ANNEX

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ANNEX 1: TERMS OF REFERENCE

The terms of reference for this evaluation are contained in Gavi's Request for Proposal: "COVAX Evaluation: COVAX Facility and COVAX AMC (Gavi Secretariat), and COVAX Pillar Delivery Efforts (Joint) 192-2023-GAVI-RFP". This can be accessed through the provided attachment.

ANNEX 2: METHODS

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EVALUATION DESIGN

The evaluation employed a non-experimental, theory-based evaluation using a systems lens to assess the implementation and adaptation of the COVAX Facility and AMC and Delivery Pillar Efforts (referred to below as "COVAX") in achieving their intended results. The design prioritizes advantages to answering the evaluation questions (Qs) and emerging learning objectives.

The choice to conduct a non-experimental evaluation is warranted not only by the lack of a natural or easily constructed counterfactual for COVAX, but also by the EQs and learning priorities advanced by the evaluation users. These EQs and learning questions focus on the effectiveness, relevance, efficiency, and coherence of COVAX as it was implemented, reinforcing the importance of context. A non-experimental design allows for the evaluation to assess the program in real-world settings, reflecting the conditions and context in which it was implemented. As a result, our findings are grounded in the multidimensional context on which COVAX was designed and implemented.

We integrated a systems lens into the evaluation to capture and acknowledge the complexities of COVAX's operation within existing systems at the country level and to center on the importance of context in influencing COVAX's implementation decisions and the results it achieved at the country level. We did not assess the breadth of every system in which COVAX was working, given the breadth of its activities and the limited resources of the evaluation. Instead, we focused on areas where COVAX was most intentionally engaged with key systems to bound our analysis and assess its impact.

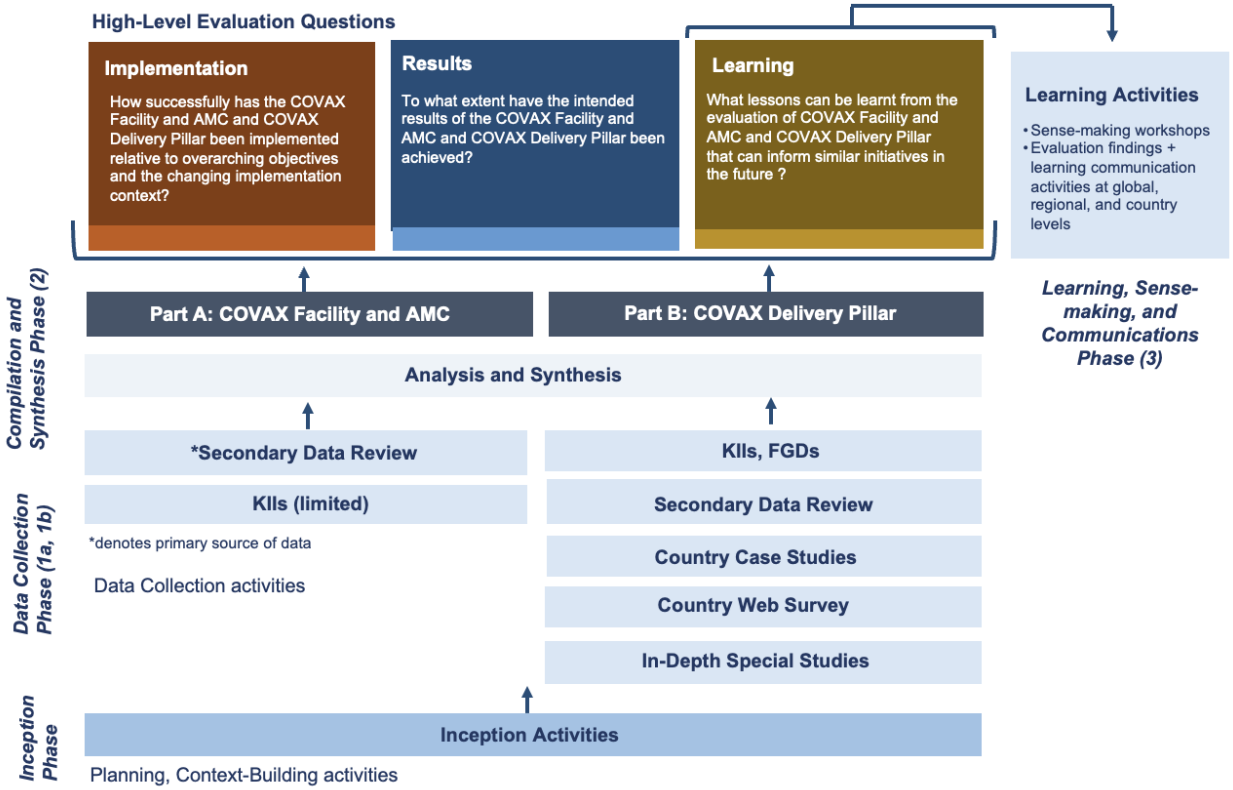
We drew on a mixed methods approach to collect and assess data, with the goal of developing a more comprehensive set of evidence from which to draw evaluation findings. By relying on qualitative and quantitative data, our evaluation captures a more holistic view of the COVAX initiative and its process and outcomes by examining not only *what* results transpired but also *how* they emerged. Our work collected secondary quantitative data relevant to COVAX program outcomes (e.g., COVID-19 doses delivered) and complemented findings with in-depth insights related to the experiences, perspectives, and contextual factors that influence the program's outcomes.

At the country level, we incorporated case studies in six locations where COVAX Pillar delivery Efforts were focused, with the goal of developing illustrative examples of how COVAX was implemented in context and how COVAX's implementation achieved results amid changing global and local contextual factors. Case studies have limited generalizability and so we have been mindful of how these findings are used in aggregate.

Core Evaluation Activities

Our evaluation incorporated the evaluation activities detailed in **Figure 2-1**, which visualizes how they are integrated in answering questions related to Part A and B, in addition to answering the EQs.

Figure 2-1. Core Evaluation Activities relative to High-Level EQs and Evaluation Timeline



Key Evaluation Frameworks

Value-Added Analysis and Framework

Our work to understand the results achieved by COVAX Facility and AMC and COVAX Pillar delivery efforts used process analysis to establish whether and how implementation of activities in the theories of change (TOCs) contributed to observed results. To deepen our assessment of results achieved, we relied on a value-added framework, which examines the multiple dimensions across which results might have been experienced. In a program as complex and far-reaching as COVAX, this framework acknowledges that its results may have also been experienced in different ways. The value-added framework assesses multiple dimensions of "added value" of results achieved to further elucidate and understand the contribution of the program as follows:

- **More/additional value:** Activities that were being conducted before, but there are now more of them at a markedly increased level of activity due to COVAX
- **Improved value:** Activities that were being conducted previously but are now appreciably more effective, efficient, or strategic due to COVAX
- **Unique value:** Activities/contributions that are exclusive or exceptional to COVAX
- **Pace-oriented value**: Activities that were being conducted previously but now at a more accelerated speed

- **New or innovative value:** Actions that are entirely new or original to and/or initiated because of COVAX

Analysis of value added provides a lens to explore in what ways the observed results have provided benefits at the global, regional, and country level. In combination with process analysis, value added analysis was used to support the development of findings that respond to EQs 5 and 6 related to the achievement of intended results for the COVAX Facility and AMC and the COVAX Pillar delivery.

Collaborative Partnership Analysis and Framework

COVAX introduced an effort to solve a complex societal problem in a global crisis; in this way, COVAX can be seen as a systems change initiative, as it aimed to disrupt processes and power dynamics that limit equitable vaccine access by strengthening the collective power of low- and middle-income countries (LMICs) to access vaccines in an emergency. By design, COVAX relied on the active and ongoing collaboration of Gavi, UNICEF, WHO and CEPI to achieve these goals, such that the organizations performed the roles of "system change agents." (Raynor and Bonnici, 2021)

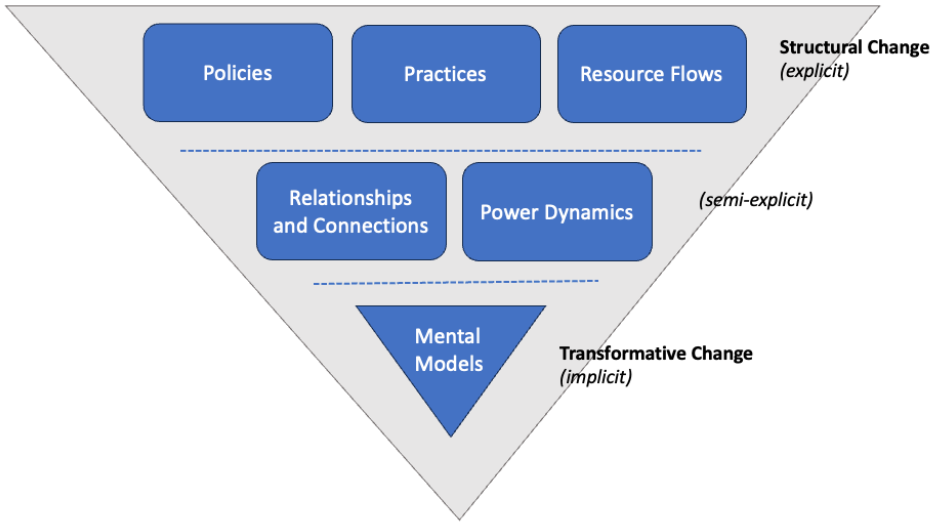
To assess the effectiveness of these collaborations, we assessed the strengths of collaborative partnerships aimed at systems change as defined by the EQs (*EQ 1.3: How well did COVAX Pillar partners coordinate and collaborate? and EQ 4.3: How well did WHO and UNICEF country office coordinate and collaborate to support Pillar delivery objectives relative to specific country needs?)* Drawing on research that identifies the underpinning factors of successful systems change collaborations and effective partnerships, we evaluated the effectiveness and presence of these factors within the collaborative.

Specifically, we drew on the conditions for systems change (Kania et al, 2018) that outline the conditions necessary for effective collaboration. (**Figure 2-2**) These conditions were evaluated across the relevant partners in both Parts A and B of the evaluation to understand the strengths and weaknesses of these relationships between actors implementing COVAX. These conditions include:

- **Policies:** Government, institutional and organizational rules, regulations, and priorities that guide the entity's own and others' actions.
- **Practices:** Espoused activities of institutions, coalitions, networks, and other entities targeted to improving social and environmental progress. Also, within the entity, the procedures, guidelines, or informal shared habits that comprise their work.
- **Resource Flows:** How money, people, knowledge, information, and other assets such as infrastructure are allocated and distributed.
- **Relationships and Connections:** Quality of connections and communication occurring among actors in the system, especially among those with differing histories and viewpoints.
- **Power Dynamics:** The distribution of decision-making power, authority, and both formal and informal influence among individuals and organizations.

- **Mental models:** Habits of thought; deeply held beliefs and assumptions and taken-for-granted ways of operating that influence how we think, what we do, and how we talk.

Figure 2-2. Six Conditions of Systems Change



Source: Kania, Kramer, and Senge (2018) *The Water of Systems Change*

Systems Lens Integration – Country Level

We drew on principles from systems thinking to support our evaluation in several ways: (1) as a tool for defining focused areas of COVAX within systems; and, (2) to assess COVAX's impact on changes to system capacities and resilience at the country level.

Defining focused areas of systems of where COVAX was most engaged at the country level

Health systems within a country are dynamic and complex, in which private and public actors coordinate actively to deliver health services. The sub-systems which facilitate the delivery and administration of vaccines within health systems are equally complex and unique to each context. At a country level, integration of a systems lens gives our evaluation tools to contextualize, simplify, and bound a sub-system to focus on the areas where COVAX was most closely engaged and where the results achieved by the COVAX Pillar delivery may be most readily observed and understood. We drew on systems principles to bound and define systems in line with country-specific areas of focus within our CCS with the goal of narrowing the scope of our evaluation of the Delivery pillar at the country level.

Understanding the changes to systems' capacity and resilience at the country level

A well-defined sense of how COVAX engaged with systems at the country-level facilitates a second aspect our work: evaluating the changes in systems and their capacities as a result of COVAX Pillar delivery efforts in a country. While the COVAX Pillar delivery sought to facilitate an increase in vaccines delivered, its work also introduced broader changes to countries' health system capacities through its focus on country-level processes and infrastructure. As described in the Delivery Pillar's TOC, its work aimed to introduce longer-term capacities in country systems, including integration of COVID-19 vaccination into routine immunization programs and

increased preparedness for the next pandemic. These longer-term, system resilience[a] goals speak to nature of systems change sought by COVAX at the country level beyond the near-term goal of emergency vaccination. In this light, we examined changes in country-level systems and their capacities as a result of COVAX in ways that supported country systems' short-term response and longer-term resilience.

To understand if COVAX introduced changes to the system's capacity and its resilience, we looked at four factors identified by an adapted resilience framework for the context of COVID-19 and health emergencies. Using this framework we evaluated four areas where meaningful change can occur that affect a system's capacity:

- **Evidence-based decision-making** to improve preparedness and responsiveness to shocks based on reliable and timely data;
- **Connectivity**, the quality of partnerships and joint initiatives for effectiveness, engagement, and collaboration during health crises;
- **Strategic planning for shock preparedness** to improve equity in service delivery during a crisis; and
- **Balancing power dynamics** between actors to respond to the needs of marginalized groups during an emergency in real time.

Applying this framework, we further assess the value of changes in system capacity and resilience at a country-level due to COVAX using a value-added analytical methodology. Value-added analysis will evaluate the impact that COVAX's systems change efforts brought at the country level. Operationalized at a country level, using value-added analysis to evaluate systems changes introduced by COVAX could include lines of inquiry, such as:

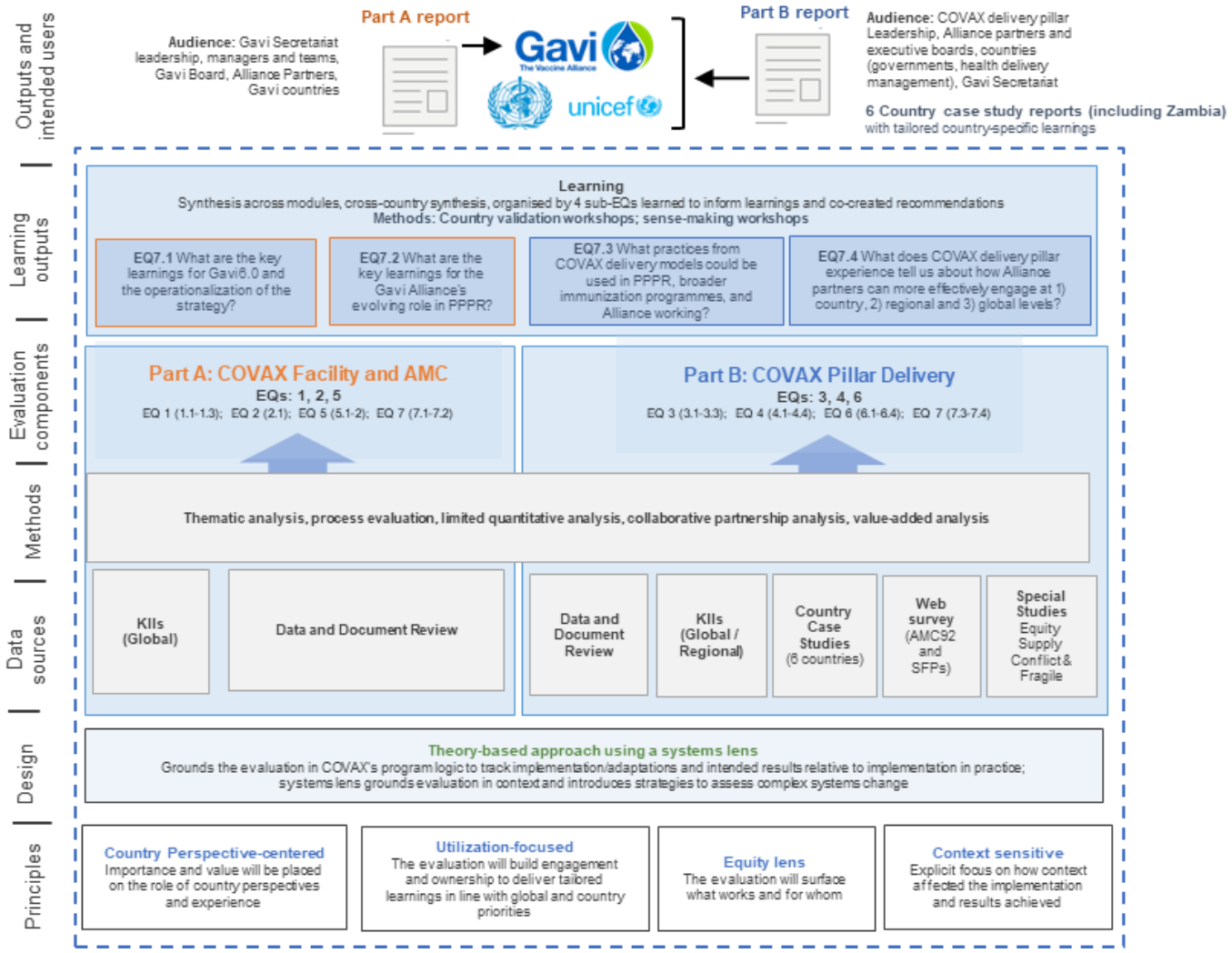
- "Within [country's] disease surveillance function, what was COVAX's impact on evidence-based decision-making? What kind of value did that introduce? (more/improved/faster/innovative)," or,
- "What was COVAX's impact on [country's] ability to plan strategically around supplies distribution? What kind of value did that introduce? (more/improved/faster/innovative)"

Evaluation Approach

In this section, we outline our evaluation approach and the steps we will took to collect and analyze data and synthesize findings to answer the EQs, including the methods for data collection and analysis that we employed. **Figure 2-3** describes our overall approach.

[a] We define health system resilience capacity as the ability to respond adaptively to emerging shocks and stresses while sustaining essential health services, in contrast to a reactive shock which leads to a system breakdown. Measures for system resilience draw from and apply to many sectors.

Figure 2-3 Evaluation Approach



Underlying our approach are our evaluation principles, which provide a foundation for our work.

- **Context-Sensitive.** Our consortium understands that context affects how evaluation findings are perceived and used after the fact; however, our approach examines context as a central determinant that influences the implementation, adaptation, and results generated by the COVAX Facility and AMC and COVAX Pillar Delivery efforts. This is critical when reflecting on the pandemic response experience, where epidemiological trajectory, political considerations and national responses, and vaccine supply varied greatly. Our systems-informed methodology defines the functions and structures of the system as being context-based and influential to the outcomes it produces.
- **Country Perspective Centered.** The extent to which the COVAX Facility and AMC and, especially, COVAX Pillar delivery efforts' objectives, outcomes, and goals have been realized relies on understanding and amplifying in-country experiences. This requires an evaluation design that centers country perspectives at each stage of the assignment, avoiding countries' views simply as complementary or supplemental to other evidence.

To do so, we sought out and incorporated country perspectives objectively through data collection activities and learning engagements, including country case studies and a country-oriented web-based survey.

- **Utility-Focused**. This evaluation will inform future decisions and strategies related to pandemic preparedness and response.
- **Equity-Centered**. Equity is an important theme in this evaluation for several reasons. First, COVAX sought to distribute vaccines equitably and it is a priority of the established EQs to take an objective look at the results achieved in this area. To do so, however, requires a foundation in understanding the power and resources that determined much of how COVID-19 vaccines were distributed and accessed. We incorporated this principle in our systems-oriented approach, which considers the role of perspective in framing how systems work and *for whom*. This work was reinforced by the equity in-depth study to highlight how equitable outcomes were or were not achieved under COVAX.

Evaluation Methodology

Overview of Methodologies Included in Evaluation Approach

Across our evaluation, we rely on the data collection methodologies included in **Tables 2-1** and **2-2**. The methods employed and described herein are intended to provide fit-for-purpose assessments to answer the EQs laid out for this evaluation.

Table 2-1. Data Collection Methodologies

Method	Brief Description
Key Informant Interviews	Interviews with COVAX partners and stakeholders at multiple levels. Provide in-depth understanding of COVAX implementation, the context in which COVAX operated and its outcomes.
Document Review	Review of COVAX-related documentation, including from Gavi, other COVAX partners, and AMC country participants. Provides primary data, ensures the alignment of EQs with past materials, and provides operating context that will inform evaluation.
Data/Desk Review	Gathers existing secondary data to give evidence to implementation outcomes and results. Includes quantitative and qualitative data analyses and previous research.
Web Surveys	Web-based surveys will expand the breadth of stakeholder and partner input. They help to inform understanding of COVAX activities at a lower level of effort from respondents.

Table 2-2. Analytical Methodologies

Method	Brief Description
Thematic Analysis	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.

Method	Brief Description
Process analysis	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 will be assessed.
Collaborative Partnership Analysis	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.
Value-Added Analysis	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. (Section 2.3.3)
Case Studies	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 KIIs 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.
Descriptive Analysis (limited quantitative analysis)	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.

Using Process Analysis for Theory-Based Evaluation

Process analysis was used to assess causal inference—that is, to understand whether and how intended actions and activities have been implemented as intended, and whether the linkages and assumptions underpinning the TOC have worked as intended to produce the desired effect. This involved the following steps:

- Develop 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 key informant interviews;
- Analyze 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.

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. This is a subjective assessment, yet the use of process analysis is intended to make this assessment rigorous, transparent, and repeatable.

Key Informant categories

All key informants interviewed for the evaluation remain anonymous. **Table 2-3** below identify on each line the organization that the key informant belongs to, and the stakeholder category.

Table 2-3. KII categories

Organization	Stakeholder category	Evaluation Part
CEPI	ED Preparedness & Response	COVAX Facility and AMC
CEPI	Regulatory	COVAX Facility and AMC
Gavi	Allocation	COVAX Facility and AMC
Gavi	Country Engagement	COVAX Facility and AMC
Gavi	Country Engagement	COVAX Facility and AMC
Gavi	Country Engagement	COVAX Facility and AMC & COVAX Delivery Pillar
Gavi	COVAX design	COVAX Facility and AMC & COVAX Delivery Pillar
Gavi	COVAX Resource Mobilization	COVAX Facility and AMC
Gavi	COVAX Strategic Coordination Office	COVAX Facility and AMC
Gavi	COVAX Strategic Coordination Office	COVAX Facility and AMC
Gavi	High Impact Countries	COVAX Facility and AMC & COVAX Delivery Pillar
Gavi	HSIS	COVAX Delivery Pillar
Gavi	Leadership	COVAX Delivery Pillar
Gavi	Leadership	COVAX Delivery Pillar
Gavi	Leadership	COVAX Delivery Pillar
Gavi	Leadership	COVAX Delivery Pillar
Gavi	Leadership	COVAX Facility and AMC
Gavi	Measurement, Data & Insights	COVAX Delivery Pillar
Gavi	Partner Engagement	COVAX Delivery Pillar
Gavi	Policy Design	COVAX Facility and AMC
Gavi	Vaccine Portfolio	COVAX Facility and AMC
Gavi	Vaccines Demand & Supply	COVAX Facility and AMC
Gavi	COVAX Strategic Coordination Office	COVAX Facility and AMC

Organization	Stakeholder category	Evaluation Part
Gavi	Country Engagement	COVAX Delivery Pillar
American Red Cross	CSO	COVAX Delivery Pillar
MMGH	CSO	COVAX Delivery Pillar
MSF	CSO	COVAX Delivery Pillar
Save the Children UK	CSO	COVAX Delivery Pillar
UNICEF	COVAX coordinator	COVAX Facility and AMC & COVAX Delivery Pillar
UNICEF	Health Specialist	COVAX Delivery Pillar
UNICEF	Leadership	COVAX Delivery Pillar
UNICEF	Regional	COVAX Delivery Pillar
UNICEF	Regional	COVAX Delivery Pillar
UNICEF	Regional	COVAX Delivery Pillar
UNICEF	Regional	COVAX Delivery Pillar
UNICEF	Social & Behavior Change	COVAX Facility and AMC & COVAX Delivery Pillar
UNICEF	Social & Behavior Change	COVAX Facility and AMC & COVAX Delivery Pillar
UNICEF	Supply Division	COVAX Facility and AMC & COVAX Delivery Pillar
UNICEF	Supply Division	COVAX Facility and AMC & COVAX Delivery Pillar
UNICEF	Vaccines Coordinator	COVAX Delivery Pillar
WHO	Country Engagement	COVAX Delivery Pillar
WHO	COVAX Strategic Coordination Office	COVAX Facility and AMC & COVAX Delivery Pillar
WHO	EPI/IVB	COVAX Facility and AMC
WHO	EPI/IVB	COVAX Facility and AMC & COVAX Delivery Pillar
WHO	Essential Programme on Immunization	COVAX Facility and AMC & COVAX Delivery Pillar
WHO	Humanitarian Workstream	COVAX Facility and AMC & COVAX Delivery Pillar
WHO	Vaccine Data and Monitoring	COVAX Facility and AMC & COVAX Delivery Pillar
WHO	EPI/IVB	COVAX Delivery Pillar
WHO	EPI/IVB	COVAX Delivery Pillar

Organization	Stakeholder category	Evaluation Part
WHO WPRO	Essential Medicines and Technologies	COVAX Facility and AMC & COVAX Delivery Pillar
WHO EMRO	Regional	COVAX Delivery Pillar
WHO EURO	Regional	COVAX Delivery Pillar
WHO WHE	World Health Emergencies	COVAX Facility and AMC & COVAX Delivery Pillar
WHO-IVB-Global	COVID-19 readiness and programme	COVAX Facility and AMC & COVAX Delivery Pillar
	Close-out committee member	COVAX Facility and AMC

Part A: COVAX Facility and AMC Approach

Table 2-4. Part A Approach At A Glance

Relevant Evaluation Questions (EQs)	EQ 1 (1.1-1.3); EQ 2 (2.1); EQ 5 (5.1-2); EQ 7 (7.1-7.2)
Data Collection Methods	Data and document review*, KIIs
Analysis Methods	Thematic analysis, process analysis, limited quantitative analysis, collaborative partnership analysis, value added analysis
Programmatic Level of Focus	Global

*Denotes primary method.

For Part A, our inquiry is 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 theory of change (TOC). With the focus on the COVAX Facility and AMC from 2022 to 2023, these questions are targeted to COVAX's work at the global level.

As outlined in the Request for Proposal (RFP; see Annex 1), the body of work that has been conducted to date is large, including reports, assessments, data, and programmatic documentation among others. As a result, the Part A evaluation draws primarily from secondary data sources (e.g., existing data and documentation), with limited input from stakeholder consultations. Our approach included data collection from both data and document review (a primary source) and key informant interviews.

Theory-Based Design

Following our theory-based design, we relied on our validated TOC to provide clarity on the program's intended strategy and logic, against which we compared both the experience of implementation and the achievement of intended results to what transpired. All TOCs were validated during our inception phase using a discussion-based format with key stakeholders identified by the DEPG; updates to the TOCs were drawn from data and document review and initial inception conversations with Gavi, UNICEF, and WHO stakeholders. This theoretical comparison helps us to answer EQs 1 and 2 focused on implementation and adaptation of COVAX, oriented around adaptations and risk management decision-making relative to context, objectives, and risk profiles.

