External Evaluation of the Access To COVID-19 Tools Accelerator (ACT-A)

October 10, 2022

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*The report includes some minor updates made in response to comments received.

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Preface

The Access to COVID-19 Tools Accelerator (ACT-A) was launched in April 2020 to enable an effective and equitable global response to the COVID-19 pandemic. It was established at a time of urgency and uncertainty – less than three months after the World Health Organization (WHO) determined that the outbreak of the 2019 novel coronavirus (2019-nCoV) was a Public Health Emergency of International Concern.

The ACT-A Facilitation Council (FC) was established in September 2020 – to facilitate the work of the ACT-A partnership. In our role as Co-Chairs of the FC, South Africa and Norway commissioned an independent external evaluation of ACT-A to learn lessons for future responses. We invited additional countries (Brazil, Canada, Germany, India, Nigeria and Sweden) and four civil society (CSO) representatives to join the ACT-A External Evaluation Reference Group to co-design, oversee and approve the evaluation. The evaluation was run over a short period (July 11-October 10, 2022), and we commissioned Open Consultants to conduct the work.

As established in the Terms of Reference, the purpose of the evaluation was not an in-depth impact evaluation of any particular function. Instead, this evaluation sought to complement other more in-depth work and provide a broad overview – including a wide range of perspectives as to the lessons that could be learnt.

The evaluation process gathered inputs from nation-states, regional organizations, ACT-A agencies, civil society organizations, academia, and the private sector. We are grateful to all participants for their time and effort in contributing to this endeavor. Your input provided a broad and rich picture of how you perceived ACT-A's work.

The Reference Group believes the evaluation report provides clear overall messages and important lessons for future pandemic preparedness and response. The ACT-A partnership is widely considered innovative and the best collective response that could be constructed given the constraints. We very much wish to recognize and commend all the ACT-A agencies for their hard and tireless work over the past years – and the work still ahead.

The evaluation underlines both what was achieved through the ACT-A partnership, but also where more was needed. The evaluation seeks to contribute a series of recommendations to ensure that future global actions are even better coordinated, more inclusive, accountable, equitable and effective. The evaluation does raise the issue of the affordability of medical countermeasures, and there is a need for more in-depth assessment in future work on this. On behalf of the Reference Group, we thank Open Consultants for their valuable work and for executing the evaluation according to the Terms of Reference.

The ACT-A agencies were given the opportunity to comment on and identify potential factual errors in the first public version of the report. This final report includes minor changes based on this feedback, and the more general comments are published as a separate addendum to the report. Some of these comments were critical, e.g., of the evaluation process, methods, and findings. Some comments illustrate differences in understanding of the ACT-A partnership itself; is ACT-A a partnership or only the coordination of pillars and the top-level bodies. We believe it is important also to share these different perspectives.

We trust the Facilitation Council members and WHO member states will use the lessons learnt from ACT-A to contribute to future debates and decisions about institutional

innovations and reforms regarding equitable access to medical countermeasures to further protect global health security. If ACT-A has taught us one thing, it is that we need to be prepared as well as possible and that we are always better when working together.

Sincerely,

John-Arne Røttingen	Olive Shisana, MA, Sc.D
Ambassador for Global Health	The President’s Special Advisor on Social Policy
Norway	South Africa

Acronyms

ACT-A	Access to COVID-19 Tools Accelerator
AMC	Advance Market Commitment
APA	Advanced Purchase Agreement
AVAT	African Vaccine Acquisition Trust
BMGF	Bill & Melinda Gates Foundation
CEPI	Coalition for Epidemic Preparedness Innovations
CSO	Civil society organization
COVAX	Vaccines pillar of ACT-A
CoVDP	COVID-19 Vaccine Delivery Partnership
Dx	Diagnostics
EC	European Commission
EUL	Emergency Use Listing
FC	Facilitation Council
FIF	Financial Intermediary Fund for Pandemic Prevention, Preparedness and Response
FIND	Foundation for Innovative New Diagnostics
GAP	Global Action Plan for Healthy Lives and Well-being for All
Gavi	Gavi, the Vaccine Alliance
GFF	Global Financing Facility for Women, Children, and Adolescents
Global Fund	Global Fund to Fight AIDS, Tuberculosis and Malaria
GPEI	Global Polio Eradication Initiative
HIC	High-income country
HSRC	Health Systems and Response Connector
ICG	International Coordinating Group (ICG) on Vaccine Provision
KII	Key informant interview
LIC	Low-income country
LMIC	Lower-middle income country
MCM	Medical countermeasure
PAHO	Pan American Health Organization
PHC	Primary Health Care
PPE	Personal protective equipment
PPR	Pandemic preparedness and response
SFP	Self-financing participant
ToR	Terms of Reference
Tx	Therapeutics
UNICEF	United Nations Children's Fund
UMIC	Upper-middle income country
Vx	Vaccines
Wellcome	The Wellcome Trust
WHO	World Health Organization

