMC Formative Review and Baseline Study*, published March 2023 as “the first COVAX Facility and AMC evaluation.”

and AMC and COVAX Delivery Pillar efforts together, the evaluation captures key dependencies and relationships, providing a more comprehensive view.

## Key Findings

### Part A: COVAX Facility and AMC

#### Resource Mobilization

The COVAX AMC effectively continued its fundraising efforts by leveraging Gavi's established capacity and donor relationships. It utilized a high-level summit in 2022 to engage stakeholders and present a compelling investment case. This approach ensured ongoing resource availability for procurement of additional vaccines to address changing epidemiological and vaccine needs.

#### Securing Supply

In response to uncertainties around future vaccine needs—including epidemiological shifts, demand for pediatric and variant-adapted vaccines, and unclear country-level demand—COVAX adopted a management strategy that balanced proactive planning, risk awareness, and timely responsiveness to changing circumstances. Before 2022, supply was limited primarily due to heavy dependence on a single source. However, in 2022, as COVAX transitioned into a phase of surplus supply, partly due to the acceptance of large quantities of donated doses, it minimized wastage by renegotiating advanced purchase agreement (APA) options and firm order commitments. This approach was further influenced by COVAX's decision to continue facilitating dose donations through 2022 and 2023, likely driven by pressure from high-income countries (HICs), Gavi donors, and the desire to reduce global vaccine wastage. The impact of COVAX's decision to renegotiate its commitments with manufacturers, particularly on the credibility of multilateral procurement mechanisms in future pandemics, remains uncertain.

#### Allocation

In 2022, the allocation approach was adjusted to address the shift from constrained to excess vaccine supply. Despite well-intentioned efforts and dedicated support to improve country-level demand forecasting, the implementation of the Phase 2 allocation approach was hindered by inaccurate demand projections and discrepancies between estimated needs and countries' absorption capacities. The rolling allocation method introduced in August 2022 was a well implemented solution for rapidly meeting country demand in a supply replete environment. However, it imposed some implications, particularly for ensuring timely availability of syringes compatible with non-standard dose volumes.

#### Close-out

The closure of COVAX was generally well planned, resourced, and operationalized. However, several challenges arose during the close-out process, requiring significant negotiation and resources to resolve. These challenges included discussions on repurposing funds, including Self-Financing Participants committed resources, and negotiating with manufacturers regarding doses COVAX had committed to purchase through APAs.

#### Evolution and Implementation

The design of the COVAX Facility and AMC evolved effectively over time, adapting to shifting global needs and emerging challenges. This evolution, along with overall implementation, was supported by strong coordination and collaboration among COVAX partners, proactive management by the Office of the COVAX Facility, and coordination by the COVAX Strategic

Coordination Office. A robust risk management function—bolstered by Gavi’s Country Insights capabilities—also played a critical role in enabling this level of success.

## Results

Globally, most COVID-19 doses went to HICs. However, COVAX Facility and AMC made a significant impact on vaccine supply and coverage in low-income countries (LICs), with a more moderate contribution in many lower-middle-income countries (LMICs) and a marginal impact in upper-middle-income countries and HICs. The scale of vaccines distributed by COVAX, along with its role in promoting a more equitable global allocation of vaccines, alongside bilateral donor contributions, represents a major achievement.

## COVAX Delivery Pillar

### Delivery Modalities

As noted in the first COVAX Facility and AMC evaluation, delivery funding for COVAX vaccines was slow to begin in 2021 and was not available when the first vaccines arrived in countries. However, since April 2020 WHO and UNICEF, through the CRD workstream, effectively supported countries in assessing and strengthening their readiness to introduce, accept and administer COVID-19 vaccines. Through CRD, countries were provided with technical guidance and tools, training materials, and support to prepare for the entry and rollout of COVID-19 vaccines. Key examples include the Vaccine Introduction Readiness Assessment Tool (VIRAT); the COVID-19 Vaccines Safety Surveillance Manual; the COVID-19 Vaccine Toolkit; the adaptation of regulatory tools such as emergency use authorizations; and the development and review process of National Deployment and Vaccination Plans (NDVPs). As supply constraints eased in early 2022 and significant unmet technical support needs became evident in a subset of countries—particularly those with vaccination coverage below 10%—the COVID-19 Vaccine Delivery Partnership (CoVDP) was launched in January 2022. It continued through mid-2023 as an intensified phase of the COVAX delivery pillar.

Engagement with national governments and health systems evolved significantly throughout the COVAX initiative. Initially, COVAX adopted a predominantly top-down approach, treating countries primarily as aid recipients. Over time, however, it transitioned toward more collaborative and participatory operational models that engaged countries as active partners in the process. This transition facilitated improved information flow and fostered trust, particularly through WHO’s efforts with the NDVP process and COVID-19 vaccination toolkits.

### Country Insights

- COVAX significantly enhanced equitable vaccine access and strengthened health systems through infrastructure improvements and increased human resource capacity.
- Effective collaboration between national governments and COVAX partners was crucial for successful vaccine delivery.
- Vaccine hesitancy and misinformation emerged as major challenges across all CCS, hindering vaccine uptake.
- Logistical and operational difficulties, such as vaccine stockouts, short expiry dates, limited infrastructure, and limited transparency or delays in funding allocation and arrival of doses affected equitable vaccine distribution.
- Some countries successfully transitioned to routine immunization, while others faced challenges
- In several CCS, the focus on COVID-19 vaccination led to strained resources and attention, impacting routine immunization programs.

## Financing

From 2020 to mid-2021, due to delays in funding availability from other partners, Gavi launched the COVID-19 Delivery Support (CDS) funding windows. These windows evolved to address emerging needs. In July 2021, the CDS Early Access funding window aimed to address urgent delivery needs in AMC92 countries. However, countries had limited visibility of funding allocations which hindered planning and decision-making. By the end of 2021, only a small proportion of the allocated delivery support funds were effectively utilized at the country-level. In October 2021, the Needs-Based funding window supported scaling of COVID-19 vaccinations through 2022. A third CDS (CDS3) funding window was introduced in September 2022, and in June 2023, the Gavi Board approved an extended timeline for CDS grants until the end of 2025. By September 2023, 32 countries had submitted CDS3 applications, with an additional 13 applying later. Gavi mobilized approximately US\$1.6 billion for vaccine delivery support in AMC92 countries, while generally seen as adequate the funding was not always timely.

## Priority Populations and Equity

COVAX had distinct mandates for vaccine distribution. However, the emphasis on intra-country equity was inconsistent and not fully integrated into national planning and distribution guidelines. Although WHO provided guidance on prioritization of target populations, such as the WHO roadmap on uses of COVID-19 vaccines and the strategy to achieve global COVID-19 vaccination, there was limited support from global and regional partners to directly assist countries in achieving intra-country equity.

Reaching high-risk and hard-to-reach populations was challenging for many countries, particularly without clear standard operating procedures for equity and sufficient technical assistance. These challenges were heightened during the supply-driven phase, where countries were pressured to use vaccines before they expired. Additionally, many countries lacked the necessary infrastructure, such as cold chain systems, to effectively deliver vaccines, especially in hard-to-reach areas.

## Results

The COVAX Delivery Pillar was regarded as successful in providing end-to-end support through the CRD and CoVDP workstreams, enhancing vaccine readiness and implementation in countries. Key areas of support included health workforce capacity building, policy guidance for prioritizing target groups, data management and monitoring, strategic communications and demand generation, infrastructure development—such as cold chain strengthening—regulatory readiness and flexibility, systems for monitoring and reporting adverse events following immunization, vaccine effectiveness assessment, and community-based programming. From January to November 2022, the completion of the primary vaccine series in AMC92 countries rose from 28% to 52%. Subsequently, in the CoVDP subset of the AMC92 countries, primary series coverage increased from 3% to 28% by May 2023.

A notable positive result of the COVAX Delivery Pillar was the strengthening of routine immunization systems, expanding adult vaccination and supporting broader health system improvements. This included enhanced cold chain capacity, better medical waste management, and increased awareness and innovative delivery strategies for reaching high-risk adult groups.

## Conclusions

**Conclusion 1:** The COVAX design, including the COVAX Facility, AMC, and Delivery Pillar efforts, remained relevant as a mechanism to ensure readiness for and equitable access to COVID-19 vaccines during the pandemic's evolution into 2022 and 2023. By the end of 2021, 11 billion doses had been administered globally, but the majority went to HICs. There remained an ongoing need to provide vaccines to LICs, with COVAX continuing to play a crucial role in vaccine development, procurement, and distribution amidst evolving epidemiology.

**Conclusion 2:** COVAX's business model and design adapted significantly to the shifting context in 2022-2023. Key adjustments included securing funding through the Pandemic Vaccine Pool, securing supply by balancing self-procured and donated doses, renegotiating contracts with manufacturers, revising the dose allocation approach across countries to reflect shifting demand and supply dynamics, and transitioning to a routine vaccination model. The COVAX Delivery Pillar also evolved, shifting focus on readiness and introduction of vaccines for all countries to dedicated attention to increasing coverage in the CoVDP priority countries.

**Conclusion 3:** By 2022, COVAX had become an effective end-to-end solution for equitable vaccine access. Key strengths included a successful fundraising function, proactive portfolio management, and efficient resource mobilization through Gavi's partnerships. COVAX navigated vaccine demand uncertainties and minimized waste while continuing to supply dose donations. However, challenges emerged related to delivery financing, operational complexities, accurate forecasting and communication with countries, and the ongoing need to adapt to evolving demands and resource availability.

**Conclusion 4:** The success of COVAX was in part due to strong coordination between global, regional, and national stakeholders, collaboration among partners, a proactive management structure, active listening and response to evolving country needs, and robust risk management functions. Challenges persisted in ensuring adequate human resources to manage the operation, though the establishment of CoVDP improved coordination and strengthened partner relationships for in-country vaccine delivery particularly in CoVDP priority countries.

**Conclusion 5:** COVAX distributed nearly two billion COVID-19 vaccines, mainly to LICs. However, it did not fully realize its original goal of ensuring global equitable access. Vaccine coverage remained lower in LICs due to delays in vaccine availability and challenges in country-level rollout, as well as reduced demand for vaccines once supply increased. COVAX played a crucial role as the largest provider of vaccines to LMICs, but access disparities remained.

**Conclusion 6:** Intra-country equity in vaccine distribution remains unclear, and more intentional strategies could have improved equity in LICs. While COVAX provided support for equitable rollout, country-specific implementation was hampered by limited human and financial capacity, and challenges in reaching vulnerable populations, including those in remote areas.

**Conclusion 7:** The COVAX experience offers critical lessons for strengthening future responses to global pandemics and inform i-MCM-Net and INB. These lessons emphasize the need for addressing vaccine nationalism and commercial interests, engaging stakeholders from the outset, and supporting intra-country equity. Operationally, key lessons include clarifying roles and responsibilities while building on existing capacities, ensuring a strong fundraising approach, ensuring timely vaccine supply, integrating delivery and zero day financing, and maintaining agility to respond to evolving needs.

## Overarching Learning<sup>d</sup>

### Key learnings for Gavi alliance's evolving role in PPPR

- ✓ **Lesson 1:** Achieving equity requires action both across countries and within countries.
- ✓ **Lesson 2:** The right mix of agencies (including country-level voices and CSOs), functions, skills, and competencies is critical to fulfill an end-to-end approach and coordination for vaccine product development, securing supply, and delivery support.
- ✓ **Lesson 3:** Acknowledging power dynamics within and between organizations and establishing a partnership working culture alongside tailored and appropriate governance structures is important for responding to power imbalances as they arise and mitigate their impacts.
- ✓ **Lesson 4:** In emergency contexts, decisions must be made with imperfect data. This requires a) a clearly articulated and consistent risk approach to enable rapid decision-making, b) recognition that risk appetite will need to expand in times of emergency, and c) mechanisms to account for implications that arise from decisions made based on imperfect data.
- ✓ **Lesson 5:** A dedicated and dynamic MEL team is key to real-time learning and program improvement. In COVAX, MEL insights played a crucial role in refining vaccine delivery strategies and improving implementation. While broader policy and stakeholder engagements influenced initiatives like the Pandemic Vaccine Pool, Zero Day Financing Facility, i-MCM-Net, and the African Vaccine Manufacturing Accelerator, the integration of MEL-driven learnings helped shape discussions on future pandemic preparedness and equitable vaccine access.

### Key learnings from COVAX delivery models, functions, and coordination structures that could be used for future emergency response, broader immunization programs and Alliance working

- ✓ **Lesson 6:** Appointing the right level of authority to lead advocacy with countries that are hesitant to commit to vaccination programs is important in securing countries' high-level engagement.
- ✓ **Lesson 7:** Defined structures and documented operating procedures are necessary to underpin the multiple workstreams and interdependencies in an emergency pandemic scenario, where decisions need to be made and acted upon rapidly.

### Key learnings from the COVAX delivery pillar experience tell us about how Alliance partners can more effectively engage to achieve results at 1) country, 2) regional and 3) global levels

- ✓ **Lesson 8:** Maintaining routine immunization and other essential health services during pandemics requires proactive investment in surge capacity and systems that ensure uninterrupted access to care at the country-level.
- ✓ **Lesson 9:** Building transparent communication grounded in trusted relationships with countries and communities is essential for ensuring response efforts are aligned with country needs and are effective in practice.
- ✓ **Lesson 10:** Regional capacity within Alliance partners served as a vital link between global and country-levels during the COVAX response, but its full potential was not leveraged—highlighting the need to strengthen and better utilize regional mechanisms in future efforts.
- ✓ **Lesson 11:** Improving vaccine coverage at the country-level requires a design-thinking approach that centers on country-specific political and operational contexts, while actively engaging relevant stakeholders—such as civil society organizations—for informed and inclusive decision-making.

<sup>d</sup> See Annex 8 for detailed Learnings.

## Recommendations

The four overarching recommendations support the end-to-end process—from design to implementation—of a rapid response mechanism for future pandemics, such as i-MCM-Net. They provide guidance for the Gavi Secretariat; UNICEF, WHO and CEPI as COVAX partners; governments; and civil society in collaboratively developing a coordinated, efficient, and equitable framework to enhance preparedness and response capabilities.

### Area 1

A future pandemic response mechanism should adopt a multilateral approach to ensuring equitable access to vaccines.

**TARGET OWNER: Agencies and country governments leading on the design of a future pandemic response mechanism**

Establish a coordinated, multilateral approach that includes both Civil Society Organizations (CSOs) and global agencies, with clearly defined roles while leveraging experience and strengths for vaccine procurement, allocation, and delivery. Prioritize low-income countries (LICs) and plan for vaccine donations. Ensure strong leadership, clear communication, and active engagement with all stakeholders. Foster collaboration between agencies and countries, build trust-based partnerships, and set clear expectations for transparency.

**Enablers: Strong leadership grounded in a commitment to equity, along with effective cross-organizational line management and the strategic use of partner strengths. Rapid decision-making supported by agile systems and mechanisms that prioritize guiding principles over rigid formal processes. Clear, consistent communication and meaningful engagement with non-traditional actors—such as CSOs, regional alliances, national and subnational implementing partners, and beneficiary governments. Build on existing country-level health equity strategies and promote true country ownership.**

### Area 2

Develop an end-to-end vision and approach for equitable access to vaccines.

**TARGET OWNER: Agencies and country governments leading on the design of a future pandemic response mechanism**

Leverage global health initiatives and donor relationships to secure funding and balance donated and self-procured doses for rapid supply, accounting for wastage. Adopt a flexible allocation approach based on demand and supply, with the ability to adjust during high-demand periods. Develop a risk-based decision-making approach, considering imperfect data. Ensure technical agencies like WHO and UNICEF are prepared to guide countries, and engage CSOs for diverse input. Establish a communications team during the response period to manage external messaging and support country-facing staff. Integrate delivery considerations into procurement and allocation, providing financial and technical support early, with funds reaching the community level for activities like demand generation.

**Enablers: relevant partners relevant partners including non-traditional actors—such as CSOs, regional alliances, national and subnational implementing partners, and beneficiary governments included in the design process, address supply and delivery together at the outset**

### Area 3

Continue to working towards resilient health systems and define a realistic delivery support objective for acute and long-term phases.

**TARGET OWNER: Agencies and country governments contributing to WHO leadership in Global Health Security and Health Systems teams**

Identify and engage potential partners in health systems now to prepare for future pandemics, ensuring complementarity and reducing country burden. Share lessons learned from COVID-19 vaccine delivery to improve future responses, such as integrating vaccines into existing health services. Develop a clear framework for delivery support during a pandemic, outlining objectives, partner roles, and strategies to address health system bottlenecks. Ensure financial support and technical assistance are complementary and tailored to varying country needs.

**Enablers: knowledge documented related to health system strengthening legacy of COVAX.**

### Area 4

Develop approaches to address specific surge capacity challenges at country, regional and global levels.

**TARGET OWNER: Agencies and country governments leading on the design of a future pandemic response mechanism**

Future support should consider a minimum package of essential personnel and skills, assess gaps, and develop strategies to meet future needs. Additionally, leveraging existing structures like health clusters, addressing regulatory and financial barriers, and creating a clear mandate for regional teams such as WHO and UNICEF Regional Offices to bridge global and country-level gaps are crucial, especially if essential health services are to be maintained in countries during an emergency. At the global level, lessons from recruitment delays, skill mismatches, and managing surge capacity staff should inform the design of future centralized response mechanisms, ensuring staff with relevant expertise are efficiently recruited and effectively utilized.

**Enablers: collaborative team-working spirit to get things done at every level and willingness of volunteers to support at country levels.**



## **PART 1:** Introduction, Evaluation Design and Methodology

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## Introduction

### Background

On January 30, 2020, the Director-General of the World Health Organization (WHO) declared the COVID-19 outbreak a public health emergency of international concern (PHEIC),<sup>1</sup> underscoring the urgent need for widespread vaccine distribution. On March 11, 2020, the Director-General of WHO characterized COVID-19 to be a pandemic.<sup>2</sup> In April 2020, within the framework of the Access to COVID-19 Tools Accelerator (ACT-A), the COVID-19 Vaccine Global Access Facility (COVAX) was launched as a global initiative aimed at accelerating the development, procurement, and equitable distribution of COVID-19 vaccines.<sup>3</sup> COVAX was co-led by the Coalition for Epidemic Preparedness Innovations (CEPI), Gavi, the Vaccine Alliance (Gavi), the United Nations Children’s Fund (UNICEF), and WHO. COVAX contributes to the United Nations Sustainable Development Goal 3: Ensure healthy lives and promote well-being for all at all ages. COVAX specifically links to Target 3.3 (fight communicable diseases); Target 3.B (support research, development and universal access to affordable vaccines and medicines); and Target 3.C (increase health financing and support health workforce in developing countries).<sup>4</sup>

By mid-July 2021, seven of the ten COVID-19 vaccine candidates in COVAX’s portfolio were approved for manufacturing.<sup>5</sup> COVAX aimed to maximize equitable access to COVID-19 vaccines by working closely with manufacturers to invest in and incentivize vaccine production, ensuring vaccines would be ready for distribution once approved. The initiative leveraged collective purchasing power of participating countries through the COVAX Advance Market Commitment (AMC) to negotiate competitive prices with manufacturers. The COVAX Delivery Pillar aimed to ensure countries were ready to accept and distribute the vaccines. From 2020 to 2022, the Country Readiness and Delivery (CRD) program aimed to ensure country readiness to accept vaccines and support for the deployment of COVID-19 vaccines. The delivery support of CRD was instrumental in providing evolving guidance and technical assistance

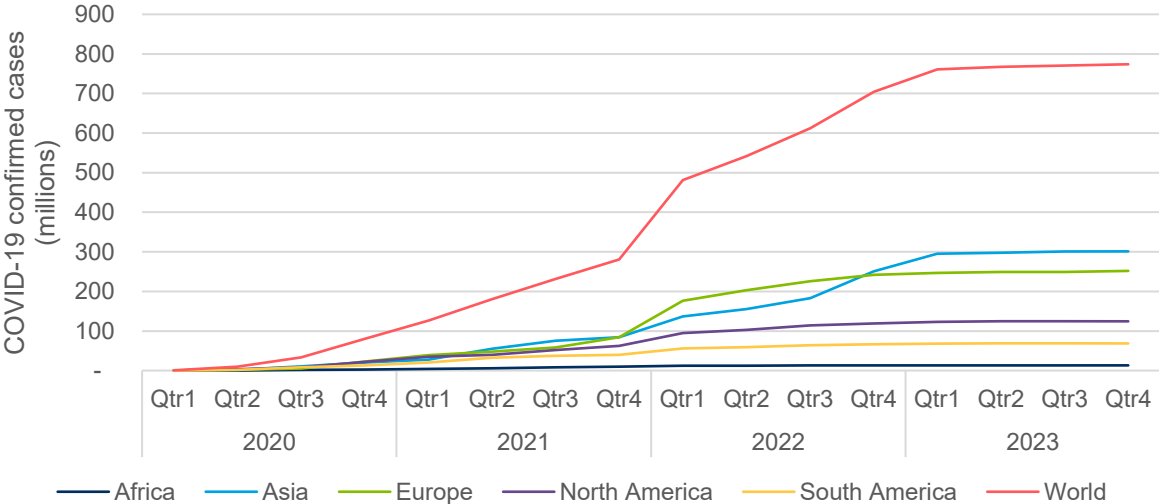
### Pillar Partners<sup>6</sup>

- CEPI focused on vaccine research and development (R&D), investing in multiple vaccine candidates and ensuring future availability through strategic manufacturing partnerships.
- Gavi, the Vaccine Alliance, led global procurement and supported delivery at scale through the COVAX Facility and designed and managed the COVAX Facility and the COVAX AMC.
- UNICEF led efforts to procure and supply vaccine doses, safe injection equipment, and cold chain equipment. It played a lead role to foster trust in vaccines and co-led the CRD working group with WHO and Gavi, and the cross-cutting health system group.
- WHO played a key role in implementing COVAX, particularly within the CRD workstream. WHO was responsible for the development and publication of evidence-based technical guidance, training materials, and tools to support country readiness. WHO issued the SAGE recommendations for use of COVID-19 vaccines. WHO provided guidance on vaccine policy, regulation, safety, R&D, allocation, and country readiness and delivery. WHO developed interactive training and communications platforms to enable national, regional, and global stakeholders to ensure access to real-time information and support for COVID-19 vaccine introduction. It coordinated global efforts on vaccine safety monitoring, developed product profiles and provided Emergency Use Listing for COVID-19 vaccines, and coordinated R&D. WHO and Gavi co-designed a No-Fault Compensation Program.

needed for readiness and early rollout. CRD leveraged lessons learned from WHO’s experiences preparing countries and delivering vaccines through the A(H1N1) Pandemic Influenza Vaccine Deployment Initiative and the International Coordination Group for emergency vaccine provision to deliver on this new scope. COVAX faced complex and changing conditions, including evolving supply and demand dynamics, political pressures, and global disparities in vaccine access. Throughout 2021 and 2022, as demand for vaccines soared and new variants of the virus emerged, COVAX adapted its approach. In response to lagging vaccination rates in some countries, the COVID-19 Vaccine Delivery Partnership (CoVDP) was launched in early 2022 to provide intensified support to 34 countries with coverage below 10% at the time of its launch. This partnership focused on accelerating vaccine delivery through funding, advocacy, and technical assistance. In line with publication of the WHO and UNICEF interim guidance<sup>6,7</sup> in July 2022, COVAX began to work with countries on integrating COVID-19 vaccinations into routine immunization programs. The timeline and associated fundings for COVAX is illustrated in **Figure 3**. These events are adapted from the Gavi COVAX timeline and COVAX: Structure and Principles document.<sup>8</sup>

From the first quarter (Q1) 2020 to the fourth quarter (Q4) 2023, global COVID-19 cases increased steadily, reaching 481 million by the end of Q1 2022 and 761 million by Q1 2023, with a slower increase thereafter (**Figure 1**).<sup>9,f</sup> COVAX officially closed on December 31, 2023 following the WHO declaration in May 2023 that COVID-19 was no longer a PHEIC<sup>10</sup>, and specific Gavi support under COVAX was withdrawn. Looking ahead, the Gavi Board extended COVAX’s mandate until 2025, with future support for COVID-19 vaccination to be considered within the broader Gavi Vaccine Investment Strategy.

**Figure 1. Cumulative COVID-19 cases over time**



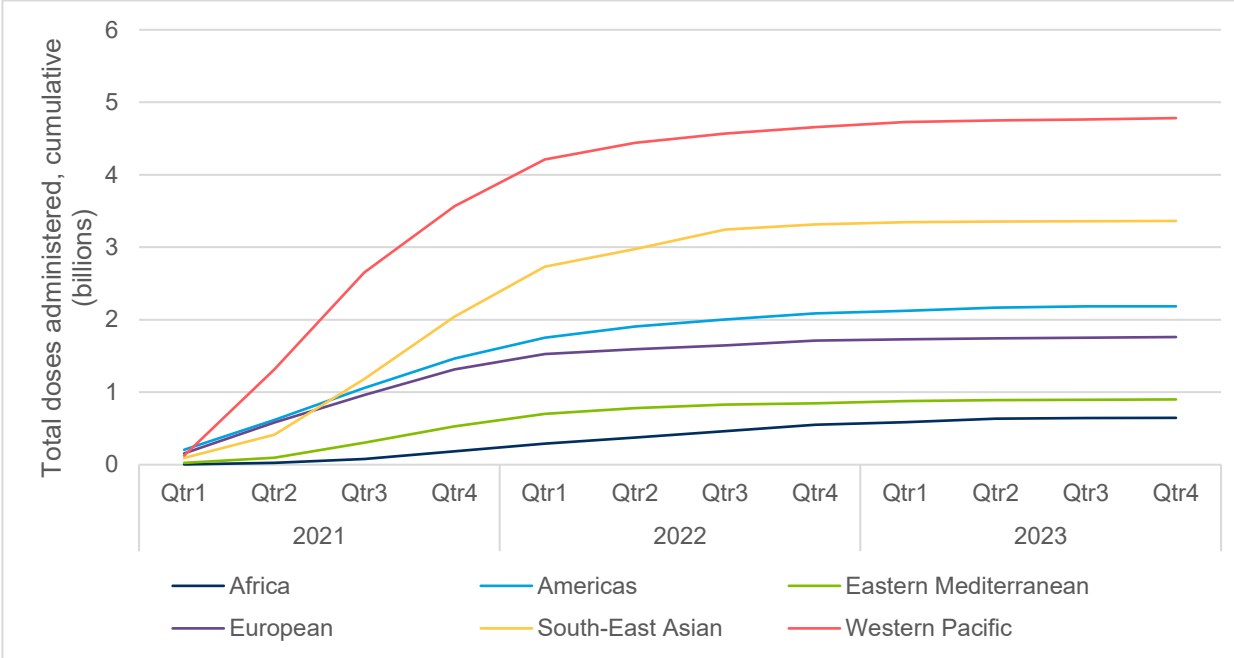
Source: WHO (2024)

<sup>e</sup> This evaluation involved extensive participation from key rights holders and duty bearers. Representatives from CEPI, WHO, Gavi, and UNICEF formed a reference group to guide the design of the evaluation and to validate the findings. Additionally, individuals from these organizations contributed as key informants. Moreover, perspectives from country stakeholders were actively sought and integrated throughout the evaluation process.

<sup>f</sup> Due to limited testing, the number of confirmed cases is lower than the true number of infections.