The primary analytical method for conducting this assessment against the TOC was process analysis, to understand whether and how intended actions and activities have been implemented; whether the linkages and assumptions underpinning the TOC have worked as intended to produce the desired effect; and provide the basis for making claims on causal inference. This involved collecting and analyzing data related to each part of the TOC, and the causal pathways within it and assumptions that underpin it. Briefly, using the validated TOC for COVAX Facility and AMC, we collected data to test key assumptions and mechanisms for the program, including its intended adaptations over time. After analyzing the data, we assessed what parts of the intended implementation were associated with the results achieved and what additional unintended effects and results were incurred related to the program's implementation.

Data Collection and Analysis

Our approach to data collection followed three main activities: data and document collection and review, stakeholder consultations, and evidence synthesis and stock-taking. First, we conducted an exhaustive review of data and documentation, including published literature, white papers and reports, and data sets (those available publicly and those shared from COVAX, Gavi Secretariat, and/or Alliance partners). Further, we drew on the formative review and baseline study conducted for COVAX Facility and AMC for 2020 and 2021 as a critical input foundational to starting our evaluative work.

Second, we conducted 31[b] stakeholder consultations with key informants who spoke to the EQs where data and documentation left gaps or where sufficient qualitative background was lacking. These stakeholder conversations were primarily at the global level and comprise perspectives from Gavi, WHO, UNICEF, CEPI, and CSOs. Stakeholders consulted for this exercise were drawn from a list of stakeholders mapped to specific areas of expertise and the time period for which they were involved, so that we engaged individuals best suited to provide insight into the priority questions of our work. Data collection instruments prepared for those conversations reflected emphases on specific sub-EQs where additional information was needed and where stakeholder input was likely to be useful.

Third, our evidence synthesis and stock-taking exercise helped us assess the body of evidence assembled to answer EQs and make agile pivots to collect more data (via stakeholder consultation in targeted areas or further desk review) to ensure that sufficient evidence was available to support our emergent evaluation findings. To implement this process, we developed an evidence matrix to collate data and assess the richness of the data and the strength of evidence in supporting answers to each sub-EQ.

Once data was collated within the evidence matrix, we relied on several different analytical methods tailored to each sub-EQ, as appropriate, with the intention to apply the method best suited to answer each sub-EQ. In many cases, thematic evaluation and process analysis (as described above) were employed to understand overarching questions related to implementation and adaptation of the COVAX Facility and AMC. Our thematic and process analysis incorporated a focus on understanding where and if departures from the TOC took place, the rationale for doing so and the impact on intended outcomes, as a result.

[b] Five KIIs informed both Part A and Part B

Table 2-5. Sub-EQs Matrixed to Part A and Associated Data Sources and Methods

		Headline EQ		Sub-EQ	Data Sources	Analysis Methods
1. 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?	Document review KIIs (global)	Thematic analysis Process analysis
			1.2	How effective were adaptations to the model to respond to evolving context?	Document review KIIs (global)	
			1.3	How well did COVAX Pillar partners coordinate and collaborate?	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?	Document review KIIs (global)	Thematic analysis
2. Results	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?	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)?	Data/Doc Review	

Part B: COVAX Pillar delivery Efforts Approach

Table 2-6. Part B Approach At A Glance

Relevant Evaluation Questions (EQs)	EQ 3 (3.1-3.3); EQ 4 (4.1-4.4); EQ 6 (6.1-6.4); EQ 7 (7.3-7.4)
Data Collection Methods	Data and document review, KIIs, Focus Group Discussions (FGDs), web surveys
Analysis Methods	Thematic analysis, process analysis, limited quantitative analysis, collaborative partnership analysis, value-added analysis
Programmatic Level of Focus	Global, Regional, Country

Part B of this evaluation of the COVAX Pillar delivery Efforts centered on EQs that touch on the relevance, effectiveness, and efficiency of its implementation and adaptation and its achievement of results. 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 included 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 engaged with a different set of stakeholders and relied on different methods at the country level than were employed at the global and regional levels. Data collection instruments were additionally tailored to each programmatic level being engaged.

Our approach to data collection was similar at the global and regional levels, focused on key informant interviews (KIIs) and data and document review. At the country level, we employed case studies in six countries where COVAX was engaged, and a web survey distributed to all participants of COVAX (including self-financing participants); this process is outlined separately below.

Theory-based design

We drew on our updated and validated TOCs for Part B to establish the logic and intended strategy for Delivery pillar efforts. All TOCs were validated during our inception phase using a discussion-based format with key stakeholders identified by the DEPG; updates to the TOCs were drawn from data and document review and initial inception conversations with Gavi, UNICEF, and WHO stakeholders.

This theoretical framework for COVAX Pillar delivery was foundational to answering EQs 3 and 4, which are focused on understanding the relevance and effectiveness of the program's design and adaptations. We used process analysis to understand how the program was implemented in practice and to identify any deviations from the TOC and their significance in influencing results.

At the country level, we adapted the generic TOC for Part B for each country context, a step which is detailed further below. For the six selected countries, we retained our theory-based approach, which was anchored by a TOC adapted for each country.

Table 2-7. Sub-EQs Matrixed to Part B and Associated Data Sources and Methods

		Headline EQ		Sub-EQ	Data Sources	Analysis Methods
Implementation and adaptation	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?	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?	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?	KIIs (global / regional / country), Document Review, Web survey	
	4	How well was the COVAX Pillar delivery efforts implemented and adapted as needed, in line with overarching objectives?	4.1	What were the key enablers and barriers relative to successes achieved and challenges encountered?	KIIs (global, regional, country), document review (global, country), web survey, FGDs	Thematic analysis, process analysis, collaborative partnership analysis
			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?		
			4.3	How well did WHO and UNICEF country offices coordinate and collaborate to support Pillar delivery objectives relative to specific country needs?		

	Headline EQ	Sub-EQ		Data Sources	Analysis Methods
		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?		
Results	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?	Quant data review (secondary sources) Document review (case studies) Document review (global) KIIs (global) KIIs (case studies) FGDs/group interviews Web survey	Thematic analysis, limited quantitative analysis, value-added analysis
	6	6.2	Were equitable results achieved?		
		6.3	Did delivery modalities strengthen national and local systems and capacities?		
		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?		

Global/Regional Level

To operationalize our approach to answering the EQs relevant to Part B at the global level, we followed a four-step process that includes: data and document compilation and review, KIIs, evidence synthesis and stock-taking, and data analysis. First, we continued the data and document review undertaken during Inception to rigorously identify and review sources that support our relevant evidence needs to answer EQs at the global level (and regional, where relevant and available).

Second, we identified stakeholders via a mapping exercise and interviewed key informants with expertise to speak to a range of the phases and activities of the Delivery Pillar efforts. We tracked evidence needs relevant to EQs and adapted our data collection strategies to reflect

areas where further evidence or triangulation of information was needed. We conducted 36[c] KIIs from informants at the global level and regional level, with an aim to understand how the regional level played a role in both the global/regional TOC and how this may have served as a link to the country level efforts of the Delivery Pillar.

Third, we undertook an evidence synthesis and stock-taking exercise to account for the data dawn from KIIs and data/document review. This exercise centered on existing gaps in evidence or areas where consensus was lacking or may be biased, and additional data collection was needed. This process was anchored by an evidence matrix aligned to EQs that helped to assess the volume and quality of evidence gathered.

Fourth, we analyzed the data collected using analytical methods as identified in **Table 2-6**. In many cases, we relied on thematic analysis and process analysis to understand the EQs oriented around implementation and results achieved by the COVAX Pillar delivery at a global level. Our thematic and process analysis incorporated a focus on understanding where and if departures from the TOC took place at a global level, the rationale for doing so and the impact on intended outcomes, as a result.

Country Level

At the country level, our evaluation focused on COVAX Pillar delivery efforts focused on the implementation of the work and the results achieved unique to each country. Our approach reflected an attempt to balance breadth and depth: we gathered information in depth from six countries by conducting case studies and with greater breadth from a range of countries, including both SFPs and AMC92 countries, via a web survey.

Importantly, evaluation of COVAX at the country level included a range of actors, including those leading COVAX engagement (i.e., global, regional, and country staff) and country-based staff involved in vaccine distribution (e.g., Ministry of Health officials). Through our data collection activities, we aimed to get a range of perspectives from these individuals to understand objectively what occurred and triangulate these vantage points across respondents who were present for the program's work across COVAX's key phases.

Country Case Studies (CCS)

CCS constituted the majority of our evaluation efforts at the country level and give the evaluation an important window into the implementation of COVAX Pillar delivery in different 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 case studies include Cameroon, Cote d'Ivoire, Guyana, Indonesia, Uzbekistan, and Zambia. Understanding and conveying this context in relation to COVAX's implementation and its outcomes at the country level is a key priority. The individual country case study reports can be found in the **Country Case Study Supplement**.

[c] Five KIIs informed both Part A and Part B

Table 2-8. CCS Country Summary

	Cameroon	Cote d'Ivoire	Guyana	Indonesia	Uzbekistan	Zambia
WHO Region	AFRO	AFRO	PAHO	SEARO	EURO	AFRO
World Bank Income Group	Lower-Middle Income	Lower-Middle Income	High-Income[d]	Lower-Middle Income	Lower-Middle Income	Lower-Middle Income
Francophone	Yes	Yes	No	No	No	No
Conflict/Fragile	Yes	Yes	No	No	No	No
DPT3 Vaccine Coverage	68%	76%	100%	85%	99%	82%
COVID-19 Series Vaccine Coverage	12%	46%	48.7%	64%	55%	87%
COVID-19 Infection Rate	0.5%	0.24%	0.3%	0.24%	0.7%	2%
Government Stringency Index pre-2021	42.2	68.1	47.5	68.1	50.9	50.9
Government Stringency Index post-2021	26.3	17.85	18.5	66.7	38.0	38.0
CoVDP	Yes	Yes	No	No	No	Yes

Systems Lens

We drew on systems principles in our CCS for two key purposes: (1) as a tool to identify, bound, and simplify the sub-systems which COVAX was most centrally engaged (using "process flow diagrams"), and (2) to assess the results achieved by COVAX at the country level related to systems change using thematic analysis. The systems lens was applied as follows: first, we identified the systems changes relevant to country-specific areas of focus (reflected in a country's adapted TOC, the process for which is described below). Second, assessed the potential that systems change occurred because of COVAX and the type of value this delivered to countries (value-added analysis, thematic analysis.) Third, we validated evidence of systems change with country-level stakeholders.

For each country, we did not attempt to capture the dynamics of the entirety of the health system or the entirety of the vaccine delivery system; instead, we worked with informants to identify the programmatic focus areas of COVAX for each country (i.e., the areas where COVAX delivery efforts were intentionally focused or engagement was highest). This effort, instead of limiting our ability to learn about the breadth of COVAX's engagement at the country level,

[d] Guyana moved from upper-middle to the high-income category in 2024.

created opportunity to understand the dynamics of how COVAX engaged with and impacted country systems at a deeper level.

Collaborative Partnership Analysis

To answer specific evaluation questions for Part B, as part of the CCS, we incorporated tailored analyses as follows:

- For 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?) we employed collaborative partnership analysis focused on the effectiveness of WHO and UNICEF's country office engagements. Because the Delivery Pillar was jointly implemented across partners at the country level, the quality and extent of collaboration between partners in serving country needs is an important consideration. We drew on the collaborative partnership framework to frame our analysis, exploring how the conditions for systems change partnership were present and effective in their relationship to the program's objectives.

Data Collection and Analysis

Country case studies followed a multi-stage process[e]:

Phase 0. Gavi, UNICEF, and WHO confirmed CCS countries, identified focal points, requested and shared initial data and documents with evaluation team. Via the evaluation management and DEPG, focal points for each country were identified that serve as both "hosts" to the team collecting data through the evaluation and as initial key informants to scope the CCS and establish key learning priorities for the country. Focal points included country level experts that were well-informed in terms of COVAX activities in the country and in identifying meaningful country-level learning priorities as they relate to COVAX support received during the country's COVID-19 response. These individuals may include country representatives from

[e] The Zambia CCS followed a modified approach
Phase 1 – Desk review: The first phase involved identifying and reviewing various documents using the workbook template. An initial report was developed on the country's COVID-19 response and the integration of COVAX. The goal of this phase was to establish a solid foundation for understanding the context for COVAX support and its key focus areas within the country. Focal points provided the primary documents reviewed and the consultancy identified additional documents, for example, statistical data on the country, COVAX strategy documents at country level, and assessments related to vaccination delivery and uptake.

Phase 2 – Informal consultation with country focal points: This phase involved holding clarification and verification sessions with key focal points. Three sessions were conducted with UNICEF, WHO and CIDRZ to facilitate informal consultations on the context and evolving areas of focus for COVAX. GAVI provided written feedback. Multiple attempts were made to engage with the Ministry of Health, without success. The clarification process was intended to be supplemented with data from Ipsos field interviews, however, the data was not available within the timeframe for completing the CCS.

Phase 3 – Analysis, synthesis and report compilation: Phase 3 involved the synthesis of the data from phases 1 and 2 using a standardized analysis template. This template allowed new themes to be identified but retained a focus on comprehensive answers to evaluation questions. A review of initial findings was conducted with the evaluation team to ensure that findings were articulated appropriately and presented with relevant evidence. Findings were then incorporated into a draft CCS report and shared with stakeholders in a validation session, to ensure consensus before finalizing the CCS report.

UNICEF or WHO (e.g. current or former COVAX desk officers) and/or points of contact in the national government working closely with COVAX (e.g. individuals serving on a COVID-19 national task force, working on national COVID-19 response strategies).

As hosts, focal points connected the evaluation team with stakeholders within the country that served as key informants (further detailed in Phase 2) and assisted the evaluation teams with finding additional informants where requested.

A data and document request was shared with country focal points by the evaluation management (Gavi, UNICEF points of contact) and compiled and shared these with the evaluation team. A summary of documents and data requested include country-level planning documents (e.g., national and sub-national COVID-19 strategy documents, NDVAP), situation reports from MOHs (e.g. monthly updates from EOCs), past assessments or explainers of COVID-19 vaccine distribution, identification and scopes of work for any implementing partners and civil society, and country-specific definitions of key groups (e.g. “vulnerable populations”).

Phase 1. Building context, planning country-specific CCS scope, and updating/validating country-specific TOC. The first phase of the CCS focused on understanding country context and developing country-specific scope for the CCS (including TOCs) in order to prepare for data collection efforts (Phase 2). Beginning with a kick-off meeting (CCS teams, at least 1-2 country focal points, and the Country Engagement Manager), to establish the process and goals of the work. Each CCS team participated in a half-day CCS Methods workshop (internal to the evaluation team) to reinforce systematic processes of the CCS.

The CCS team adapted the generic country-level TOC for the Delivery Pillar for each country based on initial conversations (highlighting areas of focus, programmatic intent, and key context and assumptions). At the completion of Phase 1, the CCS team conducted a validation workshop with focal points to ensure the updated TOC is reflective and aligned with the country context and focus of COVAX’s work in a specific country.

Phase 1: Building context, planning CCS scope and approach, TOC update and validation

Activities:

- Country Kick-Off meeting;
- CCS Methods Workshop;
- Data/document review to build background and context for work;
- Engage country focal points/primary stakeholders to gather information for TOC update;
- Identification of country-level learning questions and areas where COVAX support was focused (“focus areas”);
- Conduct TOC validation workshop with focal points/primary stakeholders

Phase 2. Planning for and conducting primary data collection. This phase began with tailoring and adapting data collection instruments to fit the country context and defined focus areas, as well as initially defined country learning priorities. The CCS team adapted pre-developed “generic” evidence matrix and data collection instruments, using information gathered in Phase 1. Further, the CCS team worked with country focal points to establish a stakeholder list to ensure that appropriate perspectives and expertise are included.

The CCS team conducted between 12-15 KIIs in each country and gathered documents and data to complement information gathered during KIIs.

The CCS team populated a structured evidence matrix to account for evidence gathered and to use as a guide to make agile pivots to direct and focus remaining data collection activities. Quality controlled interview transcripts were developed following interviews translated into English.

Phase 2: Planning for and collecting primary data collection

Activities

- Phase 2 CCS Data Collection Workshop (tailoring and adapting instruments to country context and focus areas of COVAX);
- Develop stakeholder list for KIIs;
- Schedule and conduct KIIs/FGDs;
- Develop quality-controlled interview transcripts.

Phase 3: Analysis, synthesis, and report compilation. Phase 3 analyzed the interview data collected in Phase 2 and developed findings using a standardized analysis template. This template allowed for new themes to be identified from each CCS but retained a focus on comprehensive answers to EQs and learning priorities, where possible. A review of initial findings with the evaluation team took place to ensure that findings are articulated appropriately alongside strength of evidence (measured as “strongly supported”, “somewhat supported” and “lightly supported” by evidence). Findings were compiled into a draft CCS report.

Initial findings from the CCS were reviewed in a consensus workshop with key informants engaged during the CCS. Conversations sought to triangulate and build consensus on findings and appropriately qualify areas where consensus was lacking, prioritizing objectivity and independence. Revisions to the CCS report in accordance with the conversation were made where needed. CCS teams compiled validated findings and initial responses to learning priorities in CCS reports (Annex 4).

Phase 3: Analysis, synthesis, and report compilation

Activities

- Conduct thematic analysis of key takeaways;
- Compile findings into complete CCS Report;
- Facilitate a findings consensus workshop/series of conversations;
- Finalize CCS report.

Phase 4. Country-level Learning. CCS teams, in conjunction with the evaluation learning lead, will provide findings related to learning questions to stakeholders engaged during the CCS via a learning presentation in March 2025.

Phase 4: Country-level Learning

Activities

- Prepare a PowerPoint deck with key learnings in response to country learning priorities
- Facilitate a findings learning briefing / presentation.

Stakeholders Engaged in CCS

CCS teams adapted a set of prioritized stakeholders to engage from a "generic" sampling frame (below) from which key informants will be interviewed. Adaptations reflect each country's individual context and focus areas of engagement through COVAX. During the CCS, initial stakeholder engagements (e.g. with Gavi SCMs, WHO or UNICEF country officers, local government officials) helped to craft a list of priority stakeholders to engage.

- National Government (Ministry of Health, COVID-19 Task Force, etc.) (3-5 people)
- Including one or more that can speak to vulnerable and marginalized populations in each country.
- UNICEF (1-2) – country officers / multiple phases
- WHO (1-2) – country officers and regional offices / multiple phases
- Gavi SCM (1)
- Donors (1-2)
- MOH Regional (1-2)
- Technical Assistance and Implementing Partners (1-2)
- Government or Implementing partners: Sub-regional (1-3)
- Civil Society Organizations (CSOs) (1-3)
- Academics/University
- Private sector

Web Survey

A web-based survey was administered to countries participating in COVAX as part of the AMC92 and as SFPs. Target respondents included individuals working in country governments who are knowledgeable to speak to the impact of the support received and country-level results achieved by the initiative. More specifically, respondents had been integrally involved in the COVID-19 response in a directly observational or participant role with COVAX activities in support of national COVID-19 response through at least two years of the COVAX program (2020-2023). These criteria ensured that respondents can share knowledgeable input about their experience with COVAX and its results in each country.

The survey focused on a sub-set of the EQs, including 3.1, 3.3, 4.1, 4.4, 6.3 and 6.4. This subset was selected for its importance for understanding COVAX's work at scale and the appropriateness and effectiveness of each question to be answered via the mode of data collection. The focus was on delivery efforts that were uniformly provisioned (e.g. guidance that was made available to all countries, NDVAP or VIRAT). The survey focused on understanding how delivery pillar modalities made a difference in country level results, but did not focus on deciphering differences between SFPs and AMC92 countries in detail.

The web survey was conducted simultaneously with CCS during the data collection phase and was executed in coordination with the evaluation management and DEPG's supportive outreach to countries to promote a robust response to the survey and to identify the appropriate respondents, which will not be the responsibility of the evaluation team. The survey was programmed in English, French, and Spanish and was delivered using Alchemer, a web-based survey tool with robust data security protocols.

In-Depth Special Studies

Three deep-dive analyses will be included with the intention of deepening the evaluation's focus on specific topics of importance to the EQs and tailored to evidence gaps. Topics selected bring complementary value to Part B (COVAX Pillar delivery), primarily, and were integrated into the final report for Part B. Each special study represents a focused topic that is relevant to the existing EQs. Thus, while efforts are not redundant, they allow for focused inquiry and committed evaluation resources on a given topic that would not otherwise be committed.

Equity

This special study focused on COVAX Pillar vaccine distribution equity data gaps and their implications for the evaluation's broader equity findings. The aim of this special study is to augment and inform the work being carried out under the main evaluation. The evidence gained through this study has been incorporated into the overarching findings in the report.

The evaluation questions considered most relevant to the vaccine equity special study are:

Q3.2 To what extent and how were (1) in- and intra- country equity and (2) gender equity considerations integrated into delivery modalities?

- Please describe the in-country equity considerations regarding COVAX Pillar delivery activities.
- Did the way COVAX addressed those equity considerations change over time, from the CRD phase, to CoVDP to Alliance Structures? If so, how? Please provide examples.
- Please describe the extent to which equity considerations influenced the quality of partnerships and joint initiatives for effectiveness, engagement, and targeting during health crises? Why or why not? Please provide examples.
- To what extent did equity considerations influence the way evidence was used for decision-making to improve preparedness and responsiveness to shocks based on reliable and timely data? Why or why not? Please provide examples.

Q6.2. Were equitable results achieved?

Any specific contributions COVAX made to achieving in-country equity, including:

- More/additional: activities that were being conducted before, but in which marginalized groups are markedly more active and engaged?
- Improved: Activities that were being conducted to achieve equity goals previously but are now appreciably more effective, efficient, or strategic?
- Unique: Activities/contributions to equity that are exclusive or exceptional to COVAX
- Faster: Activities to improve equity that were being conducted previously but now at a more accelerated pace?
- New or innovative: Equity-oriented actions that are entirely new or original and/or initiated because of COVAX?

Other relevant evaluation questions are:

Number	Evaluation Question
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?
4.4	To what extent did delivery modalities complement existing health systems and RI systems to jointly respond to the needs of priority population groups?
5.2	To what extent has equitable impact been achieved (e.g., by gender)? *(added: and how measured?)*
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?

The equity special study comprises two activities agreed on by evaluation oversight stakeholders.

Activity 1. Examination and synthesis of vaccine equity data across evaluation data sources for Parts A and B[f], including document review, web-based survey, key informant interviews (KII), country case studies, and additional equity-focused KIIs from the vaccine equity special study. From this synthesis activity, we expect to gain insight into how countries defined and prioritized high-risk groups and how they shifted strategies to increase equitable dose coverage.

Activity 2. Complementary, virtual key informant interviews in case study countries (CSC)[g] where vaccine equity was prioritized and/or that had specific equity-focused strategies. (Cameroon, for example, attempted vaccine delivery across all 128 administrative districts simultaneously toward an equity outcome.) Evaluators anticipate some information gaps in the case studies that may be regional in nature or perhaps related to vaccine delivery led by non-government implementing partners or CSOs to hard-to-reach places and/or marginalized groups with vaccine hesitancy. KII questions will be developed after the more comprehensive CSC KII tools have been developed. The intent is to be quite specific about gaps the complementary KIIs can fill.

RTI and Itad jointly determined the case study countries where an anticipated 10 to 15 additional equity-focused KIIs will add most value. UNICEF country level stakeholders who have been identified as evaluation focal points in case study countries were asked to help identify the best-informed stakeholders for the equity KIIs; their identities depended in part on the learning from Phase 1 activities.

[f] The evaluation includes two components: the COVAX Facility and AMC ("Part A") will include activities from 2022–2023, while parallel evaluation of the COVAX Pillar delivery efforts ("Part B") will span the course of its implementation from 2020 until the conclusion of 2023.

[g] Cameroon, Cote d'Ivoire, Guinea, Indonesia, Uzbekistan.

Supply Chains

Objective

To contribute to the deep understanding of vaccine supply chain within the COVAX Pillar delivery, tailored to evidence knowledge gaps. The evidence gained through this study has been incorporated into the overarching findings in the report.

Approach and Methodology

During the current evaluation of COVAX Facility and AMC and Pillar Delivery efforts, it was decided that a special discrete supply chain study be undertaken to augment the findings of the evaluation in gaining deeper understanding on the impact the vaccine supply chain had during the COVAX years.

Scope

Through several consultations with Gavi and UNICEF a number of questions were considered and prioritized. Given the size of the study, it was deemed to have a small number of questions that focused on key vaccine commodity access and impact on the supply chain.

The three study questions are:

1. What were the implications on the supply chain of accepting large quantities of donated doses of vaccine?
    a. The donation recipients (to COVAX/UNICEF) and/or direct to countries
    b. Reference to the supply chain, whose? COVAX? A vaccine supply chain mapping will be undertaken to understand commodity flow from manufacturer/donor to the COVAX supply chain to identify key enablers and pain points.
    c. The interplay between Gavi, COVAX and other actors to accept dose donations despite robust Advance Purchase Agreements (APAs).
    d. The impact on the COVAX supply chain as it became over supplied with vaccine wastage results due to high donation volumes.
2. Did the contracting model with separate PAs and Supply Agreements managed by two different organizations suitable in ensuring proper contract management under COVAX?
    a. Explore the various contracting models
    b. Examine the supply agreements by Gavi and UNICEF
    c. Study key APAs, firm order commitments and options and provide examples of positive and negative experiences and implementation.
    d. Recognize the value these two organizations brought, in ensuring proper contract management under COVAX.
    e. Interplay between Gavi, UNICEF, WHO, vaccine manufacturers and other partners providing financial resources for vaccine procurement.
    f. Document operational and strategic challenges.

3. To what extent have the collaboration and information management/ sharing between Gavi, UNICEF and WHO contributed to better coordination and to reaching rapid decisions in the context of this unprecedented emergency?
    a. What collaboration and information management mechanisms were put in place between Gavi, UNICEF, WHO and partners for coordination purposes?
    b. How donors communicated/used these mechanisms?
    c. Was information shared on time and comprehensively?
    d. How the information shared influenced supply decisions?
    e. What information was available to the Allocation Taskforce to make allocation decisions?
    f. What challenges were encountered at the global level for information sharing that could have done better?
    g. Document best practices.

Methodology

To respect the time of key stakeholders, this study capitalized on data already captured by the COVAX evaluation to avoid duplication. The study:

1. Utilized the interview notes from KIIs
2. Reviewed secondary data
3. Utilized materials already developed such as the COVAX inception report, status update and other deliverables relevant to this study
4. Developed a short interview guide to add to interviews of relevant KIIs not yet interviewed
5. Identified a small but relevant group of informants to be interviewed, of which four individuals were successfully interviewed.
6. To capture differing views and opinions for Q2 on contracting models and efficiencies, a small working group session was conducted with Gavi, UNICEF and WHO representation. Participants included representatives from UNICEF's Supply Division and Gavi's Vaccine Markets, Global Health Security, and Vaccine Programmes and Policy departments,

Conflict and Fragile

Objective

The objective of this mini-deep-dive exercise was designed to draw from and build upon past lessons from the COVAX humanitarian response using Somalia as a case study. Of particular interest was filling evidence gaps in order to:

- Inform the findings, lessons learned, and recommendations of the COVAX phase 2 evaluation.

- Generate insights to respond to "What is needed to operate differently" (collectively, as an Alliance) to better respond to fragility and conflict-affected countries and regions for improved vaccine delivery.
- Explore the limitations on access to COVID-19 vaccines among populations of concern.
- Identify potential platforms to provide suggestions for the Gavi 6.0 strategy, to ensure differentiated, flexible, and tailored support in the context of future pandemic prevention, preparedness, and response.

The evidence gained through this study has been incorporated into the overarching findings in the report and is included in **Annex 5**.