Executive Summary

About this evaluation

The Access to COVID-19 Tools Accelerator (ACT-A) was launched in April 2020 to enable an effective and equitable global response to the COVID-19 pandemic. It was established at a time of urgency and uncertainty – less than three months after the World Health Organization (WHO) determined that the outbreak of the 2019 novel coronavirus (2019-nCoV) was a Public Health Emergency of International Concern (January 30, 2020).

ACT-A was the first global initiative of its kind, responding to the need for unprecedented global collaboration to respond to the COVID-19 pandemic. ACT-A's original aim was to "develop essential health products for the fight against COVID-19 and to ensure they are distributed equitably through a rapid and ambitious programme of work to develop, test, bring to market, procure and distribute new diagnostics, drugs and technologies, while taking steps to help ensure health systems can deliver these tools to the people who need them."[1]

ACT-A comprises three vertical pillars of Diagnostics, Therapeutics, and Vaccines (COVAX), as well as a fourth cross-cutting pillar – the Health Systems and Response Connector (HSRC). The COVID-19 Vaccine Delivery Partnership (CoVDP) was established in January 2022 to support vaccine delivery, with a focus on 34 countries.

In September 2020, the ACT-A Facilitation Council (FC) was established to provide high-level advice, guidance, and leadership to facilitate the work of ACT-A. In July 2022, the FC co-chairs – Norway and South Africa – commissioned an independent, external evaluation of ACT-A and invited six other countries and four civil society representatives to join the ACT-A External Evaluation Reference Group to oversee the evaluation.[2]

This external evaluation was a rapid, forward-looking exercise, carried out between July 11 and October 10, 2022. Its main objective was to learn from ACT-A experiences and to identify key lessons learnt for future pandemic preparedness and response. More specifically, the evaluation aimed to provide learnings for institutional solutions to enhance global equitable access to medical countermeasures (MCMs) in the future. The evaluation assessed 24 evaluation questions across six areas:

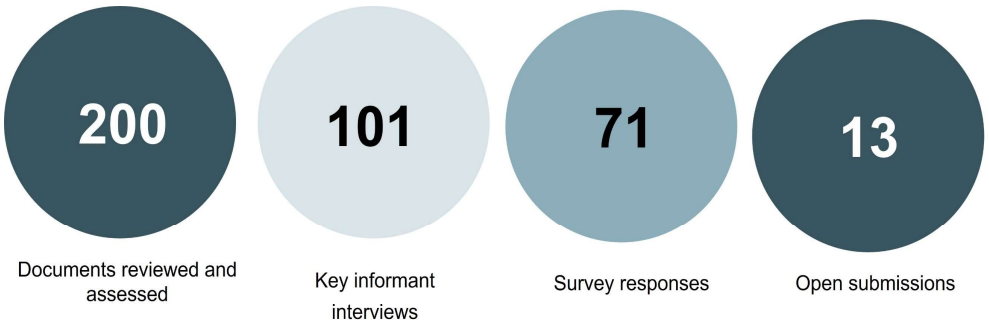
1. Mandate
2. Set-up and structure
3. Resource mobilization and financing
4. Achievements
5. Gaps and missed opportunities
6. Way forward.

The evaluation was based on a mixed-method design. Four data collection methods were used:

1. A document and database analysis
2. Semi-structured key informant interviews and focus group discussions
3. Online surveys
4. Online platform for open-ended stakeholder submissions

The data was collected between August 1 and September 20, 2022. Figure ES1 summarizes the data collected and analysed through these methods.