Despite significant operational challenges, including vaccine shortages, export bans, and logistical hurdles, the COVAX Facility distributed vaccines to 144 countries by the end of 2021.<sup>11</sup> The global number of administered vaccine doses grew rapidly, from 0.02 billion doses in Q4 2020 to 11.2 billion by the end of Q1 2022, reaching a total of 13.7 billion doses by Q4 2023 (Figure 2).<sup>12,c</sup> As vaccine supply became more secure in 2022 and 2023, COVAX provided over 1.8 billion doses, approximately 8% of the global distribution.<sup>9</sup> At this time COVAX transitioned from a supply-driven allocation model to a demand-driven system.

**Figure 2. COVID-19 vaccine doses administered by WHO region**

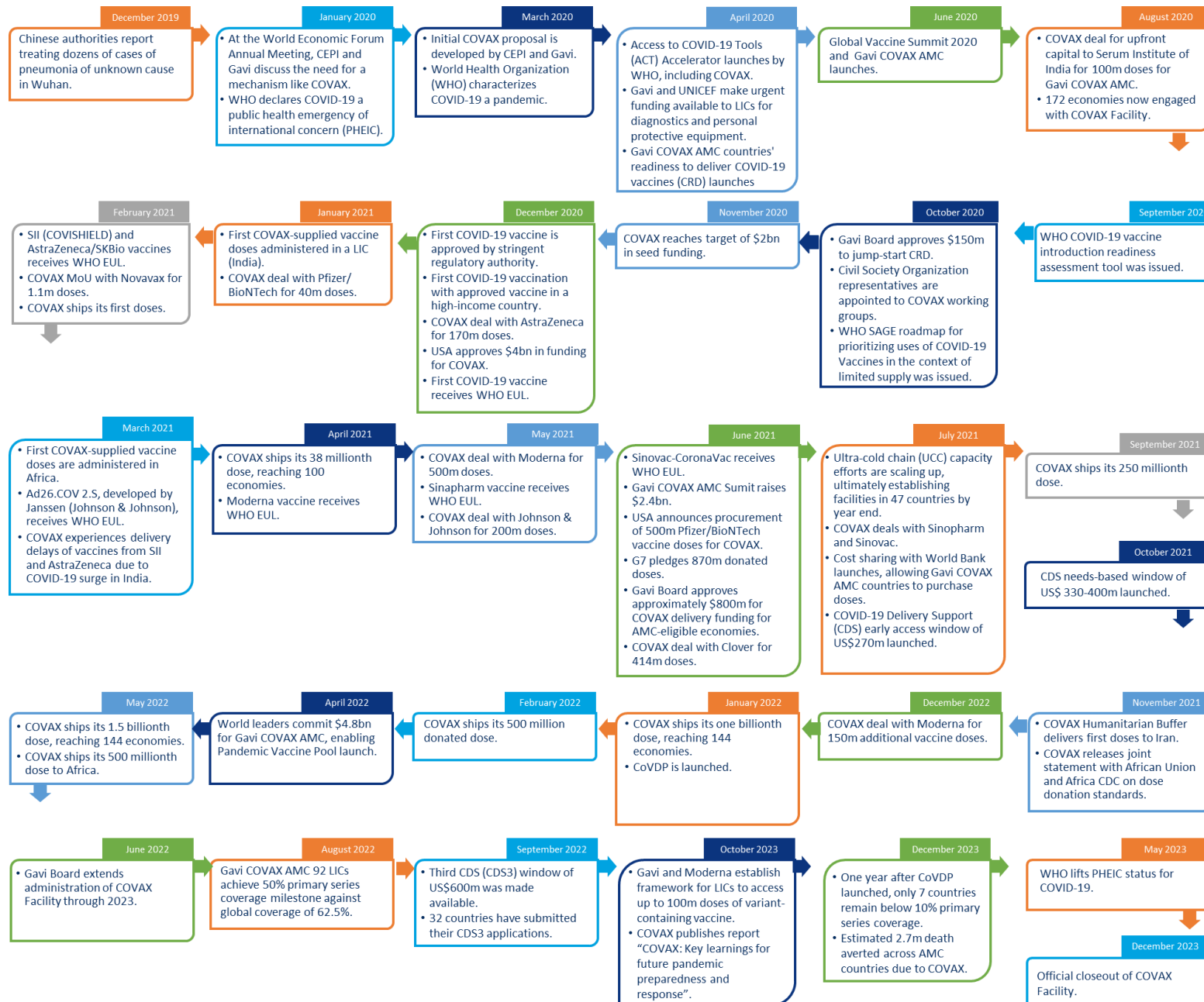


Source: COVID-19 Vaccination Information Hub. WHO and UNICEF

**Annex 3** presents an updated articulation of the TOC for the COVAX Facility and AMC and COVAX Pillar Delivery efforts including core activities, outputs, expected outcomes and impact. These TOC reflect the status quo as of March 2024, acknowledging substantial changes to the design and focus of activities over time and the roles of partners. The COVAX Facility AMC TOC draws on the set of inputs related to resource mobilization, securing supply, and allocation. The COVAX Delivery Pillar TOC reflects the evolution of COVAX’s strategy over time in response to shifting contextual factors (CRD, CoVDP, and Alliance Structures). The TOC incorporate conditions for systems change to assess the extent to which COVAX contributed to these changes. The TOC are underpinned by a series of assumptions related to the causal nature of relationships between steps in the TOC, operating context, and design and delivery mechanisms.

The intent of the COVAX Facility was to provide critical guidance, funding, and technical support to ensure equitable vaccine access. COVAX's evolution from an emergency response to a programmatic approach aims to leverage lessons learned and integrate COVID-19 vaccination into broader health systems strengthening efforts.

**Figure 3. COVAX Timeline (adapted from COVAX Timeline)**



## Purpose Objective and Scope of the Evaluation

The overall purpose of the evaluation as defined in the request for proposal is to provide an independent assessment of:

- the COVAX Facility and COVAX AMC's contribution to intended results for the Gavi Alliance Board,
- the COVAX Pillar delivery efforts towards expanding access to COVID-19 vaccines and increasing immunization coverage, in terms of outcomes and achievement of intended results for the Gavi Alliance Board, Partner Executive Committees and countries, and
- to foster institutional learning and strengthen evidence-based action and inform decision-making for Gavi Alliance and its partner agencies.

The evaluation of the COVAX Facility, AMC, and COVAX Delivery Pillar reflects the shared goal of Gavi, WHO, UNICEF, and CEPI to learn and provide an accountability perspective from past experiences and inform future strategies. Following the complex, unprecedented effort to procure and deliver COVID-19 vaccines, these organizations commissioned this evaluation with the objective to:

- Generate evidence and insights to:
  - inform Gavi Alliance's contribution and support for delivery and rapid introduction, scale up, and equitable access to vaccines to inform future public health emergencies and pandemics, in the context of the evolving WHO Medical Counter Measures (MCM) Platform discussions and broader PPPR agenda, targeting operationalization of global commitments to be made in 2024.
  - provide insights to Gavi Alliance to help inform future investments to better support countries and partners in their ability to detect, prepare, prevent and respond to outbreaks in a timely and effective manner.
  - help countries learn from each other on what worked well and less well to help inform future delivery strategies and future PPPR (learning).
- Foster greater cross Partner learning and strengthen evidence-based action and decision making by the Gavi Alliance, and COVAX Pillar Partners
- Provide a critical assessment and make evaluative judgements on what worked well, didn't and why, for both the COVAX Facility and across COVAX AMC participants
- Provide a critical assessment and make evaluative judgements of how well the initiative delivered against commitments made through the COVAX Pillar partnership for both global and county levels (accountability)
- Provide actionable recommendations for Gavi Alliance partners to inform planning and upcoming policy and programme development going forward as well as pandemic preparedness and response activities relevant for both global and country levels.

The evaluation has two parts: Part A assesses the COVAX Facility and AMC activities from 2022 to 2023, while Part B evaluates the COVAX Delivery Pillar from 2020 to 2023. The first two years of the COVAX Facility and AMC (2020-2021) were previously reviewed in the COVAX

Formative Review and Baseline Study,<sup>9,5</sup> and this evaluation builds on that work. By evaluating the COVAX Facility and AMC and the Delivery Pillar together, this evaluation provides a more comprehensive understanding of their interdependencies.

- For **Part A**, the scope of the evaluation focused on understanding how Gavi Secretariat contributed to activities that were jointly administered by COVAX partners, not inclusive of non-COVAX delivery partners (e.g., World Bank, USAID, Africa CDC, donor countries). This work focuses on the experiences of COVAX AMC participants, including Self-Financing Participants (SFPs) and AMC92 countries, among others.
- For **Part B**, the evaluation scope includes a focus on funding, guidance, technical assistance, and investments provided to countries and the coordination, monitoring, learning, and risk identification underlying this country support through the COVAX Delivery Pillar.

The following elements are out of scope of this evaluation:

- For **Part A**, 2020-2021 design and early implementation, performance or results of other COVAX delivery contributors (i.e., World Bank, USAID, Africa CDC, CDC, Donor Countries), and the AMC as a financial instrument.
- For **Part B**, upstream aspects, such as R&D, vaccine manufacturing, resource mobilization, securing supply, SFP model and engagement, as well as strategy, policy, WHO Emergency Use Listing Procedure (EUL), and safety monitoring. Additionally, out of scope are complementary efforts led by Alliance partners to protect routine immunization and minimize disruption to broader EPI during COVID-19 response and SFP participants.

The terms of reference (ToR) for this evaluation can be found in **Annex 1**. As this evaluation progressed there were some departures from the ToR (**Table 1**).

**Table 1. Departure from ToR**

ToR	Departure
7 - 10 Country Case Studies	This evaluation conducted six country case studies. The Zambia country case study implemented a modified approach.
In-depth special studies through three deep-dive analyses to complement and deepen the evaluation's focus on specific topics of value to explore further	The impact modelling special study was removed from the evaluation scope. The supply chain and equity special studies refined scopes of work post inception phase. Additionally, a conflict and fragile context mini-deep dive was added to the evaluation scope post inception phase.
Contribution Analysis	Shifted to a value-added analysis.
Timelines	The evaluation timelines shifted as the evaluation progressed.

The evaluation seeks to answer overarching evaluation questions (EQs) described in **Figure 4**. These EQs fall under the Development Assistance Committee (DAC) evaluation criteria of

<sup>9</sup> For ease, throughout this report we refer to the *COVAX Facility and AMC Formative Review and Baseline Study*, published March 2023 as “the first COVAX Facility and AMC evaluation.” <https://www.gavi.org/our-impact/evaluation-studies/covax-facility-and-covax-advance-market-commitment-amc-formative-review-and-baseline-study>

relevance, effectiveness, efficiency, and coherence.<sup>h</sup> This evaluation provides a critical assessment and makes evaluative judgment on what worked well, what didn't, and why, while also assessing how effectively the initiative met the commitments made through the COVAX Pillar partnership. The evaluation will consider both global and country-level performance, with a focus on accountability. The primary utility of this evaluation is to inform strategic planning for future pandemic responses, specifically concerning the procurement and deployment of medical countermeasures (vaccines). The primary audiences for this evaluation are the Gavi Alliance Board, COVAX Partner Leadership, other Alliance partners, and countries.

This is a theory-based evaluation centered on COVAX's logic and evolving objectives, comparing these with its implementation and outcomes. This approach, grounded in COVAX's TOC (**Annex 3**), assesses assumptions, the implementation process, and causal links between activities and results. It enabled an evaluation of COVAX's design and adaptive management across various contexts, including different countries and organizational cultures.

The objective is to make an assessment relating to whether the theoretical claim that is set out, as per the TOC, is valid, according to the balance of evidence, and the level of influence or contribution of the intervention to this. The TOC are underpinned by a series of assumptions about the conditions that need to be in place for COVAX to deliver its intended results. The key assumptions tested and verified within this evaluation are listed in **Table 2**.

The evaluation is designed to address high-priority questions regarding decisions being made in the near-term and to contribute to the refinement of approaches for handling global health emergencies. A key component of this work is understanding the highly politicized, complex, and contextually diverse environments in which both the COVAX Facility and the AMC were implemented. The evaluation will offer valuable insights by examining the underlying mechanisms of each program, how they were operationalized and adapted in response to evolving challenges, and the outcomes achieved within these varied contexts.

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<sup>h</sup> Relevance: The extent to which objectives were consistent with recipients' requirements, country needs, global priorities, and partners' policies

Effectiveness: The extent to which objectives were achieved

Efficiency: A measure of how economically inputs were converted into results

Coherence: Consistency across policies

**Table 2. TOC Key Assumptions**

<b>Key Assumptions</b>	
<b>Resource Mobilization</b>	<ul style="list-style-type: none"> <li>• A diverse range of stakeholders from different constituency groups actively advocate for the full financing of the COVAX AMC via the ‘100-days campaign’.</li> <li>• Strong collaboration between COVAX Facility/AMC partners around resource mobilisation campaign(s).</li> <li>• Broad-based engagement of potential AMC donors in international discourse.</li> <li>• COVAX Facility/AMC has sufficient soft power to influence SFP and AMC donor and participant decisions, and those of partners and wider stakeholders.</li> <li>• The epidemiological situation and fundraising environment is conducive to meeting resource mobilisation targets.</li> </ul>
<b>Secure Supply</b>	<ul style="list-style-type: none"> <li>• Governance bodies make relevant and timely inputs into decision making on vaccine portfolio and product selection.</li> <li>• Vaccine manufacturers are willing and able to enter into advance purchase agreements to meet COVAX objectives.</li> <li>• Strong collaboration between COVAX Facility and vaccine manufacturers to meet COVAX requirements.</li> <li>• Strong collaboration between the Office of the COVAX Facility, AMC Delivery Partner and SFP Procurement Coordinator to establish and implement procurement, transport and delivery arrangements.</li> <li>• Strong collaboration between the Office of the COVAX Facility, partners and participants to communicate indicative supply timelines and determine other delivery needs.</li> <li>• The global vaccine supply situation is conducive to meeting COVAX vaccine availability expectations.</li> </ul>
<b>Allocation</b>	<ul style="list-style-type: none"> <li>• Countries are willing and able to derive and share data on needs, preferences and readiness; and later, demand.</li> <li>• Strong collaboration between all COVAX participants to evolve the allocation model from a push, supply-driven approach to a pull, demand and absorption capacity-driven approach.</li> <li>• Strong collaboration between the JAT, deals team and others engaged in sourcing supply within the Office of the COVAX Facility to understand and forecast (a) total vaccine supply and availability; and (b) country needs/demand.</li> <li>• Independent Allocation Validation Group’s (IAVG) makes relevant and timely inputs to influence allocation decision making.</li> <li>• Supply dynamics enable COVAX to provide predictability to participants on allocation and supply.</li> <li>• Allocation processes are able to be conducted flexibly in response to changing context.</li> </ul>

**Figure 4. Evaluation Questions Matrix**

Module 1: Implementation				Module 2: Results		Module 3: Learning
How successfully has the COVAX Facility and AMC Delivery Pillar been implemented relative to overarching objectives and the changing implementation context?				To what extent have the intended results of the COVAX Facility and AMC Delivery Pillar been achieved?		What lessons can be learned from the evaluation of the overall COVAX Facility and AMC Delivery Pillar that can inform similar initiatives in the future?
EQ1	EQ2	EQ3	EQ4	EQ5	EQ6	E7
How successfully was the COVAX Facility and AMC implemented, relative to overarching objectives and the changing implementation context?	How effectively were COVAX Facility and AMC risks and challenges managed during implementation?	Was the implementation framework for the COVAX Delivery Pillar appropriate to achieve overarching objectives?	How well was the COVAX Delivery Pillar implemented and adapted as needed, in line with overarching objectives?	To what extent have the intended results of the COVAX Facility and AMC been achieved?	To what extent have the intended results of the delivery Pillar been achieved?	What are the key learnings?
1.1 What were the key enablers and barriers relative to successes achieved and challenges encountered?	2.1 What were the risks to achieving COVAX Facility and AMC objectives? Were these managed appropriately?	3.1 To what extent did core delivery partners and delivery modalities respond to identified needs and priorities of 1) priority population groups, 2) national governments, and 3) COVAX stakeholders?	4.1 What were the key enablers and barriers relative to successes achieved and challenges encountered?	5.1 To what extent were COVAX Facility and AMC outcomes and goals achieved?	6.1 To what extent were COVAX Delivery Pillar outcomes and goals achieved, and were related targets and timelines appropriate?	7.1 What are the key learnings for Gavi 6.0 and the operationalization of the strategy?
1.2 How effective were adaptations to the model to respond to evolving context?		3.2 To what extent and how were 1) in- and intra-country equity and 2) gender equity considerations integrated into delivery modalities?	4.2 Did adaptations to delivery modalities in response to the changing context enable countries to prepare, introduce and scale up vaccines in a timely and effective manner?	5.2 To what extent has equitable impact been achieved (e.g., by gender)?	6.2 Were equitable results achieved?	7.2 What are the key learnings for the Gavi Alliance's evolving role in pandemic prevention, preparedness, and response (PPPR)?
1.3 How well did COVAX Pillar partners coordinate and collaborate?		3.3 Were human and financial resource allocations to delivery modalities 1) adequate and 2) defined, coordinated, and agreed?	4.3 How well did WHO and UNICEF country offices coordinate and collaborate to support Delivery Pillar objectives relative to specific country needs?		6.3 Did delivery modalities strengthen national and local systems and capacities?	7.3 What practices from COVAX delivery models, functions, and coordination structures could be effectively used for future emergency/pandemic response, broader immunization programs, and Alliance working?
			4.4 To what extent did delivery modalities complement existing health systems and routine immunization (RI) systems to jointly respond to the needs of priority population groups?		6.4 Did unintended consequences arise during the implementation of the COVAX Delivery Pillar? Were they directly or indirectly related to the Pillar activities, or due to external factors?	7.4 What does evidence from the COVAX Delivery Pillar experience tell us about how Alliance partners can more effectively engage to achieve results at 1) country, 2) regional, and 3) global levels?
Part A Sub-EQs		Part B Sub-EQs				

## Structure of this Report

**Part 1:** Further to this introduction, the next section of this report presents an overview of the joint evaluation design and methodology. A more detailed account of the evaluation design and methodology is included in **Annex 2**.

**Part 2:** This section presents findings for each EQ and sub-EQ, with key findings and a strength of evidence rating (described below) for each finding.

**Part 3:** Evaluation conclusions, and recommendations are presented in this section.

Lessons Learned can be found in **Annex 8**.

Throughout this report, the following icons serve as visual cues to help readers quickly identify how findings from this evaluation align with those from the first COVAX Facility and AMC evaluation<sup>5</sup> as well as the report *COVAX: Key Learnings for Future Pandemic Preparedness and Response*, published in September 2022.<sup>13</sup>



**Building on Findings:** This icon indicates areas where the current evaluation's findings are building on the findings from the first COVAX Facility and AMC evaluation and/or COVAX: Key Learnings for Future Pandemic Preparedness and Response.



**Novel Findings:** This icon indicates areas where the current evaluation's findings are novel or new and were not uncovered in the first COVAX Facility and AMC evaluation.

The findings were derived from evaluative judgments made to assess what worked well, what didn't, and why, while also evaluating the effectiveness of the initiative in meeting its commitments. This assessment took into account both global and country-level performance, with a particular emphasis on accountability. The findings are derived from multiple sources of evidence, incorporating the perspectives and experiences of various partners. These included desk reviews, key informant interviews (KIIs), the web survey, and special studies, with comprehensive details provided in **Annexes 4 and 5** and country case studies (CCS), as outlined in the **Supplemental CCS reports**. These findings reflect areas of convergence across partners and supporting documentation.

1

Evidence comprises multiple data sources (both internal and external; good triangulation), which are generally of good quality. Where fewer data sources exist, the supporting evidence is more factual than subjective.

2

Evidence comprises multiple data sources (good triangulation) of lesser quality, or the finding is supported by fewer data sources (limited triangulation) of satisfactory quality but that are perhaps more perception-based than factual.

3

Evidence comprises few data sources across limited stakeholder groups (limited triangulation) and is perception-based, or generally based on data sources that are viewed as being of lesser quality.

4

Evidence comprises very limited data source (single source) or incomplete or unreliable evidence

## Evaluation Design and Methods

The evaluation employed a non-experimental, theory-based approach with a systems lens to assess the implementation and adaptation of the COVAX Facility, AMC, and Delivery Pillar in achieving their intended outcomes. This design was chosen due to the absence of a clear counterfactual for COVAX and the focus on evaluating effectiveness, relevance, efficiency, and coherence in diverse contexts. A non-experimental approach allowed for assessing COVAX in real-world settings, reflecting the conditions in which it was implemented.

Process analysis was used to assess causal inference—that is, to understand whether and how intended actions and activities were implemented as intended, and whether the linkages and assumptions underpinning the Theories of Change (TOC) (**Annex 3**) has worked as intended to produce the desired effect. This involved the following steps:

- Developing a theory through the TOC about how and why the intervention leads to an observed outcome;
- Identify the evidence needed to test each part (or focused parts of the TOC/adapted for certain contexts) of the mechanism and adapt data collection tools accordingly;
- Collect the data in order to test the theory, including secondary and quantitative data and through KIIs;
- Analyse the data through assessing the inferential weight of the evidence collected;
- Consider, as part of the analysis, what unintended effects/results were incurred and how these relate to the intervention design and its implementation.

Using a mixed-methods approach, the evaluation combined both qualitative and quantitative data to provide a comprehensive view of COVAX's processes and outcomes. This included secondary data on program outcomes (e.g., COVID-19 doses delivered) alongside insights into the contextual factors shaping those outcomes. Data collection and analysis methodologies are detailed in **Annex 2**. The flexible evaluation design facilitated the adaptation of methods to address specific EQs, ensuring the careful integration of evidence to support robust findings. The analytical methods employed are outlined in **Table 3**, with a matrix of methods key TOC assumptions tested and verified, and data sources applied to each sub-EQ provided in **Table 4**. All findings have been triangulated across multiple data sources. **Figure 5** illustrates the overall approach.

**Table 3. Analytical Methodologies**

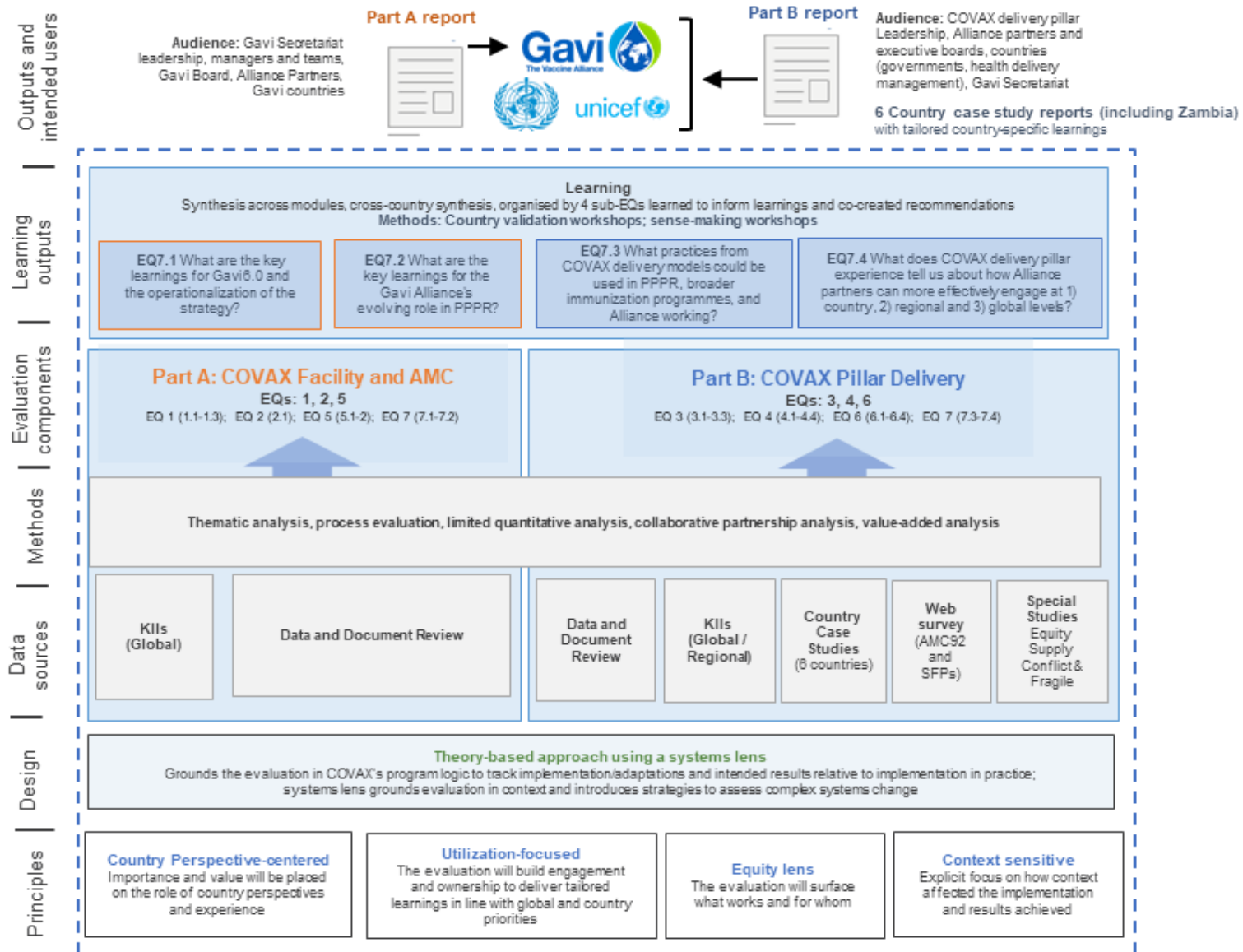
<b>Method</b>	<b>Brief Description</b>
<b>Thematic Analysis</b>	Involves the systematic identification and summary of common themes, patterns, and meanings across a dataset of primarily qualitative material. Helps with evaluation across multiple EQs and synthesis and generation of larger takeaways and lessons learned. Includes assessment of health systems change across a set of specified domains and target outcomes, tailored to the country context.
<b>Process Analysis</b>	Explores the extent, quality, and fidelity with which COVAX was implemented as planned (and as it was intentionally adapted) and if it led to intended outcomes. This will include an assessment of the implementation activities and the timing of planned and unplanned activities across the “phases” of COVAX and cross-reference these with the program’s theories of change and assumptions. Where deviations occur, or where certain assumptions did not hold, the impact on achieving outcomes and the role of unexpected/unanticipated and contextual factors in influencing outcomes was assessed.
<b>Collaborative Partnership Analysis</b>	Assesses the efficiency and effectiveness of collaborative partners working together towards a common goal (e.g., WHO, UNICEF, Gavi) and identifies strengths and weaknesses in coordination and collaborative processes. In the context of COVAX, we rely on a framework designed to assess the collaboration of systems change actors through six discreet criteria. (detailed in <b>Annex 2</b> )
<b>Value-Added Analysis</b>	Evaluates the results achieved by COVAX along multiple dimensions of “added value” to understand the contribution of the program at the country level. Value added is examined across five dimensions of value, including: more/additional, improved, unique, pace, new/innovative. (detailed in <b>Annex 2</b> )
<b>Case Studies</b>	Provides in-depth examination of COVAX Delivery activities in individual countries by drawing on mixed methods. Includes supplemental data collection and analyses at the country level, with a focus on KIs and data/document review to gain a comprehensive understanding of the implementation and results achieved by COVAX in a real-life setting. Cross-Case Study analysis will be limited by the lack of generalizability of case studies yet will be employed to understand how context influenced COVAX’s programmatic adaptation and results.
<b>Descriptive Analysis (limited quantitative analysis)</b>	Description of the attributes of quantitative data (e.g. time series of vaccines allocated/delivered, dose donations). Helps contextualize and summarize data and relate data to EQs in complement with qualitative findings.