Scope

This special study relied on an initial review of existing literature related to COVID-19, focusing specifically on Somalia wherever possible. This material was complemented by key informant interviews that the evaluation team conducted virtually. The key informants included individuals directly or indirectly involved in COVID-19 vaccination initiatives, such as representatives from the Ministry of Health—Gavi's principal partner in the COVAX Facility—alongside donors such as the United States Agency for International Development (USAID) and the World Bank, UN agencies including WHO and UNICEF, international and local NGOs, and a selected group of Somali researchers.

It is essential to clarify that the goal of this study was not to comprehensively evaluate the COVAX initiative in Somalia. Rather, it was intended to serve as a special study identifying the factors that contributed to Somalia's progress in achieving strong results with COVID-19 vaccine coverage.

Learning Questions

To inform the key question, "What do we need to do to operate differently (collectively, as an Alliance) to better respond to fragility and conflict affected countries to improve vaccine delivery?" the exercise explored the following sub-questions:

1. What has been the Somali experience with access, uptake and perceptions regarding COVID-19 vaccines?
    a. What was the nature of COVID-19 vaccine accessibility in Somalia?
    b. To what extent was it accessible for all those who needed it?
    c. What have been general perceptions regarding taking COVID-19 vaccines in urban and rural areas?
    d. What has the Somali government done to improve the public perception of the vaccines?
2. How did the incorporation of People of Concern (POC) into existing NDVPs impact vaccine coverage for such target populations?
    a. Does Somalia have an operational NDVP in place?

    b. How did the NDVP feed to into the humanitarian system and impact vaccine coverage for POC such as IDPs, and population in hard-to-reach areas such as Al-Shabab controlled areas?

3. What is the role of the Inter-Agency Standing Committee Decision Group (IASC-DG) in formulating policies to facilitate access to COVID-19 vaccines?
    a. How were they involved?
    b. What were successes and limitations?
4. How were non-state/non-governmental actors engaged in Somalia's COVID-19 response?
    a. Were non-state/non-governmental actors engaged by Alliance partners through the humanitarian response system or through a formal government channel?
    b. Which humanitarian actors, e.g., emergency responders were recruited to support COVID-19 vaccination?
    c. What were some of the shortcomings and/or advantages of the approach followed?
5. How were health crises and vaccine delivery factored into humanitarian response plans in Somalia during the COVID-19 pandemic?
    a. What was the exact role of humanitarian response plans and to what extent did these integrate with other pandemic response implementation frameworks?
    b. Is there greater preparation following COVID-19 for meeting the needs of POC in the Somali humanitarian setting for future pandemics? Where / how is this documented?
6. What were the causes of lesser COVID-19 vaccine coverage for POC from an operational perspective? What were the causes from the perspective of the POC as beneficiaries?
7. How can challenges related to vaccine coverage for POC during a pandemic be addressed by Alliance partners in future?
    a. What processes should Alliance partners follow vis-à-vis POC in humanitarian settings in future?
    b. What partnerships should be formed in preparation for a future pandemic?
    c. How should partnerships be reviewed and/or adjusted in response to a pandemic?
    d. What operational considerations should Alliance partners take into account during a pandemic response?
    e. What factors from the perspective of the POC as beneficiaries should Alliance partners be prepared to address during future pandemics?

Stakeholders

The exercise conducted 11 key informant interviews among a selection of stakeholders listed in ***Table 2-9***.

Table 2-9. List of Conflict and Fragile Special Study Key Informants

Stakeholder Type	Organization	Number of Respondents
Somalia Government	Ministry of Health	2
Somalia Government	Health Worker	1
United Nations	UNICEF	1
United Nations	WHO	1
International NGO	Save the Children	1
International NGO	SOS children village	1
Local NGO	SCRS	1
Donor	World Bank	1
Donor	USAID	1
Independent	Local Researcher	1
Total		**11**

Methodology

This exercise involved a detailed desk/literature review, mapping relevant stakeholders, and conducting KIIs using a semi-structured interview guide anchored on the learning question.

Potential key informants were mapped to identify who was available and willing to be interviewed. From the overall mapped group, eleven key informants were reached. The study participants were purposively selected for their deep experience in COVID-19 vaccines access and distribution in Somalia. Focal points assigned from the in-country COVAX organizations confirmed that the mapped, identified, and selected study participants were well informed and appropriate. Additional informants were identified via snowballing where informant referrals were approached. Consent was obtained and responses anonymized.

Key informant interviews were triangulated with insights gained from the desk/literature review to generate the report findings. A brief findings report was shared and a validation workshop reflecting on data collected was reviewed by stakeholders including Somalia's MOH. Feedback was incorporated into the final report (**Annex 5**).

Risks, Limitations, and Mitigation Measures

All evaluations have inherent risks and challenges; understanding and effectively anticipating these risks is crucial for ensuring the validity, reliability, and utility of evaluation findings. In this section, we explore some of the potential methodological and operational risks posed by this work and mitigation strategies for addressing them and/or preventing them. We define methodological risks as those that may arise from decisions in evaluation design, approach, methodological selection that could threaten the validity and credibility of results. Operational

risks consist of challenges from the planning and implementation of the evaluation itself, which hold consequence for the validity, accuracy, and efficiency of evaluation.

Table 2-10. Risks, Limitations, Mitigation Measures – Methods

Risk/Limitation	Mitigation Measure
Measurement error resulting from non-systematic data collection/lack of training. The distributed nature of the teams collecting data, particularly for CCS, introduce a potential source of error if data is not collected systematically and evaluation goals are not universally understood. This can result in the generation of inconsistent and unreliable data.	The evaluation team has developed an approach to control for inconsistencies in data collection across CCS teams, which includes a combination of training, structured data collection instruments, consistent oversight and QA/QC measures, and regular engagement with data collection teams. • Training and detailed guidance documentation: each CCS team will participate in a methods workshop to establish a methodological bearing for how and why the evaluation should be conducted in accordance with a structured plan and will offer guidance for teams in data collection processes. • Structured data collection templates: each CCS will work within structured instruments to collect and guide data collection that will help the team evaluate the strength of evidence for each sub-EQ, as relevant. • Oversight from evaluation leadership: the consortium has budgeted for consistent oversight and guidance from team members to regularly check in and guide agile pivots where needed. • Strength of evidence will be widely reflected in our reported findings to suggest where highest confidence findings emerge.
Sampling bias emerging from a small sample of countries included in CCS sample and small number of stakeholders engaged in each CCS. Selection bias can introduce subjectivity to the findings when a small sample size of cases and informants is included (e.g., 15 stakeholders will be engaged in each CCS).	The evaluation team will address these concerns through the following measures: • Small CCS Sample: We acknowledge that the sample of seven countries included in the evaluation plan limits the generalizability of the findings that will emerge from the CCS in aggregate. Acknowledging that and treating these findings as anecdotal examples of the country level COVAX experience is fundamental to handling this bias. • Small stakeholder sample for each CCS: Given the feasibility limitations for conducting data collection in seven countries, we will adopt several strategies for limiting the bias of a small sample. First, we will work to triangulate stakeholder identification between multiple experts at the country level, such that we are not relying on one perspective to define the key informants with which we speak. Second, we will give careful attention to objectively contextualize stakeholder perspectives by conducting group-based validation exercises at the conclusion of case studies and triangulating data collection on the same topic, where possible, to confirm consensus on stakeholder opinions. • Clearly defined sampling strategy: A rigorous and objective sampling strategy would protect against bias, yet we are limited in our ability to be objective in selection, as feasibility to conduct the work is a critical selection indicator (e.g., country-level agreement to participate.)

Risk/Limitation	Mitigation Measure
The theories of change developed for COVAX that will be used in this evaluation are high level and not highly detailed, which may limit the precision with which the evaluation can assess detailed deviations from planned activities. While the evaluation team has (and will continue throughout the Inception Phase) undertaken extensive review of documentation and consulted stakeholders about program logic, strategy, and intention, the COVAX program is a challenging one to reduce to simple terms. The theories of change that our evaluation team is working with – while accurate and retaining necessary components – do not provide extensive detail on activities, causal pathways, and the actors that performed each of the activities.	Our evaluation team is trying to uncover as much detail as is possible to deepen our understanding and provide detail in the theories of change in order to best employ the theory-based design of this evaluation. Our approach to this work that is heavily reliant on qualitative methods allows us to fill gaps more readily by asking targeted questions around program intent and logic. While it is challenging to perfectly reflect a program's theory of change retrospectively, we believe we will capture the most critical tenets of COVAX's strategies and be able to reflect these (along with critical adaptations) in order to sufficiently answer EQs.
Using systems lens focuses on simplifying complex systems to make them understandable that can overlook important nuances and interactions.	Importantly, while we are adopting a systems lens in our work to understand how COVAX's implementation in countries played out and how systems changes as a result were achieved, **this evaluation will not attempt to map or explain the entirety of health systems in any country context.** Our approach is limited to (and will be bounded) areas of a country's health system where COVAX was most engaged (which we anticipate will differ by country). While this may not illustrate articulated changes across every component and actor of the system, it will give a more holistic picture of the results that COVAX achieved.
Limits to contextual understanding. A challenge of conducting evaluation work in multiple locations is that it is impossible to have deep-seated knowledge of context across a concentrated team of evaluators.	As has been reinforced in our systems-oriented evaluation and through multiple stakeholder conversations, context is critical to understanding the implementation and adaptation decision of COVAX. To address the limits of our team's contextual understanding we have adopted several processes to understand context at the global, regional, and country levels. • The systems orientation of our work engrains our approach in centering on context for any of the lines of inquiry undertaken in this work. Systems thinking principles prioritize the importance of contextual factors in influencing results, outcomes, and processes, which we will be foregrounding in our evaluation findings development and synthesis. • Using a distributed team of researchers with experience in each country and are knowledgeable of the local health sector will help our team initiate CCS with some context in-hand. We will further emphasize context-building and familiarization activities in the initial CCS activities using structured guides to identify key factors and influences that may have impacted COVAX at a country level (both programmatic and external/environmental).

Risk/Limitation	Mitigation Measure
Evidence gaps identified in Inception Evidence Gap Analyses may not present comprehensive or complete identification of gaps in information and decisions made on this basis could bias the evaluation workplan.	We undertook the evidence gap analyses as a way to gather a meta-view of the information provided to us and supplemented by external review. This is an initial exercise that will not be used to guide large directional shifts in our work; instead, it helps to underpin small decisions about the work we will pursue (e.g., little evidence on equity exists to date – perhaps this suggests that the equity special study is of high value.)

Table 2-11. Risks, Limitations, Mitigation Measures - Operations

Risk/Limitation	Mitigation Measure
Evaluation management is shared jointly by multiple organizations and expectations to meet the needs of all is highly challenging.	Th evaluation team is relying heavily on the evaluation management team and DEPG to coordinate between the organizations and relies on this team to hold ultimate responsibility for coordinating, communicating, and prioritizing organizational expectations and requirements. Where we identify these, we will dutifully notify the evaluation management team, but use their role as a coordinating mechanism as the most critical line of mitigation for this risk. In some cases, responses to the draft Inception Report from different organizations have raised clear misalignments in goals (e.g. disagreement on EQs) and the evaluation team has flagged these for the evaluation management.
Delays in selection of CCS locations and receiving country-level acceptance risks pushing the overall evaluation timeline. Additional concerns include the noted challenges (from countries) in capturing stakeholder conceptions during Global North summer months (July, August) when many potential informants and focal points may be absent.	The evaluation team will continue to let the evaluation management and DEPG know about challenges in timing and will ask that they continue to move diligently in selecting CCS locations. As we move into data collection, a set of timelines will be established by the evaluation team to help clarify the time needed between CCS location agreement and data collection launch. Where needed, we will use this as a basis to push back on timelines as necessary.
Low participation and response rates for country web survey. The Phase 1 evaluation of COVAX Facility and AMC found it challenging to get strong response from countries via a similarly formatted survey.	The evaluation team acknowledges the challenges of low response and suggests several of the following approaches to gathering a strong response from participant countries: • Putting strong initial effort into assembling a list of respondents in each country and adequately communicating the survey and its purpose to potential respondents may attract increased response. Using pressure from the DEPG may additional support response. (Assembling responses and communicating the value of participation will be the responsibility of the evaluation

	management/DEPG, with support from the evaluation consortium.) • Acknowledge the likelihood of this outcome and the implications for data that will be derived from this data collection effort, such as: it is unlikely that generalizable information will be drawn from this effort, however, we can use the data (nuanced that it is biased towards a set of respondents) and suggest its limited use in evaluation findings. • Conduct the survey with a sub-sample of countries and concentrate follow up efforts with minimal time and cost. *This was not approved by DEPG with a priority to gather wide participation.*
Stakeholder lack of engagement Stakeholder fatigue with evaluation(s) of COVAX response and similar studies and associated risk of poor or non-engagement with the exercise. This includes staff at Gavi, UNICEF, and WHO as well as other key informants at the global, regional, and country levels. At the country level, many stakeholders may feel there is a high opportunity cost of devoting their time to engaging with this work. (Informed from experiences during Itad's baseline evaluation of the COVAX Facility and AMC.)	The evaluation team will adopt a practical approach to engaging stakeholders, acknowledging that not all will be able to devote time and attention to our request. We will do our best to reduce duplicative requests and deploy methods that minimize the length of engagement with stakeholders, while still prioritizing data collection. We will additionally leverage the DEPG, evaluation managers, and others to send special request letters and formal explainers about the evaluation, to help to support active stakeholder response at all levels. Where needed we will employ methods to identify appropriate informants, such as snowball sampling methods. Finally, we understand that many stakeholders at the country level are reluctant to participate in global evaluations that may not direct lessons and learnings back at them as a key audience. We will incorporate learning activities at the country level with a mind towards satisfying this feedback loop and supporting countries with evaluation learnings that can help them to build and prepare, just as the global stakeholders will benefit.
Ambitious timeline for the evaluation Th evaluation timeline is ambitious and should delays or challenges arise that are outside the evaluation team's control, may result in challenges to meet the laid out schedule, particularly for some deliverables. For example, should country level approvals for case studies be delayed in some countries selected for CCS, it could be challenging to execute case studies in line with reporting deadlines (e.g., Emerging Findings Deliverable).	The evaluation consortium will continue to work closely with the DEPG and others in communicating challenges in timelines as they emerge, and managing expectations. For example, in the case study approval process, we have adopted an approach to green light countries by region when country offices confirm a willingness to participate. Our project management function is actively engaged in monitoring challenges to the critical path and will continue to raise these with our evaluation management on a regular basis, as they arise.
Gaps in available secondary data Gaps in secondary data may exist, particularly where analyses rely on data gathered at the	The evaluation will clearly map and outline where data gaps exist as early as possible, to identify mitigating measures (i.e., additional sources for

health service delivery level (e.g., on key populations vaccinated, health workers trained) due to logistical challenges or historic incompleteness during the height of the pandemic, when human resources were highly stretched.	triangulation) or to set expectations around the ability of the secondary data analysis to speak to all outcomes of interest. By using a mixed-methods evaluation and drawing on a wide variety of data sources, the consortium hopes to draw flexibly on different types of information as needed.
Gaps in availability/participation of knowledgeable stakeholders Given that COVAX was a 4-year program conducted during a pandemic, it is possible that some knowledgeable stakeholders at the global, regional, and country levels may have moved on to new positions and roles, making engagement difficult to organize.	The evaluation team will do our best to create accurate stakeholder maps that demonstrate who can speak to different aspects of COVAX over different phases, though it is possible that we may not be able to locate everyone. In these cases, we will ask stakeholders to recommend people to speak with that they can provide contact information for or introduce using a "snowball sampling" approach. Where absolutely necessary, we will rely on experts to speak to areas of COVAX in which they were tangentially involved and will note this relationship to the evidence collected in these cases.
Managing scope Given the significant stakeholder interest in this evaluation, from a broad group, there has been an ongoing risk around managing stakeholders' expectations on what the evaluation is able to deliver in terms of its scope.	The consortium welcomes advice from Gavi on how to land the evaluation findings effectively and to manage expectations among COVAX stakeholders around the scope. A clear articulation of delineation of scope is and communication of this will help to bound the responsibilities and expectations of stakeholders.
Global PPPR / organizational strategies are actively in formation, which may limit the utility of evaluation findings and lessons learned. As strategies to address relevant topics emerging from COVAX are underway actively, there is some risk that findings will arrive too late to be useful to decision-makers and organizational leadership.	The evaluation consortium's learning efforts will be tracking and participating (where relevant) in events where global strategies are under discussion to highlight the evaluation for awareness of goals and timeline. By monitoring the development of these conversations and the topics that are under continued discussion, we can tailor our learning output to ensure the relevance of these future-oriented evaluation takeaways and learnings.
Formation of utility-oriented and user-friendly materials to communicate evaluation findings and learnings. Given the complex nature of the evaluation and its many audiences, it may be challenging to distill findings into consumable and applicable takeaways for all audiences.	The consortium's dedicated learning workstream will develop a strong understanding of user needs through engagement prior to the development of findings, including the most appropriate feedback mechanisms for stakeholders to provide input and help contextualize findings. Where possible, we will develop visual aids (e.g. charts, graphs, tables) to present data easily and in a way that is most digestible to a global audience.
Political nature of the evaluation may raise sensitivities among sponsor organizations, country governments, and a range of additional stakeholders.	By nature, this evaluation is politically-charged and may feel sensitive to some audiences and informants. We take several approaches to address this challenge, including: • Transparency. As an evaluation consortium, we prioritize clear communications about the purpose of the evaluation and the way the findings will be used to inform decisions, as well as our limited control as to the influence of the findings within each

	sponsor organization. We will additionally work to disseminate findings and recommendations in a clear and accessible manner. • Focus on data and evidence. We will draw on objective data and evidence to guide the process and inform recommendations. • Confidentiality and anonymity. We will ensure that evaluation participants receive confidential treatment of their statements such that honest feedback will be shared. • Manage expectations of stakeholders. Not all opinions will support the underlying recommendations of this work; we will treat stakeholder input as subjective and use objective criteria to assess them.

Learning and Communications Plan

Evaluation findings may also be relevant to other Gavi, UNICEF and WHO priority learning topics, through information gleaned during country case study data collection, as stakeholders contribute evidence on factors related to CoVDP and country delivery support successes and challenges. Below we outline the dissemination plan through which we will communicate evaluation findings (Table 10).

The key features of this plan are:

- Routine internal engagement and socialization of findings: As evaluation deliverables emerged, there were coordinated dissemination and/or engagements with key high-level groups involved in the evaluation to review and react to outputs. These groups include the DEPG, Gavi, UNICEF and WHO programme teams, offices (country/regional as applicable) and senior leadership; vaccine industry and global health implementing partners; CSOs, research communities and academia/global health networks.
- Informative events: The evaluation team shared insights and raised consciousness of the evaluation and its utility for accountability and learning the Gavi APPT meeting.
- Validation opportunities: Sense-making workshops were used to stress-test and reflect on findings. The workshops were repeated with different stakeholder groups, to allow for in-depth and nuanced conversation among participants, and the format was tailored to get the most from these sessions.

Table 2-12. Learning Focus Areas and Stakeholder Interests/Opportunities

No.	Area of learning (evaluation focus)	Part A/B	Learning EQ	Gavi learning priorities	Interested groups	Considerations/sensitivities	Connected opportunities/ how to leverage
1	Operationalizing 6.0 strategy	A	7.1	What lessons can be drawn, both successes and challenges, from the COVAX experience to inform Gavi's broader programming and collaborations?	Gavi Alliance Board and PPC	Time-sensitive in terms of feeding into design -- 6.0 development process currently underway; focused operationalization learnings more likely to feed into thinking on implementation, but opportunities should still be monitored closely	Key areas of learning for 6.0 may be around deepening life-course approach (lessons from mass vaccination/integration into routine campaigns for non-infants); country ownership (being country-driven in an agile environment where quick-decision making required). Opportunities may be formal (e.g. emerging findings deliverable, UNGA fringe) and informal (connections via Gavi CET to programmatic leads/groups to discuss insights), and will require clear steers from Gavi to navigate
2	Equity and equitable outcomes (including gender)	A/B	7.1, 7.2, 7.3	Are the approaches to addressing gender-related barriers effective to increase immunization coverage, why or why not? (Incl. approaches to provision of funding and technical expertise for implementation)	Gavi Secretariat, relevant UNICEF and WHO programme teams; wider audiences – GH community, academia	Identified as a knowledge gap from the last evaluation phase of COVAX, as not enough data available at that time. 'Ripe' area for learning given limited previous knowledge and general commentary of inequity of C-19 vaccine distribution: clear need for independent analyses of results.	Global interest in equity outcomes – worth drawing out learnings in this domain in external-facing resources given unprecedented opportunity for learning/reflection on large-scale vaccination in emergency context
3	Collaboration between partners (Gavi/UNICEF/WHO)	A/B	7.2, 7.4	What lessons can be drawn, both successes and challenges, from the COVAX experience to inform Gavi's broader programming and collaborations?	COVAX partners leadership (UNICEF/WHO) Gavi Secretariat, relevant UNICEF and WHO programme teams	Evaluative analysis may highlight areas of weakness in partnership generally and configurations of actors at country level. These findings should be presented sensitively and in a forward-facing and learning-oriented manner, without attributing fault.	DEPG meetings can be used to sense-check emerging themes; anticipated that DEPG can also help to convene broader Gavi/WHO/UNICEF stakeholders
4	COVAX engagement with national governments and health systems	A/B	7.3		COVAX-support country governments Gavi Secretariat, relevant UNICEF and WHO programme teams	May be political sensitivities in COVAX-supported countries – requires strong engagement through introductory/other meetings in CCS countries; sense-checking with DEPG on others	Highly relevant to Gavi 6.0 operationalization. May be opportunities to engage broader group of national government stakeholders through existing Gavi distribution lists (e.g. former AMC Engagement Group).

No.	Area of learning (evaluation focus)	Part A/B	Learning EQ	Gavi learning priorities	Interested groups	Considerations/sensitivities	Connected opportunities/ how to leverage
5	Risks, management and mitigation	A/B	7.1, 7.2, 7.3	What are the biggest risks associated with the COVAX model and how successfully have these risks been mitigated?	Gavi Secretariat; relevant UNICEF and WHO programme teams, Gavi Alliance Board and PPC		Predominantly for internal dissemination within Gavi/WHO/UNICEF
6	Strategic adaptation to challenges	A/B	7.1, 7.2, 7.3	What lessons can be drawn, both successes and challenges, from the COVAX experience to inform Gavi's broader programming and collaborations?	Gavi Secretariat, relevant UNICEF and WHO programme teams	Requires synthesis across EQs; need to think about which audiences/stakeholders are interested in which challenge/adaptation and why	Present in case study/pull-out box format in reports and other associated products Relevant to 6.0 operationalization thinking
7	Collaboration in-country (WHO/UNICEF)	B	7.4		COVAX partners' Country Offices Regional coordinating offices (UNICEF/WHO) DEPG Gavi Alliance Board and PPC	Evaluative analysis may highlight areas of weakness in partnership generally and configurations of actors at country level. These findings should be presented sensitively and in a forward-facing and learning-oriented manner, without attributing fault.	Operational learning for next pandemic and how to strengthen in 'peacetime' in-country: opportunities through CCS stakeholder convenings to share these insights, but need to get a further sense of countries' learning priorities to shape this well
8	Country-level readiness to introduce vaccines	B	7.4	What is the country-level readiness to introduce vaccines? What are key enablers or bottlenecks to: equitable and sustainable new vaccine introductions? Rapid scale-up / update of new and underused vaccines? Specifically, to increase proportion of Fully Immunized Children (FIC)?			

ANNEX 3: THEORIES OF CHANGE

Overview: Updates to Theory of Change for Part A, the COVAX Facility and AMC

Figure C-1 presents an updated articulation of the TOC for the COVAX Facility and AMC, including core activities, outputs, expected outcomes and impact, referred to as Part A for this evaluation. This TOC reflects the status quo as of March 2024, reflecting substantial changes to the design and/or focus of activities over time and the roles of partners.[8]

Drawing on the set of inputs listed on the left hand side, the main programmatic activity areas for Part A (each with their own, specific intervention logic) relate to:

1. **Resource mobilization** efforts which shifted from fundraising in early 2022 to the conversion of pledges to commitments and cash (covering both Parts A and B).
2. The **pooling of demand and portfolio management**, the approach to which also shifted over time, including in the scope of countries included in the mechanism; the approach to securing vaccines via APAs and donations; and to incorporate boosters and products to cover variants of concern.
3. **Allocation** which shifted from Phase 1 (relevant to a supply constrained environment) to the Phase 2 approach (relevant to a supply secure environment).

These activities, as well as those for Part B, operate within the prevailing context and are underpinned by four sets of processes that relate to governance, end-to-end coordination, country communications and engagement, and preparation for sunsetting COVAX and transitioning to integrating Covid-19 vaccines into routine programming (a major work area in 2023). Together, Parts A and B, enable the allocation of doses which triggers procurement, logistics and shipment of doses to countries, which are then administered among national populations to achieve the three stated impact measures.

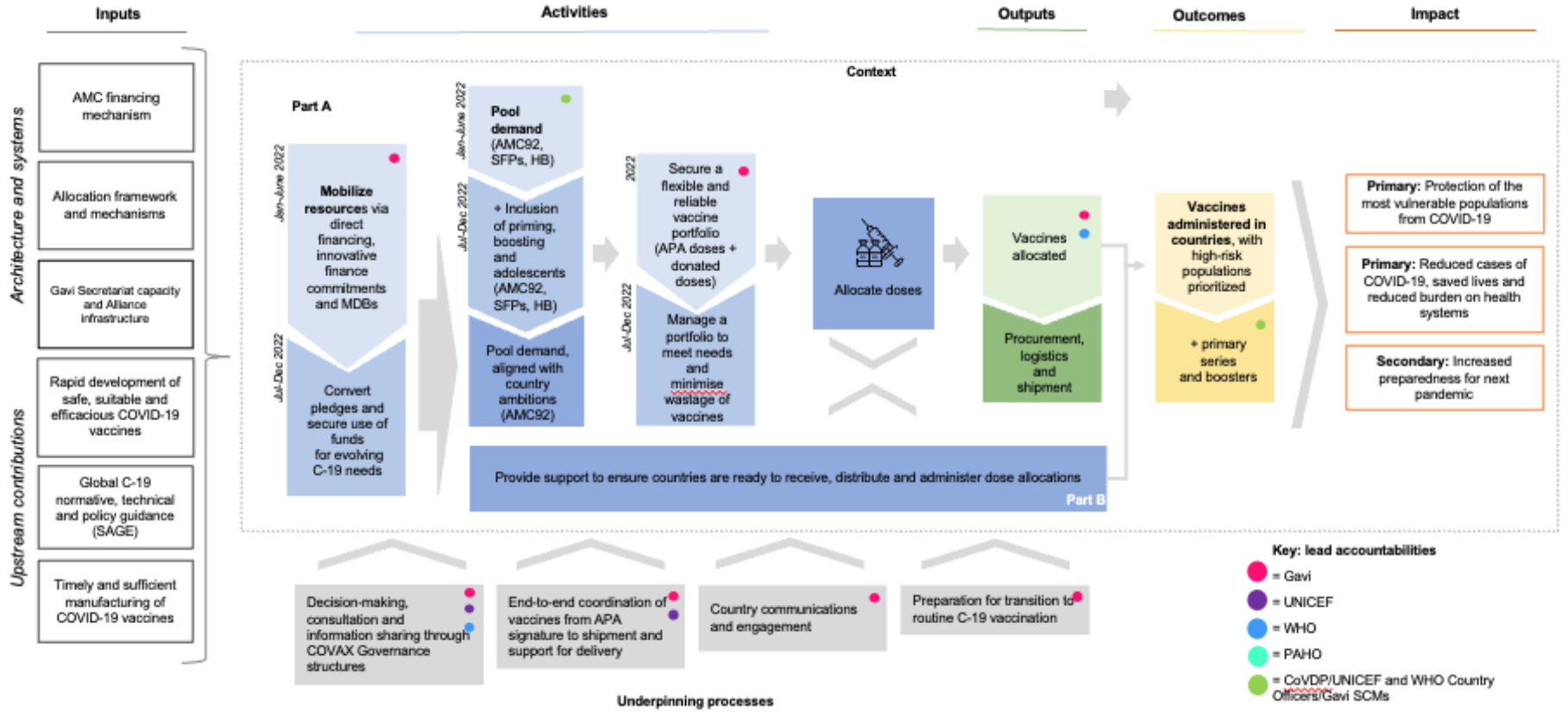
Assumptions

The TOC presented is underpinned by a series of assumptions about the conditions that need to be in place for the COVAX Facility and AMC to deliver its intended results. These assumptions relate to:

- The causal nature of relationships between steps in the TOC (i.e. how and why do activities lead to outputs, outputs lead to outcomes and how ultimately outcomes will contribute to the achievement of impact)
- The context in which the COVAX Facility and AMC is operating (i.e. what has to happen or not in context for each anticipated change to emerge, other than the intervention?)
- COVAX Facility and AMC design and delivery mechanicals (i.e. what does the COVAX Facility and AMC have to do to make each anticipated change happen?)