Figure ES1. Key data collection figures



Key findings

Below we summarize key findings from the report, organised by the following themes: (a) mandate and scope; (b) operating model; (c) financing; (d) performance of ACT-A and its pillars; and (e) external factors.

A. Mandate and scope

1. Most government representatives from low-income and lower-middle income countries reported that ACT-A's mandate was very relevant to them, as they lack the means to develop and self-procure MCMs. The original targets, modalities, and funding arrangements for ACT-A's pillars were defined without sufficient input from low- and middle-income countries, which resulted in poor ownership.

2. The global scope of the Vaccines Pillar (COVAX) was too ambitious. Originally, the COVAX Facility was positioned to act as the key purchasing agent for the world – pooling demand and allowing significant market shaping and equitable allocation powers. While such an ambition was laudable, key informants felt it was unrealistic to assume that higher-income countries would purchase their vaccines through COVAX, thereby delegating authority over R&D and allocation decisions to a new global partnership. As HICs did not use the self-financing arm of the COVAX Facility for their purchases as anticipated, COVAX was unable to play the market shaping role it first envisioned. A more targeted and less ambitious approach would have been more useful.

B. Operating model

3. ACT-A facilitated an unprecedented level of coordination and collaboration between global health agencies, enabling a rapid response to address the COVID-19 pandemic. When ACT-A was set-up, it was considered unrealistic to establish new structures given the urgent need for a speedy response. Two-thirds of survey respondents (66.0%) agreed that ACT-A's operating model was the best possible structure at the time of the launch.

4. ACT-A's informal coordination model is insufficient for future pandemic response. A different design will be needed to address future pandemics. While ACT-A was a great

innovation at its launch, a different model for pandemic response will be needed in future. For the next pandemic, only 34.7% of survey respondents would replicate ACT-A's operating model – i.e., four pillars and an informal coordination structure. Almost two-thirds of respondents (65.3%) think that the operating model should not be replicated. Key concerns with the model included limited cross-pillar and within-pillar coordination, insufficient accountability, limited meaningful engagement of low- and middle-income countries and regional bodies, and an insufficient focus on delivery. The HSRC was considered as being largely dysfunctional.

5. Principal Group meetings were useful but overall cross-pillar coordination was perceived as too limited. Key informants reported that the Principal Group meetings established a new level of coordination between co-convening agencies. Both the ACT-A Hub and the Special Envoys contributed to an effective coordination of the group. At the same time, the decentralized and multi-layered decision-making model also slowed down the response. Key informants also reported that there was limited coordination on upstream work as well as on delivery. From a research and development (R&D) perspective, there should have been much more collaboration between the pillars, but they operated largely independent of each other. Key informants emphasized that the lack of R&D coordination remains a problem in the global health architecture. Moving forward, there is a need to better coordinate efforts between product types and diseases. With respect to delivery, each pillar responded in a siloed manner, too late, and too slowly. The HSRC was largely disconnected from the other pillars and poorly focused. The late creation of the operations-focussed CoVDP did offer some real advances in how to speed up in-country action in a focused group of countries.

6. Coordination within the pillars worked best for the Vaccines pillar due to longstanding working relationships between the actors involved. Within-pillar coordination varied considerably. Key informants emphasized that collaboration was best in COVAX because of the longstanding relationships between Gavi, WHO, UNICEF, and more recently with CEPI as well as with others. The Therapeutics pillar suffered from the fact that working relationships were less well developed and that there was no clear structure and lead agency, but multiple parallel and insufficiently coordinated efforts. The HSRC was held back by discordant views and approaches of the co-convening agencies.

7. Accountability and transparency were not sufficiently promoted by the ACT-A model. Prioritizing speed of response and using existing global health agencies to respond to the pandemic has compromised accountability and transparency. Only 38.0% of survey respondents agreed that ACT-A's operating model sufficiently promoted accountability, flagging ACT-A's inability to precisely track or communicate results due to the decentralized accountability mechanism, and delegating that role to individual agencies and pillars. Key challenges were a lack of transparency with regards to decision-making, allocations of resources, and reporting, as well as the informal and overall complexity of the structure. Data tracking systems were set up, and while these contributed to transparency, they were set up ad-hoc by different agencies. The data needs and monitoring and tracking platforms should be predefined and established comprehensively and early on in future global health emergencies.