**Table 4. Sub-EQ Matrixed to Data Sources and Methods**

	Headline EQ	Sub-EQ	DAC Criteria	TOC Assumption Tested	Data Sources	Analysis Methods
Implementation and adaptation	1 How successfully was the COVAX Facility and AMC implemented, relative to overarching objectives and the changing implementation context?	1.1 What were the key enablers and barriers relative to successes achieved and challenges encountered?	Effectiveness	All	Document review KIIs (global)	Thematic Analysis
		1.2 How effective were adaptations to the model to respond to evolving context?	Relevance	All	Document review KIIs (global)	Process Analysis
		1.3 How well did COVAX Pillar partners coordinate and collaborate?	Effectiveness	Secure supply, Allocation	Document review KIIs (global)	Collaborative Partnership analysis, Thematic analysis
	2 How effectively were COVAX Facility and AMC risks and challenges managed during implementation?	2.1 What were the risks to achieving COVAX Facility and AMC objectives? Were these managed appropriately?	Effectiveness	Secure supply, Allocation	Document review KIIs (global)	Thematic analysis
	3 Was the implementation framework for the COVAX Pillar delivery efforts appropriate to achieve overarching objectives?	3.1 To what extent did core delivery partners and delivery modalities respond to identified needs and priorities of (1) priority population groups, (2) national governments, and (3) COVAX stakeholders?	Relevance	Secure supply, Allocation	KIIs (global) KIIs (case studies) Data/document review (inc. budgets/finance data)	Thematic analysis Process analysis, limited quantitative analysis
		3.2 To what extent and how were (1) in- and intra- country equity and (2) gender equity considerations integrated into delivery modalities?	Relevance	Allocation	KIIs (CCS, regional, global) Data/document review	
		3.3 Were human and financial resource allocations to delivery modalities (1) adequate, (2) defined, (3) coordinated, and (4) agreed?	Efficiency	Allocation	KIIs (global / regional / country), Document Review, Web survey	
	4 How well was the COVAX Pillar delivery efforts	4.1 What were the key enablers and barriers relative to successes achieved and challenges encountered?	Effectiveness	All	KIIs (global, regional, country), document review (global,	Thematic analysis, process

			DAC Criteria	TOC Assumption Tested	Data Sources	Analysis Methods
	Headline EQ	Sub-EQ				
	implemented and adapted as needed, in line with overarching objectives?	4.2	Did adaptations to delivery modalities in response to the changing context enable countries to prepare, introduce, and scale up vaccines in a timely and effective manner?	Efficiency/ Effectiveness	Allocation	country), web survey, FGDs analysis, collaborative partnership analysis
		4.3	How well did WHO and UNICEF country offices coordinate and collaborate to support Pillar delivery objectives relative to specific country needs?	Efficiency	All	
		4.4	To what extent did delivery modalities complement existing health systems and RI systems to jointly respond to the needs of priority population groups?	Coherence	Allocation	
	5 To what extent have the intended results of the COVAX Facility and AMC been achieved?	5.1	To what extent were COVAX Facility and AMC outcomes and goals achieved?	Impact	All	Quantitative data review, Document Review, KIIs (global) Thematic analysis, Value-added analysis, limited quantitative analysis
		5.2	To what extent has equitable impact been achieved (e.g., by gender)?	Impact	Allocation	Data/Doc Review
Results	6 To what extent have the intended results of the Pillar delivery efforts been achieved?	6.1	To what extent were COVAX Pillar delivery efforts outcomes and goals achieved, and were related targets and timelines appropriate?	Impact	All	Quant data review (secondary sources) Document review (case studies) Document review (global) Thematic analysis, limited quantitative analysis, value-added analysis
		6.2	Were equitable results achieved?	Impact	Allocation	Document review (global)
		6.3	Did delivery modalities strengthen national and local systems and capacities?	Impact	Allocation	KIIs (global) KIIs (case studies) FGDs/group interviews
		6.4	Did unintended consequences arise during the implementation of the COVAX Pillar delivery efforts? Were they directly or indirectly related to the pillar activities, or due to external factors?	Impact	Allocation	Web survey

Figure 5. Evaluation Approach



For Part A, our inquiry focused on the EQs examining the effectiveness, relevance, efficiency of its implementation and adaptation and the impact it had on outcomes of interest, as set out in the TOC (**Annex 3**). EQs were mapped against the TOC and data was gathered to test the TOC pathways and assumptions (**Table 2**). With the focus on the COVAX Facility and AMC from 2022 to 2023, these questions targeted COVAX's work at the global level. We conducted a comprehensive review of 102 documents, including published literature, white papers, reports, and datasets (both publicly available and shared by COVAX, Gavi Secretariat, and Alliance partners). We also drew on the first COVAX Facility and AMC evaluations as foundational input for this work. In addition, we conducted KIIs with 31 stakeholders to address gaps in data or qualitative background for specific EQs. The interviews included 14 Gavi, 7 WHO, 7 UNICEF, 2 CEPI, and 1 CORE group stakeholders. These key informants were selected from a list of stakeholders mapped to specific areas of expertise and the time period for which they were involved. This ensured that we engaged individuals who were best suited to provide insight into the priority questions of the evaluation.

Our evidence synthesis and stock-taking process assessed the available evidence to answer the EQs, making agile adjustments to collect additional data where necessary through targeted stakeholder consultations or further desk reviews. Various analytical methods were applied to each sub-EQ, tailored to the nature of each question (**Table 4**).

Part B of this evaluation centred on EQs that touch on the relevance, effectiveness, and efficiency of its implementation and adaptation and its achievement of results as set out in the TOC (**Annex 3**). The Part B EQs were also mapped against the TOC and data was gathered to test the TOC pathways and assumptions (**Table 2**). Part B contributes to learning about effective strategies for partnership, coordination, and collaboration at the global, regional, and country level targeted around the delivery of vaccines and supplies and to support country preparedness to the next pandemic. This component includes a focus on COVAX programmatic efforts at the global, regional, and country levels, as all were strategically important to delivering on the goals of the Delivery Pillar. For each programmatic level, we followed a four-step process: 1) data and document compilation and review, 2) KIIs, 3) evidence synthesis and stock-taking, and 4) data analysis. We conducted a thorough review of 93 documents to gather the necessary evidence for answering the EQs at the global level, and regional level where relevant and available. Additionally, we conducted KIIs with 36 stakeholders to fill gaps in data

### Special Studies

Three special studies were conducted to enhance the evaluation's focus on specific topics critical to the EQs and address evidence gaps:

- **Supply Chain<sup>i</sup>**: Provided a deeper understanding of vaccine supply chain within the COVAX Pillar delivery, documenting the supply chain management and practices.
- **Equity<sup>i</sup>**: Focused on addressing gaps in equity data related to COVAX Pillar vaccine distribution, supplementing and informing the broader evaluation work.
- **Fragile and Conflict-Affected Contexts**: Drew lessons from COVAX's humanitarian response, specifically in Somalia, to generate insights on how the Alliance can operate differently to better support fragile and conflict-affected countries and regions for improved vaccine delivery (**Annex 5**).

<sup>i</sup> Findings from both the Supply Chain and Equity special studies are incorporated into the main report.

or qualitative background for specific EQs. These interviews included 11 from Gavi, 10 from WHO, 12 from UNICEF, 3 from civil society organizations (CSOs), and 1 from the CORE group, aligned with the sampling approach used in Part B, stakeholders were selected based on their expertise across various phases and activities of the Delivery Pillar efforts. Of the informants, five provided regional perspectives, while 31 shared global insights. The data collected were analyzed using the analytical methods outlined in **Table 3**.

A web-based survey was administered to 826 individuals, with responses received from 133 individuals from 62 countries. The respondents included 31 country government stakeholders, 77 COVAX country representatives, 9 COVAX regional representatives, 13 COVAX in-country implementing partners, and 3 additional participants. The evaluation management and DEPG worked internally to identify appropriate respondents based on the established criteria. The survey sample included respondents from AMC92 and SFP countries. The survey focused on key areas critical to understanding COVAX's impact at scale, particularly delivery efforts that were consistently provided across all countries.

Country case studies (CCSs) from six locations were included to illustrate how COVAX was implemented in varying contexts and how it achieved results amid evolving global and local factors. While case studies provide valuable, context-rich insights where causal pathways are not fully established, their generalizability is limited. The findings from these case studies were carefully aggregated to avoid drawing conclusions beyond the specific country contexts discussed in the following section. The selection of CCSs was purposively designed to ensure variation in context and experience with COVAX and the COVID-19 pandemic. The CCSs include Cameroon, Cote d'Ivoire, Guyana, Indonesia, Uzbekistan, and Zambia. The individual CCS reports can be found in the **Country Case Study Supplement**.

**Table 5. Country Case Study Country Overview**

	Cameroon	Cote d'Ivoire	Guyana	Indonesia	Uzbekistan	Zambia
<b>WHO Region</b>	AFRO	AFRO	PAHO	SEARO	EURO	AFRO
<b>World Bank Income Group</b>	LMIC	LMIC	HIC <sup>j</sup>	LMIC	LMIC	LMIC
<b>Francophone</b>	Yes	Yes	No	No	No	No
<b>DPT3 Vaccine Coverage</b>	67%	79%	99%	83.3%	96%	88%
<b>COVID-19 Series Vaccine Coverage</b>	12%	46%	49%	64%	55%	87%
<b>COVID-19 Infection Rate per 100,000</b>	471	335	9,329	2,497	70	200
<b>Government Stringency Index</b>	Pre-2021: 42.2 Post-2021: 26.3	Pre-2021: 47.5 Post-2021: 17.85	Pre-2021: 71.6 Post-2021: 18.5	Pre-2021: 68.1 Post-2021: 66.7	Pre-2021: 50.9 Post-2021: 38.0	Pre-2021: 50.9 Post-2021: 38.0
<b>CoVDP</b>	Yes	Yes	No	No	No	No

<sup>j</sup> Guyana moved from upper-middle to the high-income category in 2024.

## Country Case Study Approach

The CCSs provide valuable insights into the implementation of COVAX Pillar Delivery across diverse contexts. The selection of case study countries was purposively designed to ensure variation in context and experience with COVAX and the COVID-19 pandemic. The following criteria were used for selection of countries:

- Feasibility: (1) willingness to participate by Gavi, UNICEF, and WHO country representatives, and (2) feasibility for the evaluation consortium to confidently conduct the work in each setting.
- Context: Geographic, economic, stability diversity
- Health system strength
- Global health security strength
- COVID Vaccine coverage achieved
- COVAX support: countries receiving priority under CoVDP
- COVID pandemic experience (political will, vaccine hesitancy, infection rate per 100K)

The case studies include Cameroon, Cote d'Ivoire, Guyana, Indonesia, Uzbekistan, and Zambia.<sup>k</sup> The country engagement approach was embedded in each phase of the CCS, beginning with the identification of country-level experts and government representatives as focal points. The focal points had a pivotal role in acquiring and transferring relevant documents, consulting with the evaluation team on the country-level TOCs, helping to convene country-level workshops for identification of country learning priorities, reviewing CCS results, participating in country-level validation workshops and providing input into lessons and insights, and advising on in-country dissemination strategies. The CCS followed a multi-stage process, outlined as follows:

**Phase 0.** Gavi, UNICEF, and WHO confirmed the CCS countries, identified focal points, and shared initial data and documents with the evaluation team. Through the evaluation management and Delivery Evaluation Partnership Group (DEPG), focal points were selected to serve as hosts for the data collection team and key informants for scoping the CCS and setting learning priorities for each country.

A data and document request sent to country focal points by Gavi and UNICEF yielded relevant documents for the evaluation team. These included country-level planning documents (e.g., national COVID-19 strategies, National Deployment and Vaccination Plan (NDVP), situation reports from ministries of health (e.g., monthly updates), past assessments of vaccine distribution, scopes of work for implementing partners and civil society, and country-specific definitions of key groups (e.g., "vulnerable populations").

**Phase 1.** A thorough data review and consultations with focal points provided the context to adapt the generic country-level TOC developed during inception. These discussions also identified country-specific learning questions within the overall evaluation scope. The CCS team then tailored the generic TOC for the Delivery Pillar to each country and held a validation

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<sup>k</sup> The Zambia CCS approach has differed from the other CCSs in methods applied and evaluation questions covered—specifically only evaluation questions three and four have been addressed. The approach has been largely desk based (i.e., documentation, data, past assessments) with follow-up clarificatory and verification sessions—written and in-person held with the Focal Points from the strategic partners (i.e., UNICEF, WHO, CIDRZ, and Gavi).

workshop with focal points to ensure the updated TOC accurately reflected the country context and COVAX's support focus.

**Phase 2.** Building on a predeveloped "generic" evidence matrix and data collection tools, each CCS team adapted these to country-specific contexts using information gathered in Phase 1. The teams collaborated with country focal points to create a stakeholder list, ensuring diverse perspectives and expertise were included. The teams were guided to invite key informants with diverse and relevant perspectives across different groups for specific contexts. This included representatives from national government, UNICEF, WHO, Gavi, Donors, MOH, implementing partners, civil society organizations, and private sector. Each CCS team conducted 10–15 KIIs per country and collected supplementary documents and data. The evidence was organized in a structured matrix to track findings and guide further data collection. Interview transcripts were quality-controlled, transcribed, and translated into English.

**Phase 3:** Interview data from Phase 2 were analyzed using a standardized template, and initial findings were reviewed in a consensus workshop with key informants. Where unified attendance was not possible, separate discussions were held. Revisions to the CCS report were made based on feedback. CCS teams, in collaboration with the evaluation learning lead, presented findings related to learning questions to stakeholders through global sense-making workshops.

The evaluation consortium allocated significant resources to provide guidance and oversight for the CCS teams. This included field visits, training sessions, workshops, weekly meetings, and regular communication via email and WhatsApp to ensure consistent application of methodologies.

The core of this report summarizes key findings per evaluation question in Part B, highlighting how CCS findings differ or add nuance to the global/regional results. Selected anecdotes from the CCS are included to illustrate specific findings. The full CCS report for each country is available in **Supplemental CCS Reports**.

## Learning Priorities

Generating learnings from the evaluation was guided by four key EQs, which focus the consortium's synthesis and findings into four main streams: Gavi's strategy implementation (e.g., Gavi 6.0); Gavi's role in PPPR; broader future emergency and pandemic response, immunization programming, and collaboration across Alliance partners (Gavi, WHO, UNICEF); and the engagement and collaboration between Alliance partners at various levels. These EQs were addressed through a comprehensive synthesis of learnings across the broader set of EQs.

## Validation and Sense-making

Validation and sense-making workshops were conducted to rigorously assess and reflect on the findings. These workshops engaged a diverse range of stakeholder groups, fostering in-depth and nuanced discussions among participants. Twenty-seven individuals across Gavi, UNICEF, WHO, CEPI and other organizations participated in these sessions. The insights gathered during these workshops contributed to the refinement and enhancement of the utility-focused lessons and insights presented in this report.

Initial findings from the CCS were reviewed in a consensus workshop with key informants engaged during the CCS (or series of conversations where unified attendance of stakeholders is not possible.) Conversations sought to triangulate and build consensus on findings and

appropriately qualify areas where consensus was lacking, prioritizing objectivity and independence.

### **Triangulation of Insights and Recommendation Development**

The triangulation of country data and the development of recommendations involved a series of consortium-wide sessions held throughout the duration of the evaluation. These sessions concentrated on three key areas: 1) key learnings, 2) recommendations, and 3) country case study findings. Country-level findings were systematically organized into thematic categories and aligned with existing findings wherever feasible. These insights were subsequently leveraged to refine, deepen, and enhance the report's findings, as well as to introduce new perspectives and conclusions throughout the document. The themes that emerged from the sense-making workshops were synthesized and played a crucial role in guiding the formulation of the recommendations.

### **Ethics**

The evaluation adheres to guidelines and standards for ethics set forth by the United Nations, in accordance with the 2020 Ethical Guidelines for Evaluation (UNEG, 2020). Informed consent was obtained from all key informants and confidentiality of all data was ensured. Primary data collection with vulnerable parties was not undertaken. The interview guides do not contain sensitive or private information, but respondents were free to terminate the interview at any time without need of explanation. Declining to participate in the evaluation does not influence the ability to receive any future support from the alliance. Participant selection focused on diverse representation. This evaluation was conducted by an independent and impartial evaluator with oversight from the Evaluation Advisory Committee, Delivery Evaluation Partnership group, and Evaluation Steering Committee. This evaluation derives lessons from the COVAX experience, and its implementation and results achieved to inform future program implementation in pandemic prevention, preparedness, and response (PPPR) and organizational and global strategies that could benefit the participants.

Further this evaluation was assessed by the Health Media Lab (HML) Institutional Review Board (IRB) and received ethics review approval (HML IRB Review 938GLOB24).

## Risks and Limitations

Limitations of the joint evaluation methodology are expanded in **Annex 2, Table 2-8**. The key risks and limitations and mitigation actions taken are summarized in **Table 6**. These have been submitted and reviewed by Gavi’s Centralized Evaluation Team (CET) at regular intervals and in quarterly progress reports throughout the evaluation.

**Table 6. Risks and limitations**

Limitation	Mitigation strategy
Stakeholder fatigue with evaluations of the COVAX response has led to a risk of poor or non-engagement with these exercises, affecting staff at Gavi, UNICEF, WHO, and other key informants at global, regional, and country levels.	The evaluation team took a practical approach to stakeholder engagement, recognizing that not all have the time or capacity to participate. Efforts were made to minimize duplicative requests and streamline engagement, while prioritizing essential data collection, with support from the DEPG, evaluation managers, and others to facilitate active responses. Understanding the reluctance of country-level stakeholders to engage in global evaluations, the team ensured that evaluation findings are shared with countries in a way that supports their capacity-building and feedback needs, while also benefiting global stakeholders.
Stakeholder recall and bias	The evaluation team highlighted conflicting views and, where applicable, provided an independent assessment of the evidence. For CCS interviews, the evaluation team provided visual overviews of the phases of COVAX and the country-specific COVAX-funded activities to mitigate recall bias.
Joint evaluation delays feedback and statement of work approvals including country case study selection	During the inception period, the evaluation established a clearly defined scope and learning priorities to serve as a shared reference for all joint partners. Bilateral discussions and sub-group focal points ensured DEPG-related actions progressed, with clearly defined timelines for consolidated feedback to align expectations between the client and supplier.
Distributed teams conducting data collection activities within a multi-organization evaluation	The evaluation employed structured approaches for distributed data collection, using consistent guidance and systematic processes across contexts and topics, supported by weekly workstream meetings and monthly cross-consortium learning sessions.
Delays in country case study implementation	A dedicated consultant from UNICEF facilitated country case study interactions with the supplier, while UNICEF, RTI, and Genesis leveraged in-country connections to access health ministry personnel, with DEPG reinforcing terms of reference with country focal points to ensure engagement, and core evaluation team members providing in-person support during Phase 1 of the case studies.
Low response rate to web survey	The timeline for responding to the survey was extended, and direct outreach was made to key stakeholders to encourage survey completion.
Breadth and depth of evaluation scope	Given the complexity of COVAX, the number of different COVAX coordination structures that were established and used, the breadth of scope covered by the evaluation questions, alongside the pressure on key informants’ time, being able to discuss all relevant coordination and collaboration structures in detail has not been possible. This means that analysis is limited to areas and structures spoken about by interviewees when asked for perspectives on coordination and collaboration.



## **PART 2: Evaluation Findings**

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## Implementation and Adaptation



### EQ 1: How successfully was the COVAX Facility and AMC implemented, relative to overarching objectives and the changing implementation context?

This section presents the evaluation findings in relation to EQ1. For Sub-EQs 1.1 and 1.2, the evaluation team employed a process analysis approach to assess the assumptions underlying the COVAX TOC and establish whether and how implementation of activities in the TOC contributed to observed results (**Annex 3**). This analysis involved the identification and evaluation of evidence derived from KIIs and document reviews, with the aim of determining the extent to which the TOC assumptions related to resource mobilization, securing supply and allocation were valid. For Sub-EQ 1.3, the team utilized the collaborative partnership framework (**Annex 2**) to structure the analysis, examining the conditions for systems-change partnerships and assessing their effectiveness in relation to the program's objectives. All findings presented here are informed by a triangulation of evidence from KIIs and document reviews. Supplemental evidence can be found in **Annex 7**.


Sub-EQ 1.1 What were the key enablers and barriers relative to successes achieved and challenges encountered? and 1.2: How effective were adaptations to the model to respond to evolving context?<sup>1</sup>

#### Resource Mobilization (RM)

**1**  **Finding 1: At the start of 2022, resource needs for COVAX were highly uncertain due to factors such as epidemiological unpredictability, fluctuating country demand, and unclear future vaccine requirements.** At the start of 2022, COVAX faced two principal challenges: a potential oversupply of vaccines in the face of increased availability and reduced demand and evolving Scientific Advisory Group of Experts on Immunization (SAGE) guidance regarding booster doses and vaccination of adolescents and children. In response, COVAX adapted to this changing context by retaining the capacity to address a potential “worst-case scenario” through the Pandemic Vaccine Pool, ensuring ready access to funding for vaccine procurement if needed. Most key informants were widely supportive of this approach. Literature exploring the use of advanced purchase agreements (APAs) in pandemic scenarios also supports the notion that this risk paid off: “In the spirit of ‘no regrets’ purchasing, having bought what hindsight suggests was too much is generally preferable to having bought too little”.<sup>14</sup>

**1**   **Finding 2: In 2022, the COVAX AMC continued its effective RM strategy, leveraging AMC summits and Gavi's existing donor relationships to secure funding for vaccine procurement.**<sup>13</sup> The approach proved successful in 2021, with the “One World Protected” event raising \$6.3 billion, followed by \$2.4 billion in pledges at the COVAX AMC Summit.<sup>15</sup> The 2022 AMC Summit, focused on establishing a Pandemic Vaccine Pool and strengthening delivery systems, resulted in an additional \$4.8 billion in pledges, marking it a significant success.

#### Securing Supply and Portfolio Management

**1**  **Finding 3: By the end of 2021, dose donations became a central element of COVAX's vaccine supply strategy, especially for mRNA vaccines. In 2022, the continuation of dose donations despite excess supply was motivated by the need to maintain strong donor**


<sup>1</sup> Evidence for Sub-EQ 1.1: Is woven throughout this section, these are detailed in Figure 9.

**relations, minimize global vaccine wastage, and ensure access to high-demand mRNA vaccines.** Dose donations were not initially envisioned in the COVAX platform design but were reportedly introduced in 2021 when it became apparent that supply through APAs alone would not be timely enough to meet global needs. Dose donations accounted for more than half of COVAX shipments during 2021 and were also a major source of COVAX vaccine supply in 2022 and 2023.<sup>m,16</sup> In particular, and largely due to a substantial purchase of Pfizer doses on behalf of COVAX by the U.S. government (referred to as a 'facilitated purchase'), key informants noted that dose donations helped to bolster timely COVAX supplies of mRNA vaccines which were in high demand from late-2021 onwards. However, stakeholders also noted that the requirement for ultra-cold chain supply chain and difficulties in accessing specialist syringes posed additional challenges for COVAX to navigate.


Dose donations added significant urgency and complexity to the COVAX process due to the need to negotiate with donors and manufacturers, as well as arrange for certain allocations, contracting and shipment of donated doses. Many key informants highlighted the challenge of balancing the goal of equitable vaccine access with the need to maintain donor relationships and secure COVAX and wider Alliance goals and objectives.<sup>17</sup> In 2022, procedures were streamlined making the administration of dose donations significantly more efficient.<sup>17,18</sup>

**2**  **Finding 4: With excess supply within the COVAX portfolio, APA options (as opposed to firm order committed doses) afforded considerable flexibility for portfolio management.**<sup>18</sup>

As part of its deal-making, Gavi secured a high degree of optionality within its contracts with manufacturers (representing more than 50% of secured supply). Multiple key informants noted that these options were negotiated in 2020 and 2021 to balance demand to manufacturers with the need to avoid overcommitting financial resources, which Gavi had not yet received from AMC donors, and to allow for adjustments based on uncertain vaccine needs and country demand. Several key informants noted that the use of APA options played a crucial role in effective portfolio management in 2022 and 2023, allowing COVAX to adjust vaccine volumes in response to fluctuating country demand.

**2**  **Finding 5: The continued administration of donated doses in 2022 influenced scope and scale of APA renegotiations required to mitigate wastage within the COVAX portfolio.**<sup>19–23</sup>

Multiple key informants confirmed that in addition to not exercising APA options, COVAX renegotiated significant volumes of firm order commitments in 2022 and 2023, with these renegotiations driven by continued administration of donated doses in 2022 and the desire to mitigate wastage within the COVAX portfolio. The available evidence suggests that COVAX successfully renegotiated committed volumes down from 2.2 billion to 1.4 billion doses.<sup>24,25</sup> Several key informants felt that APA renegotiations contributed to reducing wastage as APA adaptations were sometimes made before the vaccine products had been produced. Several key informants also questioned whether the approach to renegotiate firm order committed doses would have implications for how manufacturers would view a future multilateral procurement mechanism, should something similar to COVAX be established in the future.

**1**  **Finding 6: COVAX “above country” vaccine wastage (unutilized doses within the global system) was reported at 9%.**<sup>16</sup> Several key informants across COVAX partners acknowledged

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<sup>m</sup> By the end of December 2023, of the 1.98 billion vaccines shipped, 53% (1.05 billion) were APA doses, and 47% (926 million) were donations.

that this amount of wastage was perceived as necessary and acceptable to promote equitable vaccine access within a pandemic context and relevant uncertainties. However, there was confusion around wastage policy messaging during the pandemic, driven by novel and mixed vaccines being rolled out in addition to a lack of implementation evidence to inform such a policy during a pandemic. This created significant stress among COVAX teams tasked with supplying countries with vaccines.<sup>18,26,27</sup> Multiple key informants referred to COVAX playing a positive role in reducing global wastage rates by facilitating dose donations. Several key informants noted the substantial pressure felt by staff to minimize COVAX wastage, which may have had implications for how COVAX allocated and worked with countries to distribute doses. It was reported by multiple key informants that any “acceptable target” of ‘above country’ wastage would be difficult to set in advance, and instead, should be calibrated as the pandemic evolves.

#### Learnings from the COVAX contracting model for vaccine doses

Gavi’s involvement in negotiating APAs for the COVAX Facility and AMC marked a departure from its usual practice, in which UNICEF manages tenders, allocates demand, and works with manufacturers through long-term agreements. While Gavi and UNICEF had previously used APAs and AMCs in some rare circumstances, (such as for Ebola and Pneumococcal vaccine), they are not frequently used by the Gavi Alliance as UNICEF normally procures vaccine under good-faith, long term agreements and only uses firm contracting and special contracting when required and the supply market situation calls for it. The COVAX model was exceptional in that procurement contracts were entered into by both the Gavi Secretariat and thereafter operationalized by UNICEF and PAHO respectively.