[8] The Part A TOC for the COVAX Facility and AMC is mainly focused on the areas of Gavi's primary responsibility within the COVAX Pillar but considers the roles and contributions of all COVAX partners (see coordination key), as well as other stakeholders. Although the Office of the COVAX Facility coordinates the implementation of the COVAX Facility and COVAX AMC, its success depends on all COVAX partners' contributions, including but not limited to (1) WHO's normative and technical support for equitable allocation and CRD; (2) UNICEF and PAHO's procurement and delivery of commodities; and (3) CEPI's work on incentivizing research, development, and manufacturing of COVID-19 vaccines.

COVAX Facility and AMC Theory of Change 2022 – 2023 (revised)



Assumptions will be tested and verified during the evaluation, playing a role in shaping the final judgments and recommendations about progress and performance.

Key assumptions
1. Resource mobilisation
A diverse range of stakeholders from different constituency groups actively advocate for the full financing of the COVAX AMC via the '100-days campaign'.
Strong collaboration between COVAX Facility/AMC partners around the resource mobilisation campaign(s), notably 100-days.
Broad-based engagement of potential AMC donors in international discourse.
COVAX Facility and AMC has sufficient soft power to influence SFP and AMC donor and participant decisions, and those of partners and wider stakeholders
The epidemiological situation and fundraising environment is conducive to meeting resource mobilisation targets.
2. Secure supply
Governance bodies (e.g., Independent Product Group, Procurement Reference Group and other relevant governance structures) make relevant and timely inputs into decision making on vaccine portfolio and product selection.
Vaccine manufacturers are willing and able to enter into advance purchase agreements to meet COVAX objectives.
Strong collaboration between COVAX Facility and vaccine manufacturers to meet COVAX requirements.
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.
Strong collaboration between the Office of the COVAX Facility, partners and participants to communicate indicative supply timelines and determine other delivery needs.
The global vaccine supply situation is conducive to meeting COVAX vaccine availability expectations.
3. Allocation
Countries are willing and able to derive and share data on country needs, preferences and readiness; and later, country demand.
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.
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.
Independent Allocation Validation Group's (IAVG) makes relevant and timely inputs to influence allocation decision making.
Supply dynamics enable COVAX to provide predictability to participants on allocation and supply.
Allocation processes are able to be conducted flexibly in response to changing context.

Overview: Updates to Theory of Change for Part B, COVAX Pillar Delivery

The TOCs for Part B (COVAX Pillar Delivery) have been consolidated across the pre-identified key phases (CRD, CoVDP and Alliance Structures) to provide a comprehensive vision for activities leading to desired results. By consolidating the TOCs, while still capturing key programmatic shifts in a country timeline, the evaluation team foregrounds the adaptive nature of the policies, mechanisms, and funding strategies utilized by COVAX.

- The global/regional level TOC addresses COVAX and country-level activities that resulted in the allocation and import of vaccines, as well as the country-level inputs to COVAX policy development and guidance.
- The country level TOC captures elements related to operations and administration of vaccines *once they cleared customs*.

Programmatic phases and changes in context

The key phases of COVAX are best captured in a timeline of programmatic shifts that correspond to ongoing learning and real-time adaptations to changes in context, which are also included. We summarize these phases and the operating context at each point in time as follows:

- The CRD phase, from 2020 to early 2022, involved country preparation for Covid-19 vaccines, introduction of the vaccines and scale-up across entire country populations. CRD was carried out in a context where demand was plentiful and supply was constrained, yet rapidly ramping up starting in Q4 2021. During this phase, the focus of COVAX's Delivery pillar was on negotiating advance agreements for procurement of Covid-19 vaccines and allocating dosages across countries, as well as providing a framework for assessing country readiness, focused in good part on national regulatory environment and legal and customs arrangements.
    - Funding windows for countries under CRD shifted from a no-regrets basis to one structured around plans and reporting requirements.
    - Allocation algorithms grew more complex to incorporate equity and country ability to procure vaccines through other agreements.
- CoVDP marked a significant departure in terms of strategy, shifting focus to a subset of 34 countries where vaccine coverage was lowest (<10%). CoVDP, from 2022 through Q2 2023, operated in a context where demand was waning. Meanwhile, donated doses to COVAX increased and supply was abundant. CoVDP marked a transition from the provision of guidance to hands-on implementation with a focus on operational support to countries.
- The final phase of the COVAX Pillar delivery, carried out via Alliance structures from the PHEIC lift through the end of 2023, was marked a goal focused on integration with primary health care systems. Phasing down support required country preparedness for the integration of Covid-19 vaccination into routine, country-led strategies and programs.

Revisions to the Theory of Change for Vaccine Delivery at the Global/Regional Level

The TOC at the global and regional level (Figure C-2) reflects the evolution of COVAX's strategy over time in response to shifting contextual factors. As 2021 came to an end, COVAX faced a decline in demand and sudden influx of vaccine donations. Further, there was a growing recognition that gaps in country preparedness was impacting uptake. CoVDP ramped up engagement in countries with less than 10% vaccine coverage while the Humanitarian Buffer was put in place to increase access for groups in fragile contexts, e.g. outside the influence of state health systems.

The **inputs** to activities and processes include architecture and systems put in place through the formation of COVAX and the upstream contributions made through activities under the COVAX Facility and AMC (procurement).

Activities and processes include four primary areas of activities, e.g. funding directed to each phase of country uptake of vaccines, ending with integration into health systems; policy, advocacy and technical guidance for country governments regarding all aspects of vaccines delivery, information and communications; technical assistance covering an array of tasks (detailed in the country-level TOC), but shifting over time from a readiness checklist, of sorts, to more substantial engagement and demand planning; finally, targeted investments of funding, equipment and technical assistance. Ongoing work streams that were managed primarily at the global or regional level, yet in step with countries, include coordination across the vast array of actors involved in the efforts; data and vaccine safety systems, as well as vaccine monitoring and feedback loops; and systems for risk identification and mitigation around vaccine safety and management.

Outputs at the global and regional level include countries completing their readiness assessment and receiving their dose allocation (which was executed at the COVAX Facility and AMC level), and vaccines shipped out to respective countries. A gap emerges in the global/regional level TOC between the **outputs** and the **outcomes** of vaccine administration and eventual integration into routine health care systems; this gap is addressed in the country level TOC.

In looking ahead to preparedness for the next pandemic, *the TOC incorporates conditions for systems change to assess the extent to which COVAX contributed to these changes and draw lessons learned for future efforts.* The system in question relates to the global and regional system for emergency vaccine delivery, as Covid-19 brought new awareness to the growing threat of pandemics that are global – and not only regional – in nature.

Revisions to the Theory of Change for Vaccine Delivery at the Country Level

The TOC at the country level represents the broadest possible set of illustrative interventions COVAX undertook in countries – as this is intended to be a “generic” model which will be adapted for individual countries. This case is particularly true in the CoVDP and Alliance Structure phases. The TOC at the country level focuses on country responsibilities for preparedness for delivering and administering vaccines, with a recognition that substantial efforts went into preparedness for import and regulatory adjustments to receive their dose shipments, reflected in the first workstream carried out during the CRD phase.

Inputs reflect the contributions of the COVAX Facility and AMC as well as COVAX Pillar delivery activities at the global and regional level that include I&L agreements, guidance, resources, investment and planning, and vaccine allocation (both domestic funding mobilization for purchase of vaccines, as well as coordination across external sources of funding and management of donations), alongside the critical role of coordination, including formation of task forces, etc.

Workstreams and illustrative activities reflect the range of health system components necessary for the delivery of Covid-19 vaccines. However, the TOC for a specific country depends on that country’s strengths, weaknesses, priorities, and the efforts of other donors and multi-lateral institutions. The role of COVAX during the CRD phase, was primarily to assess areas of need and assist countries in preparing strategies for timely addressing of identified gaps. However, during CoVDP, COVAX provided substantial direct support in the form of investments and Technical Assistance to achieve country preparedness and effectiveness for Covid-19 vaccine delivery and administration to priority groups. Once

PHEIC was lifted, COVAX shifted gears, preparing for its closeout, and moved toward integration of Covid-19 vaccine delivery into PHC and EPI systems through Alliance Structures. Although not an initial goal of COVAX, country preparedness for future pandemics became increasingly central to COVAX programming, expected to be strengthened through the improved vaccine delivery capabilities of country-level health systems.

The cumulative set of **outputs** necessary to achieve target **outcomes** are captured here as well, with the understanding that these ultimately fall outside the manageable control of COVAX alone.

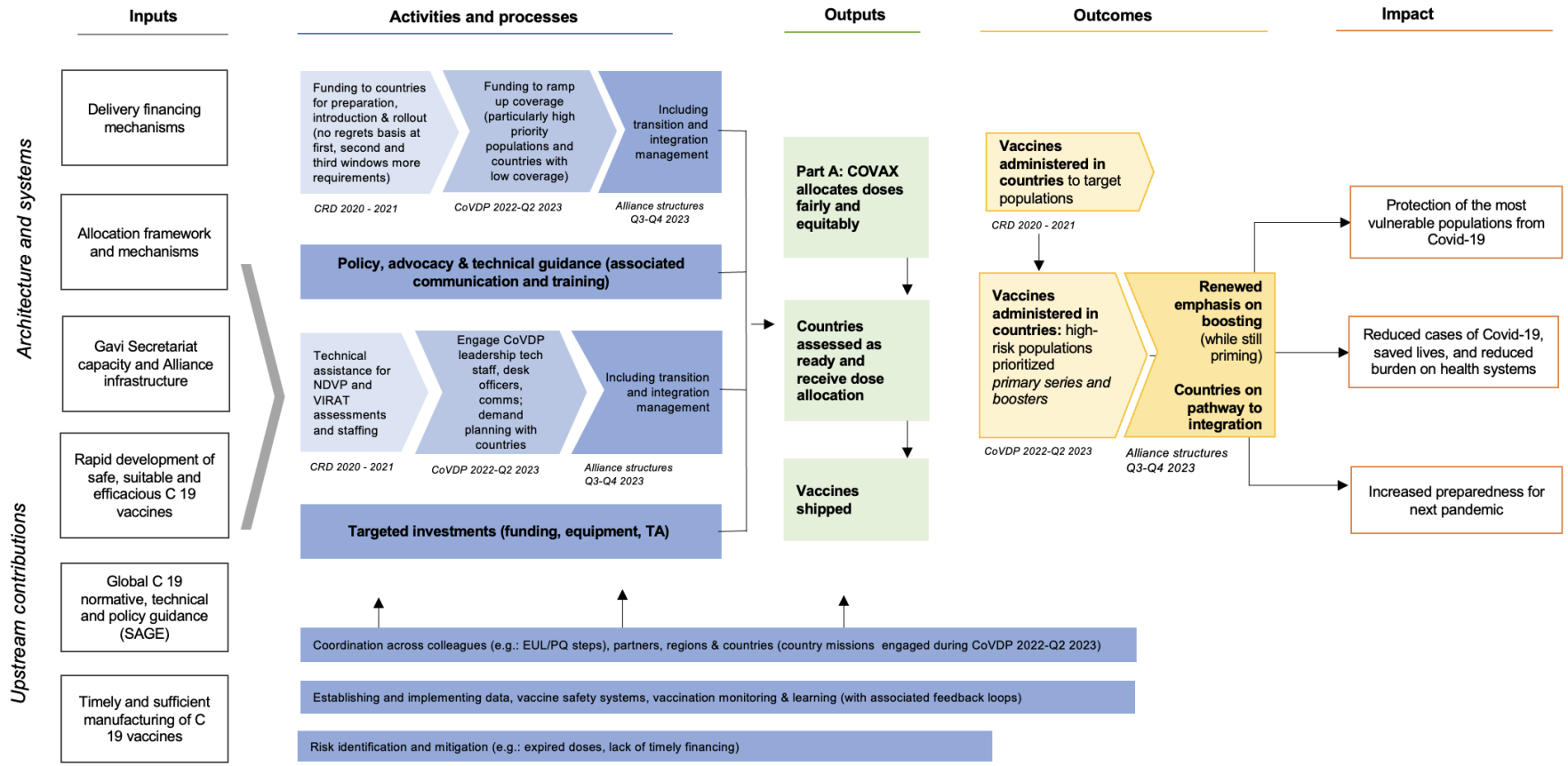
Achieving **impacts** required COVAX to work with and through the country-level health system, both to deliver a timely response to the Covid-19 emergency, but also to address gaps in the system itself that presented obstacles to achieving vaccination. The primary impacts of COVAX are indicated while the impact on increased preparedness for the next pandemic is secondary, a by-product of addressing gaps in the country health system where necessary.

Key **contextual factors** not depicted in the TOC but which will nevertheless guide our case study enquiries include the political will and leadership dynamics at the country level; the country efforts to coordinate and manage multiple sources of investments and donations, including mobilizing country resources; and the critical role of regional offices in deploying guidance and technical assistance.

COVAX Pillar delivery – Global/Regional-Level Theory of Change

COVAX Global/Regional-level Delivery Theory of Change 2020 – 2023

Contextual timeline: CRD 2020 – 2021: *demand plentiful, supply severely constrained;* CoVDP 2022 – Q2 2023 & Alliance structures Q3-4 2023: *demand waning, supply available*

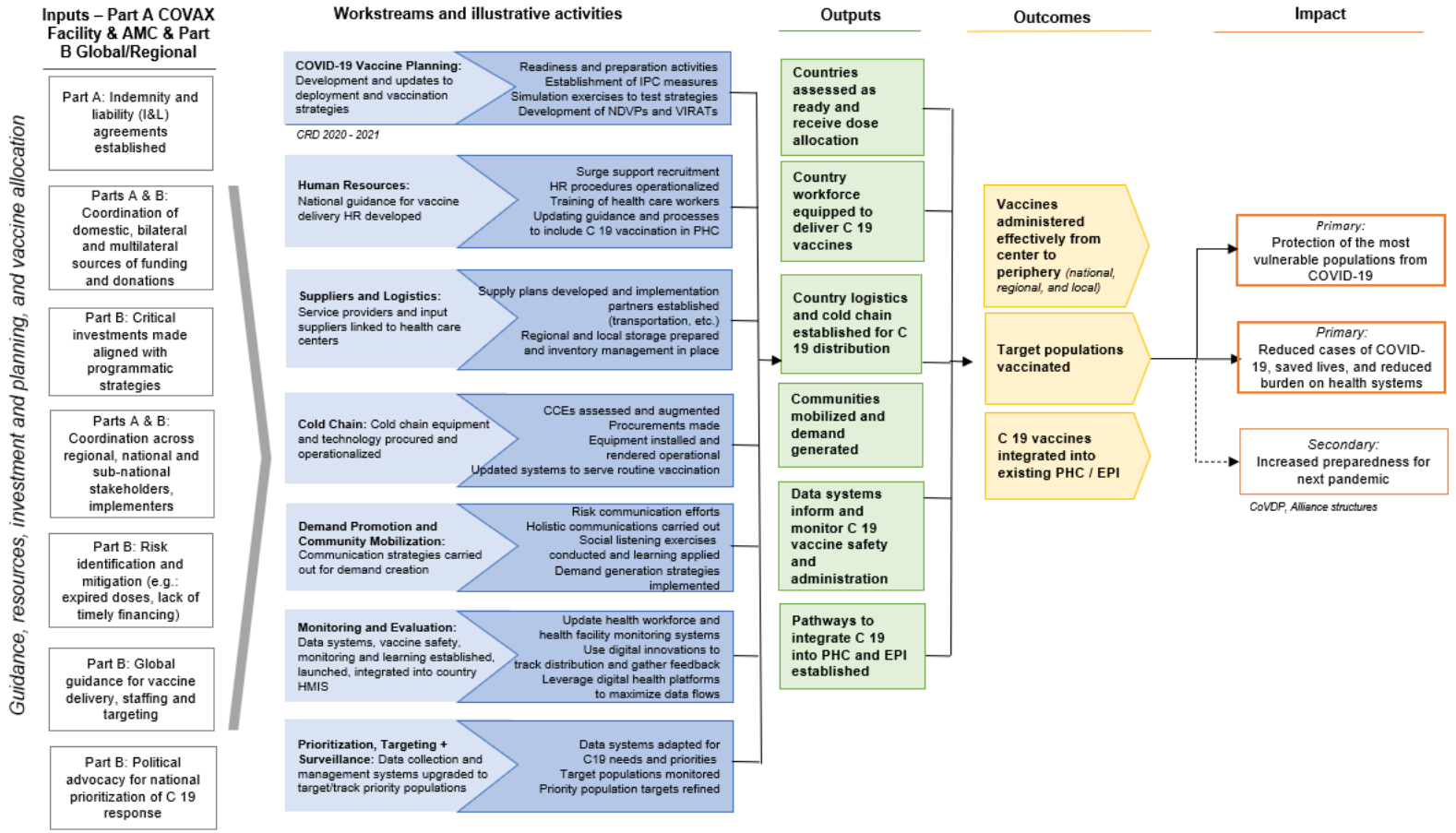


*Noting that upstream R&D, vaccine manufacturing, the majority of resource mobilization, securing supply (deals & market shaping), SFP model and engagement are all considered out of scope for Delivery arm

COVAX Pillar delivery – Country-Level Theory of Change (Validated and updated 4/24/2024)

COVAX Country-level Delivery Theory of Change 2020 – 2023 (Preparation, introduction and scale up, prioritization and integration)

Contextual timeline: CRD 2020 – 2021: *demand plentiful, supply severely constrained;* CoVDP 2022 – Q2 2023 & Alliance structures Q3-4 2023: *demand waning, supply available*



ANNEX 4: WEB SURVEY

A web-based survey was conducted among individuals representing countries that participated in COVAX under the AMC-92 initiative and as Self-Financing Participants (SFPs). The survey was available in English, French, and Spanish and received responses from 133 individuals across 64 countries, of which 31 respondents (23%) were country representatives (***Table 4-1***).

Table 4-1. Distribution of web-survey respondent type

Response Type	Number (%)
Country representative (e.g., ministry of health [MOH] official/staff, Technical Working Group member, EPI official/staff)	31 (23%)
COVAX representative	
COVAX country representative (i.e., UNICEF/WHO Country Officer, Gavi Senior Country Manager)	77 (58%)
COVAX regional representative (e.g., WHO or UNICEF Regional Officer)	9 (7%)
Unknown* (*Note Responses 29, 49, 78 were cleaned to be COVAX rep rather than Implementing partners)	3 (2%)
COVAX in-country implementing partner (third-party organizations contracted via COVAX to provide COVID-19 vaccine delivery support in line with COVAX objectives – e.g., CHAI, CRS, JSI, Jhpiego)	13 (10%)
Total	**133**

Note: Responses by country were as follows: Afghanistan (4), Bangladesh (1), Benin (4), Bhutan (1), Bolivia (1), Burkina Faso (3), Burundi (1), Cambodia (1), Cameroon (2), Central African Republic (2), Congo, Dem. Rep. (2), Congo, Rep. (1), Cote d'Ivoire (1), Djibouti (2), El Salvador (1), Eswatini (1), Ethiopia (4), Fiji (2), Gambia (1), Ghana (6), Guinea-Bissau (1), Guyana (3), Haiti (1), Honduras (1), India (3), Indonesia (6), Kiribati (2), Kosovo (2), Kyrgyz Republic (1), Lao PDR (1), les Comoros (1), Liberia (2), Malawi (5), Mali (2), Morocco (1), Myanmar (2), Nepal (1), Nicaragua (2), Niger (1), Nigeria (2), Pakistan (3), Papua New Guinea (2), Philippines (2), Samoa (1), Senegal (1), Sierra Leone (6), Solomon Islands (1), Somalia (2), South Sudan (6), Sudan (3), Syrian Arab Republic (3), Tanzania (3), The Guinea (1), Timor-Leste (2), Togo (2), Uganda (1), Ukraine (1), Uzbekistan (1), Vanuatu (2), Vietnam (2), Zambia (3), Zimbabwe (3).

Among the 31 country representatives who responded, many were involved in key COVID-19 response groups. These included the COVID-19 National Task Force (or similar) (71%), the Expanded Program on Immunization (EPI) (71%), the National Immunization Technical Advisory Group (NITAG) (39%), committees focused on COVID-19 supplies and logistics (45%), and/or committees focused on data management or monitoring and evaluation (39%) (***Table 4-2***).

Table 4-2. Web-survey respondents involvement in COVID-19 response groups

Key COVID-19 Response Groups Country Representatives Participated In	Number (%)
Regional COVID-19 planning/strategy committee	29%
COVID-19 National Task Force (or similar)	71%
COVID-19 Sub-National Task Force (or similar)	13%
EPI Programme	71%
National Immunization Technical Advisory Group (NITAG)	39%
Technical advisory group on vaccine safety	23%
National regulatory agency	10%
Committee focused on vaccine advocacy	26%
Committee focused on COVID-19 response financing	16%
Committee focused on COVID-19 supplies and logistics	45%
Committee focused on data management/monitoring and evaluation	39%
Committee focused on risk communication and demand generation	32%
Other	16%
Total	31 (100%)

The implementing partner organization respondents included one representative each from Acasus, Care International, CHAI, and GHSC-PSM/CHEMONICS. Additionally, the survey included six representatives from JSI and two representatives from PATH.

All 133 survey respondents indicated familiarity with the National Government's identified vaccine delivery priorities (88% indicating very familiar, 10% indicating somewhat familiar, and 2% indicating slightly familiar).

The survey focused on a subset of the evaluation question (EQs) selected with a focus on delivery efforts that were uniformly provisioned (e.g., guidance that was made available to all countries). The survey focused on understanding how Delivery Pillar modalities made a difference in country level results.

Across all respondents, 77% identified vaccine rollout and delivery planning as the highest priority area where their country required support. Close to half (41%) of respondents cited cold chain logistics planning and equipment provisions as a high priority. Cold chain equipment was specifically highlighted as a top priority by both country and COVAX representatives, with 48% and 43% respectively indicating it as a key concern. Vaccine procurement and provisioning from manufacturers or donors emerged as a priority for both country representatives (42%) and COVAX representatives (37%). In contrast, monitoring and evaluation support (38%) and

assistance with demand promotion and community mobilization planning (38%) were key priorities among implementing partners.

Table 4-3. To the best of your knowledge, which types of COVAX support were provided to [COUNTRY]'s vaccine delivery efforts during the time of your involvement?

	Country Representative		COVAX Representative		Implementing Partner	
	n	%	n	%	n	%
Financial resources provided for COVID-19 vaccines and supplies (e.g., Gavi support to provide COVID-19 vaccine doses and operational funding - CDS)	27	87%	81	91%	12	92%
Technical assistance (e.g., advising on planning or strategy provided by UNICEF/WHO staff or partners in teleconferences, written policy guidance on vaccine delivery or logistics, monitoring and evaluation support)	28	90%	78	88%	12	92%
Supplies and equipment (e.g., vaccines, syringes, cold chain equipment)	29	94%	79	89%	12	92%
I am not aware of any COVAX support being provided	0	0%	0	0%	0	0%
Don't know/not sure.	0	0%	0	0%	0	0%

The findings included the following and are depicted in the following graphs Figures A3-1-A3-7[9]:

- 78% of respondents indicated that COVAX financial support notably or significantly contributed to equipping and preparing the country workforce to deliver COVID-19 vaccines.
- 73% of respondents indicated that COVAX financial support notably or significantly contributed to strengthening the country logistics and cold chain for COVID-19 vaccine distribution.
- 46% of respondents indicated that COVAX financial support notably or significantly contributed to integrating COVID-19 vaccines into existing PHC/EPI programs.
- 25% indicate no or minor contribution.

[9] There was no meaningful difference when these data were disaggregated by respondent type.