8. LIC and LMIC governments were insufficiently included in ACT-A's model, resulting in a lack of ownership and affecting the delivery of COVID-19 tools. The majority of key informants described ACT-A as having a top-down approach that sacrificed inclusion for an

assumed decisive and rapid response. However, an early and meaningful inclusion of low- and middle-income countries and civil society is critical to strengthen mandates and objectives, broaden ownership, and to ensure that a delivery lens is fully integrated from the beginning.

9. Regional platforms played an important role in the response to the pandemic. However, the work of global and regional players was not well coordinated, partly because there was insufficient representation of regional representatives in the ACT-A structures, and vice versa. In the future, regional platforms should be more meaningfully integrated into global structures early on and encouraged to develop the capabilities to play a core role in pandemic preparedness and response.

C. Financing

10. The ACT-A agencies, with support of the FC Financial Resource Mobilization Working Group, raised substantial funding – US$23.5 billion. However, the ACT-A partnership also faced a large funding gap across the entire implementation period. The Vaccines pillar was more successful in terms of resource mobilization than the other three pillars (it received over two-thirds of total funding). Multiple key informants across different stakeholder groups highlighted that the other pillars should have been resourced much better. Survey respondents were divided on whether ACT-A should have a complementary joint fund for pooling some of the available funding to allow better and more flexible allocation of resources across different ACT-A agencies based on need.

11. ACT-A's coordinated resource mobilization was useful. About three-quarters (74.0%) of survey respondents reported that the joint resource mobilization model was preferable compared to uncoordinated fundraising efforts. The fair-share model was also perceived as useful, but the model would have to be agreed upon in advance to ensure wide ownership for future use.

12. Funding was not mobilized at sufficient speed, which hindered a faster and stronger global COVID-19 response by ACT-A. Pandemics require a rapid response, leaving no time to fundraise. Contingent funding needs to be available on day zero of the next pandemic. A pandemic Advance Commitment Facility with access to a credit line could help to secure orders earlier to promote a faster and more equitable global response than during COVID-19.

D. Performance of ACT-A and its pillars

13. The majority of stakeholders was satisfied with ACT-A. Across all survey respondents, 53.8% were satisfied with ACT-A, while only 21.6% were dissatisfied. This result can be interpreted in the sense that stakeholders understood the consequences of the counterfactual – an uncoordinated global response, i.e., a response without ACT-A.

14. The Vaccines pillar is considered as the most successful ACT-A pillar, while the Therapeutics and Diagnostics pillars also made important contributions. The HSRC is seen as a failure.

- Survey respondents rated **COVAX's performance** in improving access to COVID-19 vaccines in the 92 Advanced Market Commitment (AMC) countries highly. The

median ranking across all respondents was 7.5 out of 10, the highest survey rating across the four pillars. While it fell short of its overall 2021 target, COVAX delivered almost one billion doses of vaccines by the end of 2021 and almost reached its 2021 AMC target (950 million doses). By September 15, 2022, it delivered 1.72 billion doses – an unprecedented achievement. Yet, massive vaccine inequalities persist. The self-financing arm of the COVAX facility was largely perceived as a failure. The Humanitarian Buffer did not meet its 2021 target. One obstacle was that its indemnification and liability scheme did not work for non-governmental humanitarian agencies – this should be addressed for continued COVID-19 response and to prepare for a future pandemic.

- The Therapeutics **Pillar** was held back by complex science. Key informants thought that a lot of good work was done by the pillar, but it took time to develop effective drugs. However, the pillar supported research that identified dexamethasone as the first life-saving therapy for COVID-19 and provided guidance on its use. Through its partner the Medicines Patent Pool, it reached two licensing agreements for the oral antivirals molnupiravir and nirmatrelvir (Paxlovid). The Therapeutics pillar failed to achieve its original delivery targets, and there remain challenges with the delivery of therapeutics. Oxygen delivery substantially improved since the pillar took over responsibility for it.
- The **Diagnostics pillar** made substantial upstream contributions. It negotiated low prices for rapid tests and molecular tests, contributed to genomic sequencing and variant tracking, and supported manufacturing of diagnostics in the Global South. The impact of the pillar was hampered by an insufficient focus on delivery and by late WHO guidance for self-tests.
- The contributions of the **HSRC** to country readiness were considered poor (a mean of 3.5 out of 10 across survey respondents). Most key informants described the pillar as largely dysfunctional throughout 2020 and 2021, arguing that the initial approach was misconceived – it aimed to strengthen health systems during an emergency instead of ensuring that strong links were built between the work of the pillars, the overall global COVID-19 response, and the country systems. Rather than being a pillar, it should have been a mechanism to hardwire MCMs into country systems.