There were highly divergent and strongly held perspectives on whether it was appropriate for Gavi to assume responsibility for deal making. Stakeholders from the Gavi Secretariat suggest that this was an example of how COVAX adapted and innovated under pressure, noting that Gavi was able to take a greater degree of risk and act more quickly than other organizations, and as such it made sense for Gavi to lead on deal making with UNICEF responsible for operational procurement functions. Stakeholders, notably from UNICEF, suggested that this approach did not leverage UNICEF’s expertise and significant experience in deal making and created unnecessary duplication between the APAs established by Gavi and the long-term agreements established by UNICEF for procurement and shipping. For instance, it was reported that APAs included terms and conditions for shipping which UNICEF was responsible for managing, the terms for which were already included in UNICEF’s agreements. The process of aligning the multiple agreements with manufacturers was reported to have added complexity and transaction costs to an already highly complex process.

#### Allocation

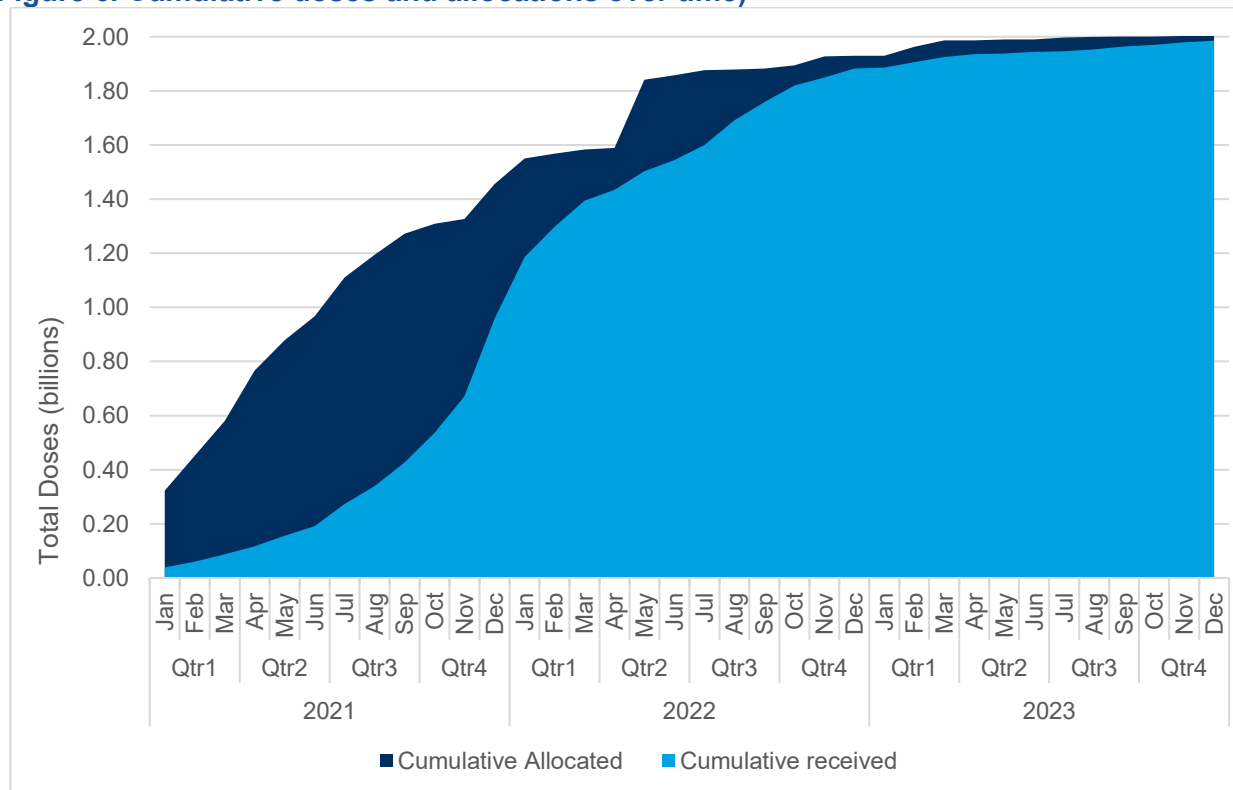
1



**Finding 7: The allocation model for COVID-19 vaccines evolved continuously to address changing supply availability and country needs.** Phase 2 of the allocation model was introduced in February 2022 and lasted until July 2022, reflecting shifting vaccine supply and demand dynamics.<sup>28</sup> In August 2022, with continued reduced demand, vaccine allocation was integrated into Gavi Alliance’s regular processes under a simpler “rolling allocations” system, which was better suited to excess supply.<sup>18</sup> The primary goal from the outset was to ensure “fair

access and equitable allocation" for participating countries,<sup>n</sup> in line with COVAX's normative principles.<sup>29</sup> By Q4 2023, approximately 2.0 billion doses (**Figure 6**) had been received by 146 economies.<sup>30</sup> The Phase 2 model, which maintained several Phase 1 principles,<sup>i</sup> was reoriented to be demand-driven rather than supply-driven. Following the declaration by WHO in May 2023 that COVID-19 was no longer a PHEIC,<sup>31</sup> the allocation model transitioned further.<sup>i</sup>

**Figure 6. Cumulative doses and allocations over time)**



Source: COVAX: ensuring global equitable access to COVID-19 vaccines | UNICEF Supply Division; CPP dataset

1



**Finding 8: The Phase 2 Allocation Mechanism was broadly seen as well-intended, with a theoretically sound design, but perceptions of its effectiveness were mixed.**<sup>13,32</sup> Evidence from Phase 2 suggests that COVAX was relatively successful in meeting country demand, with 100% of participants receiving the doses they requested by Round 16 and 63% of the 57.5 million doses requested were allocated with the requested product,<sup>33</sup> though challenges such as country absorptive capacity<sup>o</sup> and difficulties in demand forecasting hindered its full success. For the remaining 37% of doses requested by participants, the specific products were allocated

<sup>n</sup> The allocation mechanism evolved across three “phases”:

Phase 1: May 2021–February 2022. Focus on proportional allocation up to 20% of total population. This meant that countries were to receive doses proportionally to their total population. Context of supply constraint and high country demand. The Joint Allocation Team was disbanded at the end of Phase 1. Phase 2: February 2022–July 2022.

Context of rich supply, waning vaccine demand. Fear around emergence of variant strains. Phase 3: August 2022–December 2023. Context of balancing supply with demand. Centralized management of dose supply (managing reputational risk) with doses allocated on a rolling basis as countries requested them. During this time there was proactive renegotiation of firm order commitments in APAs to avoid loss of funds and maximize benefits from donations.

<sup>o</sup> Includes availability of appropriate cold chain infrastructure, transport for vaccine logistics, availability of syringes, etc.

using the information available in participants' demand plans. Issues like vaccine hesitancy, fears of expiration, and limited supply chain capacity complicated the operationalization of Phase 2, with inaccurate long-term forecasts adding pressure on COVAX teams to allocate and deliver vaccines quickly.

The variability in country responses to shifting public preferences, vaccine requirements and vaccine suppliers other than COVAX further complicated demand forecasting. Despite efforts to create a more responsive system with monthly allocations, the reality of logistics made this approach unfeasible, and allocations were sometimes made without regard to countries' ability to absorb the doses. The Phase 2 mechanism, while less burdensome than Phase 1, allowed for valuable learning, leading to the development of a simpler allocation system in Phase 3. Evidence in Joint Allocation Team (JAT) and Independent Allocation of Vaccines Group (IAVG) reports of June 2021<sup>34</sup> and June 2022<sup>35</sup> demonstrate that the allocation mechanism made clear efforts to adapt and respond to country needs from the outset including instating a reallocation function.

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*“There was a lot of good work done in a very short amount of time, so I think the demand planning in particular for me was a standout of how COVAX pivoted and sort of was like, well, we need to rethink. This was a genuine example of real-time learning, reflection, pivot to change your approach.” – Gavi stakeholder*

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1



**Finding 9: In August 2022, with sustained reduced vaccine demand, allocation of COVID-19 vaccines was integrated within Gavi Alliance regular structures, referred to as “rolling allocations.” This was much simpler to administer and was better suited to a situation of excess supply.**<sup>18</sup> However, it imposed some implications, particularly for ensuring timely availability of syringes compatible with non-standard dose volumes. In July 2022, it was agreed to stop allocation rounds and instead countries could request vaccines directly from Gavi on a rolling basis. In this phase, WHO was no longer engaged and per regular Gavi practice, the Gavi CEO was the ultimate decision-maker on where doses were sent. This transition is broadly perceived as a pragmatic and natural adaptation to the change in demand for COVID-19 vaccines.

#### Close-out

2



**Finding 10: The COVAX close-out<sup>p</sup> process was well-managed, implemented, and resourced, with strong support from a cross-functional team that included risk, legal, monitoring and learning, finance, and communications.** Many key informants across alliance partners felt that the close-out was smoothly executed and well-timed, given the declining demand for COVAX services. The planning for closure was also seen as effective, with advance communication about the closure and appropriate governance and human resources in place. Gavi was recognized for effectively managing the complex transition to the 2024-2025 COVID-19 program, which involved coordinating multiple partners and shifting from APA vaccine procurement to tendered supply contracts. COVAX senior management ensured

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<sup>p</sup> The decision to formally close COVAX was made in June 2023, shifting focus to a new 2024–25 COVID-19 vaccine program. Key informants noted close-out discussions having been initiated during 2022 and formalized in Gavi's Board meeting in June 2022. Specifically, the close-out of COVAX implied closing SFP agreements at the end of September 2023 (3 years following the start of agreements) and closing the COVAX Facility and AMC by the end of December 2023.

that the close-out process was adequately resourced, acknowledging the exhaustion of teams after three challenging years, while maintaining focus on executing the closure properly. However, some key informants noted that in certain areas, human resources were reduced too quickly, which slowed the completion of tasks like closing SFP agreements and issuing refunds, requiring committee members to extend beyond regular duties.

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*“Ultimately this was a major achievement that we were managing [whilst still working on other projects] COVAX.” – Gavi stakeholder*

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1



**Finding 11: The decision-making process surrounding the repurposing of AMC funds (US\$2,490 million<sup>36</sup>) faced some critique from key informants.** The repurposing decision was made after an assessment and consultation with AMC donors through the AMC Investors Group, as many donors had specific conditions on how their funding could be used.<sup>37</sup> However, some key informants felt that the repurposing of AMC funds was not adequately considered, and they would have preferred more consultation among Alliance partners and country governments regarding how these funds should be repurposed. A further challenge arose from COVAX governance, particularly with some individuals on the AMC Investors Group also holding seats on the Gavi Board. Key informants noted that it may be more appropriate to consolidate decision-making power within a single body, such as the Gavi Board, which would consult and keep the Investors Group informed, rather than giving the Investors Group direct decision-making authority.

Sub-EQ 1.3: How well did COVAX Pillar partners coordinate and collaborate?

1



**Finding 12: The Gavi Alliance's established partnerships, the strong comparative advantages of its partners, and prior experience with APAs facilitated the rapid launch and implementation of COVAX, despite significant challenges.** Key informants across Alliance partners highlighted the value of COVAX being led by an established alliance with clear mandates and complementary strengths. COVAX's successful implementation was further supported by strong relationships between its leads and industry, health ministries, and national immunization teams. However, leveraging existing relationships inadvertently led to communication issues, with examples provided by key informants relating to partners communicating mixed messaging at the global level and countries receiving COVAX-related information from different partners at different times, sometimes with mixed messaging (see Finding 15). However, this issue improved over time.

Sharing of information between partners was also a challenge, particularly at the outset of COVAX. Over time COVAX partners successfully developed and refined a system for data sharing and coordination, incorporating a range of tools and platforms that supported both individual teams within their respective organizations and across the broader partnership. The use of custom-made, fit-for-purpose platforms was instrumental in facilitating efficient data sharing, which was key in addressing the complexities of vaccine allocation and distribution. Given the scale and urgency of the vaccine rollout, there was a learning curve as COVAX partners adopted new processes and tools. However, as the system matured, processes and coordination improved, demonstrating the adaptability and resilience of the partners involved.

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*“We met multiple times per day but had one repository for documents and we recorded as much as possible in minutes. So for anyone coming in – and we had a*

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*lot of turn-over on Gavi side – they had this complete repository which made it easier.” – Gavi Stakeholder*

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Underpinning these challenges was the persistent challenge of human resourcing. The first COVAX Facility and AMC evaluation,<sup>5</sup> found that despite a robust management function, it was under-resourced relative to the scope and scale of its responsibilities. Additionally, while Pillar partners' strengths were leveraged effectively in many areas, there were instances where responsibilities were not allocated to the most experienced agencies, causing duplication of efforts, creation of parallel structures, and uncertainty regarding future roles within the Alliance.

*“Responsibilities between partners for the various workstreams were not always well thought through, and this led to duplication of efforts and to some extent building structures that already existed. This could be improved in a future set up.”  
– Sense-making participant*

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2



**Finding 13: Cross-partner coordination structures were generally viewed as essential<sup>38</sup>; however, while some proved highly effective, others were perceived as overly complex, with excessive layers and unclear roles and responsibilities.<sup>13</sup>** Several key informants shared concrete examples of particularly effective coordination structures, such as the Work Stream Conveners (WSC), the COVAX Operational SWAT Forum (SWAT), and the cross-disciplinary COVAX Close-out Committee. The regularity of meetings and strong relationships between counterparts across agencies were identified as key enablers of successful coordination and collaboration within these structures. These forums were also deemed effective due to the participation of individuals with the appropriate decision-making authority. However, there was recognition that greater inclusion of civil society organizations (CSOs) and governments could have further strengthened these groups.<sup>39</sup> The Regulatory Advisory Group (RAG)<sup>q</sup> was highlighted as both useful during COVAX and valuable for continuing to contribute to the sector. Additionally, the proactive coordination role of the COVAX Facility Project Management Team in risk management and the COVAX Strategic Coordination Office, which was staffed with experienced, high-caliber individuals, were seen as important enablers. Many key informants also emphasized the future need to define accountability clearly among partners to ensure all parties understood their roles and responsibilities.

2



**Finding 14: Individual personalities and differing viewpoints at times strained working relationships between partners, particularly when stakeholders were perceived as "positioning" themselves or their organizations for power and influence in current or future pandemic responses.** These relationship challenges hindered the establishment of trust-based collaborations,<sup>13</sup> with vaccine deal-making and competition for delivery donor funding serving as key examples. Key informants across different Pillar partners cited instances where decisions were made without proper consultation or agreement, leading to delayed decision-making and eroded trust. Three specific behaviors were consistently cited as factors

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<sup>q</sup> RAG 1) Supported and promoted regulatory planning among COVID-19 vaccine developers to ensure access when scientifically appropriate, 2) Informed regulatory agencies of the questions and challenges faced by vaccine developers in the development of COVID-19 vaccines (e.g., batch release, enriching and dynamic expiry date, immuno-bridging, etc.), and 3) addressed regulatory science questions raised by Clinical Development and Operations, Enabling Sciences, and the Manufacturing SWATs led by CEP. Source: COVAX Structures and Principles, Dec 2022 COORDINATION IN A CRISIS: LESSONS MANAGING THE COVAX STRATEGIC COORDINATION OFFICE (2021–2023), COVAX, December 2023

eroding trust: competing for the same donor funds, negative talks between agencies about each other to donors, and perceived compromises on COVAX's equity principles under political pressure. Ultimately, these dynamics slowed decision-making, reduced efficiency, and negatively affected team morale.

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*“Strong interpersonal relationships and soft skills were essential, as emotional intelligence played a crucial role in building trust and collaboration among stakeholders. Without these qualities, effective relationships could not be established.” – Gavi stakeholder*

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1 

**Finding 15: The challenges in maintaining effective communication with countries during 2021, when visibility on supply was low<sup>r</sup>, continued to affect Pillar partners and their relationships with countries into 2022, as many countries had already lost trust in COVAX.** In 2021, this loss of trust was primarily due to the COVAX team's lack of visibility on supply volumes and timelines from manufacturers. Evidence from this evaluation suggests that these early communication challenges persisted into 2022 although, this did improve using 'monthly supply snapshots' which included information on country vaccines, volumes and shelf lives. Additionally, the creation of various government structures at the country level in response to COVID-19 led to confusion about which Alliance partner or stakeholder was responsible for ensuring collaboration and coordination. Key informants also noted that COVAX struggled to project a unified voice, as multiple actors across different partners communicated with countries and the media, often delivering conflicting messages.

## **EQ 2: How effectively were COVAX Facility and AMC risks and challenges managed during implementation?**

This section presents the evaluation findings in relation to EQ 2. The evaluation team employed a thematic analysis including identification and evaluation of evidence derived from KIIs and document reviews. The first evaluation of COVAX Facility and AMC<sup>5</sup> found that the initial COVAX Facility design was agreed in mid-2020 without a full understanding of the associated risks, but that strong risk management systems and processes were established over time. In this section we explore how risks and challenges were managed during implementation from 2022 onwards to complement and build on this finding. **Annex 7.3** demonstrates how focal risks changed and new risks were added over time, aligned with changes being made in COVAX's scope of work. The annex also provides an overview of the risks that were being actively managed during COVAX's operating period between January 2022 and September 2023.

**Sub-EQ 2.1: What were the risks to achieving COVAX Facility and AMC objectives? Were these managed appropriately?**

1 

**Finding 16: COVAX was largely an untested risk management endeavor due to the unprecedented and unpredictable nature of the COVID-19 pandemic. Evidence suggests that the risk management function during 2022-2023 effectively supported decision-**

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<sup>r</sup> See Box 7 Lesson G in the first COVAX Facility and AMC evaluation for detail. Lesson G: The content (accuracy, transparency, clarity of messaging) and quality (timeliness) of communication with countries on allocation details and forecast deliveries can significantly affect relationships with countries, confidence in the mechanism, and public perception of success. In addition, a key learning documented by Gavi in 2023<sup>49</sup> was that without manufacturers being transparent regarding their order books (e.g., when delays occur or supplies were limited), "it is not possible to determine when countries that are unable to afford doses are in danger of disproportionately missing out."

**making and mitigated key risks as they evolved over time.** Despite the abundance of supply after 2022, the processes and systems needed to support countries continued to be challenging to predict and adapt to, as the nature of risks and challenges shifted. **Table 6** demonstrates how the broad risk category ratings shifted to align with COVAX's own understanding and appreciation of what was required within its scope of work to achieve COVAX objectives.<sup>5</sup> Although risk management capacity was initially stretched, it is generally perceived as adequately resourced through 2022 and 2023, with a well-coordinated team of risk owners, senior managers, and the COVAX Facility Program Management Team and the COVAX Leadership Team playing pivotal roles. Many key informants highlighted the novel, fast-paced nature of COVAX, which fostered a proactive, collaborative risk management culture that was highly effective.

**Table 7. Evolution of COVAX risk area ratings 2020–2023**

Area of risk	Rating 2020	Rating 2021	Rating 2022	Rating 2023
COVAX supply	Very high	Very high	High	Medium
COVAX delivery	Not featured	Very high	High	Not featured
COVAX Facility	Very high	Very high	Not featured	
COVAX reputation	Very high	Very high	Not featured	
Country management capacity				Very high

### EQ 3: Was the implementation framework for the COVAX Delivery Pillar appropriate to achieve overarching objectives?

This section presents the evaluation findings in relation to EQ 3. The evaluation team employed a process analysis approach (**Annex 2**) to assess the assumptions underlying the COVAX TOC (**Annex 3**) aligned with the evolution of the COVAX strategy over time in response to shifting contextual factors. For Sub-EQ 3.1 and 3.2, this analysis involved the identification and evaluation of evidence derived from KIIs at the global and country levels and document reviews. For Sub-EQ 3.3, this analysis involved the identification and evaluation of evidence derived from KIIs at the global and country levels, document reviews, and the web-survey.


#### 1

**Sub-EQ 3.1: To what extent did core delivery partners and delivery modalities respond to identified needs and priorities of (1) priority population groups, (2) national governments, and (3) COVAX stakeholders?**

**Finding 17: The CRD workstream was viewed as successful at its intended purpose of working with countries to enhance delivery support and improve their vaccine readiness and introduction.** Countries were mapped based on capacity in relation to the WHO health system building blocks and their readiness to introduce a vaccine.<sup>3,34,35</sup> Through CRD, countries were provided with mostly technical assistance for the preparation, introduction, and rollout of COVID-19 vaccinations. As supply constraints eased in early 2022 and it became clear that there were significant unmet needs in a subset of countries, CoVDP was launched and continued through the end of Q2 2023 (see Finding 20). All CCS align with this finding of

<sup>5</sup> To accelerate the development, procurement, and equitable distribution of COVID-19 vaccines by working closely with manufacturers to invest in and incentivize vaccine production, ensuring vaccines would be ready for distribution once approved by leveraging the collective purchasing power of participating countries through the COVAX Advance Market Commitment (AMC) to negotiate competitive prices with manufacturers.


success and describe the CRD phases of funding and how each country benefited from these windows of funding.


- 1**  **Finding 18: Throughout 2020 and into mid-2021, there was an expectation that other partners would be responsible for funding (notably the World Bank) and implementing (notably UNICEF and WHO) vaccine delivery support. Gavi adopted a more proactive role in this space over time as it became apparent that delivery funds would not be made available to countries in a timely way.** By the end of 2021, only a small proportion of the funds allocated for delivery support had been effectively utilized at the country level. Delays in both funding disbursement and absorption capacity at the country level posed significant challenges to timely vaccine delivery. The challenge of timeliness of funding support was echoed across the CCS.

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*“Theoretically, it’s said that it [disbursement of funds] can be done in a month, but there are delays that have exceeded three months. There are even delays that have exceeded four months. And, when you receive the money, I think you have three months to justify it.” –National MoH Cameroon*

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- 1**  **Finding 19: Gavi’s CDS program supported countries to strengthen country readiness to accept COVID-19 vaccines and roll out COVAX doses.** In July 2021, Gavi launched the CDS Early Access funding window with an allocation of approximately US\$270 million to meet urgent needs for COVAX-supported dose delivery across 92 AMC countries.<sup>36,42–44</sup> In October 2021, Gavi introduced the Needs-Based funding window, offering US\$330-400 million to further support the scaling up of COVID-19 vaccinations through the end of 2022. The objective of each of the funding windows was adapted and evolved based on need. By the end of 2021, over US\$240 million had been approved through various funding windows. In April 2022, successful fundraising efforts enabled Gavi to announce a third CDS funding window, and by June 2022, an additional US\$600 million was made available to support countries. In June 2023, the Gavi Board approved an extended timeline for implementing CDS grants until the end of 2025, allowing countries to reallocate their approved CDS funds to support COVID-19 vaccine delivery into 2024-2025. By September 2023, 32 countries had submitted their CDS3 applications, with an additional 13 countries applying later. Gavi had disbursed US\$331 million of the US\$422 million committed under CDS3 by the end of 2023, surpassing the forecasted disbursement target for the year. The implementation period of the CDS funding has been extended to the end of 2025, and countries are eligible to reallocate their approved CDS funds to support delivery of COVID-19 vaccines in 2024-2025. As of February 2024, Gavi committed US\$1.301 billion and disbursed US\$1.187 billion of the COVID-19 Delivery funds and disbursement is still ongoing.<sup>40</sup>

- 1**  **Finding 20: Recognizing the urgent need for focused attention to countries experiencing issues with vaccine delivery and uptake, including those in humanitarian settings, CoVDP was established as an evolution of CRD.** In February 2022, the appointment of a CoVDP global lead coordinator and country desk officers streamlined decision-making, leading to greater efficiency and clearer accountability. Furthermore, the funding increase in mid-2022 was effective at providing CoVDP with necessary additional resources. The introduction of these roles was cited by several key informants as evidence of COVAX’s ability and willingness to pivot when things were not working well. However, the CoVDP structure also introduced inefficiencies within Gavi, particularly overlap between supply country managers and CoVDP desk officers, with mixed opinions on the desk officer role’s impact. Similarly, several key informants cited that changes took long to implement due to the different delivery partner ways

of working and inherent bureaucracies. Despite these challenges, CoVDP implemented several proactive coordination measures, including weekly funding alignment meetings, the use of readiness assessments, and successful dose-sharing mechanisms, all contributing to improved delivery effectiveness.

1

**Finding 21: Delivery modalities, such as the CDS mechanism and NDVP templates were designed primarily to meet the needs of national governments and COVAX stakeholders, while more attention could have been given to delivery considerations to reach priority populations.** While countries largely developed strategies to target these populations, many LICs struggled with limited human and financial resources to effectively execute these plans. The CCS illustrated differing experiences in terms of human and financial resources for these strategies.

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*“COVAX was not really geared initially to provide support at the country level. It was more at the global and regional levels. So, even when vaccines became available at the country level, many countries found it difficult to target the populations, though they had strategies in their plans on how they were going to reach the target population. They couldn’t reach them.” — WHO stakeholder*

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#### Country Insights (Supplemental CCS Reports)

- In Cameroon, the EPI had sufficient capacity to initiate drafting of the NPDV before receiving Alliance support.

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*“We distributed the different chapters of the NPDV among ourselves and started developing the document right here at the EPI [national] office. The WHO country office only came later with technical assistance, when the draft was already advanced.” – Cameroon National MOH*

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- The Zambia CCS notes that the COVAX-funded activities were implemented in accordance with the NVDP, which was based on a needs assessment and integrated with EPI systems.

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*“From my experience, those pillars [NVDP] were followed almost to the book, and I think the successes would have been difficult if they were not followed.” – Zambia UNICEF, verification discussion*

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- In Guyana, COVAX held meetings with the government to assist on developing the NDVP. Key informants agreed that the core delivery partners (UNICEF and PAHO) were involved and integral through the process of planning to delivery.

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*“These partners [ UNICEF, PAHO, WHO] and so many others, played an integral part in the COVID-19 response for Guyana, helping to facilitate, in many instances, the entire process... many of these organizations were involved ... they were part and parcel with the Ministry, and that’s where you see that close knitted relationship” – Guyana National Government Health Official*

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#### Fragile and Conflict Special Study Insights (Annex 5)

The Somali MOH, with assistance from COVAX partners including WHO, developed the distribution plans and microplanning. These plans outlined the allocation and distribution of vaccines across the country.

**Finding 22: There are differing views on the level of engagement of CSOs and advocacy groups in COVAX delivery modalities. Global and regional perspectives suggest that while these groups were generally included as representatives of civil society, they were rarely consulted in decision-making and often excluded from technical discussions.<sup>t</sup> At the country-level, CCS identified that CSOs played a crucial role yet received limited recognition and had no access to COVAX funds and were often not adequately consulted.** Some CSOs were included in the design of at the global-level COVAX from the outset, primarily due to their involvement in other vaccine initiatives. These CSOs leveraged their presence to advocate for the inclusion of CSO representation in the working groups, which eventually led to the election of a CSO representative. However, CSOs reported that decision-making was often conducted at higher levels and then communicated down to them without consultation with partners on the ground. CSO key informants expressed preference for a more collaborative approach, advocating for consultations with experts rather than being directed on what action to take. The overall CSO impact was limited by the lack of formal participation channels, steering groups, and restrictive agreements such as non-disclosure agreements. A planned Strategy Steering Group was never established. More recent initiatives, such as regional immunization training and co-design sessions, have promoted more inclusive collaboration, although challenges in integrating CSO technical expertise into vaccine strategy formulation remain.

Insights from CCSs suggest that the inclusion and role of CSOs varied by country, depending largely on the government’s willingness to engage with CSOs on the COVID-19 response. Some CCS noted that CSOs were not fully utilized, particularly in terms of leveraging their built-in trust with the community. While others noted levels of engagement were substantial throughout the response and inclusion of CSOs was critical.