Figure 4-1. Impact of COVAX support to equip and prepare the country workforce to deliver COVID-19 vaccine

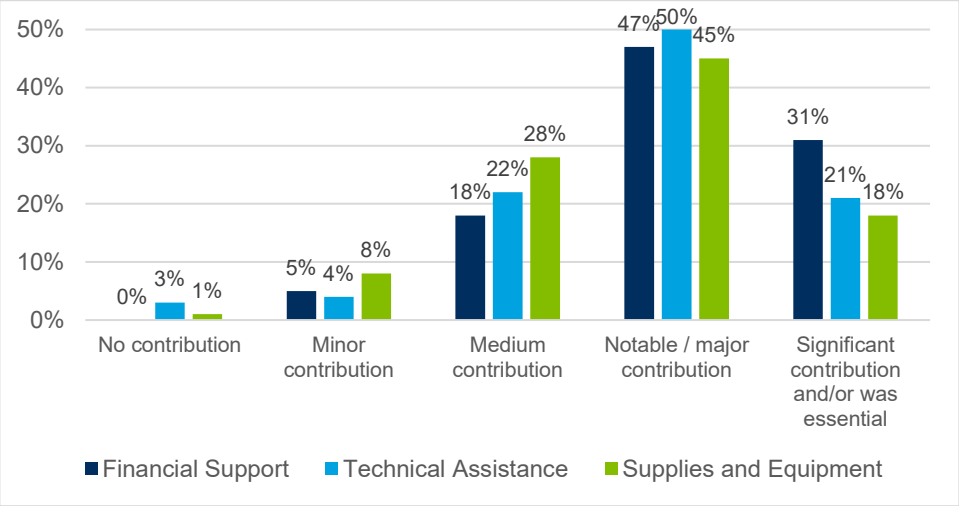


Figure 4-2. Impact of COVAX support to leverage data systems to inform and monitor COVID-19 vaccine safety and administration

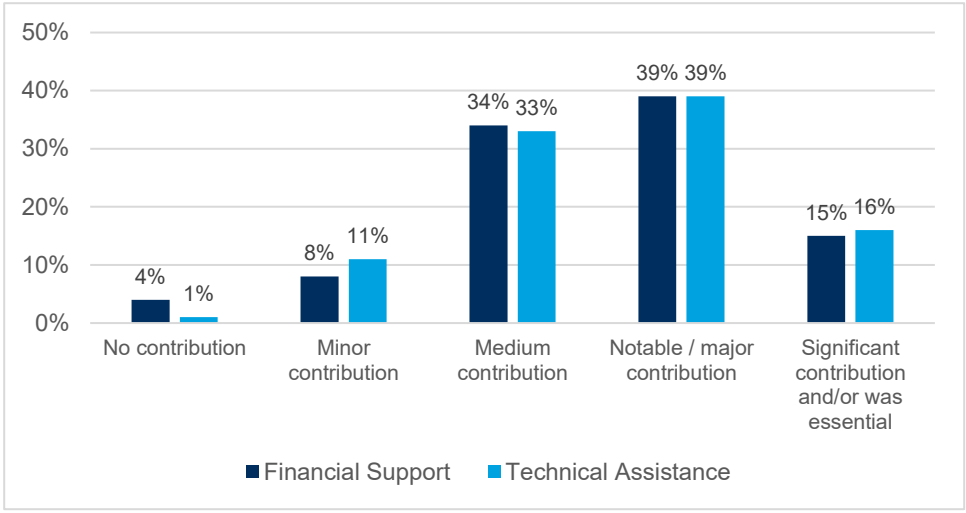


Figure 4-3. Impact of COVAX support to strengthen country logistics and cold chain for COVID-19 vaccine distribution

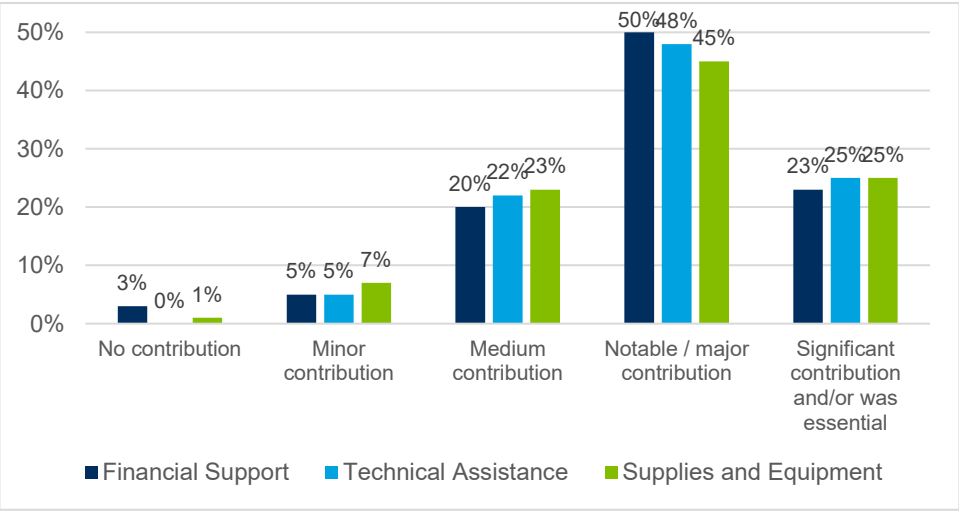


Figure 4-4. Impact of COVAX support to distribute, transport, and administer vaccines from the national to local level

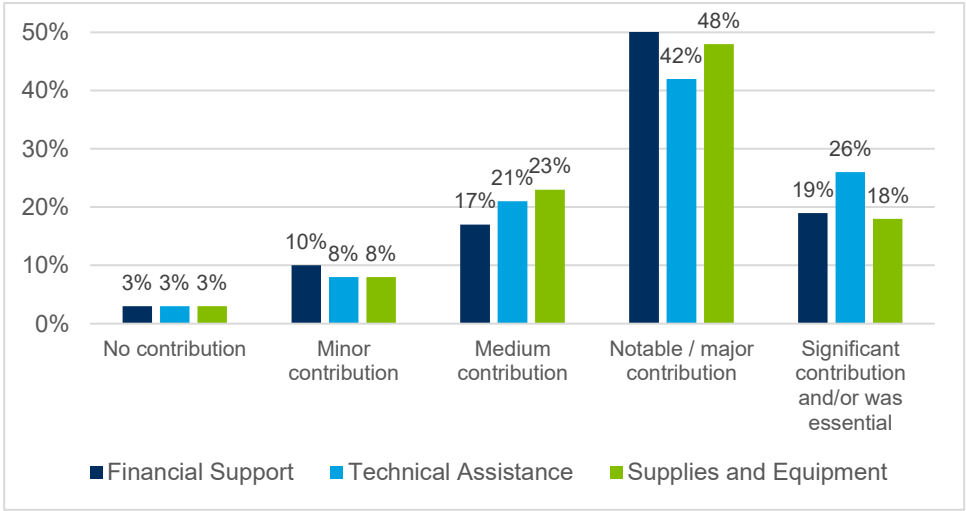


Figure 4-5. Impact of COVAX support to mobilize communities, disseminate information, and create demand for COVID-19 vaccines

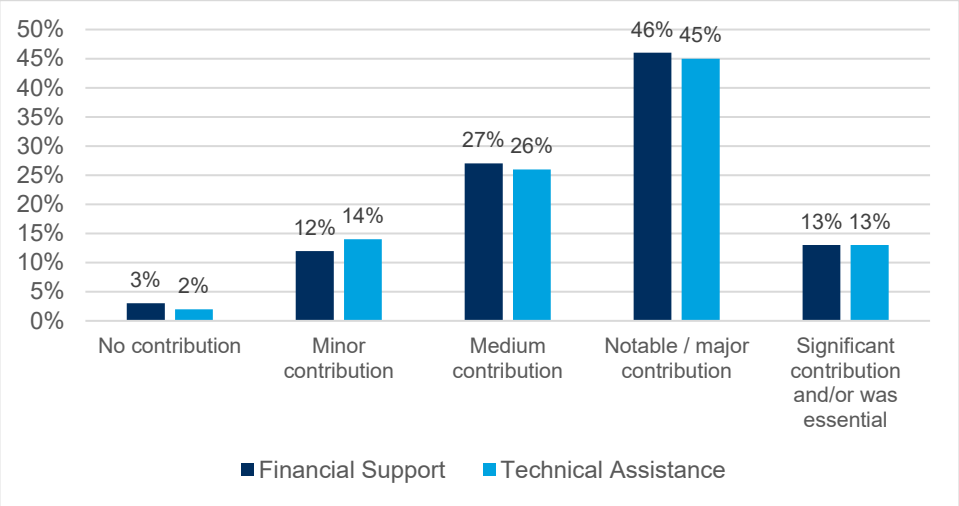


Figure 4-6. Impact of COVAX support to vaccinate target populations

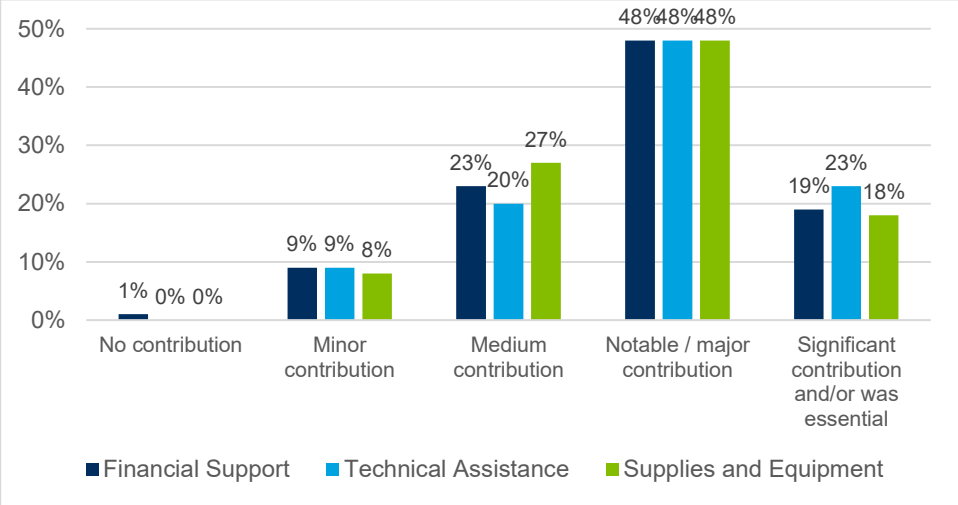
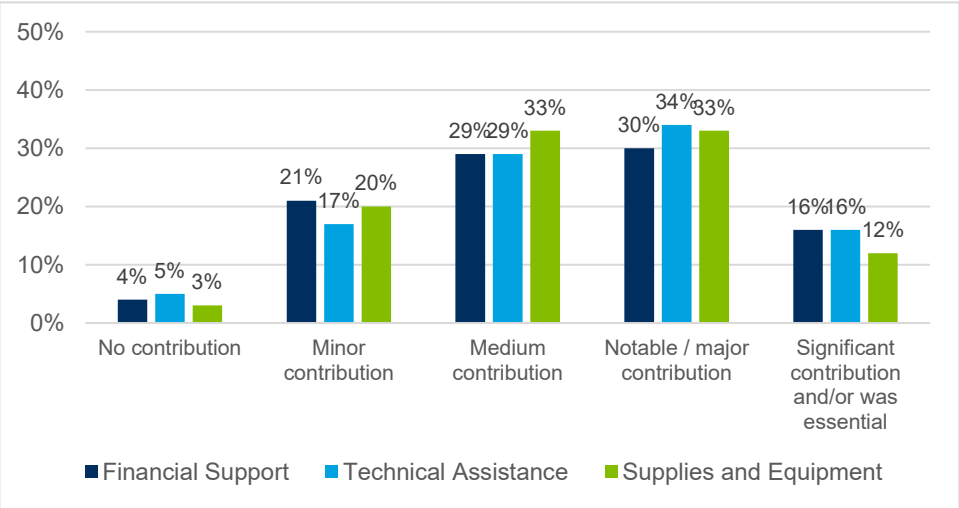


Figure 4-7. Impact of COVAX support to integrate COVID-19 vaccines into existing PHC / EPI programs



Thirty-four respondents indicated that they observed additional impacts that can be attributed to COVAX support. These observations fall into six themes: catalytic funding and bilateral support, overall health system strengthening, immunization improvements, political will, coordination, and strengthened epidemiological capacity.

Table 4-4. Additional impacts attributed to COVAX support

	Additional Impact from COVAX Financial Assistance	Additional Impact from COVAX Technical Assistance	Additional Impact from COVAX Supplies and Equipment
Themes:			
Catalytic funding and bilateral support	Influencing public budget for health	Private sector engagement	Leverage additional bilateral support
	Leverage additional bilateral support		
	Catalytic funding from other donors		
Health system strengthening	Monitoring of adverse events following immunization	Improved monitoring and supportive supervision	Acquisition of cold chain and laboratory equipment, which has made it possible to increase the storage capacity of vaccines, and also to strengthen the diagnostic capacities of other diseases, for example hospitals and laboratories have been equipped with laboratory equipment for ELISA, GENEXPERT, etc.
	Improvement of medical waste management practice following COVID-19 and routine immunization	The team was also supporting and providing technical capacity in other areas	Cold chain system and the management strengthened at all levels (national, regional, municipality down to the primary health care level.
	Enhanced AEFI system	Strengthened country capacity on leadership, management planning and huma resources	Strengthened supply chain systems for the overall health systems in Syria
	It strengthened the national MoH EPI Office - more personnel, regular technical working group meetings being held, closer links with WHO, UNICEF, and IPs for achieving optimal COVID-19 rollout	Waste management	Expansion of cold storage capacity

	Additional Impact from COVAX Financial Assistance	Additional Impact from COVAX Technical Assistance	Additional Impact from COVAX Supplies and Equipment
	Renforcement du système de santé	The HR employed did not only focus on COVID but provided technical assistance to other health interventions	The additional cold-chain equipment deployed from COVAX will continue to be used for routine immunization
	Benefiting other intervention for example NCD screening strengthening	Improved capacity of human resources in micro-planning and PHC planning	Afghanistan cold chain showed resilience by being able to store large amount of vaccines—at least in the provincial and national level.
	Cold chain system was strengthened due to additional cold chain equipment	Support for partner coordination; support for vaccine regulatory aspects; Support for monitoring post-immunization adverse events; support for research, particularly in monitoring the efficacy and impact of vaccines	
	Implementation of infodemic management systems that continue after COVID and are used by other health events		
Improved immunization at large	Supported catch-up efforts in routine immunization	The TAs were used to strengthen the routine immunization planning and monitoring including support to identify and reach zero-doses	QR code vaccination card
	Improved planning and capacity built for immunization	Improved AEFI surveillance for all vaccines as a result of the support from COVAX for COVID-19 safety surveillance and AEFI reporting	The equipment does not only serve in the storage of COVID-19 vaccines but routine immunization vaccines
	Opportunity to integrate and catch up for routine vaccination	General improvement in health worker capacity in routine immunization	Improved supply chain/cold chain for routine immunization

	Additional Impact from COVAX Financial Assistance	Additional Impact from COVAX Technical Assistance	Additional Impact from COVAX Supplies and Equipment
	Strengthened in country capacity in running an immunization program and strengthened partner coordination	Vaccine safety surveillance, indemnification and liability agreements	Increasing vaccine storage capacity at the national level
	Strengthening vaccine safety through TA		
	Routine immunizations benefitted from this support including capacity building		
	Strengthening the health system, including vaccination		
Political will	Support for coordination of partners with government leadership	Significant impact, considering ongoing changes and updates of national regulations	Leadership change challenged the initial support including implementing National Immunization Technical Advisory Group (NITAG) recommendations
	Commitment of national political authorities to vaccination	Concerted advocacy	
	Improving coordination in the fight against COVID and other diseases		
Coordination		Partner coordination and brought in several partners to support EPI	Improved partner coordination
		Promote coordination and collaboration amongst stakeholders	
		Strengthening the planning culture	
Strengthened epidemiological capacity		Though indirectly the NITAG was more engaged in advising the government on type of vaccine to be rolled out	Increased technical awareness about the maintenance of CCE accrued as a result of COVAX support and capacity
		increased EPI coverage	

	Additional Impact from COVAX Financial Assistance	Additional Impact from COVAX Technical Assistance	Additional Impact from COVAX Supplies and Equipment
		Identification of special populations	
Additional	Several best practices were identified during the COVID-19 campaigns supported by COVAX (e.g., hiring female vaccinators and reaching the female targets).		
	Ethiopia was able to integrate identification and vaccination of zero-doses during COVID-19 vaccination campaigns		

ANNEX 5: CONFLICT AND FRAGILE CONTEXT

Conflict and Fragile Context

Somalia Mini-Deep Dive Final Report

March 2025

Prepared for
Gavi, WHO, UNICEF, CEPI
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LIST OF ACRONYMS

ACT-A	Access to COVID-19 Tools Accelerator
CDS	COVID-19 Delivery Support
CEPI	Coalition for Epidemic Preparedness Innovations
COVAX	COVID-19 Vaccines Global Access
COVID-19	coronavirus disease 2019 (SARS-CoV-2)
IDP	internally displaced person
NGO	nongovernmental organization
UN	United Nations
UNHCR	United Nations Refugee Agency
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

BACKGROUND

This special study contributes to the *Evaluation of COVAX Facility and AMC and COVAX Pillar Delivery Efforts*, with the aim of providing an illustrative example of COVAX's implementation in a conflict and fragile context.[10] Appendix 2 outlines the methods for this special study.

The World Bank defines fragile and conflict affected states as countries experiencing a combination of weak governance, political instability and violence yielding pronounced economic shocks that hinder progress and development.[1]

The global distribution of COVID-19 vaccines exposed profound disparities in access, both across and within nations. Vulnerable populations of concern (POC), including those requiring humanitarian assistance such as internally displaced persons (IDPs) and marginalized communities, including ethnic minorities faced significant challenges in accessing COVID-19 vaccines. These inequities underlined systemic issues in global health systems and highlighted the urgent need for a more inclusive approach. Four of six countries with primary coverage rates <10% in March 2023 had ongoing humanitarian crises.[2] Added complexities contributing to lower rates of access included challenges in fulfilling necessary indemnity and liability waivers by vaccine manufacturers for humanitarian contexts and lack of direct importation capabilities for humanitarian agencies. While national vaccine plans were essential for vaccine roll-out, many plans did not specifically identify POC as target groups.

COVAX was designed to ensure that all countries, especially low- and middle-income countries, had timely access to safe and effective COVID-19 vaccines.[3] Despite this mandate, it became increasingly clear that vaccine nationalism played a role during the pandemic and early access for all was neither pervasive nor equitable across geographies. On October 6, 2020, an open letter was published ahead of the London Summit on the Global Response to COVID-19, which stated, "Let us ensure that any vaccine that is developed is treated as a global public good" and stressed that "a fair allocation mechanism for any successful vaccine needs to be determined urgently".[4] After COVAX was launched, the design of the COVAX Humanitarian Buffer aimed to establish access for POC who were missed during the main allocation mechanism for vaccines.[5] However, this humanitarian buffer was challenged by limited additional funding for in-country vaccine delivery and continued regulatory and legal setbacks in coordination with manufacturers.

Country Context

Somalia is in the Horn of Africa and is bordered by Djibouti, Ethiopia, and Kenya with maritime borders shared with Yemen and the Seychelles. The Indian Ocean lies to the east, while the Gulf of Aden is to the north. Its governance and its economy have been crippled by protracted

[10] 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 market mechanism at a global scale. COVAX was co-led by the Coalition for Epidemic Preparedness Innovations (CEPI), Gavi, the Vaccine Alliance (Gavi), 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.

civil conflict, political disintegration, and severe climate variabilities (drought and floods). Combined, these challenges have left Somalia with a number of IDPs that are amongst the highest in the world. In mid-2024, the United Nations Refugee Agency estimated that Somalia had nearly 3.9 million IDPs, or almost 30% of the population, mostly living in densely populated areas with limited or no public services, including health and potable water.[6]

As of 2024, Somalia's population was estimated to be approximately 18.7 million, with an annual growth rate of around 3.1%.[7] The country has a predominantly youthful demographic, with over 60% of its citizens under the age of 25 years. About 73% of the population live below the national poverty line, and 45% of households are in severe poverty. Somalia faces significant health challenges, including high rates of infant and maternal mortality, widespread malnutrition, and frequent outbreaks of communicable diseases. The average life expectancy in Somalia is 56 years. These challenges are compounded by the decades of conflict and displacement that weakened the country's healthcare infrastructure, especially in rural areas.[2,8]

Somalia has a federal governance structure consisting of the Federal Government of Somalia (FGS) based in Mogadishu, and five Federal Member States (Puntland, Jubaland, South West, Hirshabelle, and Galmudug). The self-declared autonomous region of Somaliland lies in the northwest. The federal system was established by the 2012 Provisional Constitution, though tensions between the central government and regional states persist over resource sharing, security responsibilities, and political authority. Governance in Somalia remains fragile due to ongoing security challenges from Al-Shabaab, limited state capacity in rural areas, and complex clan dynamics that influence political processes. Over the past four decades, the international community has provided most of the public services for Somalia, implemented by the United Nations (UN) and nongovernmental organizations (NGOs) through humanitarian systems. The Somali health system in particular has fully depended on humanitarian assistance.

Country response to COVID-19

Somalia reported its first confirmed case of COVID-19 in March 2020, a development that immediately placed a strain on the country's already fragile healthcare infrastructure. Given Somalia's fragility and its limited capacity of healthcare services, the government implemented a range of urgent public health measures to mitigate the spread of the virus.[9] Steps included imposing lockdowns, curfews, travel restrictions, and public health measures such as social distancing, mask mandates, and hand hygiene, all promoted through awareness campaigns. While these restrictions were intended to limit human movement and disease spread, enforcing such measures was challenging, particularly in rural and conflict-affected areas, where healthcare services, communication networks, and access by the government or humanitarian actors was limited.

Economic and Social Effects

Somalia's economy was already grappling with instability in the wake of the 2017 drought and other cumulative shocks over the previous five years. The COVID-19 mitigation measures and restrictions placed an additional strain on the economy. Moreover, because the pandemic disrupted global supply chains, it led to decreased imports of consumer and capital goods. The cancellation of the 2020 Hajj pilgrimage and export bans by Saudi Arabia was further disruptive. As a result, the Somali economy, largely driven by the private sector was particularly vulnerable

to pandemic effects. Disruption of agricultural value chains and the resulting widespread food shortages had a severe impact on food security, particularly for vulnerable populations.[10]

Vaccine Distribution

Introducing vaccination was a welcome response to economic concerns. The first COVID-19 vaccine in Somalia arrived in March 2021 via COVAX, one year following its initial reported case. As part of the global COVAX initiative, Somalia received over 13 million vaccine doses to support equitable access, with 20% of its population declared eligible in the initial phases (**Table 5-1**). [11]

Table 5-1. Quantities of COVID-19 vaccine doses distributed in Somalia[11]

Vaccine source	Number of doses
AstraZeneca	2,033,760
Johnson & Johnson	9,716,160
Pfizer	1,366,344
Sinopharm	231,600
Total	**13,347,864**

FINDINGS ON COVAX SUPPORT IN SOMALIA

This section describes the special study findings in Somalia. This section is structured by emerging themes from the special study.

Strong Coordination and Political Leadership

COVAX[11] partners, including the world health organization (WHO) and UNICEF, worked closely with the Somali government to achieve 49.7% full coverage amongst its target population, by December 2023. COVAX provided Somalia with over 13 million vaccine doses (**Table 5-1**)[11]. While UNICEF was responsible for the physical logistics of vaccine delivery, 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.

The UN COVID-19 Task Force, composed of COVAX stakeholder organizations, played a key role in advocating for vaccine distribution within the Somali government, engaging with some of the nation's highest political offices. This included outreach to senior political figures such as the Prime Minister and the President. Recognizing the need for high-level political commitment, the Task Force worked to ensure a coordinated response across various sectors to effectively combat the pandemic.

Through strategic dialogues and collaborative initiatives, the Task Force elevated the urgency of COVID-19 vaccination within the government's agenda. By building strong relationships with key decision-makers, the Task Force aimed to ensure that policies and resources aligned with the immediate needs of the population. This advocacy not only underscored the health implications of the pandemic but also highlighted the socioeconomic challenges facing Somalia,

[11] Additional support came from bilateral donors, such as the U.S. government, which contributed Pfizer vaccine donations.

thereby promoting a comprehensive approach to pandemic management. Involvement at such high levels of government was essential for garnering support for vaccination campaigns, mobilizing financial resources, and ensuring the logistical arrangements necessary to deliver vaccines across the country.

> ***"Somalia's leadership for example, there was public vaccination of the former president Farmajo and the vaccination of the Minister of Health, Dr. Fowzia. Public media dissemination of these high-level vaccinations boosted uptake." –COVAX Partner***
>
> ***"The nature of over three decades humanitarian response and coordination core led by the government and country humanitarian system with strong support from the donors seems to be a top notch in Somalia." –USAID Staff Member***

While coordination and political leadership lead to success in vaccine delivery, there were also some notable challenges. Key informants noted a challenge in initial delays in securing tax exemptions for vaccine imports. The contrasting experiences between the federal government level and the federal member states' swiftness to offer tax exemptions highlight the importance of streamlined administrative processes and the need for prompt governmental action in response to public health crises. FGS required intervention by Gavi leadership to release the tax exemptions.

> ***"For us to ship vaccines from our primary store in Nairobi into Somalia we require tax exemption... that was taking long because the tax exemption is a document that is approved by different offices." –COVAX Partner***

Additionally, Somaliland requested that vaccine supplies bypass Mogadishu, leading COVAX, through UNICEF and other UN coordination mechanisms, to facilitate the direct shipment of vaccines to Somaliland. Furthermore, in Puntland, there was a higher demand for vaccines compared to other regions, resulting in an oversupply that was eventually redistributed to other states. This collaborative approach to vaccine distribution highlights the importance of international partnerships and detailed planning in addressing public health emergencies in fragile contexts such as Somalia.

Key Strategies

- ✓ **High-level political commitment demonstrated through public vaccination of leaders.**
- ✓ **Weekly coordination meetings were co-chaired by the MOH and UN Humanitarian Coordinator and with higher political support from Offices of the President and Prime Minister.**
- ✓ **Effective partnerships developed between government, UN agencies, and implementing partners through existing health cluster mechanisms.**
- ✓ **Leveraging Somalia's long-standing humanitarian coordination infrastructure.**

Effective Community Engagement and Social Mobilization

Early vaccine hesitancy highlighted the need for enhanced community engagement and culturally sensitive health interventions to address misconceptions and improve public health outcomes. Initial hesitancy stemmed from misinformation regarding side effects, particularly concerns about fertility related to certain vaccines. Cultural barriers and myths further compounded the challenge, necessitating significant resources to address these issues.

> *"There were a lot of fear and misinformation about the available vaccine. It was related to blood clotting, cause other health issues and infertility while there was no proof." –SOS Children's Villages Staff Member*

Key informants from a wide range of organizations noted that vaccine hesitancy, driven by low trust and misinformation, highlighted the need for prioritized, tailored solutions. In particular, it was emphasized that health advice needed to come from trusted nonstate authorities.

> *"Community and religious leaders as well as community health workers especially women played important role to create vaccine demand." – Local Researcher*
>
> *"They also used radios, social media and all possible mechanism to make the Somali population receive the necessary information." – USAID Staff Member*

Community engagement proved to be crucial in improving vaccine uptake. The Somali government, in collaboration with its partners, launched organized outreach initiatives. These efforts included community- and household-level campaigns, as well as partnerships with local stakeholders such as community leaders, religious leaders, female health workers, community-based organizations, and NGOs. These collaborations significantly improved outreach, especially in rural and underserved areas.[12]

Key Strategies

- ✓ **Strategic involvement of religious and community leaders to build vaccine confidence**
- ✓ **Deployment of female community health workers for outreach and mobilization**
- ✓ **Focus group discussions with medical experts to address fertility concerns among young women**
- ✓ **Use of multiple communication channels**

Strategic Adaptation to Context

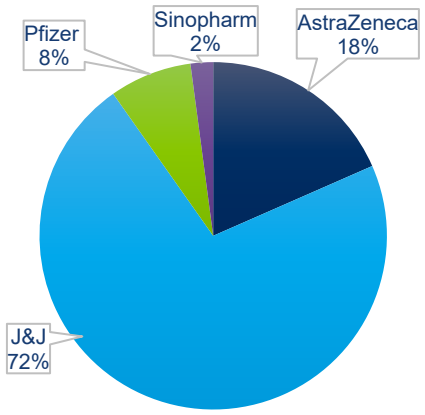
While vaccines ultimately were made available to the entire Somali population, the National Deployment and Vaccination Plan prioritized vulnerable populations, including those with preexisting health conditions, the elderly, and IDPs, who were central to Somalia's vaccination strategy.[9] Effective coordination among the government, donors, and international organizations ensured that challenges were systematically addressed during regularly held coordination meetings.

To facilitate this extensive vaccination effort both local and international health actors were actively engaged, using mobile and outreach teams to ensure accessibility. These teams were instrumental in reaching underserved populations and overcoming geographical and logistical barriers. The overarching objective of this initiative was to bring vaccines as close to the people as possible. This was achieved by engaging community organizations like teams in Baidoa who trained community actors and worked with local leaders to promote community awareness through social media campaigns. This community-centered approach not only enhanced vaccine coverage but also fostered trust and acceptance among the population. By prioritizing convenience and accessibility, health authorities were able to maximize participation in the vaccination campaign.

The single-dose vaccine emerged as the preferred option among available COVID-19 vaccines and (**Figure 5-1**). This preference was largely attributed to the vaccine's single-dose regimen. 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 single-dose vaccine (comprising 70% of vaccines used) was an important adaptation.