15. CoVDP has effectively contributed to vaccine delivery. CoVDP is a joint initiative by UNICEF, WHO, and Gavi that focuses foremost on 34 countries with <10% COVID-19 vaccination coverage at the time of its launch (January 2022). CoVDP focuses on supporting countries to reach their national objectives with a focus on high priority groups, on the way to global targets. It brings partners together around the principle of “one team, one plan, and one budget” to align support to governments and to ensure country ownership. CoVDP supports political advocacy and engagement, leverages funding from its core partners through an accelerated process, and lines up technical assistance. The interagency initiative played a key role in catalysing support in 23 of the 34 countries (as of October 2022). Critics argued that CoVDP’s focus on vaccine coverage is too narrow and that a more holistic investment approach should have been taken to boost strategic use of all MCMs and strengthen health systems.

16. Agencies found it challenging to rapidly disburse the funding, indicating that their systems were not fully equipped to respond to an acute emergency situation. Data collected by WHO suggests that the systems of some of the co-convening agencies do not allow for rapid disbursements in response to an acute emergency – even when COVID-related adjustments were made.

E. External factors

17. Insufficient manufacturing capacity, unhelpful member state responses to COVID-19, and issues around "last mile" implementation were the three factors that most heavily impacted on ACT-A's ability to deliver on its targets according to survey respondents. CSOs and academia viewed lack of agreement to guarantee technology transfers and the management of intellectual property as the most significant challenge. Fostering ecosystems to allow for distributed R&D and manufacturing is one of the strategic long-term imperatives.

18. Strengthening country health systems, and especially their primary health care systems, during "peace time" is a key imperative. The pandemic has shown the need to invest in health systems. In addition to the health burden, the costs of inaction are enormous. Predictable and sustainable funding is needed to improve pandemic preparedness and response systems at country level.

Lessons learnt

We organized the lessons learnt across four areas: R&D coordination, contingent funding platform for MCMs, global functions, and regional manufacturing and health systems (see Table ES1 for a summary). These areas are linked. They represent critical elements of an end-to-end approach, including R&D, market shaping, procurement, technology transfer, manufacturing, and delivery. R&D is critical in-between pandemics, as are the strengthening of global functions, manufacturing capacity, and health systems. During a crisis, the availability of contingent funding for R&D and procurement is critical, so it will be key to design governance arrangements to advance these areas in a coordinated way. The suggested MCM funding facility must link closely with the suggested R&D platform. The governance mechanisms for the R&D platform and the MCM financing facility will have to be developed in future work but can build on the findings and principles presented here. With respect to global functions, WHO will have to play a key role.

1. R&D coordination

Increased R&D coordination and leadership are essential to develop MCMs for future pandemics. Based on ACT-A's vertical pillars, structures with clear lead agencies for R&D on diagnostics, therapeutics, and vaccines should be defined. In addition, a joint platform should be established to coordinate the work across the three product areas.

The evaluation found that the agencies working on R&D did not sufficiently coordinate their R&D efforts across and to some extent within the pillars. The evaluation showed that clear leadership is critical to mobilize attention to and investments in R&D, and to facilitate and oversee progress across the pipeline to the delivery and uptake of new tools.

Moving forward, we recommend enhanced coordination through three permanent MCM structures for each product type, with defined leads for diagnostics, therapeutics, and vaccines. In addition, we recommend that R&D agencies create a joint platform to facilitate coordination, including on (i) scientific exchange; (ii) priority setting for the R&D agenda and investments, and (iii) technology transfer and IP management to create competitive markets and the availability of affordable, low-cost products.

2. Contingent funding platform for MCMs

Future pandemic response must enable immediate access to initial funding for at-risk development and procurement. A pandemic Advance Commitment Facility – with access to a credit line, inclusive and accountable governance structure, and a targeted scope – should be established to enable a fast, equitable global response in a future pandemic.