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*“The challenge was that CSOs are not traditionally ever consulted, so there was nothing different than that happened. The fact that they even formed this CSO constituency was important, even if not necessarily consulted in the right way because there was no right way.” — Global/Regional CSO stakeholder*

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### Country Insights (Supplemental CCS Reports)

- In Cameroon, PROVARESSC—a consortium of CSOs not funded by COVAX—played a significant role in the country’s COVID-19 response. The strength of the CSOs lay in their close ties with local communities, which enabled them to build trust and promote acceptance of COVID-19 vaccines. Some CSOs felt abandoned due to a lack of funding for activities they conducted. CSOs worked hard in mobilizing the general population, and academics involved in operational research to create an evidence base on COVID vaccination in the domestic setting.

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*“We did not receive any financial support from COVAX, but we still did our best to mobilize the communities because we saw the need. The government should learn to leverage the extensive network of CSOs for such activities because we are closest to the communities.” –CSO*

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- In Cote d’Ivoire, CSOs like the Red Cross Society focused on community mobilization and the provision of protective gear, psychosocial support, and financial aid for people who lost their jobs.

<sup>t</sup> However, in demand planning, CSOs were actively involved in forecasting activities.

However, COVAX's collaboration with CSOs was often described as inadequate and key informants emphasized the need to recognize the key role of CSOs in public communication

Sub-EQ 3.2: To what extent and how were (1) in- and intra- country equity and (2) gender equity considerations integrated into delivery modalities?

2



**Finding 23: Priority populations were defined by individual countries, with support from COVAX partners, primarily WHO and UNICEF, to help guide the identification of these groups to inform the development by countries of their NDVP.** Intra-country equity was not initially a priority consideration for COVAX Pillar Delivery activities. While CRD and CoVDP each had distinct but complementary mandates for vaccine distribution, the focus on intra-country equity was not context specific and inconsistently integrated into planning and distribution guidelines at the national level. Aside from guidelines from WHO on target populations (updated throughout the pandemic based on epidemiological evidence and vaccine availability) that were followed by COVAX and CoVDP, there is limited evidence that delivery partners at the global and regional levels provided, or were expected to provide, direct support to countries to achieve intra-country equity in vaccine distribution. According to several key informants, intra-country equity efforts were mostly led in-country by nongovernmental and humanitarian organizations (see Country Insights box).

Some countries did not fully adhere to WHO guidance, prioritizing groups like military police and teachers over individuals aged 65 and older. The WHO-UNICEF Joint Reporting Form on Immunization COVID-19 module and other WHO region-specific systems collected weekly and monthly data on national COVID-19 vaccination priority groups and coverage rates which provided information on COVID-19 vaccine distribution and use in countries. However, data was often reliant on national reporting mechanisms and was not always accurate.

#### Country Insights (Supplemental CCS Reports)

- The Cameroon MOH developed a NDVP in which all the priority groups were specified. However, it was challenging to adequately engage these priority individuals because their distribution across the national territory was unknown.

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*“We did a mapping of COVID-19 high-risk populations. We did a desk review and we tried to also identify the different barriers to vaccine access and utilization among the high-risk populations ... This is still something which is really very relevant, because we are gradually moving into an era where a lot of adult vaccines are coming into the package offered by the country” – Cameroon COVAX delivery partner*

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- A technical working group in Cote d'Ivoire developed the NDVP, which specifies the target population. The priority group extended to all population above 18 after six weeks due to low vaccine intake.

### Fragile and Conflict Special Study Insights (Annex 5)

In Somalia, there are several categories of people of concern, including those living with pre-existing health conditions, older adults, front line health workers, and people living in concentrated areas, such as camps for Internally Displaced Persons. The NDVP in Somalia put people of concern at the center of the vaccination campaign strategy and developed a specific approach for communication and outreach.

## 2

**Finding 24: It was challenging for countries to reach all high risk and hard-to-reach groups without clear standard operating procedure for equity and accompanying technical assistance to deliver these. This challenge was exacerbated during the supply-driven phase of the allocation mechanism with the additional challenge of countries needing to use vaccines before they expired.** Some countries lacked the necessary systems and infrastructure to effectively vaccinate the adult population targeted by the COVID-19 vaccination campaigns. All CCS note the challenge of short expiration dates and limited cold chain infrastructure contributing to difficulty accessing hard to reach populations.

### Country Insights (Supplemental CCS Reports)

- In Cote d'Ivoire, the country faced pressure due to the imminent expiration of the first vaccine batch, prompting an intensified communication campaign to encourage vaccination. Initially, the campaign focused on urban areas but was later expanded to other regions.  

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***"Sometimes vaccines were (received) very close to their expiry date, a month away!" –MOH Côte d'Ivoire***

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- Similarly, Indonesia emphasized that inequities in access were exacerbated by vaccines approaching their expiration date being allocated primarily to areas near the point of entry (Jakarta) to ensure timely use. This led to increased intra-country inequity, as vaccines were distributed to more accessible areas rather than remote.
- In Zambia, decisions on targeting hard-to-reach populations were influenced by factors such as the availability of ultra-cold chain facilities and technical expertise, with programmatic considerations including prioritizing a single-dose schedule in areas with high dropout rates and among hard-to-reach populations.
- In Uzbekistan, WHO collaborated with the National Center for HIV/AIDS/HIV Control and local NGOs to map communities of people living with HIV to ensure service accessibility and mobilize PLWHIV in the promotion of COVID-19 vaccination.
- Guyana aimed to ensure that access to vaccines in the hinterland was on par with that of the coast. By January 2024, 64% of people living in coastal regions received a single dose of the COVID-19 vaccine and 50% of people living in coastal regions received two doses. In Hinterland regions, 56% of the population received a single dose and 40% received two doses. Additionally, the existing vaccine programs, care sites, clinics, and partnership with private facilities, meant that COVAX delivery efforts benefited from pre-existing systems that were ready to reach the population. For example, PLHIV were able to access the COVID-19 vaccines through their routine care clinics, which also had an existing practice of following up with PLHIV to ensure second doses were accessed. Overall, this meant fewer people with comorbidities and other vulnerabilities died or experienced severe illnesses.

## 1

**Finding 25: Gender equity does not appear to have been a priority consideration in the design of the COVAX Pillar Delivery modalities. Despite this, some countries did pay**

**specific attention to pregnant and breastfeeding women and girls, although gendered dynamics of the health care workforce were often overlooked.** Early COVAX documents do not explicitly mention gender equality or equity.<sup>5</sup> When asked, most key informants said gender equity was not a primary consideration, although some acknowledged that this was an area where COVAX could have improved.

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*“To be completely frank, no, it never really came up. ... I suppose the presumption was that perhaps there weren’t major gender barriers that we could address to accessing the COVID-19 vaccine.” — COVAX stakeholder*

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Limited consideration was given to gender-related factors (such as pre-existing barriers to access) in NDVPs and global best practice guidance. WHO included gender considerations in the guidance, tools, and trainings developed. Gender-responsiveness, however, improved later in the pandemic with the development of more comprehensive guidelines by UNICEF and WHO.<sup>41,42</sup> However, the guidance still underplayed the likelihood of significant gender inequities in vaccination outcomes across countries. For example, although sex disaggregation is the primary variable used to assess equitable vaccine delivery (captured by 186 countries), these data vary in coverage and focus. Only 89 countries captured sex-disaggregated data for first doses and estimate globally aggregate level vaccination results (first dose) reached parity (51% for males to 49% for females).<sup>43</sup> However, the global aggregate masks considerable variation across countries. For instance, in Yemen, Qatar, Gabon, Somalia, and the Democratic Republic of the Congo, men consistently received a greater number of first doses compared to women with a ratio of 93%, 77%, 71%, 69% and 66% women to men across each of the countries respectively. Across the CCS, there was a lack of gender-disaggregated data collected as part of COVAX.

Gender equity is crucial to consider in COVID-19 vaccination as different genders faced different barriers, hesitations, and roles in vaccine distribution. Women in some regions struggled to access vaccines due to social norms, digital illiteracy, caregiving responsibilities, or mobility restrictions. However, women played a critical role in vaccine delivery, as they constituted most frontline healthcare workers, such as nurses, making their protection essential for broader public health efforts.

#### Country Insights (Supplemental CCS Reports)

- Cote d'Ivoire delivery efforts earmarked vaccines for pregnant women and breastfeeding mothers and integrated COVID-19 vaccines with HPV vaccines to vaccinate girls in and out of schools.
- Zambia implemented COVID-19 vaccine delivery in a gender-sensitive way, it had no specific gender plan or strategy. It developed the capacity to provide gender-disaggregated vaccination data by late 2023 and recognized that addressing gender-specific barriers to vaccine deployment was an area for improvement.

Sub-EQ 3.3: Were human and financial resource allocations to delivery modalities (1) adequate, (2) defined, (3) coordinated, and (4) agreed?

1 

**Finding 26: Delivery efforts were under resourced, however communication between pillar partners was effective with adequate mechanisms in place to support collaboration.** Given the constant evolution of the pandemic, especially in the beginning, the specific human resource requirements for the COVAX Delivery Pillar efforts were not always clear at the global

and regional levels. It was therefore difficult to adequately plan for and allocate human resources. As a result, human resources were extremely stretched, particularly during the first year of COVAX, with most key informants reporting that they were given significant COVAX-related responsibilities on top of their “day job” and were covering multiple COVAX-related roles for protracted periods.

Despite this, agencies managed to maintain effective communication. At the global level, pillar partners provided leadership, infrastructure, training, and guidance. Global and regional offices shared updates through weekly working group meetings. Regional working group meetings also took place weekly. These meetings, chaired by regional leads from WHO and UNICEF, included country participants and regional partners, facilitating the exchange of new guidelines and support for their implementation. WHO regional offices regularly checked in with countries to assess resources and vaccination strategies.

WHO and UNICEF regional and country offices were better connected to country health ministries, offering direct support to countries. WHO provided updates on changes to SAGE guidance impacting vaccine delivery, Gavi shared information on allocation and available funding, and UNICEF clarified and coordinated the timing of dose deliveries, resulting in country focal points managing information from multiple sources. Several key informants reported that human resource allocations at the country level were inadequate in terms of both volume and capacity.

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*“I think there’s certainly lessons to be learned around human resources and the ability to scale up very, very quickly. Those of us who worked on the early days of COVAX were effectively doing two jobs.” — Gavi stakeholder*

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#### Country Insights (Supplemental CCS Reports)

- Across all CCS countries, meetings were regularly held between COVAX partners to decide on the best course of action regarding COVID-19 response and COVAX delivery.
- Zambia's health system, already stretched thin, faced further strain as the COVID-19 response required dedicated human resources for vaccine deployment. Staff were diverted to COVID-19 centers, as seen in the Northern province, exacerbating the impact on vaccine delivery. The health workers also showed gaps in skills and knowledge specific to COVID-19 vaccination, and the presence of multiple competing health priorities further burdened the limited workforce.
- COVAX funding during the CoVDP phase (2022) in Cameroon enabled a tripling of the number of vaccination teams deployed in the communities, from 1,900 to 6,000. The EPI also benefited from the on-ground support of 22 experts from WHO AFRO during the 5th vaccination campaign.
- The Guyana Defense Force (GDF) served as a valuable human resource during the pandemic, offering crucial logistical support by transporting personnel and materials. Additionally, they assisted in enforcing public health mandates, including curfews, and contributed to clerical and administrative tasks. GDF medics played an essential role in administering vaccines, while GDF also supported post-vaccine surveillance through a dedicated hotline.
- In Uzbekistan, a key issue was the difficulty in attracting specialists with the necessary technical expertise and education. This challenge was exacerbated by the simultaneous rollout of COVID-19 vaccination alongside routine immunization programs, placing a heavy burden on existing healthcare staff.

2



**Finding 27: There are differing views on the sufficiency and accessibility of the delivery financing provided by COVAX to countries. While some countries found the financing adequate and accessible, others experienced complications in applying for and**

**managing funds, resulting in slow and inflexible disbursement processes.** Approximately US\$1.6 billion was mobilized by Gavi for vaccine delivery support to the AMC92 countries (see **Figures 7-8**), with several global and regional key informants agreeing the funding was more than adequate. Data from the Costs and Predicted Financing Gap report from UNICEF noted that US\$2,541 million had been identified to cover delivery funding support up to the end of 2022.<sup>44</sup>

Despite initial funding appearing sufficient, delays in funding disbursement and absorption capacity at the country level posed challenges to timely vaccine delivery. In addition, the lack of sufficient and flexible funding for the operational costs of delivery was a challenge.<sup>34-36</sup> Countries also faced challenges with visibility into the funding they would receive, which hindered planning and decision-making. To address this, UNICEF developed a vaccine finance tracking tool, though its effectiveness in practice was debated.

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***“COVAX offered you the opportunity to fill your needs, and although you had to prioritize, you were able to meet most of your emergent needs. You were able to get cold chain in areas that there was no cold chain before. You were able to expand access to vaccines, which is really what it’s all about, having everybody being able to access a lifesaving commodity that would reduce the cost of health care and the burden of tertiary care greatly....it was surreal, because they were actually looking at needs and trying to meet those.” –Guyana National Government Health Official***

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#### **Country Insights (Supplemental CCS Reports)**

- In Cote d’Ivoire, Gavi had the Project Coordination Unit mechanism, which follows the government mechanism and requires signature of all partners. This delayed funding and the government and partners had to mobilize funds through other sources.

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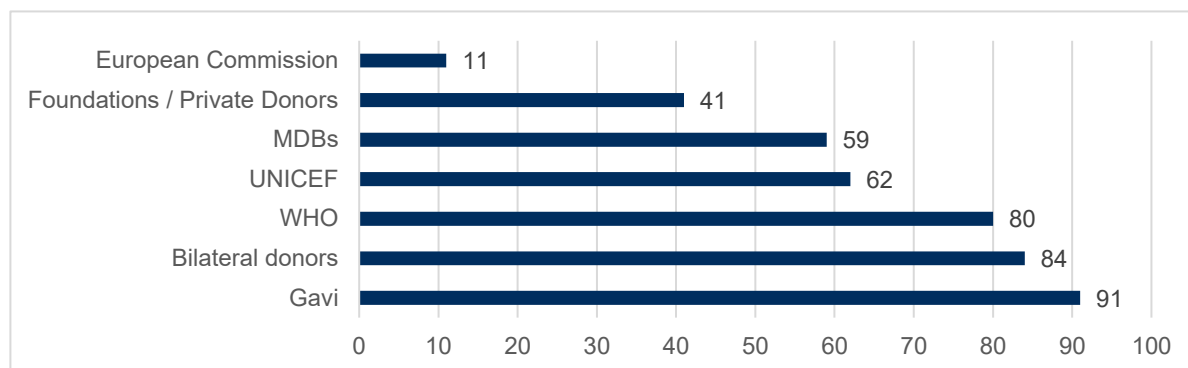
***“The bottleneck was the disbursement made from this unit to the actual implementation of the activities, particularly when we had to send back statements.” –COVAX delivery partner***

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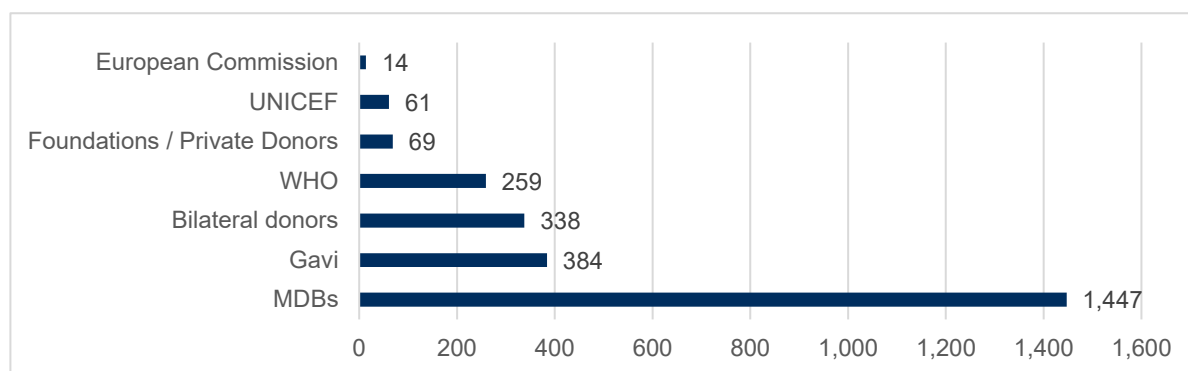
- The Indonesian national government did not apply for COVAX funding after the CDS Early Access funding window as the application was resource intensive and funding went to UNICEF/WHO/implementing partners rather than the MOH to support established national systems.
- In Zambia, WHO seconded an economist to the planning and coordination platform pillar. They developed a comprehensive partner mapping system that was useful for tracking funding and activities implemented. It also showed funding gaps and how the gaps were to be financed.

**Figure 7. Number of AMC-92 countries supported by respective donors with delivery financial support (Year-ending 2022) <sup>u</sup>**



Source: *Costs and predicted financing gap to deliver COVID-19 vaccines in 133 low- and middle-income countries*; WHO data provided by UNICEF

**Figure 8. Amount of external delivery financing (US\$M) identified for AMC-92 countries up to end 2022<sup>t</sup>**



Source: *Costs and predicted financing gap to deliver COVID-19 vaccines in 133 low- and middle-income countries*; WHO data provided by UNICEF

**2**

**Finding 28: The evidence on the extent to which funding for delivery was visible and well-coordinated is mixed and it was difficult to track funding gaps for in-country vaccine delivery, because this required complex assumptions and there were multiple flows of funding into countries.** There existed a dedicated database to track funding from multilateral, bilateral, and private contributions. However, the quality of the data was reliant on regular updates from funders on their allocations. While some key informants felt the database ensured that financial resources and how they were allocated were clear and transparent, others contended that funding allocations were opaque. It was also challenging for countries to track use of funds, although trade-offs between implementation and reporting were frequently discussed. As a result, aligning government priorities with available funding to address these

<sup>u</sup> Financing amounts are recorded by delivery mechanism rather than donor source. African Export-Import Bank played a significant role in supporting COVID-19 vaccination efforts across Africa, primarily through initiatives like the African Vaccine Acquisition Task Team. WHO data is as of July 21, 2022.

needs was a challenge, and the costs to countries in navigating the funding environment were high.<sup>13</sup> Across CCS, it was difficult to track funds because of the complex and multiple funding flows. It was unclear who was funding what activities.

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*“...we had very good visibility on the CDS funding, but when it comes to the overall picture on vaccine service delivery support at country level, it was very difficult to have a grasp on the funding that was coming from other partners.” — Gavi stakeholder*

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#### **EQ 4: How well was the COVAX delivery pillar implemented and adapted as needed, in line with overarching objectives?**

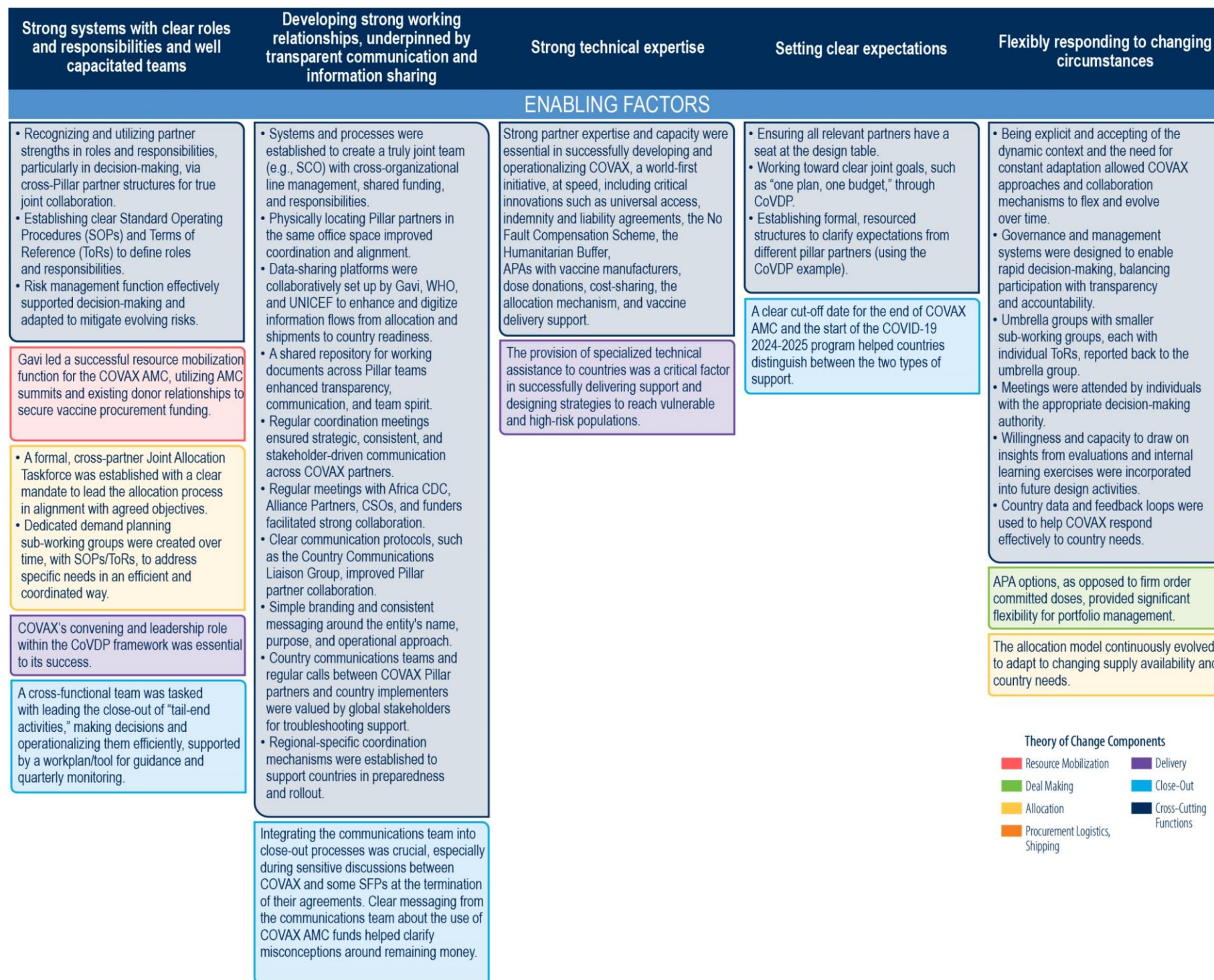
This section presents the evaluation findings in relation to EQ 4. The evaluation team employed a process analysis approach to assess the assumptions underlying the COVAX Facility TOC (**Annex 3**). The TOC incorporate conditions for systems change to assess the extent to which COVAX contributed to these changes. The TOC are underpinned by a series of assumptions about the conditions that need to be in place to deliver its intended results. Including causal nature of relationships between steps in the TOC, context in which the COVAX Facility, AMC and Delivery Pillar are operating, and design and delivery mechanisms. The team utilized the collaborative partnership framework (**Annex 2**) to structure the analysis, examining conditions for systems-change partnerships and assessing their effectiveness. All findings presented here are informed by a triangulation of evidence from KIIs, document reviews, and the web-survey.

##### **Sub-EQ 4.1: What were the key enablers and barriers relative to successes achieved and challenges encountered?**

Thematic analysis conducted as part of this evaluation highlighted a host of key enablers and barriers to the achievement of COVAX objectives. As shown in **Figure 9**, these have been categorised by COVAX TOC key components (**Annex 3**) and are structured around five key themes emerging from the data.

1. Strong systems with clear roles and responsibilities and well capacitated teams
2. Developing strong working relationships, underpinned by transparent communication and information sharing
3. Strong technical expertise
4. Setting clear expectations
5. Flexibly responding to changing circumstances

**Figure 9. Key enablers and barriers**



**Theory of Change Components**

- Resource Mobilization (Red)
- Deal Making (Green)
- Allocation (Yellow)
- Procurement Logistics, Shipping (Orange)
- Delivery (Purple)
- Close-Out (Blue)
- Cross-Cutting Functions (Dark Blue)

Strong systems with clear roles and responsibilities and well capacitated teams	Developing strong working relationships, underpinned by transparent communication and information sharing	Strong technical expertise	Setting clear expectations	Flexibly responding to changing circumstances
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**BARRIERS**

- Early in the pandemic, there was an opportunity to better align human resources with emerging needs, which led to valuable lessons for future planning.
- While dedicated funding for human resources and core functions (e.g., CRD) was initially limited, this highlighted the need for stronger team support and resilience strategies moving forward.
- Opportunities for improvement were identified in the onboarding and utilization of short-term consultants, providing foundation for enhancing operational efficiency.
- Acknowledging the need for a mechanism to retain and maintain relationships with surge capacity hires set the stage for future improvements in workforce continuity.
- Global-level recruitment revealed areas for refinement, such as ensuring the alignment of skills and expertise with public health needs.
- The COVAX governance and management structures provided valuable insights, pointing to areas for streamlining decision-making pathways and increasing efficiency in the future.

Agencies did not fundraise jointly for vaccine delivery support, leading to reduced coordination during the early stages of the COVAX Facility and AMC.

An initial lack of systems and processes to manage dose donations added complexity to allocation, logistics and shipping.

- Roles and responsibilities between Pillar partners and functions were sometimes unclear and under-resourced, leading to confusion over how CoVDP desk officers complemented or duplicated the work of Gavi SCMs and WHO/UNICEF country office focal points.
- New roles introduced through CoVDP were not always clearly understood by country implementers.

The complexity of close-out and fund repurposing presented challenges in how to present these shifts both separately and integrated within Gavi's regular business funds.

- Lack of trust between global Alliance Pillar partners was an overarching barrier to effective coordination and collaboration, often exacerbated by clashes in individual personalities, leading to slower decision-making.
- Tensions between individuals and agencies were not explicitly recognized or addressed initially, delaying efforts to explore respective strengths and weaknesses and how to manage them.
- The operating environment during the pandemic, with remote work and virtual communication amid significant personal upheaval, posed challenges for building trust and a healthy working culture.
- The absence of consensus and commitment to a clear communication protocol between Pillar partners for country engagement hindered effective collaboration.

- Insufficient transparency between Gavi and WHO colleagues regarding the details of deals made with manufacturers (e.g., doses and timings) led to frustration and reduced trust among participating countries and COVAX.
- Lack of transparency between the Gavi deal-making team and the Joint Allocation Taskforce (JAT) further hindered effective collaboration.

- Access to accurate data and data sharing challenges were significant obstacles, particularly in dose allocation, demand forecasting, and addressing funding gaps for in-country vaccine delivery.
- The lack of information on country capacity and absorption limits limited end-to-end visibility of the supply chain, impacting supply planning.

Engagement with national governments and health systems was initially challenging but evolved over time to become more transparent, improving engagement and trust.

- Hiring general project managers without global health experience and high staff turnover through consulting firms resulted in lengthy onboarding processes.
- Insufficient recruiter capacity dedicated to COVAX hires slowed down the hiring process.

Despite technical assistance from UNICEF and PAHO to help develop demand forecasts, countries still faced challenges in providing accurate longer-term forecasts (beyond 1-2 months), making allocation particularly difficult.

Non-adherence to COVAX principles by some dose donation donors may have undermined fair and equitable vaccine access, impacting COVAX's ability to meet country preferences and provide sufficient time for countries to administer donated doses appropriately.

- There was a general willingness across the COVAX Alliance to pivot when the context changed or things were not working well, but implementing changes typically took a long time due to different partner organizations' ways of working and inherent bureaucracies.
- Overly formalized processes, without the ability to adapt or evolve, were considered a constraining factor.
- Lack of flexibility in deploying financial resources raised for COVAX limited the ability to respond effectively to changing needs.