"The arrival of a single-dose option was also an important game changer." –Somalia Red Crescent Society

Figure 5-1. Percentages of COVID-19 vaccines received in Somalia, by brand



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.

"I remember the DG (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

Somalia's fully vaccinated population included 60% of all IDPs in the country and 8% of the nomadic populations.[13] However, disparities in coverage persisted, with urban areas exhibiting significantly higher vaccination rates compared to rural and nomadic communities. Gender disaggregation was not readily available from interviews and reviewed materials.

Key Strategies

- ✓ **Targeted outreach to IDP camps and hard-to-reach areas**
- ✓ **Pivoting to single-dose vaccine**

Resources and System Strengthening

Investments were made across numerous dimensions to strengthen Somalia's health system during its pandemic response. In addition, to training healthcare workers, significant efforts were made to enhance Somalia's cold chain capacity, including the deployment of ultra-cold chain equipment across multiple states. To further strengthen regional vaccine storage, solar-powered equipment was supported by COVAX and delivered by the end of November 2021.

Somalia made significant progress in rolling out the COVID-19 vaccination program, with COVAX's efforts now integrated into broader immunization initiatives, such as the Big Catch-Up, a global WHO initiative aimed at expanding access to vaccines. This integration demonstrates how the COVID-19 response was leveraged to strengthen the overall health system.

"From COVID-19 response and vaccination the Somali government learnt a lot... Government systems and capacity were relatively built." –MoH official

Key informants described the development of electronic tracking and monitoring systems, as well as online vaccination reporting, contributing to improving the vaccination process. They also noted pooling resources from multiple partners was essential in achieving widespread vaccine coverage.

However, several challenges were encountered. Air transport requirements, due to security constraints, significantly increased operational costs. Limited cold chain capacity initially required meticulous planning to ensure vaccine integrity. Additionally, the short shelf life of some vaccine shipments posed a logistical challenge, requiring careful planning to minimize waste and ensure timely distribution.

Additional challenges included the need for different storage conditions for multiple vaccine types and the requirement for training health workers to manage these varied needs. Furthermore, competing health priorities related to food insecurity and other epidemic prone diseases unrelated to COVID-19 but resultant from Somalia's worst draught during the pandemic made resource allocation and focus more challenging.

Key Strategies

- ✓ **Enhanced cold chain capacity including solar-powered equipment**
- ✓ **Integration of COVID-19 vaccines into routine immunization systems**
- ✓ **Electronic reporting tools developed specifically for COVID-19 vaccination.**

LESSONS AND INSIGHTS

- **Political will**. The commitment from the highest offices of government played a pivotal role in ensuring that the COVID-19 response was prioritized and that effective measures were implemented to safeguard the health and well-being of the Somali people.
- **Health systems strengthening.** Establishing and maintaining a robust local cold-chain logistics system ensured that vaccines could be stored and transported at appropriate temperatures. COVAX procured refrigeration units and cold-chain management training will be crucial for future events. Enhanced development and use of digital systems is necessary.
- **Community engagement**. Active involvement of relevant community actors, involving women health workers and community-based organizations allowed for tailored solutions such as the increase of vaccine access points, flexible schedules and targeted communication campaigns to reach underserved and remote populations and provide clear and culturally sensitive messaging to address misconceptions.

CONCLUSION

COVAX was instrumental in facilitating Somalia's COVID-19 vaccination efforts, providing the country with access to vaccines. This initiative proved particularly effective in urban centers, where vaccination rates reflected notable success due to better infrastructure and accessibility. However, some challenges remained in extending vaccine coverage to remote and conflict-affected areas, where logistical barriers, security issues, and limited healthcare resources hindered broader outreach efforts. Specifically, the viability of vaccines for populations facing

frequent interruptions in access to health care should be a primary consideration for fragile contexts.

Community engagement proved critical for Somalia's COVID-19 response. The Somali government's efforts to engage community and religious leaders, to recruit community health workers (especially women), and to publicly vaccinate prominent people, including the President, reduced vaccine hesitancy and increased uptake and demand.

By actively engaging influential community figures, the Somali government leveraged their trust and authority to disseminate accurate information about the safety and efficacy of vaccines. Religious leaders, in particular, played a pivotal role in shaping public perceptions and effectively countering misinformation through their established networks. The involvement of community health workers ensured that information was communicated through culturally appropriate channels and resonated with local populations. Future strategies should focus on enhancing regional vaccine production capabilities, to limit vaccine nationalism, strengthening community engagement, and integrating COVID-19 vaccination into routine immunization programs to better prepare for potential pandemics. Ultimately, a robust community engagement strategy is essential for building public trust, ensuring equitable access to healthcare, and fostering long-term resilience in preparation for future health emergencies. Notably, the longstanding nature of Somalia's humanitarian context played a role in its success for COVID-19 vaccine uptake.

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ANNEX 6: LINE OF SIGHT FROM FINDINGS TO CONCLUSIONS AND RECOMMENDATIONS

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

Conclusion 1: The COVAX design, including the COVAX Facility, AMC, and Delivery Pillar efforts, remained relevant as a mechanism to ensure equitable access to COVID-19 vaccines during the pandemic's evolution into 2022 and 2023. By the end of 2021, 11 billion doses were 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 changing epidemiological challenges.

Conclusion 3: By 2022, COVAX had become an effective end-to-end solution for equitable vaccine access, despite several challenges. 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, issues arose with delivery financing, operational complexities, and the need for further adaptation in response to shifting demands and resources.

Conclusion 4: The success of COVAX was largely due to strong coordination among partners, a proactive management structure, 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.

Conclusion 5: COVAX was highly successful in distributing nearly two billion vaccines, particularly 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. COVAX played a crucial role as the largest provider of vaccines to LMICs, but access disparities remained.

Conclusion 7: The COVAX experience provides valuable lessons for future multilateral responses to global pandemics. These lessons emphasize the need for addressing vaccine nationalism and commercial interests, engaging stakeholders from the outset, ensuring intra-country equity, and maintaining flexibility in operations. Operationally, key lessons include clarifying roles and responsibilities, ensuring a strong fundraising approach, ensuring timely vaccine supply, integrating delivery financing, and maintaining agility to respond to evolving needs. These insights are crucial for designing future global health mechanisms to ensure equitable access during pandemics.

Design principle 1: Equity

Evaluation Findings:	Related Findings from the first COVAX Facility and AMC evaluation
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, rather than priority populations.	60: Despite the fact that the COVAX Facility and AMC's support was strongly targeted to LICs and LMICs, global vaccine coverage was highly inequitable across countries.
Finding 36: Vaccination coverage has remained considerably lower for LICs compared to that in LMICs, UMICs and HICs.	61: Within-country equity is harder to define and measure, but available data suggests that high-risk groups were prioritized and that women and men had equal access to vaccines in most countries.
Finding 38: COVAX has made a substantial contribution to the deaths averted through COVID-19 vaccination, particularly in AMC-participating countries.	
Finding 39: Available evidence suggests that in most countries a majority of health care workers (HCW) and older adults were vaccinated.	
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.	
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.	
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.	
Finding 43: The COVAX Delivery Pillar was widely considered to have been impactful, with examples of added value provided in varied ways across countries.	

Design principle 2: Unity in partnerships

Evaluation Findings:	Related Findings from the first COVAX Facility and AMC evaluation
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.	
Finding 13: Cross-partner coordination structures were generally viewed as essential35; however, while some proved highly effective, others were perceived as overly complex, with excessive layers and unclear roles and responsibilities.	17: COVAX Facility governance arrangements have been overly complex, with a lack of clarity over roles and with overlapping responsibilities between bodies. These arrangements have created a huge administrative burden and have not provided an effective forum for genuine stakeholder engagement in decision making. Finding 21: A very strong mission-driven culture within the Office of the COVAX Facility has enabled it to rapidly implement a hugely ambitious agenda, though the extent to which inclusivity in decision making has influenced the speed of implementation is unclear.
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.	
Finding 15: The challenges in maintaining effective communication with countries during 2021, when visibility on supply was low , continued to affect Pillar partners and their relationships with countries into 2022, as many countries had already lost trust in COVAX.	18: Partner working relationships for the COVAX Facility have at times been challenging and blurred the usual lines of accountability for Gavi business. Finding 19: Stakeholder engagement and external communications posed significant challenges for the COVAX Facility and
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.	55: Gavi funds, alongside WHO and UNICEF resources, were used to deploy more than 400 TA providers at the country level for the development of NDVPs and to support planning for the delivery of COVID-19 vaccines in eligible AMC92 economies. Finding 56: Amid substantial concern in early to mid-2021 from countries, donors and partners on the lack of vaccine delivery support in the near and medium term, Gavi mobilized and approved $775 million to support vaccine delivery in June 2021.

	Finding 57: By the end of 2021, only a small amount of Gavi funding had been made available to countries, with many stakeholders noting that country needs were not met in a timely way.
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.	

Design principle 3: Flexibility and agility

Evaluation Findings:	**Related Findings from the first COVAX Facility and AMC evaluation**
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-making and mitigated key risks as they evolved over time.	

Recommendation area 2: Develop an end-to-end vision and approach for equitable access to vaccines cognizant of learning related to COVAX core functions.

Conclusion 2: COVAX's business model and design adapted significantly to the shifting context in 2022-2023, demonstrating flexibility as a core strength. Key adjustments included securing funding through the Pandemic Vaccine Pool, balancing self-procured and donated doses, renegotiating contracts with manufacturers, and transitioning to a routine vaccination model. The COVAX Delivery Pillar also evolved, particularly with the shift from the CRD workstream to the CoVDP workstream.

Resource mobilization: Continue to leverage strong global health initiative capacities and donor relationships to mobilize resources around high-return investment cases and use of high-level summits as a proven successful resource mobilization strategy in uniting global donors around a common cause to secure funding commitments.

Evaluation Findings:	**Related Findings from the first COVAX Facility and AMC evaluation**
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. 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. Finding 11: The decision-making process surrounding the repurposing of AMC funds (US$2,490 million) faced some critique from key informants.	23: A strong resource mobilization function was established around the COVAX AMC. 24: The COVAX AMC was not able to access sufficient financial resources immediately in 2020. 25: COVAX AMC resource mobilization in 2021 was highly successful.

Portfolio management: Develop an approach to securing supply that balances donated and self-procured doses to ensure as quick a supply as possible. This should incorporate a greater tolerance for vaccine wastage if ordered doses are not needed, and that seeks to avoid potentially harmful renegotiations with manufacturers that could impact future pandemic scenarios. Work with manufacturers to agree on supply-related information needs and communication guidelines to be adhered to even in uncertain supply contexts to allow for greater transparency and better planning at the country level.

Evaluation Findings:	**Related Findings from the first COVAX Facility and AMC evaluation**
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 relations, minimize global vaccine wastage, and ensure access to high-demand mRNA vaccines.	35: The COVAX Facility and AMC was successful in achieving reasonable pricing for LICs and LMICs. 36: The COVAX Facility and AMC design relied primarily on negotiation of APAs with manufacturers to secure supply. 37: The approach to securing supply produced some early successes, but deliveries from the COVAX Facility and AMC quickly and increasingly lagged behind targets and expectations. 38: The COVAX Facility and AMC's supply shortfall in 2021 has been attributed to several causes, including India's decision to halt exports, regulatory and manufacturing delays, limited cash in hand in 2020, lower priority accorded to the COVAX Facility and AMC by some manufacturers, and lack of pre-established arrangements for handling dose donations. 42: Most of the COVAX Facility and AMC APAs did not include enforceable clauses on delivery timing 43: The COVAX Facility and AMC ultimately lacked the market power to meet its supply objectives in the face of aggressive competition from HICs. 44: In response to the supply crisis stemming from the decision in India to halt exports, the COVAX Facility and AMC gave greater priority to donations, which became a critical source of supply for much of 2021. 45: Lack of pre-established arrangements for donations slowed supply from this source. 46: By the end of 2021, the COVAX Facility had built a broad portfolio of vaccines and could project abundant supply for 2022. Finding 47: Going into 2022, the COVAX Facility faced significant oversupply.

Finding 4: With excess supply within the COVAX portfolio, APA options (as opposed to firm order committed doses) afforded considerable flexibility for portfolio management. 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.	35: The COVAX Facility and AMC was successful in achieving reasonable pricing for LICs and LMICs. 36: The COVAX Facility and AMC design relied primarily on negotiation of APAs with manufacturers to secure supply. 37: The approach to securing supply produced some early successes, but deliveries from the COVAX Facility and AMC quickly and increasingly lagged behind targets and expectations. Finding 38: The COVAX Facility and AMC's supply shortfall in 2021 has been attributed to several causes, including India's decision to halt exports, regulatory and manufacturing delays, limited cash in hand in 2020, lower priority accorded to the COVAX Facility and AMC by some manufacturers, and lack of pre-established arrangements for handling dose donations. 42: Most of the COVAX Facility and AMC APAs did not include enforceable clauses on delivery timing 43: The COVAX Facility and AMC ultimately lacked the market power to meet its supply objectives in the face of aggressive competition from HICs. 44: In response to the supply crisis stemming from the decision in India to halt exports, the COVAX Facility and AMC gave greater priority to donations, which became a critical source of supply for much of 2021. 45: Lack of pre-established arrangements for donations slowed supply from this source. 46: By the end of 2021, the COVAX Facility had built a broad portfolio of vaccines and could project abundant supply for 2022. Finding 47: Going into 2022, the COVAX Facility faced significant oversupply.
Finding 6: COVAX "above country" vaccine wastage (unutilized doses within the global system) was reported at 9%.	
Finding 7: The allocation model for COVID-19 vaccines evolved continuously to address changing supply availability and country needs.	48: Relying on WHO and SAGE for a normative allocation framework was appropriate, given COVAX partners' mandates and the sensitivity around global allocation decisions 49: Dose allocation in 2021 and for Phase 1 was not conducted as anticipated, with no two rounds conducted in the same way and with

	several different processes being involved. The approach evolved as a pragmatic response to a challenging operating environment. 50: Most stakeholders outside of the JAT consider the allocation mechanism, and the algorithm in particular, to have been overly complex and difficult to understand. 51: Until Round 7, conducted in September 2021, the allocation mechanism was operationalized broadly in line with the WHO Allocation Framework and the principle of proportional allocation. This did not factor in other, non-COVAX, sources of vaccine supply, and as a result did not optimize global equality (equal access to vaccines) or equity (prioritization of those most in need) as much as it could have. 52: The allocation of doses from September to December 2021 did factor in other sources of vaccine supply, which gave the COVAX Facility and AMC more flexibility to prioritize countries with low vaccine coverage and led to a more equitable allocation.

Allocation: Aligned with Recommendation 4 in the first COVAX Facility and AMC evaluation, consider the implications of adopting a more flexible "rolling allocation/access 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.

Evaluation Findings:	**Related Findings from the first COVAX Facility and AMC evaluation**
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. 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.	48: Relying on WHO and SAGE for a normative allocation framework was appropriate, given COVAX partners' mandates and the sensitivity around global allocation decisions Finding 49: Dose allocation in 2021 and for Phase 1 was not conducted as anticipated, with no two rounds conducted in the same way and with several different processes being involved. The approach evolved as a pragmatic response to a challenging operating environment. 50: Most stakeholders outside of the JAT consider the allocation mechanism, and the algorithm in particular, to have been overly complex and difficult to understand. 51: Until Round 7, conducted in September 2021, the allocation mechanism was operationalized broadly in line with the WHO Allocation Framework and the principle of proportional allocation. This did not factor in other, non-COVAX, sources of vaccine supply, and as a result did not optimize global equality (equal access to vaccines) or equity (prioritization of those most in need) as much as it could have. 52: The allocation of doses from September to December 2021 did factor in other sources of vaccine supply, which gave the COVAX Facility and AMC more flexibility to prioritize countries with low vaccine coverage and led to a more equitable allocation.

Coordination and collaboration structures and modalities: Akin to the Office of the COVAX Facility, the modality would leverage learning on human and financial surge capacity through COVAX and other emergency response units. The unified modality (similar to the Unity and Partnership Design Principle in recommendation 1) would integrate the roles and responsibilities of each participating agency and leverage strong country ownership to create unity from the outset. When setting out coordination structures within the modality, roles, and responsibilities for partners and teams collaborating within them would be made clear and work under the principle of joint team working. In any future large-scale emergency response, joint operational teams should be quickly established, with intentional time set aside to define roles and responsibilities before the pandemic arrives.

Evaluation Findings:	**Related Findings from the first COVAX Facility and AMC evaluation**
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.	
Finding 15: The challenges in maintaining effective communication with countries during 2021, when visibility on supply was low , continued to affect Pillar partners and their relationships with countries into 2022, as many countries had already lost trust in COVAX.	18: Partner working relationships for the COVAX Facility have at times been challenging and blurred the usual lines of accountability for Gavi business. Finding 19: Stakeholder engagement and external communications posed significant challenges for the COVAX Facility and AMC.

Political advocacy: Ensure this function is appropriately resourced by senior-level leaders that bring established high-level networks in order to sustain strong partnerships with Gavi and non-Gavi countries. Ensure it operates with the appropriate frame, that is, broader than health where a cross-government response is required.

Key Enablers Figure.

Develop a clear and consistent risk approach to support rapid decision making: This should be accompanied by a mechanism that can account for implications that arise from decisions having been made on imperfect data. The COVAX experience demonstrated that decisions needed to be taken in uncertain situations where data to support decision-making processes was sparse and/or low quality and/or changeable. In such instances team members were sometimes reluctant to share data openly and rapidly, as they were unclear of the implications of these data being used to inform a decision that would later be criticized. Examples shared where data challenges arose included allocation decisions using imperfect and changing country demand forecasts and the approval of CDS application budgets.

Evaluation Findings:

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-making and mitigated key risks as they evolved over time.

Communication and engagement: With countries: Consider developing guidance around what communication and engagement with countries is likely to look like, including likelihood of needing to share uncertain/incomplete information that could be shared with countries in times of uncertainty and, for example, ahead of final communications that include detailed/formal WHO technical guidance. With CSOs/ community based organizations (CBOs): Consider how best to engage and empower CSOs/CBOs at a global level such that they can represent broad CSO/CBO constituent views and such that their inputs can be used to inform decision-making. External communications: Establish a well-resourced external communications team 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/scene and to ensure country-facing team members are not overburdened with responding to concerns related to media content. For a future mechanism/vaccine response effort communications should be harmonized at all levels.

Evaluation Findings:	**Related Findings from the first COVAX Facility and AMC evaluation**
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.	10: COVAX leadership was slow to engage low and middle-income countries, resulting in public criticism of COVAX. 11: There was hesitation to engage civil society in the early design discussions on the COVAX Facility as it was thought that this would delay decision making. 19: Stakeholder engagement and external communications posed significant challenges for the COVAX Facility and AMC.
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.	
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 using the NDVP template.	61: Within-country equity is harder to define and measure, but available data suggests that high-risk groups were prioritized and that women and men had equal access to vaccines in most countries.

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.	
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.	61: Within-country equity is harder to define and measure, but available data suggests that high-risk groups were prioritized and that women and men had equal access to vaccines in most countries.

Delivery Support: 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 partners 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.

Evaluation Findings:	**Related Findings from the first COVAX Facility and AMC evaluation**
Finding 17: The CRD initiative was viewed as successful at its intended purpose of working with countries to improve their vaccine readiness and to support delivery.	
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.	
Finding 19: Gavi's CDS program supported countries to strengthen country readiness to accept COVID-19 vaccines and roll out COVAX doses.	
Finding 20: The CoVDP evolved from the CRD, recognizing 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.	
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.	53: Throughout 2020 and into mid-2021, there was an expectation that other partners would be responsible for funding and implementing vaccine delivery support. During this time, Gavi did not envisage taking a substantial role in this area. 54: Despite initial delays in implementation, which meant that very little support was received before the first vaccines were delivered, Gavi's CCE support was used to procure over 5,900 cold chain units for more than 40 countries in 2021.
Finding 37: Delivered doses have taken time and not always resulted in improved coverage.	

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.

Conclusion 4: The success of COVAX was largely due to strong coordination among partners, a proactive management structure, 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.

Conclusion 5: COVAX was highly successful in distributing nearly two billion vaccines, particularly 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. COVAX played a crucial role as the largest provider of vaccines to LMICs, but access disparities remained.

Evaluation Findings:

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

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.

Finding 33: The legacy of and learnings from COVID-19 have in many cases strengthened countries' health and EPI systems.

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.

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.

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.

Finding 47: Notable negative unintended consequences of COVAX Delivery Pillar support include the rise of other vaccine-preventable diseases such as measles; inadvertently fragmenting data systems; and confusion experienced at country levels. fragmenting data systems; and confusion experienced at country levels.

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.

Conclusion 4: The success of COVAX was largely due to strong coordination among partners, a proactive management structure, 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.

Conclusion 5: COVAX was highly successful in distributing nearly two billion vaccines, particularly 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. 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 capacity, unclear delivery support roles, and challenges in reaching vulnerable populations, including those in remote areas.

Evaluation Findings:	**Related Findings from the first COVAX Facility and AMC evaluation**
Finding 10: The COVAX close-out 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.	
. Finding 26: Delivery efforts were under resourced, however communication between pillar partners was effective with adequate mechanisms in place to support collaboration.	53: Throughout 2020 and into mid-2021, there was an expectation that other partners would be responsible for funding and implementing vaccine delivery support. During this time, Gavi did not envisage taking a substantial role in this area. Finding 54: Despite initial delays in implementation, which meant that very little support was received before the first vaccines were delivered, Gavi's CCE support was used to procure over 5,900 cold chain units for more than 40 countries in 2021.
Finding 34: COVAX was a major source of COVID-19 vaccines globally, particularly for AMC participants and LICs.	58: The COVAX Facility and AMC has made a substantial contribution to the supply of vaccines to and vaccine coverage in LICs. Its contribution has been moderate in LMICs and marginal in UMICs and HICs.
Finding 35: Compared to other sources, vaccine supplies from COVAX were relatively limited in 2021, but much more substantial in 2022, plateauing in 2023.	59: Limited vaccine supplies in LICs relative to HICs constrained vaccine coverage rates, but contextual factors were also important constraints.

ANNEX 7: SUPPLEMENTARY EVIDENCE TO EVALUATION FINDINGS

Annex 7.1: Supplementary evidence to evaluation findings

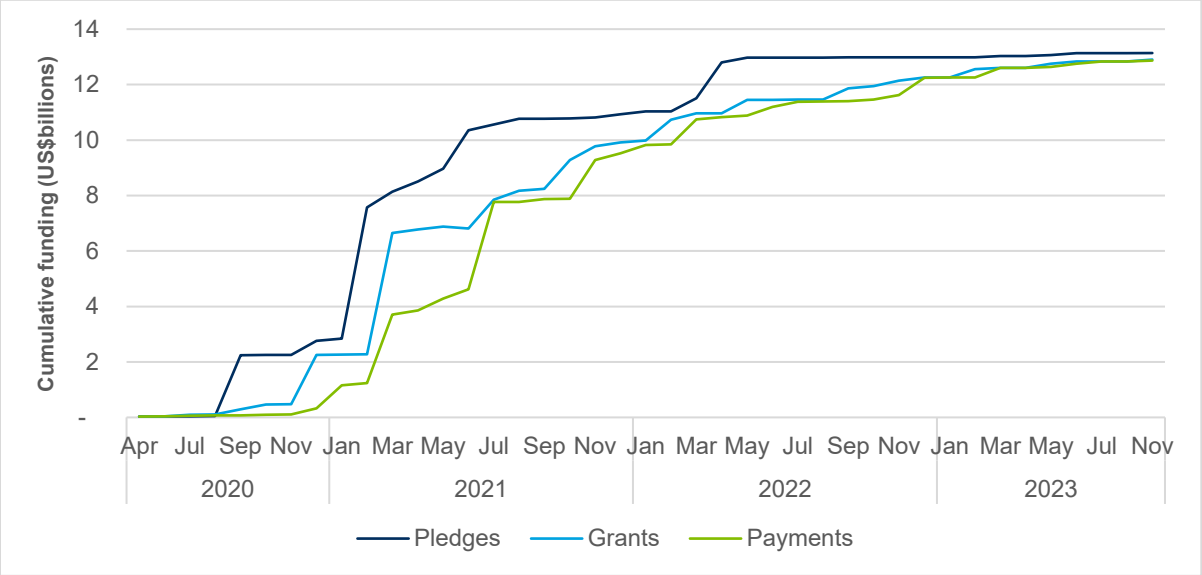
Finding 1: At the start of 2022, resource needs for COVAX were highly uncertain due to factors such as epidemiological unpredictability, fluctuating country demand, and unclear future vaccine requirements. ***Table*** summarizes the resource evidence assembled to address Finding 1; ***Figure 7-*** illustrates the timeline and amounts managed.

Table 7-1. Summary of AMC resources raised by COVAX through 2020–2023[1]

Fundraising sources	Amounts raised
Cash receipts from COVAX AMC donors	From inception through December 31, 2023, total cash receipts amounted to US$12.4 billion.
Donated doses	From inception through December 31, 2023, 868.2 million doses were donated at a value of US$6.0 billion.
Cost-sharing[2]	After the inception of the Facility, 16 economies signed legal agreements with Gavi to participate in the cost-sharing approach. In all, 141 million doses were requested, and total payments received from participants were US$73.8 million. Gavi released US$50.4 million of the cost-sharing payments to procurement agents.
SFP participation[3]	As of January 2021, 98 countries had signed up as SFPs to the COVAX scheme and it was reported that SFPs did not have sufficient cash to match their liabilities associated with manufacturing deals. However, it was recognized there was enough demand from COVAX AMC participants to absorb any vaccines originally allocated to SFPs. As of June 2021, SFPs increased to 99 countries, and SFPs contracted Gavi to purchase 576 million doses, of which 486 million (agreed by Team Europe)[l] would be transferred to AMC countries. In total, SFPs committed to procure US$4.2 billion of doses, of which US$1.4 billion was upfront funding. As of September 2021, the Market Sensitive Decisions Committee approved 12 million Sinovac doses for SFPs, which were due to be delivered during Q4 2021. At the end of June 2021, the COVAX Facility held US$2.2 billion in cash related to SFPs.
Finance agreements	On December 16, 2022, Gavi and the United States International Development Finance Corporation entered into a financing facility, which is providing up to US$1.0 billion to accelerate COVID-19 vaccine and ancillary supply purchase and delivery on behalf of developing countries participating in the Gavi COVAX AMC. On December 19, 2022, Gavi and the European Investment Bank entered into a financing facility, which provided Gavi a credit of up to €500 million for the purpose of supporting the financing of the purchase of COVID-19 and all other vaccines and equipment required for immunization campaigns approved by the Gavi Board. On December 15, 2023, the financing facility was amended for a credit of up to €1 billion. During the year ending December 31, 2023, Gavi did not enter into any new finance agreements.

[l] Team Europe: The European Commission on behalf of 27 European Union member states plus Norway and Iceland.

Figure 7-1. COVAX AMC resource management timeline



Source: Gavi COVAX data brief

SFP model

The SFP model evolved over time because it was realized that SFPs were not using the optional model as much as anticipated given its complexity (especially compared to the committed-purchase arrangement) and the degree of benefit that it ultimately afforded participants [4]. As described in *Distributing a billion vaccines: COVAX successes, challenges, and opportunitity*[5], published in November 2022, less than 2% of cumulative course coverage came from optional-purchase arrangements among SFPs.