Day zero funding: The evaluation indicated that contingent funding for MCMs must be available on day zero of the next pandemic. In a pandemic, there is no time to wait and mobilize funding. Even when expedited, the usual process of developing funding requests, generating pledges, securing cash, etc. is inappropriate for health emergency situations. We recommend establishing an Advance Commitment Facility with access to a credit line to ensure availability of funding on day zero and to secure orders for MCMs in the case of a pandemic. The facility would host a pooled fund for initial allocation for R&D and at-risk procurement. The facility needs to involve agencies working on R&D, as well as global and regional procurement platforms to make evidence-based funding decisions and provide support to the most vulnerable and lowest-income countries.

Resource mobilization: Even with early and contingent funding in place, additional funding will be necessary. We recommend building on ACT-A's coordinated resource mobilization approach. Agencies should coordinate their resource mobilization efforts to mobilize funding for their own organizational focus areas. In addition, a complementary pool of funding could be created to allocate some of the funding according to scientific evidence and need as the pandemic evolves. A fair-share model, agreed upon by countries in advance, could support joint resource mobilization efforts.

Decision-making: The Advance Commitment Facility should feature a formalized governance structure with transparent decision-making and early and meaningful inclusion of low- and middle-income countries as well as of civil society. A decision-making authority will be needed to allocate funding from the Advance Commitment Facility (it could also oversee a possible complementary funding pool).

Broad inclusion: The evaluation also showed that an inclusive structure is critical to create ownership for mandates and objectives, and to ensure that delivery and implementation of MCMs are prioritized and planned for from the beginning. Strong representation of regional actors in the facility governance should build on strengthened regional platforms, including to support regional procurement.

Scope and procurement platforms: The Advance Commitment Facility should target its funding towards countries with the lowest income. Fully global models for procurement (as initially adopted by COVAX) are overly ambitious and unrealistic. Instead, we suggest a larger group of procurement platforms, i.e., a 'club of buyers', as suggested by multiple key informants. Global and regional platforms need to define their respective roles and responsibilities to avoid competition across levels and geographies.

Delivery model: The evaluation showed that strengthening health systems during an emergency is not possible. This needs to happen in-between pandemics (see #4 below). Instead, there should have been a mechanism to address country bottlenecks to ensure delivery of MCMs in countries. For vaccines, the CoVDP has achieved significant results in a

short period of time. For the future, we recommend a 'CoVDP-type' interagency model for delivery support and coordination, led by an operational agency, that covers all MCMs and focuses on countries in greatest need of support.

Donation management: While product donations present additional complexities over direct procurement, they may play an important role in the next pandemic. The system should be prepared and well-equipped to manage donations early on in the pandemic response.

3. Global functions

At the global level, critical functions must be improved for pandemic preparedness and response, including political leadership, indemnification/no-fault compensation mechanisms, technology transfer, rapid prequalification, and data.

Leadership: Global leadership is necessary to keep pandemic preparedness and response high on the global agenda, to track progress, and to provide high-level political guidance and oversight. While different models are currently being discussed (e.g., under the UNGA, WHO and the G20), it would be important to create a high-level political body, possibly including a small secretariat. In addition, the inclusion of low-income and lower-middle income governments needs to be ensured – a forum of G20 countries only will be insufficient.

Indemnification and no-fault compensation mechanisms were a key contribution of COVAX. For the future, it will be important to have mechanisms that works for non-governmental actors, as this was one challenge for the Humanitarian Buffer.

Technology transfer is crucial for equitable access to MCMs, and there needs to be a stronger emphasis on it in the future. Pandemic treaty negotiations at WHO should be leveraged to facilitate the development of more equitable access agreements. As highlighted above, the suggested R&D coordination platform needs also to proactively facilitate technology transfer.

Prequalification: Access to certain diagnostic types was delayed due to late WHO clearance (especially for self-tests). Diagnostics are usually less complex to develop than drugs and vaccines. They are very important throughout the pandemic, especially at the beginning of pandemics when other MCMs are not available. Fast prequalification (as well as in-country regulatory approval) of diagnostics is thus needed to enable rapid availability during emergencies. Strengthening WHO's prequalification capacity for diagnostics is crucial.