The formality of the allocation mechanism during Phase 1 and Phase 2 restricted flexibility and the ability to adapt allocation plans as needed.

Financial barriers to vaccine delivery were significant, including global financing not reaching countries, delays in surge funding, long lead times between COVAX funding applications and disbursements, and delays in financial commitments, all of which limited the ability to effectively execute contracts.

**Theory of Change Components**

<span style="color: red;">■</span> Resource Mobilization	<span style="color: purple;">■</span> Delivery
<span style="color: green;">■</span> Deal Making	<span style="color: cyan;">■</span> Close-Out
<span style="color: yellow;">■</span> Allocation	<span style="color: darkblue;">■</span> Cross-Cutting Functions
<span style="color: orange;">■</span> Procurement Logistics, Shipping	

### Country Insights (Supplemental CCS Reports)

- All CCS countries noted the importance of political will. For example, the involvement of top government officials such as the Prime Minister and other authorities (nationally and locally) encouraged the population to get vaccinated.
- COVAX funding supported capacity building for health care workers and transitioning or linking electronic systems to track vaccine-related activities, which was an enabler for some countries.
- Vaccine hesitancy was highlighted as a significant challenge across all CCS countries. Some countries implemented particularly innovative approaches—for example, Côte d'Ivoire used football players to promote vaccination, Cameroon avoided mentioning the government in conflict-affected regions due to pre-existing mistrust and instead leveraged trusted entities like the UN and WHO, and some countries engaged young reporters to counter misinformation on social media.
- Several countries had challenges with logistic and administrative processes such as bureaucratic delays, issues with mobile payment databases, and cold chain limitations that delayed vaccination activities.

Sub-EQ 4.2: Did adaptations to delivery modalities in response to the changing context enable countries to prepare, introduce, and scale up vaccines in a timely and effective manner?

As outlined in Finding 20, the evolution from CRD to CoVDP recognized the urgent gaps in vaccine delivery and uptake by shifting its focus from broad AMC country support to addressing lagging countries, including those in humanitarian settings.<sup>45</sup>

2



**Finding 29: Engagement with national governments and health systems evolved significantly throughout the COVAX initiative, initially treating countries largely as recipients before shifting to more collaborative discussions on operations. This transition facilitated improved information flow and fostered trust, particularly through WHO's efforts with the NDVP process and COVID-19 vaccination toolkits.** Despite these improvements, it became clear that local experience and expertise needed to be more consistently considered, as engagement mechanisms that overlooked these aspects were not well-received. Additionally, the operational mechanisms for vaccine delivery should have been better integrated into COVAX's design from the outset. The inclusion of non-Gavi-eligible countries in the AMC, many of which were unfamiliar with Gavi's processes, created an advantage for Gavi-eligible countries, resulting in some disparities. Furthermore, WHO and UNICEF regional offices' capacity to support coordination and oversight was underutilized, and a lack of alignment across delivery partners created confusion at the country level regarding which communications to prioritize.

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*“The regional offices are essentially the gateway to countries, right? And I think at some point, as far as coordination is concerned or reinforcement or of any sort of action or oversight or even just a baseline intelligence from countries that we would not have at the global level. We did not harness that.” – Gavi stakeholder*

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### Country Insights (Supplemental CCS Reports)

- Priorities shifted between CRD to CoVDP. During the CoVDP workstream some countries expanding vaccination criteria beyond high-priority groups and because they were no longer constrained by cold chain logistics moved focus to improving human resources.
- With the decreasing demand for COVID-19 vaccines during the latter part of 2023 (Alliance phase) in Cameroon, the EPI opted to integrate COVID-19 vaccination into primary healthcare where it would be available to those who need it most.
- The national COVID-19 vaccine deployment plan in Zambia guided that the distribution of vaccines and ancillary items should be implemented using the existing immunization supply chain system from the port of entry to the service delivery points. Integration was emphasized and ensured at national, subnational, facility, and community levels. The integration plan was not considered as a stand-alone strategic effort but was incorporated into the mainstream national planning cycle in consonance with the principle of “ONE PLAN, ONE BUDGET, and ONE MONITORING FRAMEWORK” for the health sector.

### Fragile and Conflict Special Study Insights (Annex 5)

In Somalia, the preference for a single dose vaccine emerged. Due to insecurity and poor road infrastructure, airlifts were the primary distribution channel for vaccines to regions beyond urban Mogadishu. With support from COVAX, pivoting to a single-dose vaccine (comprising 70% of vaccines used) was an important adaptation.

Additional adaptations included addressing challenges with limited access to areas controlled by Al-Shabaab, which required extensive negotiations for brief periods during which vaccinations could be carried out.

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*“I remember the Director General for health asking elders to go to militant group Al-Shabab controlled areas and asking for negotiation to vaccinate people.” –Government health worker*

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Sub-EQ 4.3: How well did WHO and UNICEF country offices coordinate and collaborate to support Pillar delivery objectives relative to specific country needs?

1



**Finding 30: The roles and responsibilities among COVAX partner stakeholder organizations, and among individual roles and responsibilities, was not always clearly defined at the outset of the partnership but improved over time in relation to country readiness and delivery support.** At the global and regional levels, the literature points to “dynamic, unclear roles and responsibilities that needed to be aligned and re-aligned”.<sup>46</sup> This was pronounced particularly regarding fundraising where agencies fundraised independently for vaccine delivery support leading to reduced coordination. During the CRD phase, several key informants indicated that individual participants within CRD were often aligned with their respective agencies rather than a strictly unified culture. More generally, several key informants indicated that they often relied on personal relationships that pre-dated the pandemic to ensure things got done, particularly at the start of COVAX.

However, over time, with the introduction of the CoVDP phase and the establishment of a centralized leadership function through the Global Lead Coordination position, roles and responsibilities became more defined and coordination across agencies for fundraising improved (although remained separate). Some key informants indicated this separation was a source of competition and tension, while others saw it as necessary for agencies to manage

their own COVID-19 activities alongside COVAX efforts. Several key informants agreed that CoVDP benefited from a dedicated team and partnership was particularly effective in mobilizing high-level advocacy and managing donor relationships.<sup>32</sup> The One Support team, coordinated through CoVDP, was designed to ensure regional and global partners engaged with countries in a tightly coordinated and integrated way.<sup>46</sup> Insights from the CCS perspectives shed light on this global finding (see Country Insights box).

### Country Insights (Supplemental CCS Reports)

- All CCS countries expressed that at the country-level the COVAX Partner roles and responsibilities were well defined and indicated that COVAX was engaged with the country government.
- In Cameroon, the COVAX delivery partners assumed tasks like what they did routinely. For instance, UNICEF specialized in COVID-19 vaccine procurement and logistics; WHO bolstered community engagement, and adverse events following immunization (AEFI) surveillance. Clinton Health Access Initiative (CHAI) focused on enhancing good data practices and deriving learnings.
- In Cote d'Ivoire, partners' roles and responsibilities were well-defined, avoiding overlap and enabling a cohesive response to the pandemic. For instance, UNICEF's management of funds and the delivery of vaccines, combined with WHO's emphasis on capacity building, represented a complementary division of labor.

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*"Allocations are made to ensure that together, we won't be doing the same things, but that we'll really be complementing the government in implementing vaccination." –Cote d'Ivoire COVAX delivery partner*

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- UNICEF and WHO worked closely together in Indonesia to help the MOH develop vaccine implementation technical guidelines and training.
- In Guyana, key informants agreed that the collaboration between UNICEF and PAHO was smooth and frictionless, with the organizations operating under a clear delineation of roles.
- In Uzbekistan, UNICEF focused on planning and coordination, vaccines, cold chain and logistics support, demand generation and communication while WHO focused on prioritization, targeting and COVID-19 surveillance, safety surveillance, training and supervision along with monitoring and evaluation, resource generation and funding and service delivery.
- In Zambia, effective coordination and collaboration were achieved through the establishment of vital structures, including the IMS, the ICC, the COVID-19 Vaccination Group, and ZITAG. COVAX partners were represented in each of the structures, and they often served as chair or co-chair.

### Fragile and Conflict Special Study Insights (Annex 5)

In Somalia, the MOH played a pivotal role in the coordination system, chairing a strong coordination mechanism with the UN humanitarian coordination. The office of the prime minister was also directly involved.

Sub-EQ 4.4: To what extent did delivery modalities complement existing health systems and routine immunization systems to jointly respond to the needs of priority population groups?

1



**Finding 31: From the outset of COVAX, countries were encouraged to integrate COVID-19 vaccination delivery with routine immunization. In practice, while many countries leveraged their EPI supply chains to deliver COVID-19 vaccinations, integration in overall planning and funding of integrated health programs and healthcare workers was limited.**

To access CDS funding, countries were required to provide detailed plans for how they would

integrate COVID-19 vaccines with routine immunization in their funding applications, along with the investments they would need to achieve this.

As the acute phase of the pandemic passed, the focus on transition and integration sharpened, with COVAX partners encouraging countries to use remaining funds to more fully integrate COVID-19 vaccinations with the wider health system and routine immunization. However, at the global and regional levels, there is some concern that countries' motivation for integration is declining as the pandemic eases and urgency for COVID-19 vaccinations wanes. The CCSs describe various experiences with integrating COVID-19 vaccinations (see Country Insights box). Some key informants reported that while countries were encouraged to deliver COVID-19 vaccinations through existing routine immunization systems, COVID-19 vaccinations were mainly provided in silo due to the urgency of the pandemic, which diverted countries' limited human resources and infrastructure capacity, to the neglect of other health services and sectors.

*“Integrating COVID-19 vaccination into primary healthcare cannot happen just like that. Given our expertise in supporting learnings and piloting approaches... there was a need to find out how do we get to the target populations. So we did a mapping of high-risk populations and also conducted assessments to see how ready the EPI was to integrate COVID-19 vaccination in its routine activities. The next step was to support the EPI to integrate these (findings) into digital micro-plans. Finally, we contributed to drafting the initial integration plan for COVID-19 vaccines.” –Cameroon COVAX delivery partner*

#### Country Insights (Supplemental CCS Reports)

- In Guyana, February 2022 there was gradual phasing of COVID-19 vaccination into routine vaccinations.
- Indonesia did not apply for funding during the third wave of CDS, offered in July 2022, aimed to integrate COVID-19 into routine immunization because it lacked a plan for such integration at the time. It was not until January 2024 that the country integrated COVID-19 vaccination into routine immunization.
- In Uzbekistan, COVAX played a crucial role in strengthening resilience by facilitating the seamless integration of COVID-19 into the country's existing immunization framework. The strong partnership yielded significant results, as routine immunization efforts remained largely stable, the HPV2 vaccine was successfully introduced despite social lockdowns, and nine COVID-19 vaccines were rapidly deployed and administered.

1



**Finding 32: One reason for the limited integration of COVID-19 vaccinations with EPI is that routine immunization systems are typically used to deliver routine childhood immunizations, not vaccines for adult and vulnerable populations.** According to some key informants, countries with existing influenza vaccination programs tended to have good COVID-19 vaccination coverage<sup>v</sup>, as influenza vaccines are also targeted to older and vulnerable populations. The CCS findings also note the uniqueness of adult immunization.

<sup>v</sup> Countries with influenza vaccination tend to be HICs and MICs which could be influencing this finding.

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*“Countries that were used to only doing childhood immunization and had never experienced an adult immunization or a health worker immunization program had a hard time expanding their scope to immunize all those populations, because...it’s a vaccine for everyone and we’re used to dealing with kids.” — WHO stakeholder*

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#### Country Insights (Supplemental CCS Reports)

- The COVID-19 vaccination campaign marked the first adult immunization program in Indonesia. This is a tangible contribution from COVAX to Indonesia’s immunization program, which hopefully will lead to adult immunizations for influenza and pneumonia.
- In Cameroon, COVID-19 vaccination represented the first wide-scale immunization scheme targeting adults. This was something new that was initially received with some skepticism. It is increasingly accepted with proper sensitization.

## 2

**Finding 33: The legacy of and learnings from COVID-19 have in many cases strengthened countries’ health and EPI systems.** Although there is limited evidence at the global and regional levels on the extent to which COVID-19 delivery complemented existing systems, several key informants pointed to the ways in which the preparation for and implementation of COVID-19 vaccinations had strengthened existing health systems, particularly around the strengthening of cold chain infrastructure and data systems, and building surge capacity, including workforce skills building in areas such as outreach. As COVAX winds down, partners are encouraging and guiding countries to use remaining funds to further strengthen their health systems in preparation for future pandemics. All CCS noted the value add of cold chain equipment and capacity strengthening of their EPI systems.

#### Country Insights (Supplemental CCS Reports)

- The acquisition of cold chain equipment and technical capacities on various aspects of vaccination during COVAX have considerably strengthened the EPI in Cameroon. The microplanning and mapping of high-risk groups conducted within the scheme of COVAX delivery will serve to optimize the EPI’s functioning in future.
- The COVAX implementation framework has contributed to enhancing Zambia’s readiness for future pandemics, as demonstrated by the swift response to the large cholera outbreak in 2024.

## Results

### EQ 5: To what extent have the intended results of the COVAX Facility and AMC been achieved?

This section presents the evaluation findings related to EQ5. For Sub-EQs 5.1 and 1.2, the evaluation team employed a process analysis approach to assess the assumptions underlying the COVAX TOC and align resource mobilization, securing supply, and allocation (**Annex 3**). This analysis involved the identification and evaluation of evidence derived from KIIs and document reviews, with the aim of determining the extent to which the TOC assumptions were valid (**Table 2**). For Sub-EQ 5.1, the evaluation team also employed a value-added analysis to provide an additional lens to explore in what ways the observed results have provided benefit. This included analysis of quantitative data related to the achievement of intended outcomes and impacts (**Annex 2**).

As per the first COVAX Facility and AMC evaluation,<sup>5</sup> by the end of 2021, the COVAX Facility had distributed almost 1 billion doses to 144 countries. Although this was well below the target

of 2 billion doses by the end of 2021, 87% (833 million) of these doses went to AMC participants—close to the target of 950 million doses for these countries (a target that was achieved in early 2022).

As stated in the COVAX objectives of 2022, “In view of the ongoing, global pandemic, and in light of the WHO target for countries to vaccinate 70% of their population, COVAX aspired in 2022 to enable equitable, full vaccination of all adult and adolescent populations globally to reduce the impact of the ongoing pandemic, allow economies and societies to function, and guard against the future evolution of the virus.”<sup>47</sup> Specifically, and of relevance to Part A of this evaluation, the objectives for COVAX in 2022 related to helping AMC92 countries protect their highest- and high-risk populations to reduce morbidity and mortality; encouraging and supporting countries to achieve full vaccination for adults and adolescents, including recommended boosters, in line with national targets; and providing vaccines for children aged 5–12 on a case-by-case basis once high and highest priority groups had been reached.

As established in earlier sections of the report, these objectives were set in the context of global supply and demand dynamics having changed since 2021.

#### Sub-EQ 5.1: To what extent were COVAX Facility and AMC outcomes and goals achieved?

1



**Finding 34: COVAX was a major source of COVID-19 vaccines globally, particularly for AMC participants and LICs.** By the end of 2023, the COVAX Facility had distributed almost 2 billion doses to 146 countries<sup>40</sup>. Of these:

- Almost 1.8 billion doses (89%) were delivered to AMC participants, including accounting for 74% of the total doses into LICs, 68% of the doses into African AMC countries, and 39% of the total doses in the 20 AMC LICs that have never been previously supported by Gavi.
- Nearly 2.5 million doses were delivered to two approved Humanitarian Buffer recipients, Iran and Uganda for refugee and displaced populations (from an initial target of 50 million by the end of 2021).
- More than 200 million doses were shipped to SFPs (from an initial target of 950 million by the end of 2021).

Between December 2020 and November 2023, COVAX accounted for almost 13% of the total number of vaccines distributed globally.<sup>48</sup> COVAX doses were concentrated mostly among LICs and some LMICs. **Figure 10** presents the number of doses allocated to and received by all participating countries grouped by income classification. Overall, 99% of vaccines allocated were received. Of the 147 countries that were allocated COVAX doses, only four were not shipped their full allocation (Senegal, Madagascar, Iran, and Bangladesh).

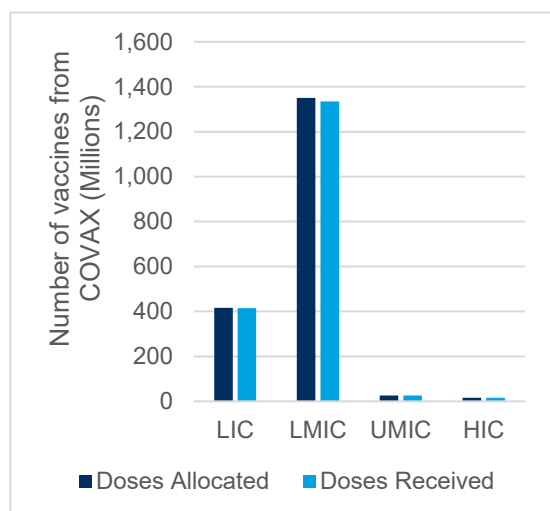
**Figure 11** shows the number of vaccine doses delivered to AMC92 countries<sup>w</sup> per capita, by vaccine delivery source. As shown, COVAX delivered 0.45 doses per capita in LICs compared to 0.15 doses from all other sources. COVAX was also the largest provider of COVID-19 vaccines to LMICs. Only two LICs received less than 50% of their total vaccine deliveries through COVAX, South Sudan (49.9%), and Guinea-Bissau (35.7%), while two countries (Haiti and Brunei) received 100% of their vaccines through COVAX.

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<sup>w</sup> Excluding India

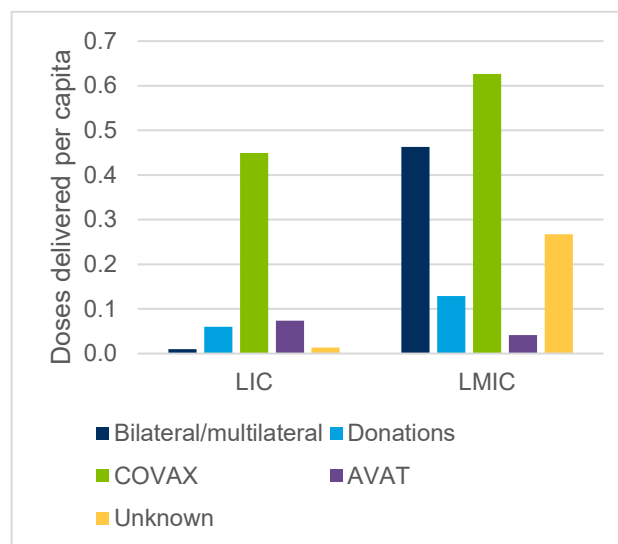
Even though the COVAX Facility contributed to a smaller proportion of total doses delivered to LMICs as compared to LICs, it provided more doses per capita in LMICs (0.63). There is, however, significant variation between countries in each income group.

**Figure 10. COVAX doses allocated and received by countries by income classification (2020–2023)**



Source: UNICEF Market Dashboard

**Figure 11. Doses delivered to AMC92<sup>s</sup> countries per capita by delivery source**



Source: UNICEF Market Dashboard

1



**Finding 35: Compared to other sources, vaccine supplies from COVAX were relatively limited in 2021, but much more substantial in 2022, plateauing in 2023.** As shown by comparing **Figure 12** and **Figure 13**, HICs and UMICs were in receipt of substantial vaccine supplies by the time COVAX vaccines supplies started to ramp up in mid-2021 (mostly to LMICs). As also established in the first COVAX Facility and AMC evaluation,<sup>5</sup> AMC-participating LICs and LMICs were also able to access vaccines from donations, and bilateral and multilateral agreements before COVAX supplies started increase in volumes. These other sources mostly plateaued after December 2021, and from 2022 COVAX supplies surpassed that from other sources. **Figure 14** also highlights the extent to which COVAX doses were targeted at LICs. This was often cited as one of the key successes of COVAX.

1



**Finding 36: Vaccination coverage has remained considerably lower for LICs compared to that in LMICs, UMICs and HICs.** In total, by the end of 2023, 2.2 billion people among the AMC92 countries were vaccinated with the complete primary series, meaning they had received all required doses of a COVID-19 vaccine for initial immunity, which equates to 57% coverage.<sup>40</sup> As of December 2023, for AMC92 countries, there was 63% coverage with at least one dose, meaning they had received one dose of a COVID-19 vaccination schedule, and 17% had been reached with a booster dose, an additional dose administered after the initial vaccination to maintain or enhance protection. For AMC92 countries (excluding India), there was 49% coverage with the complete primary series and 56% coverage with at least one dose.

1

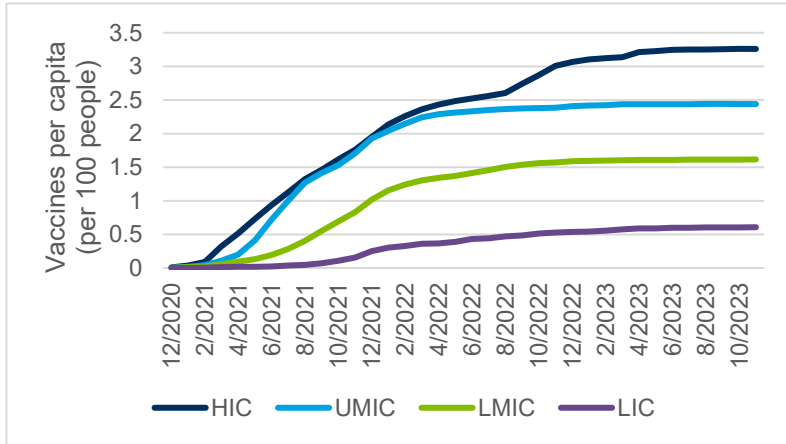


**Finding 37: Delivered doses have taken time and not always resulted in improved coverage.** As HICs and UMICs were able to access and roll out vaccines far quicker than

LMICs and LICs, vaccination coverage and targets, such as administering one dose per capita, were achieved more quickly than by LMICs or LICs. For example, 37 of 56 HICs had administered their first vaccine before the end of 2020, and all had administered one vaccine per capita by July 2021.<sup>5</sup> By January 2021, 73% of HICs had started vaccinating compared to only 13% of UMICs and 1% of LMICs. By August 2021, UMICs had also achieved the target of administering one dose per capita. The first LIC vaccination was not until February 2022, by which time 88% of HICs, 60% of UMICs, and 30% of LMICs had started vaccinations.<sup>40</sup> By the end of 2023, LICs had still only provided a first vaccine dose to 36.1% of their population.

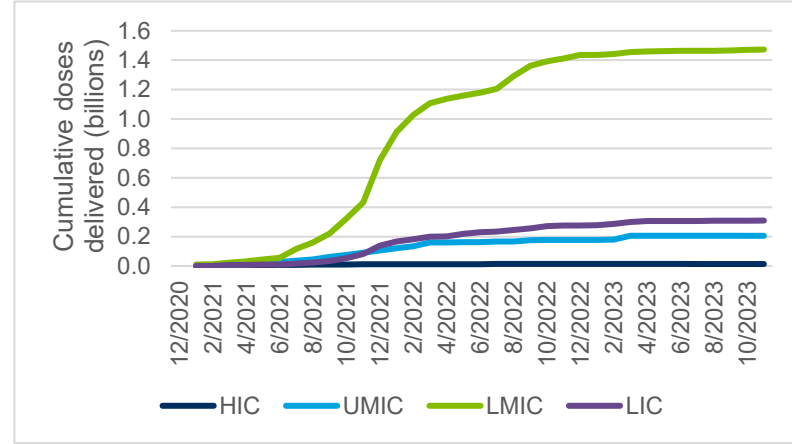
Key informants noted that the ongoing disparity in vaccination coverage across country income categories is reflective of the earlier access to vaccines in HICs, the ability to receive and more quickly roll out vaccines in HICs, and the strong demand for vaccines at the community level experienced across all countries during 2021, which faded into 2022 and 2023 as the pandemic evolved.

**Figure 12. Cumulative vaccine deliveries per capita, by income classification (All sources; 2020-2023)\***



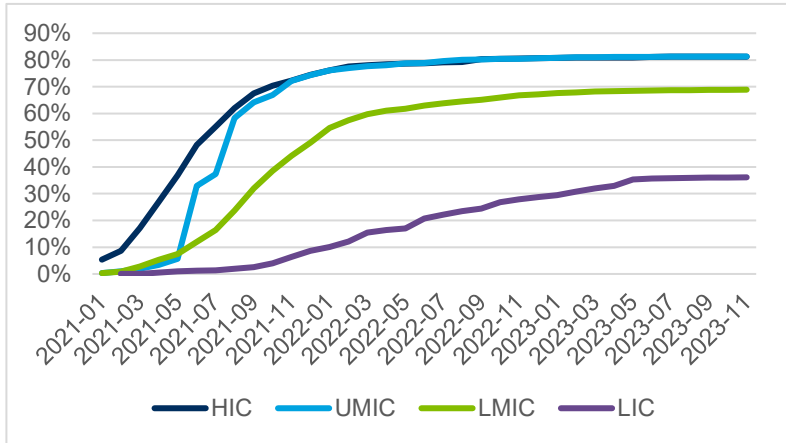
Source: UNICEF COVID-19 Market Dashboard

**Figure 13. Cumulative COVAX doses delivered by income classification (COVAX doses only; 2020-2023)**



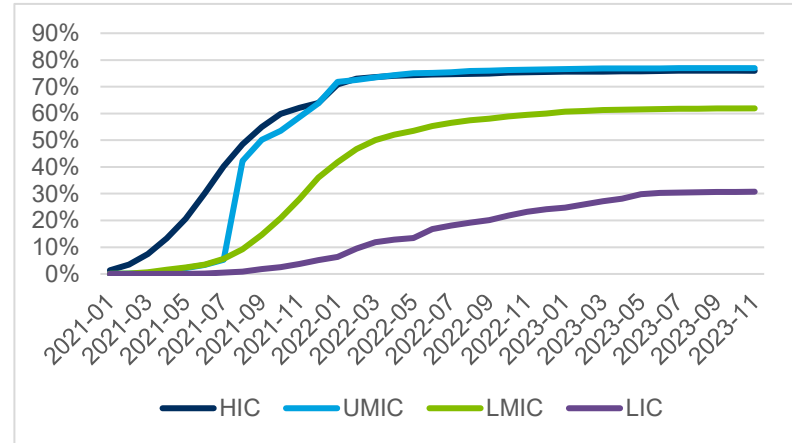
Source: UNICEF COVID-19 Market Dashboard

**Figure 14. Vaccination coverage of at least one dose, over time by country income group**



Source: COVID-19 Vaccination Information Hub. WHO and UNICEF

**Figure 15. Vaccination coverage of the complete primary series, over time by country income group**



Source: COVID-19 Vaccination Information Hub. WHO and UNICEF

1



**Finding 38: COVAX has made a substantial contribution to the deaths averted through COVID-19 vaccination, particularly in AMC-participating countries.** According to modeling commissioned by Gavi and conducted by Imperial College, London<sup>49</sup>:

- By the end of 2021, an estimated 6.5 million deaths were averted through vaccines in AMC countries, with an estimated 857,000 deaths averted specifically by COVAX vaccines.
- By the end of 2022, an estimated 13.3 million deaths were averted through vaccines in AMC countries, with an estimated 2.7 million deaths averted specifically by COVAX vaccines. Of the 2.7 million vaccine-prevented deaths, the majority were among African AMC participants, with 73% of total vaccine-prevented deaths attributed to doses provided by COVAX.