A key benefit or added value to COVAX of the SFP model included being able to leverage upfront payments to boost the amount of funds available to secure earlier AMC vaccine supply contracts and downpayments than it would have without these funds. Moreover, SFP funds contributed to coverage of the COVAX Facility's operating costs. Additional SFP-committed funds were achieved through 101 participating SFPs, including Team Europe. In total, 30 participants opted for the committed-purchase arrangement, committing to purchase 98 million doses; and 71 participants, including Team Europe, opted for the optional-purchase arrangement to procure 479 million doses. One drawback to the SFP model that interviewees noted was the level of effort required to close SFP agreements during COVAX closeout.

The key benefits or added value to SFPs of engaging with COVAX included allowing access to vaccine doses at lower prices than through bilateral deals with manufacturers,[m] and benefiting from Gavi's experience with manufacturers and markets, which meant less due diligence required for SFPs. The key drawback was the complexity of the optional model in SFP 1.0, which hindered participants' understanding of the model. Evidence suggests that

[m] The engagement with COVAX allowed access to a broader portfolio of vaccines and doses than without COVAX.

although the SFP model may not have been perfect, or used to the extent anticipated, it nevertheless allowed 18 SFPs to receive more than 20% of their total COVID-19 doses via COVAX by October 2022 [6].

Finding 4: With excess supply within the COVAX portfolio, APA options (as opposed to firm order committed doses) afforded considerable flexibility for portfolio management. Options within APAs accounted for more than 50% of COVAX APA-related supply, thereby reinforcing the importance of options within the supply portfolio (see ***Table 7-2***).

Table 7-2. Number of doses agreed through APAs with nine manufacturers, 2021–2023

Manufacturer	Doses delivered under COVAX as of May 2024 (millions[7])[n] 36
Pfizer/BioNTech – Comirnaty (Bivalent)	714.2
AstraZeneca – Vaxzervria	287.9
SII-AstraZeneca (Covishield)	292.0
SII-Novavax	
Novavax – Nuvaxovid	1.8
Johnson & Johnson (Janssen) Ad26.COV 2.S	314.1
Moderna	186.8
Sinopharm (Beijing) – BBIBP-CorV	115.5
Sinovac – CoronaVac	118.3
Clover	–
Total of secured FoC doses	**2,030.7**

Source: Gavi data shared with evaluation team.

Finding 7: The allocation model for COVID-19 vaccines evolved continuously to address changing supply availability and country needs. During this context, the COVAX deal-making team relied on timely inputs from the demand-forecasting/planning team to inform their portfolio management approach. The timeline of pediatric dose delivery can be found in Table 7-3.[o]

Table 7-3. Timeline of pediatric dose delivery during 2022

Activity	Date
Finalization of AMC participant demand for pediatric doses	March–April 2022
Matching of demand with donated supply	March–May 2022
Preparation of operations such as delivery	May 2022
Shipping of pediatric doses to selected participants	June 2022

[n] Information on doses delivered under COVAX for SII-Novavax and Clover was not available within this data source.
[o] Paediatric vaccination support presentation, 15 April 2022

Data on the extent to which countries accessed pediatric doses demonstrate that 26 countries expressed demand. As of November 16, 2022, 85 million pediatric doses had been allocated to participant countries, all sourced from donations: “To meet country demand for any doses—primary series, booster, or pediatric—as efficiently as possible, a ‘Rolling Allocations Process’ has been developed and implemented, which allows COVAX to quickly make allocations in response to verified, incoming requests.”[8]

As countries began to demand pediatric vaccines, COVAX (as of April 2022) began to consider how best to accommodate the demand. To support the delivery of pediatric doses, the following guardrails were implemented: 1) only Pfizer doses up to volumes from existing offers could be converted to pediatric doses; and 2) countries had to meet the following conditions: a) Pfizer-eligible AMC participants had to have more than 40% of their population fully vaccinated against COVID-19; b) AMC participants had to proactively express demand for pediatric doses; c) AMC participants had to show progress toward the WHO SAGE prioritization road map; and d) AMC participants had to show the ability and intention to continue delivery of other vaccines through routine immunization. During this time, COVAX was required to respond to unsolicited pediatric demand, but not to actively promote demand among low- and medium-coverage participants. Further, COVAX was required to match demand with availability of pediatric supplies, and not to provide AMC participants with additional delivery funding for pediatric doses. As of April 2022, COVAX had reached out to 26 AMC participants to finalize pediatric dose demand.

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. Demand planning leveraged two approaches: a global top-down model based on country realities and projections, and a bottom-up demand-planning exercise undertaken with all AMC91 countries (i.e., AMC92 countries except India). Allocation and demand forecasting were linked through the COVAX demand-planning team. This team consisted of representatives of Gavi, UNICEF, and WHO/PAHO, and was chaired by a nominated lead from UNICEF and Gavi. Until May 2022, COVAX conducted monthly demand-planning exercises, collecting relevant data from Ministries of Health to better 1) coordinate the sequencing and shipment of available COVAX supplies, and 2) understand product preferences, needs, and expected volumes of demand.

Prior to February 2022, countries would submit NDVPs, including details on desired volumes, specific vaccine product preferences, and optimal timing for receiving these. When the COVAX Facility lifted coverage caps in Phase 249 (February 2022 onward), participants could express their vaccine product preferences through their “demand plans” and complement them if needed with the preferences set in the “COVAX Collaboration Portal.”

Demand planning (during 2022 and onward) occurred on an as-needed basis in collaboration with PAHO and UNICEF. WHO and UNICEF provided technical support to countries with demand-planning activities. In 2022, COVAX acknowledged that there was a need to move away from COVAX Facility-managed demand-forecasting processes and to instead rely on UNICEF and PAHO expertise and established tools and processes for demand forecasting. Until Allocation Round 16 (May/June 2022), demand-planning activities provided direct inputs into the COVAX allocation process. The demand-planning team also consulted with the deal-making and supply-planning teams liaising with manufacturers and donors on required vaccine volumes (informed by country demand).

Annex 7.2: Theory of Change assessment

Theory of Change assumption held

The epidemiological situation and fundraising environment is conducive to meeting resource mobilization targets.

As shown in Finding 1, COVAX was able to meet its RM objectives both at the start of the pandemic when countries across the globe were struggling to manage COVID-19 as a PHEIC, and later when the epidemic shifted and variants began emerging that had the potential to be as serious as, or worse than, the original virus strain.

Broad-based engagement of potential AMC donors in international discourse.

The fact that COVAX consistently[p] raised resources through AMC summits and from such a wide pool of donors suggests that broad engagement among AMC donors was achieved. The total number of sovereign governments, including the European Commission AMC donors, amounted to 49 plus "other sovereign donors." In addition, 55 foundations, corporations, organizations, and "other donors" contributed [9]

Vaccine manufacturers are willing and able to enter into advance-purchase agreements to meet COVAX objectives.

Evidence demonstrates that nine vaccine manufacturers approached by COVAX's deal team were willing and entered into 11 APAs with COVAX. It is unclear how many manufacturers were approached by COVAX. However, the diversity of supply achieved by COVAX is a notable achievement.

Theory of Change assumption partially held

Strong collaboration occurred between the COVAX Facility and vaccine manufacturers to meet COVAX requirements.

From inception to December 31, 2023, Gavi entered into 11 legally binding APAs with manufacturers to secure approximately 2.2 billion doses for the Facility. During the year ending December 31, 2023, Gavi entered into one new supplemental agreement for a small volume of additional doses. This addition is evidence of strong collaboration between the COVAX Facility and vaccine manufacturers.

However, this assumption can be only partially rather than fully held. That is, there is some evidence publicly available of manufacturers having agreed to renegotiations, but not a full picture. The degree to which this contribution can be assessed as "strong collaboration" is therefore not possible to determine without soliciting manufacturers' views.

[p] The first evaluation of the COVAX Facility and AMC found strong engagement from donors, as noted in Finding 23: A strong resource mobilization function was established around the COVAX AMC.

Governance bodies (e.g., Independent Product Group, Procurement Reference Group, and other relevant governance structures) make relevant and timely inputs into decision making on vaccine portfolio and product selection.

Stakeholders confirmed that governance structures such as the IAVG provided important independent functions for COVAX, contributing to greater transparency and expert-informed decision making during 2021 and 2022. Data to confirm whether the same held true for the Product Reference Group and other relevant governance structures was not found through the evaluation.

Theory of Change assumption held

IAVG makes relevant and timely inputs to influence allocation decision making.

A document review of IAVG reports on WHO's website [10] revealed that 13 IAVG Decision Reports (and 5 JAT reports) were published between February 2021 and June 2022, or a period of 16 months. Stakeholders interviewed confirmed the utility of the IAVG during Phases 1 and 2 of the Allocation mechanism in which the IAVG was active.

Strong collaboration between all COVAX participants to evolve the allocation model from a push, supply-driven approach to an approach driven by pull, demand, and absorption capacity.

Evidence across stakeholders from different pillar partners and a review of JAT and IAVG reports suggested that this assumption held true. The general perception shared by stakeholders interviewed was that Gavi, WHO, UNICEF, and PAHO collaborated well and leveraged respective strengths to the best of their ability throughout the transitions between different allocation phases.

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.

Stakeholders interviewed across different pillar partners confirmed that collaboration was strong and that it grew stronger as teams became more familiar with each other, developed trust, and worked with common tools such as the shared data repository.

IAVG makes relevant and timely inputs to influence allocation decision making.

Stakeholders confirmed that inputs from the IAVG—as a decision-maker function during Allocation Phase 1 and later as a strategic advisory function through Phase 2—was extremely helpful and necessary for transparency above all else.

> ***"Like many countries in the region, Zambia was dealing with COVID-19 vaccine hesitancy in the start-up stage. Misinformation and rumors posed a constant threat to vaccine uptake. The spread of misinformation was exacerbated by social media platforms. [COVAX] CDS funding focused on enhancing the advocacy, communication, and social mobilization strategy by orientating community-based volunteers to sensitize their communities. In addition, spots were aired on TV and radio to counter misinformation and support demand generation." –Gavi verification notes***

"Looking back to 2021, it was fantastic we had an IAVG as [an] independent mechanism to assess and endorse them, as it gave visibility to a set of partners outside of JAT. It contributed to transparency, not least as IAVG documents were made publicly available." – WHO stakeholder

Theory of Change assumption partially held

Strong collaboration between COVAX Facility/AMC partners around the resource mobilization campaign(s), notably the AMC summit in 2022. During the AMC Summit in 2022, a further US$4.8 billion was pledged from donors.

COVAX Facility and AMC have sufficient soft power to influence SFP and AMC donor and participant decisions, and those of partners and wider stakeholders.

COVAX influenced over 100 donors to support COVAX, alongside 101 SFPs and 92 AMC countries that agreed to participate in COVAX. This was a significant achievement in a short period of time. COVAX also secured engagement of wider partners, including convincing multilateral development banks, and implementing partners, and CSOs to engage in both cost-sharing and delivery-support efforts.

However, COVAX was not able to fully influence some AMC donor decisions during dose-donation discussions, as a result of seeking to maintain good relations with several of Gavi's core donors. COVAX's soft power was also not fully able to influence AMC country decisions regarding demand, including vaccine preferences and timing of demand, partly due to misinformation and miscommunication and partly due to trust issues that developed between AMC countries and COVAX.

The global vaccine supply situation is conducive to meeting COVAX vaccine availability expectations.

As explained under Finding 8, this assumption did not hold in 2021 but did hold to some extent in 2022. As noted in the first COVAX Facility and AMC evaluation, vaccines secured through manufacturer APAs did not arrive in time to meet LIC and LMIC demand at the time when it was most needed in 2021.

Strong collaboration between the Office of the COVAX Facility, partners, and participants to communicate indicative supply timelines and determine other delivery needs.

As Finding 15 suggests, evidence on this assumption is mixed. There is ample evidence to suggest frequent collaboration having taken place between the Office of the COVAX Facility, pillar partners, and participants to communicate indicative supply timelines and determine other delivery needs. Evidence is mixed on the degree to which the collaboration was smooth.

Allocation processes were conducted flexibly in response to changing context.

Findings were mixed on the degree to which allocation processes were conducted flexibly in response to the changing context. There is clear and strong evidence that significant efforts were made to adjust the mechanism to adapt to the changing context, as shown in Finding 7. However, several key stakeholders questioned the degree to which these adaptations could be considered "flexible" enough for the changing emergency context. Despite these perceptions, several urgent allocation requests were reported to have been met over the June–July 2022 period: 100% of requested dose volumes (19 million) and 100% of product preferences were

met. As of October 2022, 100% of requested dose volumes (33 million) and 97% of product preferences were met via the rolling allocation mechanism [17].

Countries are willing and able to derive and share data on country needs, preferences, and readiness; and later, country demand.

Evidence suggests that this assumption partially held: Countries were *willing* to share preferences on demand for certain vaccines but were *often unable* to share reliable quantifications of doses needed in longer-term time frames (i.e., beyond 2 months).

Strong collaboration between the Office of the COVAX Facility, partners, and participants to communicate indicative supply timelines and determine other delivery needs.

Evidence suggests this assumption partially held. That is, there is evidence of strong collaboration between the Office of the COVAX Facility (CCT SCMs). However, due to a lack of reliable manufacturer information on supply timings, it was not possible for COVAX to communicate accurate timelines to countries in a timely way.

Strong collaboration pathways were also established between COVAX Facility partners and participants to determine delivery needs, through means such as regular calls with SCMs (and Desk Officers for CoVDP countries) and between participants and UNICEF and PAHO technical advisors on demand forecasting (starting in 2022).

Theory of Change assumption not held

Supply dynamics enable COVAX to provide predictability to participants on allocation and supply.

As Finding 15 suggests, despite significant efforts to establish and improve data sharing platforms to facilitate the flow of supply information, COVAX was not able to provide predictable allocation and supply information to participants.

Theory of Change assumption unclear if held

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.

No evidence was found to respond to this assumption.

Annex 7.3: Key COVAX-related risks managed during 2021–2023 and how they were managed over time

Annex 7.3 provides details regarding the main risks that COVAX faced in achieving the Facility and AMC objectives, as well as how and to what extent they were managed. Gavi uses a five-point rating scale to classify risk across very high, high, medium, low, and very low.

Table 7-4. Categorization of COVAX-related risks over time[12–14]

Gavi Risk and Assurance Report status updates, by year			
2020	**2021**	**2022**	**2023**
COVAX delivery			
	Insufficient country readiness and absorption capacity	Insufficient country readiness and absorption capacity	
	Lack of demand and vaccine hesitancy	Lack of demand and vaccine hesitancy	
	Wastage due to expiry or cold-chain failures	Wastage due to expiry or cold-chain failures	
	Adverse impact on RI or missed opportunity for synergies	Adverse impact on RI or missed opportunity for synergies	
COVAX supply			
Competition from bilateral deals	Competition from bilateral deals	Competition from bilateral deals	Risk related to unilateral closeout by SFP countries that could lead to legal, reputational and financial challenges
Inability to secure deals in time	Inability to secure deals in time	Inability to secure deals in time	
	Export controls	Export controls	
	Manufacturer prioritization or production issues	Manufacturer prioritization or production issues	
COVAX reputation			
	Inability to meet supply promises		
	Large-scale wastage or idle doses in-country		
(Perception of) inequitable allocation and distribution	(Perception of) inequitable allocation and distribution		
	Geopolitical tensions and conflicts of interest		

Gavi Risk and Assurance Report status updates, by year			
2020	**2021**	**2022**	**2023**
COVAX Facility			
Overstretched people, processes, systems	Overstretched people, processes, systems		
Ineffective coordination, project management, governance	Ineffective coordination, project management, governance		
Insufficient management of funding, liquidity, and risk	Inadequate management of financial risk and liquidity		
Country management capacity			
			The inherent risk (re country management capacity) is likely to increase with COVAX integration, given limited know-how and capacity of countries to integrate COVID-19 vaccination into their routine immunization programs

How key risks were managed over time:

COVAX supply	very high in 2020	very high in 2021	high in 2022	medium in 2023

Competition from bilateral deals

Competition from bilateral deals was important in the earlier days of COVAX (2020–2021) when deals were being made with manufacturers. This risk is not addressed in this evaluation because it falls outside of the temporal scope.

Inability to secure deals in time[q]

As noted in the first evaluation, the approach to securing supply produced some early successes, but deliveries from the COVAX Facility and AMC quickly and increasingly lagged behind targets and expectations [15].[r]

Supply and availability of vaccines improved over time, to the extent that oversupply became a risk to be managed in 2022. Activity shifted from securing to renegotiating deals with manufacturers in early 2022. In hindsight, COVAX's ability to cover the WHO's "worst-case

[q] Original deals secured through 2021 were out of the timing scope of the evaluation, but renegotiations in 2022 and 2023 were in scope.
[r] See Finding 37 of the COVAX Facility and AMC Formative Review and Baseline study, 2023.

pandemic scenario" was prudent and effective in ensuring oversupply rather than undersupply. Stakeholders concurred that COVAX initially struggled to secure supply and allocate vaccines to countries during the early days of the pandemic, primarily due to the lack of early pandemic funding and manufacturer capacities. Key risk mitigations included:

- Finding an alternate source of vaccine doses in the second and third quarters of 2021: COVAX urgently called for dose donations from countries with excess supply and rapidly set up a dose-sharing (later referred to as dose-donation) mechanism. This approach included setting up legal agreements among COVAX, manufacturers, and donors to secure, plan for, allocate, and ship donated doses to countries [16]. The volume of dose donations in 2021 led to a situation of potential oversupply, leading to the need to renegotiate commitments made with manufacturers.
- Through 2021–2022: Renegotiations of APA firm order commitments to the extent possible sought to reduce inflow of supply from these deals and prevent potential wastage. This endeavor recovered US$491 million.[17] COVAX held weekly meetings with manufacturers to understand stock levels, and also renegotiated manufacturer APAs. Many stakeholders noted, however, that renegotiating APAs was a complex process, and some manufacturers were reluctant to renegotiate.
- In the first half of 2022: seeking to respond to any one of WHO's pandemic scenarios (base, best, and worst case), COVAX raised enough funds to set up the Vaccine Pandemic Pool[s] to support immediate funding for vaccine procurement in the case of unforeseen future pandemics. In December 2023, the Gavi Board approved the setup of the Zero Day Financing Facility First Response Fund.[t]
- From December 2021 onward, as the pandemic progressed and new strains of the disease prevailed which limited the effect of previously developed vaccines, COVAX also invested in the development of variant vaccines on an ongoing basis to ensure the efficacy of newly developed variant vaccines.

> ***"I think it was pretty phenomenal. Given how challenging the context was and how difficult it is to plan, and you don't know the evolution of variants, you know a lot of deal making was done in a situation where we didn't know a lot. And I think that sort of liabilities management worked very well." [Gavi stakeholder]***

[s] The Vaccine Pandemic Pool accumulated 600 million additional doses to address uncertainties and related risks, including boosters, additional coverage, and new variant vaccines if required; and to ensure a reliable supply for the poorest countries.

[t] The Gavi Secretariat developed the Day Zero Financing Facility, which was approved by the Board in December 2023. It is a suite of financing instruments that aims to bridge the gap in surge financing for a rapid vaccine response that would achieve more equitable outcomes for supported countries in future pandemics. It includes innovative financing instruments that aim to provide up to US$2.5 billion in surge financing capacity by 2030. The First Response Fund is a critical component of the Day Zero Financing Facility, pre-positioning up to US$500 million of at-risk surge financing. This funding will be available for use within the first 50 days of an emergency for vaccine procurement and other urgent uses in core Gavi-eligible countries. As the fastest instrument in the Day Zero Financing Facility, bridging immediate funding needs until further resources can be unlocked, it will play an important role in a future vaccine response: 6-7-june11a - Day Zero Financing Facility - First Response Fund.pdf Report to the Board, June 2024 <See repetition note at footnote 6>

Manufacturer prioritization or production issues

Some manufacturers did not prioritize and others were unable to fulfill COVAX vaccine delivery agreements. Donated vaccinations were used successfully to mitigate the slow supply of vaccines—related to their prioritization and production issues—from manufacturer APAs during 2021 and 2022 [8,18]. For example, specific vaccine development was perceived by some stakeholders as not having been supported adequately through the development process in setting up and abiding by its regulatory frameworks and requirements. Stakeholders perceived a direct link from this shortcoming to the fact that manufacturing targets were not reached and the relevant APA had to be significantly renegotiated. It was perceived this product could have been a successful vaccine candidate given its technical properties, such as duration of immunity and storage requirements. Although other manufacturers were able to meet regulatory requirements, the supply of agreed APA doses was reportedly severely delayed, again resulting in APA renegotiations.

Although dose donations contributed to other challenges and risks associated with managing oversupply (as noted earlier), the risk associated with manufacturer prioritization and production issues was effectively mitigated because the inclusion of dose donations within the model reduced COVAX dependency on manufacturer APAs. This adjustment meant that AMC countries had access to vaccine supplies more rapidly than they would have done via APAs alone. Ultimately, dose donations accounted for 47% of overall supply.[17]

Finally, as noted in the first COVAX Facility and in AMC evaluation Finding 2: “Decisive evidence of deprioritization is hard to come by—no manufacturer has acknowledged short-changing the COVAX Facility and AMC—but multiple interviewees, both within and outside the COVAX Facility and AMC, stated that this was a factor.” This sentiment remains unchanged.

COVAX reputation	Very high in 2020	Very high in 2021	Not featured as a risk to be managed post 2022

Inability to meet supply promises

Inability to meet country needs and demands was a key challenge being grappled with during 2021 and continued through 2022[15,19]. On balance, COVAX managed this risk well, being able to meet 100% of country volume needs through 2022,[17] and being able to meet 63% of country vaccine preferences (equivalent to 36.6 million doses) in Round 16, June 2022.

The key mitigations used to meet country needs and demands included:

- Establishing the dose-sharing mechanism.
- Adapting the allocation mechanism to a demand-driven model from Phase 2 (February 2022) through proactive and regular communications with countries. Meeting supply promises during 2022 and onward implied not only meeting demand in terms of vaccine volumes for countries but also responding to country preferences.[u]
- Supplying technical assistance for demand forecasting.

[u] As noted in the first evaluation, “dose donations…became an important source of supply, but this created some tensions internally and within receiving countries” (Finding 26).

(Perception of) inequitable allocation and distribution

During 2021, countries were not getting the doses that they needed to vaccinate their populations. This shortage was effectively managed over time, but the perception (and reality) of inequitable access to vaccines persists. Analysis showed that in early 2022, only 13% of people in LICs had been fully vaccinated with a primary series of two doses, compared to 60% of the global population. Among AMC countries, 34 had less than 10% vaccination coverage. This situation did improve over time as mitigations were implemented, including:

- Introducing COVAX-negotiated APAs (including exercising options outlined in APAs)
- Setting up the dose-sharing mechanism
- Changing the allocation approach to be demand-driven
- Introducing CoVDP to address 34 lagging countries (see Finding 24)

Geopolitical tensions and conflicts of interest

The tension between COVAX relying on major donors who also had a seat on the Gavi Board to fund the AMC, alongside receiving and allocating their dose donations equitably, created a complex relationship management challenge for the COVAX Resource Mobilization team [16,20]. Several stakeholders referred to this challenge and conflict of interest as being particularly hard to manage: First, donating countries feared wastage and repercussions in terms of damage to their political reputation. Many of these countries were Gavi and COVAX AMC donors, and SFPs. This situation created pressure on the Gavi Board and COVAX Facility staff, who spent high levels of effort on managing donor relations related to dose donations. The media and donors' drive for favorable "announcements," alongside donor exigencies to allocate specific amounts of doses to specific countries, placed additional pressure on the Gavi-led RM team responsible for managing donor relations. This tension was partially mitigated through the COVAX Gavi RM team's efforts.

COVAX delivery	Not featured in 2020	Very high in 2021	High in 2022	Did not feature in 2023

Insufficient country readiness and absorption capacity

Countries receiving COVAX doses had different absorptive capacities and different delivery-support needs, which affected the complexity and level of effort required to manage dose allocations and mitigate wastage. COVAX mitigated these issues well overall through CDS support and funding, as well as CoVDP [21,22]. Countries were not able to administer vaccines at the same pace, driven by differences in health systems infrastructure, and by distinct vaccine requirements, necessitating varied readiness and delivery support.

This situation required an intensive country-by-country management approach within the allocation mechanism, involving the COVAX demand and supply teams, as well as significant effort on delivery support to countries.

Supply

Where countries were not willing or able to absorb doses allocated to them (for reasons such as not meeting their vaccine preference; having already received the same vaccine directly from a donor or other non-COVAX supply; or not having relevant approvals in place for that particular

vaccine), mitigations to reduce wastage included "reallocation" to other countries where possible. However, reallocation was perceived by some stakeholders as being documentation heavy, as noted in Finding 14. Another mitigation included redeployment of doses[v] from one country to another. These logistics were challenging for COVAX to manage. One Gavi stakeholder noted how manufacturers "washed their hands quickly of these doses and often there was the issue of a short shelf life that COVAX felt pressure to reallocate to a neighboring country."

Delivery

Both Gavi and UNICEF assumed responsibility for raising delivery-related funding (given World Bank funding access issues). They provided significant support for cold-chain infrastructure, for example, as well as technical assistance to countries on health system readiness, demand forecasting, advocacy, and demand-generation activities. Further, WHO and pillar partners provided critical readiness support through CRD.

Lack of demand and vaccine hesitancy

Vaccine hesitancy around COVD-19 vaccines through 2022 remained a significant risk that required proactive management during 2022 and beyond [23–25]. During 2022, vaccine hesitancy and changed risk perception around COVID-19 presented a risk and challenge to COVAX, not least because the emergence of variants such as Omicron in 2022 caused many people to perceive the gravity of COVID-19 to have lessened. Mis- and disinformation about COVID-19 vaccines, plus vaccination fatigue, were also impacting demand in AMC countries. The downward vaccination trend through 2022 posed a risk to COVAX in terms of in-country vaccine expiries and wastage. CoVDP was conceived in part to mitigate this risk, placing greater emphasis on a focused number of 34 "lagging countries"—i.e., those with primary series coverage under 10%. Aside from providing targeted delivery support and increasing the engagement of more expanded and local partners to build trust and generate demand, CoVDP also leveraged high-level political advocacy to encourage countries' uptake of COVID-19 vaccines [13]. COVID-19 vaccination coverage in the 34 CoVDP countries increased from 3% to 28% [26]. However, it cannot be stated that this is a correlation. CoVDP is broadly perceived as having been effective in generating political will among some participating countries, with coverage levels having increased after the CoVDP intervention.

Wastage due to expiry or cold-chain failures

Donated doses often had short shelf lives, which reportedly contributed to vaccine wastage [5,27]. Stakeholders noted that wastage within G7 and G20 countries was high because countries held onto vaccines until they were certain that they were not needed, before then donating them. At that point, donated doses increased and COVAX was required to manage this supply, which sometimes conflicted with countries' self-procured vaccination supplies. Stakeholders also noted that although donor countries provided dose-donation forecasts, these data often were inaccurate and influenced the need to renegotiate advance-purchase agreements to help manage supply and prevent potential wastage.

[v] *Redeployment* refers to doses that had been physically shipped to a country that rejected them on arrival and that then had to be shifted to another country.