Data: Multiple databases and tracking platforms and approaches were created by different agencies at different times. There was increasing coordination over time. Data availability is key to accountability and transparency – data system needs should be formulated in advance and implemented in a more explicit and purposeful manner through common frameworks, standards and databases.

4. Regional manufacturing and health systems

Building regional manufacturing capacity in a sustainable manner is important for pandemic preparedness. In addition, the health systems of countries must also be strengthened in-between pandemics.

The lack of distributed manufacturing capacity, in particularly for vaccines and diagnostics, was identified as the key external barrier for ACT-A. Multiple efforts are underway to strengthen manufacturing capacity across regions, for example through WHO's mRNA hubs. Manufacturing capacity needs to be supported over the long term and needs to be part of planning for sustainable business models and routine immunization market demand.

Strengthening country health systems, and especially primary health care systems, during "peace time" is also imperative (e.g., surveillance, workforce). The FIF is envisioned to play a key role in developing countries' future preparedness capacity. Donor and low- and middle-income countries themselves have to jointly ensure that the systems are ready when the next pandemic hits.

Table ES 1: Key findings and action points

Area	Key findings	Action Points
1. R&D coordination	Insufficient coordination between agencies working on R&D, and lack of clear lead agency for Tx R&D Need for sustained and enhanced coordination through three permanent MCM platforms for each product type, with defined leads for Dx, Tx, and Vx, to (i) exchange information, (ii) coordinate the R&D agenda and investments, and (iii) facilitate tech transfer/IP management	Define responsibilities for permanent MCM structures for Dx, Tx, and Vx Create a joint R&D coordination platform that includes the three MCM structures
2. MCM funding platform	Contingent funding needs to be available on day zero of the next pandemic – Advance Commitment Facility with access to a credit line could help securing orders early	Establish Advance Commitment Facility to ensure availability of funding on day zero, using a credit line, and based on inclusive and accountable structures/processes. *Key features*: *Providing funding at day zero* • Pooled fund for initial allocation for R&D/at-risk procurement, which requires decision-making body to allocate funds across product types *Resource mobilization* • Use of ACT-A's coordinated resource mobilization model with direct pledges to individual agencies to raise additional funds • Potentially complemented by a pooled fund to allocate funding flexibly according to scientific evidence and need *Governance* • Strong representation of regional actors and opportunities for regional procurement ("club of buyers") • Participation of low- and middle-income countries and CSOs • Better coordination between pillars • Stronger accountability *Scope and delivery* • Targeted funding for countries with lowest income • Set-up interagency model for delivery, with narrow focus to countries in greatest need of support and led by an operational agency ('CoVDP-model'). Needs to include all MCMs • Rapid creation of mechanisms for management of donations

3. Global functions	High-level leadership body for advocacy, guidance, and oversight Indemnification/no-fault compensation scheme was a key contribution of COVAX, but it did not work for non-governmental actors ("Humanitarian Buffer") Access to certain diagnostics was delayed due to late WHO clearance (especially for self-tests). Need for faster prequalification of diagnostics to enable rapid availability during emergencies Multiple databases and tracking platforms and approaches were created, with an increasing need to develop joint frameworks for data collection	Develop indemnification scheme that works for on-governmental humanitarian actors Strengthen WHO's prequalification capacity for diagnostics Develop joint framework for data collection to ensure better tracking and reporting across countries and agencies
4. Manufacturing and country systems	Lack of (vaccine) manufacturing capacity identified as key external barrier of ACT-A Strengthening country health systems is imperative – need for investments in primary health care systems/ future preparedness capacity (e.g., surveillance, workforce), including through the FIF	Support efforts to establish and expand manufacturing capacity for vaccines and diagnostics across regions Fully resource the FIF and other relevant mechanisms to improve pandemic preparedness systems

1. About this evaluation

1.1 Background

The Access to COVID-19 Tools Accelerator (ACT-A) was launched to enable an effective and equitable global response to the COVID-19 pandemic. It was established at a time of urgency and uncertainty – less than three months after the World Health Organization (WHO) determined that the outbreak of the 2019 novel coronavirus (2019-nCoV) was a Public Health Emergency of International Concern (January 30, 2020).[3]