While key informants referred to these statistics to demonstrate the scale of COVAX's success, other studies have demonstrated that further deaths could have been averted through a more equitable global distribution of vaccines.<sup>50,51</sup> Wells and Galvani estimate that an additional 156,900 deaths could have been averted had the initial 20% goal of the COVAX Fair Allocation Framework been attained (i.e., where all countries received vaccines to cover 20% of their population before any one country received further doses), and 599,300 additional deaths would have been had the later 40% goal been attained.<sup>50</sup> Similarly, Moore et al. found that greater vaccine sharing would have reduced the total global burden of disease, estimating that a full vaccine sharing scenario (considered as equitable distribution) would have prevented almost 300 million infections and 1.3 million deaths worldwide (as a direct result of COVID-19) by the end of 2021.<sup>51</sup>

**Sub-EQ 5.2: To what extent has equitable impact been achieved (e.g., by gender)?**

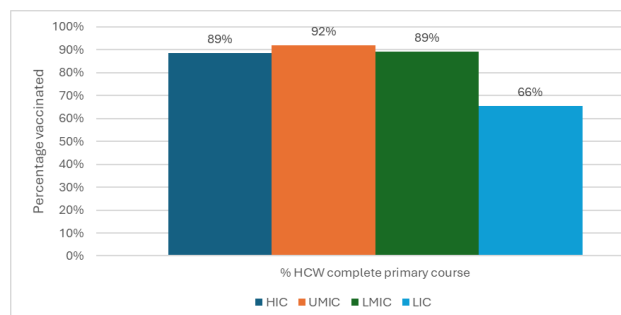
1



**Finding 39: Available evidence suggests that in most countries a majority of health care workers (HCW) and older adults were vaccinated.** HICs, LMICs, and UMICs were all able to provide full primary course vaccines to 89% or more of their HCWs. However, LICs lagged behind with only 66% of HCWs vaccinated with a full primary course (**Figure 16**). In total, 43 AMC countries reported reaching 85% coverage of HCWs with the complete primary series.

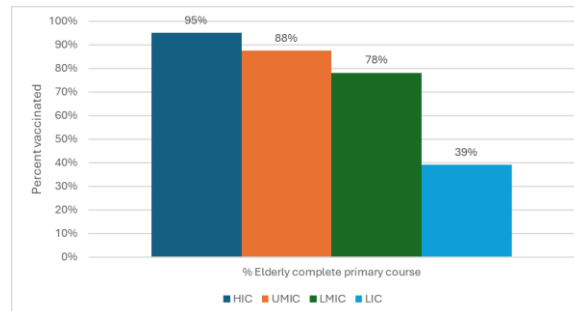
A similar pattern was observed when looking at older adults (**Figure 17**). HICs, UMICs, and LMICs were all able to vaccinate more than three quarters of their older adults, with HICs achieving 95% primary course vaccination. However, vaccination rates for older adult populations living in LICs were well below those of other income groupings, at just 39% primary course vaccination. Boosting coverage for older adult populations was noted as a challenge during 2022 and 2023, with COVAX partners working with AMC countries to facilitate cross-country learnings and use technical assistance to strengthen platforms and delivery strategies to better reach these population groups.

**Figure 16. Percentage of HCWs vaccinated by country income group (145 countries with available data; 2020-2023)**





Source: WHO country vaccination data

**Figure 17. Percentage of older adults vaccinated by country income group (164 countries with available data; 2020-2023)**



Source: WHO Country vaccination data

**1**  **Finding 40: Sex-disaggregated data on COVID-19 vaccination uptake exists globally, although significant inconsistencies and regional disparities limit its effectiveness in understanding gender-equitable results. Indications of conflicting data underscore the need for more reliable, consistent data to track sex disparities over time.** As discussed in Finding 25, sex disparities in vaccine uptake were noted in CCS countries and beyond, with considerable variation across age groups within and across different countries.

**1**  **Finding 41: Limited evidence exists regarding vaccination uptake among minority and vulnerable populations, with monitoring and evaluation data for these groups not clearly documented or discussed by key informants.** Some independent studies<sup>51</sup> highlight disparities in access, particularly for disabled persons, who faced additional barriers such as reduced healthcare availability, financial strain, fear of COVID-19, and lack of support with seeking care.<sup>52</sup> There was also little consideration of how violence against women and girls, or intimate partner violence, may have impacted equitable vaccine access, despite acknowledged links between gender, violence, and vaccine uptake.<sup>53</sup> For example, in Cameroon, 42% of participants reported women needing their husbands' permission to vaccinate their children, especially in crisis zones.<sup>54</sup> Additionally, while healthcare workers were expected to be sensitive to the needs of women and adolescent girls experiencing gender-based violence,<sup>53</sup> no evidence of this was found in the documentation or informant responses. At the global level, data were collected to understand equity in vaccine access aligned with SAGE, but systematic country-level data was challenging due to reporting inconsistencies, data quality issues, and the complexity of managing diverse regional information.

## **EQ 6: To what extent have the intended results of the Delivery Pillar been achieved?**

This section presents the evaluation findings related EQ 6. The evaluation team employed a process analysis approach to assess the assumptions underlying the COVAX TOC (**Annex 3**). This analysis involved the identification and evaluation of evidence derived from KIIs, document reviews, the web-survey, and CCS, with the evolution of COVAX's strategy over time in

<sup>51</sup> Ghana, Zimbabwe, Viet Nam, Türkiye (Syrian refugees), Bangladesh, and India

response to shifting contextual factors (CRD, CoVDP, and Alliance Structures). The evaluation team also employed a value-added analysis to provide an additional lens to explore in what ways the observed results have provided benefit. This included analysis of quantitative data related to the achievement of intended outcomes and impacts (**Annex 2**). Supplemental evidence can be found in **Annex 7**.

Sub-EQ 6.1: To what extent were COVAX Pillar delivery efforts outcomes and goals achieved, and were related targets and timelines appropriate?

2



**Finding 42: As demonstrated in previous findings, despite COVAX exceeding its delivery-related targets, inequalities in global coverage persisted over the life cycle of COVAX.**

Vaccination coverage gains were made in countries that received targeted Delivery Pillar support; however, these results reflect a wide array of factors, including the presence of CoVDP. For example, the completion rate of primary series COVID-19 vaccines for the 34 CoVDP focus countries increased from 3% to 28% from January 2022 to May 2023 compared to a global increase from 47% to 66%. More specifically, by February 2023, CoVDP had supported 15 countries.<sup>z</sup> Among these Gavi reported Tanzania's coverage increasing from 2% at the start of 2022 to 54% in May 2023; Somalia's coverage increasing from 5% in January 2022 to 41% in May 2023; and Sierra Leone having vaccinated more than 70% of its population against COVID-19, with CoVDP support.<sup>aa</sup> Further, WHO reports that by December 2023 Sudan, also supported by CoVDP, campaigns had increased primary series coverage from 10% to 31%;<sup>12</sup> and that in Cameroon political advocacy and coordination support in the lead up to a specific campaign had contributed to increasing coverage from 5% to 11%.<sup>45</sup>

In addition, 67% of the evaluation's web survey respondents indicated that COVAX financial support notably or significantly contributed to vaccinating target populations. While 10% indicated no or minor contribution. Further, 50% of the evaluation's web survey respondents indicated that COVAX financial support notably or significantly contributed to distribution, transportation, and administration of vaccines from the national to the local level; 48% indicated the supplies and equipment notably or significantly contributed, and 42% indicated that technical assistance notably or significantly contributed. While 18-26% indicated no or minor contribution across these types of delivery support received.

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<sup>z</sup> Afghanistan, Cameroon, Central African Republic, Chad, Cote d'Ivoire, DRC, Gabon, Madagascar, Papua New Guinea, Sierra Leone, Somalia, Sudan, Syria, Tanzania, Nigeria

<sup>aa</sup> [Three countries that have seen the impact of COVID-19 vaccine delivery funding.](#)

### Country Insights (Supplemental CCS Reports)

- In Guyana, as a result of outreaches funded by COVAX there was an increment of 4.7% in coverage of the vaccine from a baseline of 71.3% for the first dose coverage of adult population to 76% of the first dose coverage of the adult population in region 9 (a hinterland region with remote, difficult to access communities). A further increment of 18.4% in coverage for the second dose was achieved for the adult population from a baseline of 38.1% to 56.5% for this second dose in the adult population following outreaches in the same region. Key informants in Guyana said that because of COVAX, the response was placed in a better position. The mechanism was timely and helped to streamline delivery and reach the hinterland, help with advocacy and public relations, and provided essential volunteer and overtime stipends to conduct outreaches.

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***“I think because of the COVAX intervention. I think we're in a better place. We were able to reduce the morbidity and the mortality of the COVID. So, it did really impact, and it came at a good time. You know, it was an intervention that alone, we couldn't do it without the COVAX facility. We had to get the intervention, or else we would have been left back and we would have seen more, a higher mortality” — Guyana stakeholder***

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- In Cameroon, it is estimated that COVAX contributed to at least 70% of the COVID-19 vaccination coverage in Cameroon through campaign and non-campaign modalities. In some instances, COVAX might be wholly financially responsible for an individual receiving the COVID-19 vaccine – as when COVAX provided the vaccine and paid both the community health worker who mobilized uptake and the health worker who administered the dose. In other instances, there was partial COVAX funding, where the vaccine was provided by AVAT or the Chinese government, but COVAX paid for community engagement and vaccination.

## Sub-EQ 6.2: Were equitable results achieved?

There are discreet examples where countries have reached specific population groups to achieve more equitable impact, as demonstrated in **Finding 25** and the CCS insights box below. However, data on the extent to which equitable impact was achieved systematically, is not available at the global and or AMC portfolio level

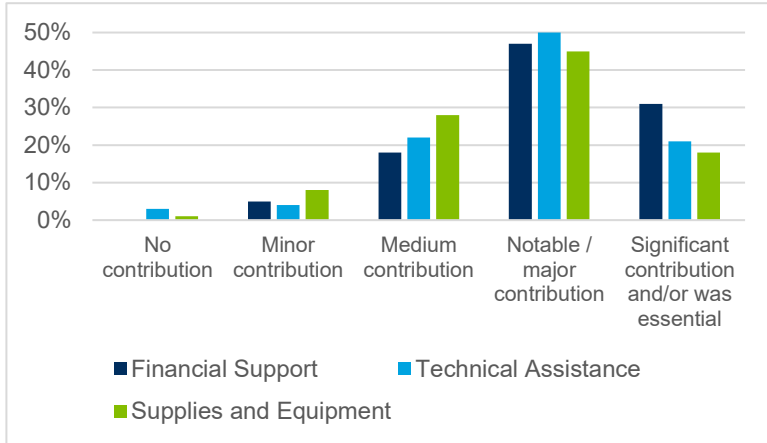
### Country Insights (Supplemental CCS Reports)

- In Cameroon, COVAX ensured that vaccines were rapidly transported to all health districts to ensure geographical equity. COVID-19 vaccines reached all 190 health districts of the country within the first month of receiving them. The “reach all districts” approach ensured geographic equity during the routine COVID-19 vaccination and campaign mode.
- In Cote d’Ivoire, the Pfizer vaccine was offered to pregnant and breastfeeding women, as a suitable option. The initiative also integrated COVID-19 vaccination with HPV vaccination campaigns, which allowed both school-attending and non-attending girls to have access to both vaccines. Special attention was also given to engaging associations for disabled persons. Reaching specific higher-risk groups was achieved through use of mobile lorries and clinics; construction and upgrade of nine regional depots; and implementing occupation-based vaccination strategies to reach groups at higher risk due to their work environment, such as farmers and mechanics.
- In Guyana COVAX partners prioritized people living with HIV by ensuring they had access to vaccinations, thereby reducing the risk of severe illness among individuals with comorbidities. Migrants were also included in this equity initiative, with no requirement for proof of citizenship or residency. COVAX supported equitable vaccine distribution by increasing vaccine supply, providing cold storage facilities across all 10 regions, and offering healthcare training in remote areas. Additionally, it addressed vaccine hesitancy and facilitated communication through translations in Spanish, Portuguese, and Indigenous languages, including Warrou, with assistance from doctors and healthcare providers.
- Indonesia targeted the most at-risk population first, such as frontline health workers, older adults, people working in public services and other vulnerable groups, before being scaled up to the general population. In addition, SMILE, the Electronic Health Logistics Inventory Monitoring System, positively contributed to gender equality and opportunities in Indonesia, as 60% of healthcare workers are female.
- In Zambia the COVID-19 vaccination strategy focused on reaching marginalized, isolated, and underserved communities in both rural and urban areas. The country aimed to protect groups with a higher burden of COVID-19, regardless of their legal status. Zambia’s target population identification followed the WHO SAFE Values Framework and Roadmap, with input from the Zambian Immunization Technical Advisory Group based on local data. Additionally, COVAX partners contributed to geographic equity by supporting mobile vaccination units and community outreach, which were vital to Zambia’s vaccination efforts and increased coverage by June 2023.

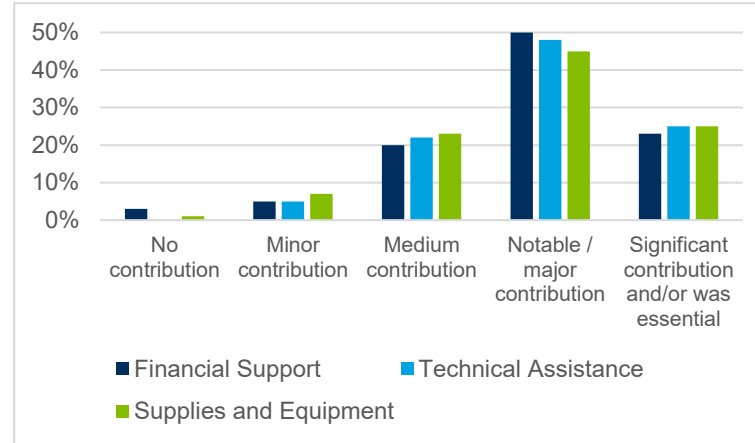
### Fragile and Conflict Special Study Insights (Annex 5)

In Somalia, vaccine hesitancy posed a major challenge to reaching vulnerable groups. Two strategies addressed this challenge, leading to remarkable gains in coverage. The first was the introduction of a vaccine that required a single dose and therefore was more acceptable to groups with limited health service coverage. Second, Somalia built on communication and outreach strategies utilized for the polio vaccine, including religious and community leaders and community health workers, as well as using radio, social media, and trusted leaders taking the vaccine on public television. The country overcame the logistical challenges to delivering vaccines by transporting doses by air, and were adequately funded for this effort even though the cost was high. Reaching rural areas and those under the control of non-state armed actors proved challenging and the extent to which people were able to reach town centers to get vaccinated is not well documented.

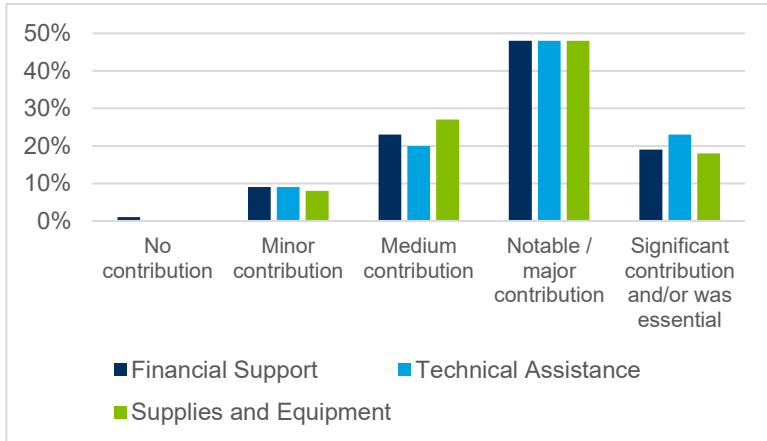
**Figure 18. Impact of COVAX support to equip and prepare the country workforce to deliver COVID-19 vaccine (n=120)**



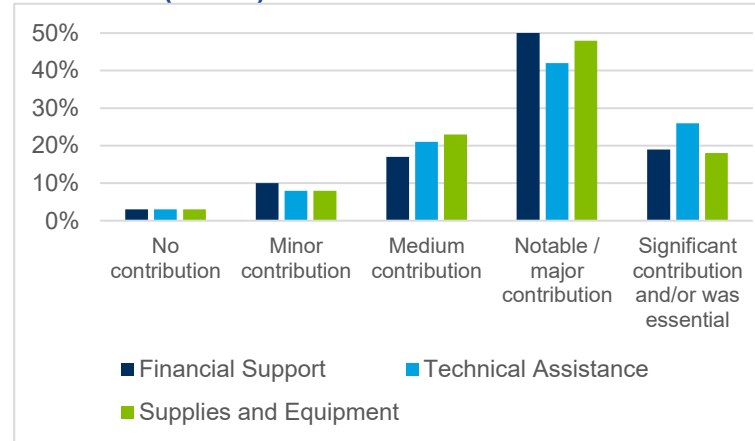
**Figure 19. Impact of COVAX support to strengthen country logistics and cold chain for COVID-19 vaccine distribution (n=120)**



**Figure 20. Impact of COVAX support to vaccinate target populations (n=120)**



**Figure 21. Impact of COVAX support to distribute, transport, and administer vaccines from the national to local level (n=120)**



Source: Web-survey (Annex 4)

### Sub-EQ 6.3: Did delivery modalities strengthen national and local systems and capacities?

2

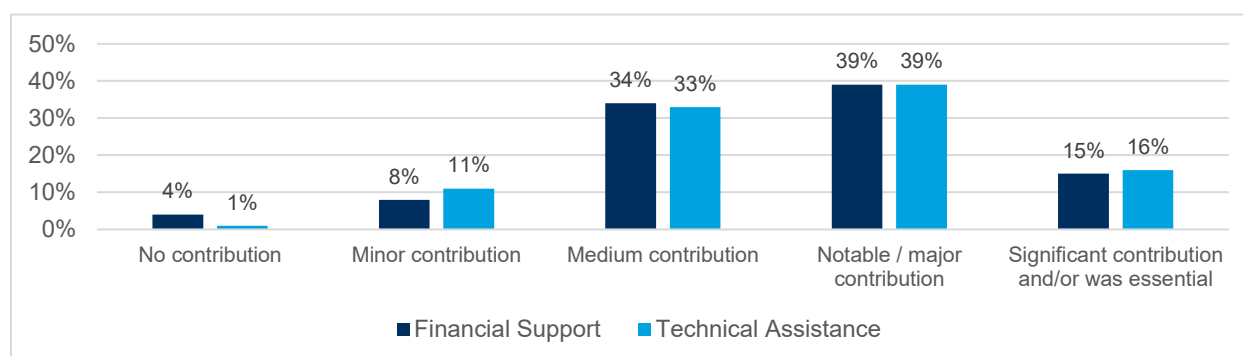
**Finding 43: The COVAX Delivery Pillar was widely considered to have been impactful, with examples of added value provided in varied ways across countries.** CRD, for example, was viewed by country, regional, and global-level stakeholders as having been successful in working with countries to improve their vaccine readiness using a health system building blocks approach.<sup>bb</sup> This was achieved through improvements made in the health workforce, information management systems, equipment, infrastructure (e.g., cold chain), and human-centered design within community-based programs. All CCS note that the influx of vaccines and cold chain infrastructure procured via COVAX meaningfully contributed to success. However, CCS key informants did not speak of the different types of support received as distinct,<sup>cc</sup> therefore attributing results to any one modality is not possible in this evaluation.

*“COVAX really brought a lot of vaccines to Cameroon, which we could not have bought ourselves. The EPI also gained cold chain equipment and technical assistance.” – Cameroon National Ministry of Health*

*“We had trained hundreds and thousands of health care workers we had built up a whole system of guidance. We had built the data system for them to report. We had built a system for funding so that they would get help if they needed it in the roll out. We had peer-to-peer and learning activities all the way and collaboration across the different both regions, but also within regions.” – WHO stakeholder*

*“I can say for sure that data management and cold chain equipment were key areas. Even now, in Chad, we continue using some of the equipment provided by COVAX. In terms of data management, people were trained during this process, which continued to support the system. I would also say that training was essential... This reinforced the capacity of human resources, cold chain equipment, and data management, which contributed to strengthening the health system.” – WHO stakeholder*

**Figure 22. Impact of COVAX support to leverage data systems to inform and monitor COVID-19 vaccine safety and administration (n=120)**

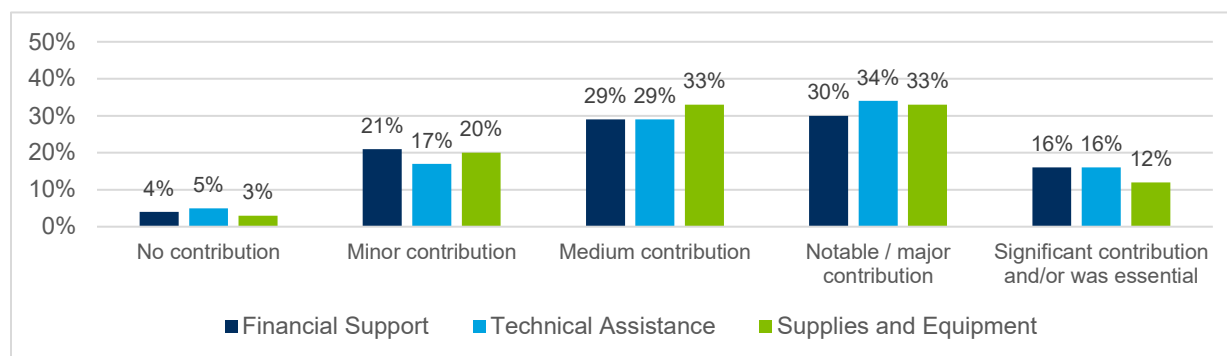


Source: Web-survey (Annex 4)

<sup>bb</sup> Covering the various output areas of Part B country level TOCs: Countries assessed as ready and receive dose allocation; Country workforce equipped to deliver vaccines; Country logistics and cold chain established for distribution; Communities mobilized and demand generated; Data systems inform and monitor vaccine safety and administration; Pathways to integrate into PHC and EPI established.

<sup>cc</sup> i.e., CRD, CDS, CoVDP, or Alliance structures

**Figure 23. Impact of COVAX support to integrate COVID-19 vaccines into existing PHC / EPI programs (n=120)**



Source: Web-survey (Annex 4)

CoVDP later offered targeted support to 34 countries with vaccination rates of less than 10%, and immediate support to 10 countries facing the greatest challenges—such as fragility and conflict—to help them address bottlenecks. Of these 34 countries, 15 received targeted support including Cameroon and Cote d’Ivoire (see Country Insights box). During 2022 and 2023, various tools, guidance, and technical support were provided to countries to help them integrate COVID-19 vaccination into routine immunization. Across the range of support provided, cold chain strengthening and data systems to inform and monitor COVID-19 vaccine safety and administration emerge across case study countries as examples of COVAX’s added value. The Country Insights box provide concrete examples of support received to strengthen national and local systems’ capacities across case study countries.

Additional examples of COVAX’s legacy in capacity strengthening include CoVDP support in Sierra Leone. CoVDP provided \$2.8 million to fund pickup vehicles, motorbikes, computers and tablets, refrigerators (including solar)—as well as covering solar powered systems in Peripheral Health Units (PHUs)—and District Vaccine Stores to support the program, all of which would also help deliver essential childhood immunization.<sup>dd</sup>

In Somalia, CoVDP delivery support is also reported to have helped scale up the country’s cold chain capacity to include four ultra-cold chain units and 25 solar direct drive vaccine fridges; built online digital systems to support vaccination and to accelerate decision-making, and supported risk communications training and community engagement training of health workers, for both COVID-19 and routine immunization.

<sup>dd</sup> COVID-19 Vaccine Delivery Partnership boosts Sierra Leone COVID-19 Vaccination with US\$ 2.8 million worth donation

## Country Insights (Supplemental CCS Reports)

- Cameroon (CoVDP-supported country) added value contributions
  - Provision of CCE that will continue to be used by routine immunization
  - EPI staff received technical assistance on data management and surveillance of adverse events: two health communication specialists joined the EPI team to track and counteract vaccine rumors.
  - Development of data management for COVID-19 vaccination (supporting the EPI in improving data completeness, timeliness and quality when reporting vaccine uptake in the district health system).
  - Integration of COVID-19 vaccination activities into the primary health care system.
  - Through COVAX support to 4 of 5 national vaccination campaigns the following results were reported:
    - COVAX is estimated to have contributed to at least 70% of the vaccination coverage through campaign and non-campaign modalities.
    - For the 5th national vaccination campaign, a generous budget funded by CoVDP meant that vaccination teams were able to receive per diem allowances and compensation for transport, communication, and data costs which motivated them to perform.
    - Creating and sustaining 244 fixed vaccination centers, deploying teams to these centers and 1,255 mobile facilities, deploying 5,263 social mobilizers for community engagement, and conducting national vaccination campaigns.
- Guyana COVAX added value contributions
  - Overall, COVAX support contributed to streamlining vaccine delivery and provided structure to the country response.
  - Expanded the geographic reach of vaccines.
  - Provision of essential volunteer and overtime stipends for workers facilitated outreach activity in hard-to-reach areas.
  - Technical assistance was provided on sensitization and addressing hesitancy for vaccines in communities.
- Cote d'Ivoire (CoVDP-supported country) COVAX added value contributions
  - NDVP support (technical and financial assistance) was received
  - Vaccinodroms were established for mass vaccination in Abidjan by Village Reach. Locations of vaccinodroms were selected to best reach underserved populations.
  - Vaccination data were integrated (electronically) into the DHIS, resulting in a single database (data managers hired by WHO). Facilitated by resources being available and used to buy tablets and provide training.
  - Training for health personnel across the health care system.
  - The enhancement of the regional depots will continue to be used by RI for vaccine storage and management.
  - AEFI focal points in health districts were reactivated and strengthened.
  - Integration of COVID vaccination activities with RI provided additional resources for PHC
- Indonesia COVAX added value contributions:
  - Having a vaccine readiness survey completed with technical support (covered by COVAX) from CHAI and NDVP completed with technical support from WHO.
  - Equipping the workforce to deliver COVID-19 vaccines through online and hybrid training for health care staff (UNICEF and UNDP and WHO).
  - Strengthening data systems to inform and monitor COVID-19 vaccine administration through electronic and real-time reporting and logistic monitoring (UNDP; UNICEF; CHAI).
  - Strengthening country logistics and cold chain established for COVID-19 vaccine distribution.
  - Having helped the country achieve adult immunization.

**2** 

**Finding 44: With Delivery Pillar support, some countries were able to adapt their existing routine immunization systems and primary health care services to reach new populations.** Data on the extent to which this happened systematically is not available; however, several key informants at the global and country levels noted instances of targeting specific groups relevant to country priorities. For instance, in Cameroon the mapping of persons with co-morbidities by Clinton Health Access Initiative (CHAI) contributed to microplanning for the integration of COVID-19 vaccination in primary health care, and in Cote d'Ivoire the COVID-19 vaccine delivery approach was noted to have improved both the delivery of HPV and the use of school medical services for other health consultations as well.