To mitigate this wastage, from February 2022 (at the onset of Phase 2 of the Allocation mechanism) onward, COVAX implemented several strategies:

- Reviewing any donated doses against criteria that promoted usability of vaccines. It adopted the following principle to reduce wastage: “doses of shelf life >16 weeks at the time of the offer letter are allocated through the round, while doses of shorter shelf life are excluded and/or handled in the separate process, as appropriate” [32].
- Investing in strong global media monitoring and participating in internal discussions to ensure that emerging reputational risks could be assessed quickly and effectively. [29] This step was noted as an enabler in helping to “mainstream and de-sensationalize an otherwise potentially key reputational risk related to COVID-19 vaccine expiries.”

  Adopting a transparent communications approach to manage expectations and be explicit that supply-demand mismatches and expiries would happen, given that procuring doses upfront when demand was unknown was an accepted risk that was necessary to fight the pandemic. The following is an excerpt from COVAX’s letter to country Ministries of Health regarding wastage, dated April 2022:

  “Increased supply creates increased risk of vaccines being unintentionally ‘wasted.’ Yet, it is a risk we should embrace in the service of promoting sustained access and accelerating coverage, and COVAX supports countries adopting an increased risk tolerance for wastage, while making best efforts to attempt to use doses to protect their populations. Wastage is expected in any immunization programme, and sensationalism around incidents of wastage, particularly in lower-income countries, can have a negative impact on vaccine confidence and uptake in countries that are working hard to protect their populations and achieve coverage goals.”
- Suspending the redeployment policy that had been introduced in a supply-constrained scenario. [29]

Despite these mitigation efforts, evidence from 2021 suggests that in some countries, wastage was significant, with over 30 poorer countries having used less than half of the doses they received, often due to short shelf life, alongside storage challenges. [5]

Adverse impact on RI or missed opportunity for synergies

The utility of integrating COVID-19 vaccines into existing programs was recognized at all levels, but the speed with which COVID-19 vaccines needed to be rolled out, and the HR needs to deliver this integration, meant that it was generally done separately and that other health areas were neglected [14,30]. A key mitigation for any adverse impact on RI is the current channeling of remaining COVAX funds to invest in both strengthening RI systems and preparing for the next pandemic. The CDS third window, for example, provided USD$600 million through the end of 2023 to “support integration of COVID-19 vaccine delivery with routine immunization to achieve sustainable benefits.” The COVAX Update 12 produced in December 2023 noted that COVAX had also committed and disbursed US$1.19 billion in COVID-19 vaccine delivery-support funding across 88 AMC participants[31]—supporting cold-chain infrastructure, digitizing health data, expanding critical capacities, and helping to integrate COVID-19 into routine programs. A no-cost extension to CDS funds through 2024–2025 was approved at the December Board meeting in 2023 [32]and a further contingency fund of US$20 million was approved[31] to support eligible countries that may have required additional CDS funding support for 2024–2025.

COVAX Facility	Very high in 2020	Very high in 2020	Not featured as a risk to be managed from 2022 onward

Ineffective coordination, project management, governance

Gavi initially struggled to allocate the appropriate human resources needed to deliver the COVAX Facility and AMC, but by the end of 2022, there was a strong sense of stability among COVAX teams established through coordination and collaboration structures and processes[12,16] Several stakeholders referred to the increased sense of stability during 2022, and although they were still grappling with uncertainty at that point, they felt that the staffing, processes, and structures in place were sufficient for effective implementation. Stakeholder views solicited for this evaluation align with the content of the risk report from 2022.

Inadequate financial risk and liquidity management

COVAX was at risk of having large liabilities recorded on its balance sheets, given the fall in vaccination demand resulting in excess supply [17,31]. As noted in Finding 25, Gavi was at risk of spending money unnecessarily through signed APA commitments (see Findings 25 and 30 on how this issue was mitigated). Due to the commercial nature of these renegotiations, it was not possible for the evaluation team to access documentation and insight beyond the publicly available case settled in February 2024. [33] The settlement of this case meant that Gavi was able to safeguard or recover US$400 million and redirect it to the new 2024–2025 COVID-19 Program and various PPPR initiatives, as outlined under Finding 12 (closeout); this case is an indication that COVAX liabilities were proactively managed and in some cases with positive outcomes.

> ***"I think colleagues who managed our fiscal risks did exceptionally well [in dealing with] our liabilities." –Gavi stakeholder***

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ANNEX 8: LEARNING

This section presents the evaluation findings related to the central question: What lessons can be learned from the evaluation of the overall COVAX Facility and AMC and Delivery Pillar that can inform similar initiatives in the future? These lessons are situated in the context of Gavi's 6.0 Strategy 2026-2030 with a vision of leaving no one behind with immunization[a] and global commitment to conceiving the best way forward for pandemic prevention, preparedness, and response. Gavi's 6.0 Strategy intends a strong continued focus on equity aligned with its commitment (alongside other global health partnerships) to support the achievement of SDGs.[b] In parallel, the future of Global Health Initiatives work[1] calls for much greater integration across GHIs for stronger and more resilient health systems.[1,c]

Learning conclusion: The intentionality of the learning approach with the COVAX facility was evident in supporting adaptations in response to the evolving epidemiological and implementation context during COVAX. Post-COVAX, some aspects of learning are influencing practice, other aspects less so.

Several learning products and informants interviewed referred to the iterative and evolving nature of the COVAX Facility and AMC as the first of its kind. In many respects this environment provided an ideal testing or learning environment. In other respects, creating intentional stock-take spaces and resourcing learning during a crisis is not a given, and merits recognition.

The fact that a dedicated and dynamic MEL team existed—and one with a firm seat at the table in key coordination mechanisms, that was able to commission evaluations, reviews, lead internal stock-takes and feed insights into strategic group—has arguably contributed to learning being adopted and influencing the COVAX Facility and AMC's evolving design and implementation throughout, as described in EQ1[d] and in EQ2.[e] Specific areas that have evolved rapidly in response to ongoing learning include, for example, the establishment of the Pandemic Vaccine Pool (2021) and Zero Day Financing Facility First Response Fund (2023), and the approval and launch of the African Vaccine Manufacturing Accelerator (2023-2024).[2,f] The

[a] Underpinned by 10 principles which include making zero-dose and missed communities its first priority Phase 6 (2026–2030) accessed November 2024

[b] A recent Global SDG Synthesis Coalition's Partnership Pillar Synthesis includes eight key insights, the seventh of which urges a proactive approach to equity within interventions design: "Equity considerations should not be an afterthought, but the primary driver of interventions connected to trade, finance, technology, capacity development, and systemic issues. Evaluations of these initiatives should better test approaches and disaggregate findings on their effectiveness for vulnerable populations. By taking a proactive stance on equity, partnerships can ensure that their initiatives are not only effective, but also just, inclusive and context specific."

[c] Vision proposed: "A global health system where all actors, including GHIs, contribute effectively to the achievement of country-led UHC and hence equitable population health and wellbeing. This means that all actors, including GHIs, plan, fund, evaluate, and account for their funds and programs to national governments in a coherent and integrated way, working in synergy with other global health actors and based on their comparative advantage, countries' priorities and needs, and the imperative to build country capacity to sustain UHC (including PHC) through strong and resilient health systems."

[d] Notably in relation to managing supply and the allocation approach.

[e] Notably the positive impact of the COVAX risk management practice that is informing wider Alliance risk practice.

[f] "The instrument was approved by the Gavi Board in December 2023 and launched in June 2024, following a design process conducted over nearly two years of close collaboration between Gavi, the African Union and the Africa Centres for Disease Control and Prevention (Africa CDC), with extensive consultations with partners, donors, industry, civil society and other stakeholders." African Vaccine Manufacturing Accelerator (AVMA)

development of the Pandemic Preparedness and Response Playbook[g],[3](referred to hereafter as the 'Playbook') led by Gavi's Global Health Security team is further evidence of commitment to learning and building on COVAX experiences. High-level commitment to learning in the Alliance is also demonstrated through statements by such as the Gavi CEO:

> ***"We must continue to retain our agility in adapting to new uncertainties, and leverage evaluations and learnings from COVAX and COVID-19 response, so we can better respond to country needs – especially with regards to ongoing and emerging outbreaks."*** [4]

Despite these successes, stakeholders interviewed that are now working on MPox note they are seeing similar repeated challenges, including challenges being experienced due to lack of inclusion, and clarity around roles and responsibilities assigned to different agency teams. This suggests that some lessons are yet to be fully operationalized and embedded.

EQ 7: What are the key learnings?

Key learnings for Gavi 6.0 and the operationalization of the strategy (EQ 7.1)

Lesson 1: Commitment among Alliance partners on the central premise of equity is a good start but insufficient to achieve equity goals. To support genuine equitable access in a future pandemic, equity should be measured not just across countries but within countries. Regional and global-level agencies have a role to play in supporting countries achieve intra-country equity, led by countries. Support needs include building on work already done via COVAX to strengthen country data collection and reporting systems to identify and capture data on hard-to-reach and vulnerable groups ahead of the next pandemic. *Builds on Lesson 1. from COVAX: key learnings for future pandemic preparedness and response: "Equitable access requires an end-to-end solution that centres ON public health, and the needs of the most vulnerable, at every step."*

The COVAX experience has demonstrated that equity can be a solid unifying principle for collaborative efforts but without clear translation into what this looks like, how it is expected to be operationalized at global, regional and country levels, including clarifying accountability requirements for promoting different levels of equity (i.e., between countries vs. within countries), equitable results are not a guarantee. Significant guidance on intra-country equity was provided to countries through CRD, for example, aligning with SAGE-recommended target populations. Countries were asked to identify target populations to meet country equity needs in the NVDPs. However, equity was not a criterion on which NVDPs were assessed/approved and intra-country equity was not a reporting requirement for countries up to the global level. As noted in Part B, the role of the COVAX Delivery Pillar in supporting intra-country equity was not clear or defined nor systematically monitored. Stakeholders who explored this area in sense-making workshops agreed that achieving intra-country equity must necessarily remain the

[g] Pandemic Preparedness and Response, a Playbook for Gavi, internal Gavi document. This document is described as a "framework that aims to enable the Alliance to react promptly to different PHEs, balancing the risks of early action with less information against a more well-informed but too late response, including consideration of measures to be taken to safeguard RI." Along with operational plans, the Secretariat is working with Alliance and other partners to develop a "PPPR Playbook" that retains the knowledge and experience from COVAX and other PHEs and builds on learnings and capacity to respond, including delivery and protecting routine immunization (RI); it includes tools, levers, processes, and interventions to refine and strengthen decision-making around responses to PHEs. This work is informed by UNICEF, WHO, and others.

responsibility of countries and that there is scope before a future pandemic scenario to explore and clarify the respective roles that regional and global stakeholders could play in supporting countries identify, reach, and monitor vaccine access among priority/ high-risk population groups.

> ***"We need to refocus instead of being on the total population we need to be specific on populations like health workers and older adults, because they are vulnerable or there is high utility in them receiving the vaccines. And that's a better use of country resources than to just try and get more shots in the arms of everybody." – WHO stakeholder***

Key learnings for Gavi 6.0 and the operationalization of the strategy (EQ 7.1) and Key learnings for Gavi alliance's evolving role in PPPR (EQ 7.2)

Lesson 2: Disagreement and confusion regarding the distinct roles different agencies/partners play in multilateral partnership endeavors such as COVAX can destabilize collaborative efforts. Having the right mix of agencies, functions, skills, and competencies including a clear division of labor to fulfill an end-to-end approach for vaccine product development, securing supply and delivery support is important for both routine and non-routine (i.e., pandemic) immunization programming. *Builds on Lesson 1. from COVAX: key learnings for future pandemic preparedness and response: "Equitable access requires an end-to-end solution that centres ON public health, and the needs of the most vulnerable, at every step."*

The COVID-19 pandemic brought Alliance partners closer together than ever before. Multiple stakeholders across all the pillar partners spoke of the importance of both including the right partners[h] at the right moment in time [5], as well as the quality of relationships underpinning COVAX's achievements.

The Gavi Secretariat, as the administrator of COVAX, was successful in 1) raising sufficient funds to set up a risk pooling mechanism to stimulate vaccine development, 2) managing a changing supply portfolio as best it could with the power and influence it held at the time and, 3) adapting to challenges as deftly as it could within its organizational constraints. While CEPI, WHO, UNICEF, and PAHO also played critical roles in COVAX, the governance of Gavi as the hosting entity of the COVAX Facility and AMC was conducive to fast decision-making.[i] Stakeholders recognized the importance of individual agencies identifying and leveraging their comparative strengths within a partnership setting such as COVAX, recognizing this did not always happen perfectly during COVAX. The gaps COVAX experienced in partnerships including humanitarian agencies, regional institutions (such as Africa CDC and the African Union), and civil society organizations (CSOs) have been recognized as essential for both Gavi 6.0 and PPPR efforts. Gavi's 6.0 strategy principles and enablers seek to support this partnerships inclusion challenge experienced during COVAX.

[h] including extending beyond Alliance partners

[i] As noted in the first COVAX Facility and AMC Evaluation Finding 13: Gavi, as a public–private partnership (PPP) with broad-based stakeholder governance and engagement, was a legitimate body to lead an international, multistakeholder effort to rapidly scale up vaccination programming.

On including the right mix of partners, people, and teams:

> ***"We need to ensure the right departments are engaged WITHIN agencies." – WHO stakeholder***
>
> ***"There's our appreciation in Gavi that we just weren't really set up to work with humanitarian agencies. We didn't have the people that had the experience, we didn't really have those relationships. And so I think a big lesson to me is like you need to bring communities together that aren't used to working together and practice that." – Gavi stakeholder***
>
> ***"We need to reflect inwards as agencies about what our comparative advantage is. Just because there are resources, doesn't mean we should just do it. We need to have openers to bring in local level partners who can make a difference. This should be informed by the comparative advantage of each organization. So many actors were doing the same thing. Was a challenge at the country level i.e. CSO, private sector doing their own thing. Would have been better to have clear accountability of roles." – Sense-making participant***

Trust and agency positioning were recurring themes associated with the quality of relationships, trust being noted as a critical enabler when coordinating and collaborating to achieve shared goals. This has already been documented in COVAX learning yet some stakeholders interviewed noted similar tensions arising currently in MPox work. This suggests that defining and prioritizing concrete processes that foster and sustain trust-based, quality relationships remains an opportunity to be fully harnessed ahead.

On trust:

> ***"Regular coordination touchpoints was hugely important. We didn't always agree on things but having a space where we could disagree and hash it out and escalate it to a joint decision-making mechanism worked well. In the absence of trust even, this allows for things to move forward. In MPox we're seeing we don't have that space…we have tried to create the space for monitoring so at least we're aligned but even if we are aligned there is no joint mechanism to have it approved. So a combination of technical level coordination and alignment, good working relationships, escalation mechanisms and clear decision-making help [with collaborative working]". – WHO stakeholder***

On what would be ideal and what was missing in COVAX:

> ***"A problem-solving session or discussion where people put that [meaning their own organizational standpoints] aside and try to figure out what's best. There's never that kind of informal exchange among trusted or semi trusted partners. Everybody has to go in towing their party line from their organization. It's kind of groupthink and you can't get there that way in my own mind." – CEPI stakeholder***

Key learnings for Gavi alliance's evolving role in PPPR EQ 7.2

Learning 3: Considering supply and delivery as separate endeavors at the offset of COVAX proved problematic and contributed to many challenges experienced, including access to vaccine delays on the part of participating AMC countries. An initiative to ensure equitable access to vaccines in a future pandemic must have an end-to-end vision and approach from the offset to address the full, integrated range of functions and processes (resource mobilization, pooling demand, securing supply, allocating doses, delivery, etc.) required to supply and deliver vaccines to those at risk in a timely fashion, including reaching those at the last mile. *Builds on Lesson 1. from COVAX: key learnings for future pandemic preparedness and response:*

"Equitable access requires an end-to-end solution that centres ON public health, and the needs of the most vulnerable, at every step."

> ***"I think that the biggest lesson is we cannot delink delivery from the supply side as we did…Greater alignment and design and working together on these two pieces is needed." – Gavi stakeholder***

The vision for the end-to-end approach should be grounded as far as possible by realistic expectations for what a future multilateral solution to a pandemic can achieve. The COVAX experience has shown that setting overly ambitious objectives and targets in 2020 created significant challenges when not realized. A clear articulation of how the mechanism will work should include details on how it leverages respective partner strengths, mitigates respective partner weaknesses, and clearly articulate roles and responsibilities. Evidence from both evaluations has highlighted the importance of having an end-to-end vision that encompasses delivery finance as well as finance for vaccines. There is appetite among pillar partners for establishing clarity on what a future pandemic response mechanism might look like. This includes appetite to reach out to manufacturers to explore their role and rules of engagement in future pandemic scenarios. Several sub-lessons have been learned in relation to several of COVAX's core functions:

Resource mobilization:

- AMC Summits are a proven successful way to raise significant funds fast.

Securing supply:

- Integrating options alongside firm order commitments within APAs proved a useful tool during COVAX, likely contributing to reducing vaccine wastage at the global level.

Allocation:

- Sequencing the documentation and regulatory approvals required from countries to after a country has firmly accepted an allocation would have saved both countries' and COVAX facility teams' time.
- Hindsight suggests that when supply is strong, shifting to a simplified, more flexible and demand-driven approach to vaccines should be introduced rapidly.

Demand forecasting:

- Drawing on the right agencies' expertise and technical capacity in this area (i.e., UNICEF, PAHO) to provide targeted technical assistance support to countries was helpful (and not done soon enough during COVAX). Accessing this support and strengthening demand forecasting from the offset should be prioritized in future response mechanisms.

Close out:

- Having a cross-functional team with a clear lead[j] mandated to lead the close out of "tail-end activities" proved efficient and effective during COVAX. The team included all specialties/functions[k] needed to make decisions and operationalize them.

[j] Global Health Security (GHS) team in the case of COVAX.
[k] Including risk, legal, finance, deal-making, delivery, COVID-19 program, and communications.

Delivery:

- Not having had sufficient operational/microplanning/technical engagement from participating country governments and implementers earlier in the COVAX set up meant that operational realities were not always anticipated and responded to rapidly enough (including e.g., microlevel planning needs around devices for the Pfizer vaccine, for example).

Lesson 4: Power imbalances within and between organizations during COVAX proved destabilizing and created significant challenges. Power dynamics are inevitable when working together are inevitable in any collaborative endeavor. There is a need to recognize this and set an intentional partnership working culture[l] alongside tailored and appropriate governance structures that can respond to power imbalances as they arise and mitigate their impacts. *Builds on Lesson 2. from COVAX: key learnings for future pandemic preparedness and response: "Hoarding, export restrictions and nationalism should be expected."*

Conflicts of interest and the need for compromise and trade-offs will arise when partners need to work interdependently to achieve a common goal. The tension between COVAX relying on major donors[m] to fund the AMC alongside receiving and allocating their dose-donations equitably created a complex relationship management challenge for the COVAX Resource Mobilization team. COVAX provided rich learning in this regard that can be used to inform future collaborative pandemic response designs. Additional power imbalances that were noted to have had significant implications for COVAX and participating countries included 1) manufacturers' power over supply information and lack of transparency therein, and 2) donors' power over the roles and responsibilities agreed between agencies in multilateral endeavors such as COVAX. COVAX has already started to mitigate for manufacturer imbalances through endeavors such as the African Vaccine Manufacturing Accelerator and the First Response fund. Finding ways to ensure the relative strengths and comparative advantages of different agencies involved in future mechanisms get leveraged appropriately, irrespective of donor preferences, could help to reduce perceptions of power imbalance at play that may lead to tensions between partners in future collaborative efforts.

> ***"It is important for people to understand the different organization structures and power structures—at EWHO regional offices hold the power. At HQ we can't oblige them to do anything. They are independent. This is different to UNICEF which is very top down where HQ can mandate. And Gavi even more so as there is no regional structure and presence. So that understanding is fundamental." – WHO stakeholder***

Lesson 5: COVAX teams were challenged by data access and data-sharing needs during COVAX: teams were sometimes unable to access accurate data and felt uncomfortable sharing imperfect data in the absence of an agreed data management framework/plan with associated assurances around what type and level of data would be acceptable to inform decision-making. In emergency and uncertain contexts, decisions necessarily need to be made with imperfect data. This requires 1) a clearly articulated and consistent risk approach to enable rapid decision-making, 2) recognition that risk appetite will most likely need to expand in times of emergency,

[l] *Partnership working culture* refers to an explicit commitment to partnership working values and would address the enabling environment required to foster trust-based relationships alongside structures to support collaborative working.
[m] Who also have a seat on the Gavi board

and 3) mechanisms put in place to account for any implications that arise as a result of decisions having been made on imperfect data. *Builds on Lesson 3. from COVAX: key learnings for future pandemic preparedness and response: "A successful global pandemic response involves taking risks."*

Normalizing the acceptance of using and sharing imperfect data across collaborating partners may help to speed up and reduce the fear/tension/discomfort of sharing low quality or incomplete data. Interoperability of data systems (e.g., financing, supply, uptake) was a challenge, especially for bringing in SBCC data that some countries were collecting—the key issue was the use of different methods and measures, making it difficult to meaningfully aggregate.

The current positive practice learning from COVAX risk management provides a good environment to be taken forward more concretely through Gavi 6.0 and wider PPPR efforts. Providing assurance for Gavi teams on the operationalization of the "no regrets" concept is also important in the context of future emergency pandemic contexts. The Evaluation of Gavi's Initial Response to COVID-19 published at the end of 2022 describes how Gavi teams were hesitant to trust the Boards' assertions that emergency response funding really was being provided on a "no regrets" basis [6].

Lesson 6: Delivery models: CoVDP helped partners align around a common goal as it had a clear vision, accompanying "branding/comms," and clear operational details around how it was intended to be implemented.

As noted in Part B, CRD and CoVDP are both recognized for their respective contributions to strengthening country systems to receive and distribute vaccines. However, many stakeholders emphasized how helpful it was to have a clear message attached to CoVDP that conveyed its intent so clearly: One plan, one country team, one budget, one support team. In an already fragmented context of different donors providing different types of support to countries at different points in time, the clearer and simpler messaging can be for all partners implicated in initiatives, the better.

To illustrate the confusion experienced in relation to naming different initiatives/teams/ structures and the plethora of acronyms:

> ***"I think for the future, we have to be clear from the beginning, who is who, who is doing what roles and responsibilities, you know, like trying to define that structure." – WHO stakeholder***

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? (EQ 7.3)

Lesson 7: Functions: Appointing the right level of authority to lead high-level advocacy with countries that are hesitant to commit to vaccination programs has proven important in securing countries' high-level engagement.

There is broad consensus among stakeholders around the value of the Global Lead Coordinator appointment to lead CoVDP and his ability to generate high-level political buy-in to COVID-19 vaccine distribution in lagging countries. The extensive high-level networks this individual brought facilitated this success. One stakeholder qualified this area as also needing to have the

right frame of engagement in future pandemic efforts, noting that under CoVDP, the response was very firmly a "health" response rather than being a broader "whole government" response to a pandemic.

Lesson 8: Coordination structures: COVAX coordination structures were necessarily put in place iteratively as the emergency context of the pandemic evolved. Experience has shown that the absence of defined coordination structures—that set out clear roles and responsibilities for partners and teams collaborating within them from the offset—contributed to challenges in partnership working, including duplication of roles and confusion. 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. Clear, simple (jargon-free), and consistent use of language and terms agreed is also critical in avoiding confusion.

Team working and collaboration improved over time, though it remained challenging as the emergency context continued to evolve and require constant pivoting from teams involved. Many stakeholders recognized the importance of coordination structures. Many lessons have been learned by the different teams engaging in the various COVAX coordination structures. Clear enablers and barriers have been documented in this evaluation as well as in other learning products. These should be drawn upon when designing new collaborative mechanisms for future pandemic scenarios.

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? (EQ 7.4)

Lesson 9: Country level: AMC countries faced the biggest challenges in being able to scale-up financial and human resource capacity to plan for, access, and administer vaccines in a timely manner, compared to regional and global levels.

The COVID-19 pandemic experience has shown that additional surge capacity at country levels is required during pandemic scenarios to ensure routine immunization does not get neglected. "Based on the experience of Gavi's initial response to COVID-19, efforts to respond to pandemics and maintain RI depend on country capacity (EPI teams)."[n]

Between pandemics, there is an opportunity and commitment to build on the legacy of and learnings from COVID-19 having strengthened many countries' health systems. Specific learnings at the service delivery level have included for example: reaching adults with vaccines often for the first time thus strengthening life course immunization; developing links with HIV, TB, non-communicable diseases clinics, and such as antenatal care for pregnant women, or occupational health for health care workers. Despite these positive strides taking place in some countries, many countries leveraged their EPI supply chains to delivery COVID-19 vaccinations, integration in overall planning and funding of combined health programs and health care workers was limited. Stakeholders noted capacity strengthening needs centering around four key systems: regulatory capacity, data systems, service delivery and vaccine vigilance systems.

[n] Finding / learning from Evaluation of Gavi's initial COVID-19 response, December 2022

Lesson 10: Country level: Communication with countries was challenging during COVAX In the absence of clear and certain supply information.[o] Achieving transparent communications built on relationships of trust with countries and communities is critical for a response that meets country needs.

In the face of uncertain supply there is ample evidence that COVAX global teams did their best to respond to country concerns and needs. Communication improved over time as cross-pillar partner structures were put in place.[p] However, COVAX ultimately lacked the power to gain access to supply data countries needed from manufacturers and this was a source of frustration and mistrust for COVAX among country partners. At the country level, in the face of vaccine hesitancy, community communication platforms and structures play a vital role in prevention, preparedness, and response efforts. Community platforms and structures played a vital role in prevention, preparedness, and response efforts. These are reported to continue to be critical for addressing vaccine misinformation that has eroded trust and impacted both COVID-19 and routine immunization efforts. Several innovative practices in communication and engagement have been implemented during COVID-19 including the use of social media, digital tools, and non-traditional partnerships including public-private partnerships to enhance response capabilities.

Lesson 11: Regional level: Regional capacity among Alliance partners provided a critical bridge between global and country levels during COVAX but was not fully harnessed. There is scope for regional teams to have expanded roles in future pandemic scenarios, for example in strengthening and analyzing subnational data, and engaging with countries to understand challenges to rolling out vaccines such as vaccine hesitancy or saturation or limited vaccine dose absorption.

The regional working groups and Regional Officers' role was critical in bridging, translating (global policy to regional and country guidance), and supporting countries. There was expressed desire among global and regional stakeholders for greater regional and country focus in the future. It was felt that Alliance partner regional offices' capacity in terms of supporting coordination and oversight with governments and health systems in a way that could support the global level, was not fully harnessed. The diversity between regions was also highlighted and a suggestion made to allow regions to tailor their support approaches based on regional needs.

Lesson 12: Global level: Country-level political and operational realities must be at the forefront of design-thinking for any future global initiative that seeks to improve vaccine coverage at country levels. Including CSO voice during future design and implementation efforts is critical.

Several stakeholders repeated the same sentiment underpinning the first COVAX Facility and AMC evaluation: that countries need to be at the forefront of any future designs for PPPR, so that designs work from the "bottom up rather than top down." Neglecting to do this can lead to relevant partners being missed and mechanism designs making assumptions that do not hold true, as evidenced earlier in this evaluation report. While this was not possible during the design

[o] This aligns with Lesson G from the first evaluation: 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.
[p] Such as the Country Communications Liaison Group

for COVAX as “the ship was necessarily being designed while it set sail,” there is time now to integrate relevant partner perspectives with the benefit of hindsight and rich learning insights. This should include paying attention to granular-level barriers and challenges experienced at country levels through COVAX. Including for example, the types of vaccine devices countries need to receive alongside vaccines themselves in order to administer them, and the implication for equity objectives of countries receiving multiple parallel donor support.

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