*“Many countries transitioned from a campaign mode to a routine delivery system. However, this didn’t significantly increase coverage. The campaign reached many people, but transitioning to routine delivery didn’t reach more individuals because the target population, adults, are not used to visiting health facilities for routine vaccination. It was difficult to capture this adult population through routine services.” –UNICEF stakeholder*

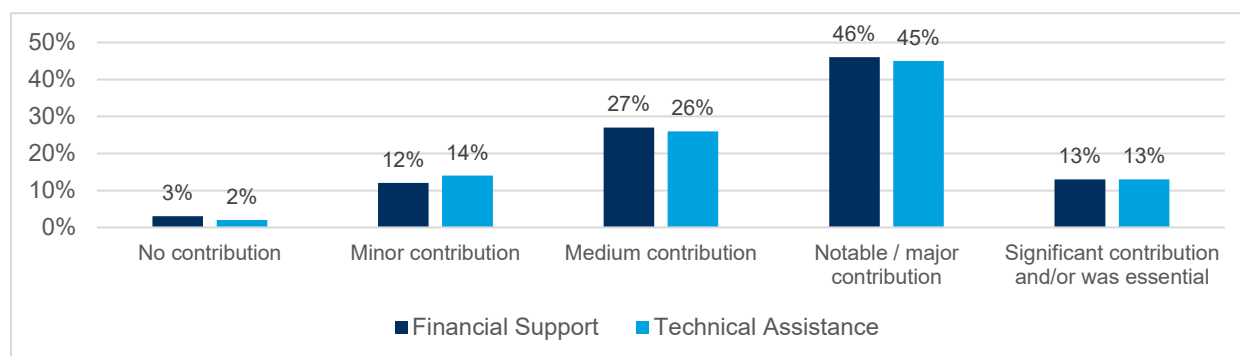
Stakeholders noted that integrating COVID-19 vaccines with existing vaccination campaigns and services that the community values was a successful integration strategy used by some countries.

*“In Darfur COVID-19 vaccinations were provided with measles, additional screening, other services that the community wants, and then that just gains acceptance.” –UNICEF stakeholder*

**2** 

**Finding 45: Despite gains made in strengthening demand for vaccines through extensive communication and sensitization efforts with communities, community (and national) reporting systems and capacities to track social behavior change efforts were lacking in many countries.** Global-level key informants recalled the utility of social behavior change and social listening tools and mechanisms used through COVAX and beyond, and 46%/45% of web survey participants suggested notable and significant COVAX contributions to demand generation achievements at community levels. However, key informants across different agencies also noted the lack of systems in place to monitor the impact of these interventions.

**Figure 24. Impact of COVAX support to mobilize communities, disseminate information, and create demand for COVID-19 vaccines (n=120)**



Source: Web-survey (Annex 4)

Sub-EQ 6.4: Did unintended consequences arise during the implementation of the COVAX Pillar delivery efforts? Were they directly or indirectly related to the pillar activities, or due to external factors?



**Finding 46: Notable positive unintended consequences of COVAX Delivery Pillar support include extending routine immunization to encompass adults in support of life-course vaccination and broader strengthening of routine immunization and broader health systems.** The positive legacy of COVAX on broader immunization and health systems strengthening was noted by web survey respondents and several key informants at global, regional, and country levels as a clear unintended consequence, not anticipated at the outset of COVAX. Web survey respondents agreed, sharing examples of routine immunization programs having been strengthened through opportunities to support catch-up efforts for routine vaccination, improvement of medical waste management practices, expansion of cold-chain capacity and non-communicable disease screening strengthening and others.

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*“The other thing that I think was important in terms of legacy was and I think we started advocating strongly for that. So while you know health system strengthening was not a key part of the terms of reference, it was a bespoke partnership that was always supposed to be temporary coming out of the exercise. We certainly have pushed for much more focus on community health workers and community-based primary health care systems. And I mean it’s not a direct correlation, but certainly there’s a continued effort currently co-chaired by USAID and UNICEF called the Community Health Delivery Partnership.– UNICEF stakeholder*

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#### Country Insights (Supplemental CCS Reports)

- In Cameroon, prior to COVID-19 there was a gap in the monitoring of community perceptions and the impact of rumors on vaccination. COVAX funding allowed the EPI to hire two community managers to focus on this activity. The EPI retained the community managers beyond COVAX and they continue to track vaccine-related perceptions and rumors, particularly in respect of the newly introduced malaria and HPV vaccines. Further, communication activities conducted under COVAX made Cameroonians more aware that adults could benefit from vaccination. The EPI also gained valuable experience with adult vaccination, which should facilitate the introduction of future adult vaccines.
- In Cote d’Ivoire, stakeholders interviewed noted that COVAX primarily helped to address COVID-19 needs but also led to broader health care improvements including successful lobbying through COVAX for health worker training leading to an increase in graduates from 3,500 to 9,000 annually; strengthening management of AEFI during COVAX leading to increased public trust in the health care system; and strengthening of the vaccine safety response under COVAX that established long-term confidence in vaccination programs.
- In Guyana, stakeholders referred to positive unforeseen consequences as boosted local confidence in being able to deliver other mass-scale vaccination campaigns, such as polio vaccinations.



**Finding 47: Notable negative unintended consequences of pivoting immunization programs (linked tangentially to COVAX Delivery Pillar support) include the rise of other vaccine-preventable diseases such as measles.** Participants in the Sense Making workshops noted as a result of immunization programs pivoting to focus on COVID-19, the rise in other vaccine-preventable diseases such as measles remains a challenge for countries to address. All CCS noted the creation of an imbalance in resource allocation to COVID-19 vaccination and non-COVID immunization activities as an unintended consequence.

### Country Insights (Supplemental CCS Reports)

- In Cameroon, in two major COVID-19 hotspots, the Center and Littoral regions, 71.4% of health districts experienced a decline in DTP3 immunization, which is taken as an indication of a general drop in childhood immunization
- In Cote d'Ivoire the provision of per diem allowances to staff working specifically on COVID-19 vaccination, without a similar incentive for routine immunization, led to a disparity. Key informants suggest that these factors could have contributed to the downturn in routine immunization coverage between 2019 and 2022. The coverage for the DTP3 vaccine decreased from 79% to 73%, while measles immunization coverage declined from 71% to 62%.



## **PART 3: Conclusions And Recommendations**

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## Conclusions

Conclusions presented here are informed by the findings from this evaluation and the first phase evaluation of COVAX, which cover the time period 2020 to 2023.

**Conclusion 1:** The overall design of COVAX, incorporating the COVAX Facility and AMC, and COVAX Delivery Pillar efforts, as a mechanism to boost equitable access to COVID-19 vaccines continued to be relevant as the COVID-19 pandemic evolved and subsided as a public health emergency in 2022 and 2023. By the end of 2021, 11 billion COVID-19 vaccine doses had been administered globally. However, as covered in the first phase evaluation, for reasons largely beyond COVAX's control, the vast majority of these doses were administered in HICs. As such, there remained a strong ongoing need to ensure access to vaccines in LICs through continued efforts to equitably distribute COVID-19 vaccines across countries, and to support the rollout of vaccines within countries. Amid considerable epidemiological uncertainty, changing vaccine products and formulations, and evolving technical guidance on the need for variant-adapted, pediatric, and adolescent vaccines, the COVAX Facility and AMC's continued role in working to ensure equitable access to vaccines was also highly relevant in 2022.

**Conclusion 2:** The COVAX design and business model continued to evolve considerably in response to the changing context, evolving needs, and lessons learned during 2022 and 2023. This flexibility was a core strength of the COVAX response. Many design features of the COVAX Facility and AMC were adapted over time, including the approach adopted to raise funding for future vaccine procurement, as needed, via the Pandemic Vaccine Pool; secure supply by balancing self-procured and donated doses, as well as the renegotiation of contracts with vaccine manufacturers; the approach for allocating doses across countries, reflecting the shift in demand and supply dynamics over time; and the decision taken to ultimately close the COVAX Facility and move towards a routine vaccination approach. COVAX Delivery efforts also evolved substantially over time, notably from the Country Readiness and Delivery (CRD) workstream to the COVID-19 Vaccine Delivery Partnership (CoVDP).

**Conclusion 3:** With systems, processes, and ways of working across partners well established in 2021, as well as ready access to vaccine supplies, COVAX as an end-to-end solution to equitable vaccine access in many ways "hit its stride" in 2022, albeit with several challenges and the need for continual adaptation.

- **Resource mobilization:** The COVAX AMC continued to implement an effective fundraising function, drawing on Gavi's strong pre-existing capacity and donor relationships, and making use of a high-level summit in 2022 to mobilize stakeholders around a convincing investment case for the Pandemic Vaccine Pool. This ensured continued resource availability to procure further vaccines, should they be needed in the event of shifting epidemiological factors and vaccine needs.
- **Portfolio management:** The considerable uncertainty over future vaccine needs, linked to epidemiological uncertainty and the need for pediatric and variant-adapted vaccines, as well as unclear country demand, required a proactive and risk conscious portfolio management approach, which COVAX managed ably. Entering a phase of excess supply in 2022, COVAX was able to minimize wastage within its portfolio by not exercising APA options and renegotiating firm order committed doses. The scale and scope of this renegotiation with manufacturers was exacerbated by COVAX's decision to continue administering dose donations through 2022 and 2023, a decision likely taken in

part based on pressure from HICs and Gavi donors, as well as a desire to minimize global wastage of vaccines. While effective in bolstering COVAX supplies in 2021 and in mitigating significant wastage of COVID-19 vaccines in 2022/23, dose donations added significant complexity to COVAX processes. The implications of COVAX renegotiating its commitments with manufacturers, for instance in terms of how seriously manufacturers will view a multilateral procurement mechanism in a future pandemic, are unclear.

- **Allocation:** The allocation approach was adapted iteratively to the shift in context in 2022 of excess rather than constrained supply. While well-intentioned, and despite dedicated support to strengthen demand forecasting at the country level, operationalization of the Phase 2 allocation approach was undermined by a lack of reliable data for accurate country demand forecasting, unpredictability of factors influencing country demand, and limited capacity for sophisticated demand forecasting at the country level to accurately forecast country demand. The rolling allocation approach adopted in August 2022 was a simple and appropriate mechanism for a situation of excess supply. However, it imposed some implications, particularly for ensuring timely availability of syringes compatible with non-standard dose volumes.
- **Delivery:** Building on success of the CRD workstream in initially supporting countries to assess and strengthen their readiness and introductions to accept and administer COVID-19 vaccines, financing to support delivery costs started to flow to countries. While delayed and not flexible enough to cover all operational and rollout costs, COVAX delivery financing was scaled up in 2022, with efforts to boost vaccination coverage also becoming more targeted to the lowest performing countries through CoVDP.
- **Close-out:** The closing out of COVAX appears to have been well planned for, resourced, and operationalized. There were, however, numerous complications to close out that required substantial negotiation and resources to successfully overcome. This included negotiating how to repurpose funds, including SFP-committed resources, and with manufacturers for doses that COVAX had committed to purchase via APAs. While a complex and sensitive issue to navigate, many key informants felt there was a lack of consultation as part of this process and on how funds should be used.

CDS funding and human resourcing for delivery at country, regional and global levels were two points of contention between partners. This appears to be in part due to an initial lack of ownership and unclear roles and responsibilities across partners. Key informants also questioned whether it is reasonable and appropriate to link delivery support to longer-term health systems strengthening objectives in a pandemic context. Clarification on these issues over time, notably through the creation of CoVDP, as well as more formalized and embedded systems, processes, and ways of working across COVAX operations, supported improvements in partner working relationships.

**Conclusion 4:** This evolution in COVAX design, and implementation more generally, has been enabled by strong coordination and collaboration across COVAX partners, the proactive management function provided by the Office of the COVAX Facility and coordination by the COVAX Strategic Coordination Office, as well as a strong risk management function underpinned by Gavi's pre-existing capacities in this area and a significant investment in data and information sharing across agencies. However, ensuring sufficient human resources to manage COVAX proved a persistent challenge.

For delivery specifically, CRD was successful in supporting countries to increase vaccine readiness and support delivery. The creation of CoVDP helped to strengthen partner coordination for in-country delivery work and enable individuals to act as representatives of CoVDP rather than their respective employing agencies. With well recognized global leadership and more emphasis on global advocacy, CoVDP brought a step change in momentum for COVID-19 delivery at a critical juncture.

**Conclusion 5:** The COVAX Facility and AMC was highly successful in distributing nearly two billion vaccines globally between 2020 to 2023, a majority of which went to LICs that were highly reliant on COVAX for COVID-19 vaccine supply. COVAX Delivery Pillar efforts have also supported meaningful gains in vaccine coverage at the country level, particularly in LICs. However, significant inequities in access to vaccines, particularly between richer and poorer countries remained and COVAX did not realize its original objective to ensure equitable access to vaccines. COVAX was though the largest procurement mechanism globally and the most significant provider of vaccines to LMICs, ensuring access to citizens who would likely have otherwise not been vaccinated. Vaccination coverage remained considerably lower in LICs compared to LMICs, UMICs, and HICs, which is largely due to the timing of vaccine supplies, with demand waning by the time doses became readily available in 2022, and challenges in rapidly receiving and rolling out vaccines in many LICs.

**Conclusion 6:** The extent to which vaccination coverage at the country level was equitable is unclear, but intra-country equity could likely have been improved had a more intentional approach been adopted by COVAX alongside simplified and timely country funding modalities to overcome health system capacity challenges. Initially COVAX was primarily focus on procurement, allocation and distribution and only over time was there increasing focus on country support and delivery. While COVAX partners (WHO and UNICEF) provided support to countries to define and develop strategies and plans to reach priority populations and implement equitable vaccine rollouts, some countries had little human and financial capacity to implement these strategies and plans. The role of the COVAX Delivery Pillar in supporting such implementation was not clear or defined. There also remain differing views on the sufficiency and accessibility of delivery financing provided by COVAX to countries.

While evidence suggests that frontline health workers and the older adults were, in general, vaccinated to a greater extent than other populations, some decisions taken by many countries were based on the need for efficiency and lack of visibility of which vaccines and expiry dates they would be receiving (for instance in programming through mass campaigns in urban settings to ensure fast impact) and by COVAX (for instance in the acceptance of dose donations with short shelf lives and the administration of certain vaccine types) are likely to have compromised the ability of hard-to-reach and some vulnerable populations to access vaccines.

**Conclusion 7:** The COVAX experience has provided many lessons to inform a future end-to-end multilateral response to a global pandemic, the value of which could be tremendous in years to come. These lessons learned are documented across many different documents developed by COVAX partners and other commentators, as well as summarized in the first phase evaluation report and in this report. These lessons are both broad in nature and relate to the specific operational details of what COVAX did and how it did it. The former mostly stem from the realization that vaccine nationalism, vaccine diplomacy, and commercial interests will play a part in any future pandemic response and any future multilateral and/or market-based

solution to vaccine equity will need to be designed to operate in a context where these factors are present and the needs of HICs are met through other means. They also relate to the recognized need for the design and operationalization of any future mechanism to be based, in part, on the inputs and engagement of those the mechanism seeks to benefit and having strong channels of communication with these stakeholders from the outset. This includes most importantly participating countries and CSOs, providing them with adequate foresight and time horizons of what to expect to inform their implementation strategy. Also of note is the critical need for any future pandemic response mechanism to factor intra-country equity into decision making alongside cross-country equity considerations.

More operational lessons relate to having clarity on roles and responsibilities across partners, including for decision making and including country, regional and global teams, and with strong governance mechanisms in place; the importance of having a dedicated fundraising vehicle, supported by a strong investment case, a credible host agency and a multi-pronged fundraising approach; ensuring a multi-pronged, balanced approach to ensuring timely vaccine supply; ensuring data on total vaccine supply and country demand are readily available to inform allocation decisions; from the outset integrating delivery financing and technical support as a critical component of an end-to-end approach, differentiated by country needs; and above all, putting in place broad operating principles rather than fixed rules for operationalization to ensure agility in response to rapidly evolving needs and circumstances.

## Recommendations

Recommendations presented here are forward looking informed by the findings from this evaluation and the first phase evaluation of COVAX. These recommendations aim to inform future PPPR mechanisms, such as i-MCM-Net and provide insights to support the ongoing work of the INB in shaping a global pandemic agreement. See **Annex 6** for line of sight across findings, conclusions, and recommendations.

### Recommendation area 1: A future pandemic response mechanism should adopt a multilateral approach to ensuring equitable access to vaccines.

#### Target owner: Agencies and country governments leading on the design of a future pandemic response mechanism.

This mechanism should be a coordinated and inclusive system (i.e. country governments and CSOs) for vaccine procurement, allocation, and delivery. Roles should be clearly defined and leverage existing strengths for fundraising, procuring doses (planning in advance for dose donations), coordinating donations, allocating vaccines, and supporting country readiness and delivery. No single agency can manage all these tasks, so a multilateral, end-to-end approach is essential. The system should prioritize Equity, Unity in Partnerships, and Flexibility.

#### Equity design principal: Responds to findings 21, 36, 38, 39, 40, 41, 42, 43.

The mechanism should prioritize two key objectives: 1) focusing on LICs, assuming that HICs will secure vaccine supplies independently; and 2) ensuring both inter-country (across) and intra-country (within) equity. It is important to recognize that future pathogens may differ significantly from COVID-19, and the rate of vaccine development success may vary, making a one-size-fits-all approach inappropriate. Nevertheless, the primary objective should be to support LICs, and as such, vaccine dose donations are likely to be a critical element in future pandemic responses, necessitating proactive planning.

Scenario planning for both inter- and intra-country equity should be undertaken collaboratively, with country voices actively involved. This process should include considerations of how future infectious diseases might disproportionately impact specific population groups and identify the roles of national governments and their partners in targeting and reaching these groups effectively.

**Enablers:** Strong leadership grounded in a commitment to equity, along with effective cross-organizational line management and the strategic use of partner strengths. Rapid decision-making supported by agile systems and mechanisms that prioritize guiding principles over rigid formal processes. Clear, consistent communication and meaningful engagement with non-traditional actors—such as CSOs, regional alliances, national and subnational implementing partners, and beneficiary governments. Build on existing country-level health equity strategies and promote true country ownership.

**Barriers:** Limited understanding of the virus's epidemiological profile, weak health data systems, unclear roles among stakeholder for focusing on equity, late engagement with humanitarian groups, and lack of high-level political advocacy.

#### Unity in partnership design principle: Responds to findings 12, 13, 14, 15, 28, 30.

The mechanism should seek consensus on design decisions and unity among participating partner agencies. All relevant partners should be included in design discussions, strengths and limitations of partners should be openly discussed to ensure strengths are leveraged and avoid inefficiencies, and strategies to achieve trust-based partnerships should be prioritized. Its design should emphasize cross-agency working to achieve true “joint” working processes. There should be clear expectations for work requiring different levels of transparency between agencies (e.g., commercially sensitive areas such as resource mobilization where there is competition for resources between agencies).

**Enablers:** A joint team with cross-organizational management, shared funding and responsibilities, clear branding, consistent communication, neutral leadership, and strong country ownership and political leadership.

**Barriers:** Inadequate resourcing of core functions (e.g., stretched human resources during CRD) and failure to address tensions between agencies.

**Flexibility and agility design principle: Responds to findings 16.**

The mechanism should have in place governance and management structures, systems, and processes that allow for flexibility and agility in decision making to ensure responsiveness to a rapidly evolving emergency context. Particularly in the initial or acute phase of a pandemic, agility is critical and dependent on both flexibility of operations and the timeliness of decision making.

**Enablers:** Leveraging partner strengths in roles and decision-making, with governance systems that enable rapid decisions while ensuring transparency and accountability and designing mechanisms around guiding principles rather than formal rules.

**Barriers:** Complex management teams with unclear decision-making and overly formalized processes lacking adaptability.

**Recommendation area 2: Develop an end-to-end vision and approach for equitable access to vaccines.**

**Target owner: Agencies and country governments leading on the design of a future pandemic response mechanism.**

The vision for an end-to-end approach should integrate key learnings across core functions: resource mobilization, portfolio management, allocation, coordination and collaboration, political advocacy, risk management, communication, and delivery support. These strategies focus on leveraging partner strengths, enhancing decision-making, and ensuring flexibility, transparency, and strong country ownership. This approach aims to ensure rapid, equitable responses to future pandemics.

**Resource mobilization: Responds to findings 1, 2, 11.**

Leverage strong global health initiative capacities and donor relationships to mobilize resources around high-return investment cases and use high-level summits for uniting global donors around a common cause to secure funding commitments. Furthermore, appropriate financing mechanisms should be in place.

**Portfolio management: Responds to findings 3, 4, 5, 6, 7.**

Develop an approach to securing supply that balances donated and self-procured doses to ensure rapid supply. Incorporate a tolerance for vaccine wastage if ordered doses are not needed and seek to avoid potentially harmful renegotiations with manufacturer. For country-level transparency, work with manufacturers to agree on supply-related information needs and communication guidelines to be adhered to even in uncertain supply contexts.

**Allocation: Responds to findings 8, 9.**

Aligned with Recommendation 4 in the first COVAX Facility and AMC evaluation, adopt a flexible rolling allocation approach in different demand and supply scenarios, weighing the respective benefits and trade-offs of the more flexible, demand-led approach compared to a more structured approach. If, as with the COVAX Phase 1 allocation approach, a structured approach is preferred while demand greatly outstrips supply, prepare to introduce a more flexible approach as soon as practicably possible.

**Coordination and collaboration structures and modalities: Responds to findings 14, 15.**

See the unity and partnership design principle in Recommendation Area 1.

**Political advocacy: Responds to Key Enablers.**

Resource appropriately with senior-level leaders that bring established high-level networks in order to sustain strong partnerships with countries. Ensure that framing is broader than health where a cross-government response is required.

**Develop a clear and consistent risk approach to support rapid decision making: Responds to finding 16.**

This should be accompanied by a mechanism that can account for implications that arise from decisions having been made on imperfect data. Decisions need to be taken in uncertain situations where data to support decision-making processes is sparse or dynamic.

**Communication and engagement: Responds to findings 22, 23, 24, 25, 29.**

WHO and UNICEF technical agencies should be briefed and up to speed so that they can effectively guide countries once information is shared. Develop guidance around what communication and engagement with countries is likely to look like, including sharing uncertain or incomplete information. Develop strategies to meaningfully engage and empower CSOs at a global level such that they can represent broad CSO constituent views and provide inputs to inform decision-making. Establish a well-resourced external communications team during the response period that can regularly and consistently tell the story of what the next initiative is doing, to help prepare countries to understand the global donor landscape and to ensure country-facing team members are not overburdened with responding to concerns related to media content.

**Delivery support: Responds to findings 17, 18, 19, 20, 27, 37.**

Ensure delivery-related considerations inform other components of the end-to-end mechanism (e.g., procurement, allocation). Seek to ensure financial support is available, alongside technical assistance, to those countries in need as early as practicably possible and in time for the first vaccines to arrive in country. Ensure funds are made available to implement activities linked to technical assistance provided, such as plans developed with support from national and subnational implementing partners, and beneficiary governments that promote intra-country equity. Seek ways to ensure funds flow down to community level, for instance for demand-generation activities. Ensure granular-level barriers and challenges faced by countries are fed into both design thinking and operational resourcing in future pandemic response mechanisms.

**Enablers:** All relevant partners including non-traditional actors—such as CSOs, regional alliances, national and subnational implementing partners, and beneficiary governments are included in the design process and applying insights from evaluations and internal learnings.

**Barriers:** Addressing supply and delivery as discreet/unrelated areas of work at the outset

**Recommendation area 3: To continue working towards resilient health systems define a realistic delivery support objective for 1) during the acute phase of a pandemic versus 2) a longer-term systems-strengthening objective, more achievable once the acute phase has subsided.**

**Target owner: Agencies and country governments contributing to WHO leadership in Global Health Security and Health Systems teams**

Delivery support needs vary across countries and evolve. Initially, emergency funding with high flexibility is necessary to address immediate gaps in health systems, which can be described as health systems support on a no-regrets basis. As the acute phase wanes, funding should be more strategically allocated to strengthen health systems and build long-term resilience. A future mechanism should develop a clear framework for delivery support objectives throughout a pandemic, identifying partners to ensure complementarity, and using delivery support for health system bottleneck analyses to address challenges effectively during emergencies.

**Responds to findings 31, 32, 33, 44, 45, 46, 47.**

Develop a clear framework for the objectives of delivery support at different time points of a pandemic. Linked to this, clarify the principles of how delivery support should be provided to meet these objectives, including financial support and technical assistance in a complimentary way. The framework may also capture how delivery support should be differentiated based on varied country needs.

Identify potential partners in healthy systems and engage them in designing an approach now in preparation for a future pandemic to ensure complementarity and reduce burden on countries.

Socialize lessons learned from different country experiences of delivering COVID-19 vaccines through the existing health system, for instance to understand how other health service databases were leveraged to identify adults, and how COVID-19 vaccines were integrated within other health services (refer to CCS Supplemental Reports).

**Enablers:** Knowledge documented related to health system strengthening legacy of COVAX.

**Barriers:** Lack of clarity on types of support being offered at different times and respective purpose of support. As well as lack of funding for health systems strengthening during non-pandemic times.

**Recommendation area 4: Develop approaches to address specific surge capacity challenges likely to be experienced again in future pandemic scenarios at country, regional and global levels.**

**Target owner: Agencies and country governments leading on the design of a future pandemic response mechanism.**

Future support should consider a minimum package of essential personnel and skills, assess gaps, and develop strategies to meet needs. Additionally, leveraging existing structures like health clusters, addressing regulatory and financial barriers, and creating a clear mandate for regional teams to bridge global and country-level gaps are crucial, especially if essential health services are to be maintained in countries during an emergency. At the global level, lessons from recruitment delays, skill mismatches, and managing surge capacity staff should inform the design of future centralized response mechanisms, ensuring staff with relevant expertise are efficiently recruited and effectively utilized.

**Responds to findings 10, 26, 34, 35.**

At the country level, a minimum package should assess gaps in current people and skills designated full time to an activity (across ministries, health workers, partner agency country offices, CSOs, and implementers) and use this to develop strategies and plans to meet surges. Countries should update their national pandemic plans and their national deployment and vaccination plans during the inter-pandemic period to enable rapid refinement and use during the next pandemic. Approaches should explore and harness structures and mechanisms at the country level before creating new ones and ensure human resource availability to address potential legal, financial, and structural barriers, such as regulatory hurdles and import processes faced by countries in accepting and rolling out new vaccines at speed.

Leverage regional level mechanisms such as WHO and UNICEF Regional Offices to bridge between the global and country levels. Create an intentional, clear mandate for regional pillar partner teams. Aside from policy translation, regional teams should play a strong role in strengthening and analyzing sub-national data and engaging with countries to understand their contextual challenges (vaccine hesitancy or limited vaccine dose absorption). They should also play a learning role between countries within and across regions. Regional teams may also play an important role to link a multilateral mechanism to regional procurement and manufacturing mechanisms.

At the global level, the mechanisms should introduce staff on how to use management consulting inputs and aim for minimum contract lengths of six months for surge capacity staff. Ensure surge capacity staff are placed in appropriate roles that leverage their expertise. Additionally, ensure the recruitment team for future mechanisms is appropriately resourced to maximize the chance of getting new and right hires quickly.

**Enablers:** Collaborative team-working spirit to get things done at every level and willingness of volunteers to support at country levels.

**Barriers:** Lack of dedicated funding and flexibility for human resources, insufficient understanding of needs at the pandemic's outset, unpreparedness to effectively use management consultant capacity, ill-suited global recruitments, and short-term surge capacity contracts leading to high turnover.



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