Launched on April 24, 2020, at an event co-hosted by WHO's Director-General, the President of France, the President of the European Commission (EC), and the Bill & Melinda Gates Foundation, ACT-A brought together ten co-convening agencies (CEPI, FIND, Gavi, the Global Fund, UNICEF, Unitaid, Wellcome, WHO, the World Bank, and the Bill & Melinda Gates Foundation), governments, scientists, businesses, civil society organizations (CSOs), and philanthropists.[4,5,6]

The ACT-Accelerator Facilitation Council (FC) was officially launched on September 10, 2020. The FC is co-chaired by the Governments of Norway and South Africa, and co-hosted by WHO and the EC. It is comprised of ACT-A founding donor countries, market shapers, additional government representatives from low- and middle-income countries, and current chairs of regional cooperation groups, with non-governmental partners[7] and standing invitees from civil society and industry.[8]

In its first published investment case from June 26, 2020, ACT-A set out its aim to "develop essential health products for the fight against COVID-19 and to ensure they are distributed equitably through a rapid and ambitious programme of work to develop, test, bring to market, procure and distribute new diagnostics, drugs and technologies, while taking steps to help ensure health systems can deliver these tools to the people who need them."[9]

ACT-A was the first global initiative of its kind, responding to the need for unprecedented global collaboration to mitigate the COVID-19 pandemic. ACT-A comprises the three vertical pillars of Diagnostics, Therapeutics, and Vaccines (COVAX), as well as a fourth cross-cutting pillar – the Health Systems and Response Connector (HSRC).[10] The COVID-19 Vaccine Delivery Partnership (CoVDP) was established in January 2022 to support vaccine delivery in the 92 Advanced Market Commitment (AMC) countries, with a focus on 34 countries.[11]

As the COVID-19 pandemic transitions into an endemic state and countries move from managing COVID-19 as an acute emergency to integration into longer-term disease control programmes, the ACT-A partnership is adjusting its ways of working. In light of this transition, and because ACT-A's Strategic Plan & Budget came to an end on September 30, 2022, work is ongoing to develop a plan to support this transition and to ensure countries have equitable and sustained access to the tools they need to manage COVID-19 in the longer term. This will ensure ACT-A's ongoing ability to support country needs and demands in this next phase while maintaining capacity to manage subsequent waves of COVID-19, if and when new variants emerge.[12]

Overall, there is a need to reflect on strengthening the international framework for pandemic preparedness and response (PPR). The FC, which will go into a 'stand-by mode' at the end of September,[13] thus commissioned an independent, external evaluation of ACT-A in July 2022 to identify lessons learnt for future pandemic preparedness and response. The FC co-

chairs – Norway and South Africa – invited six countries and four civil society representatives to join the ACT-A External Evaluation Reference Group to oversee the evaluation.[14]

1.2 Objectives of the external evaluation

The external evaluation was a rapid, forward-looking exercise, which was carried out between July 11 and October 10, 2022. Its main objective was to learn from ACT-A and to identify key lessons learnt for future pandemic preparedness and response. More specifically, the evaluation aimed to provide learnings for institutional solutions to enhance global equitable access to medical countermeasures (MCMs) in the future.

The evaluation was not an impact evaluation of the global response to the COVID-19 pandemic, and it was also not a detailed description of all ACT-A activities. Instead, the aim was to assess the 24 evaluation questions from the Terms of Reference (ToR) and to review the ACT-A partnership through a focus on six areas (see Annex 1 for more details):[15]

1. Mandate
2. Set-up and structure
3. Resource mobilization and financing
4. Achievements
5. Gaps and missed opportunities
6. Way forward.

1.3 Acknowledging the dynamic context

ACT-A was established as an informal coordinating mechanism, leveraging the existing global health architecture to mobilise a rapid global response to the pandemic. Regarding ACT-A's design and performance, the evaluation had to consider the dynamic and uncertain environment in which ACT-A was launched. The environment was characterized by the fast-spreading and mutating virus, the evolving evidence base for responses (in terms of public health and social measures, and MCMs), and the fast changing political and financial environment, among other factors. Particularly during 2020 and 2021, the context changed rapidly and significantly, almost on a weekly basis.

Despite these challenges, the ACT-A partnership has had many achievements: Substantial funding was mobilized (US$23.5 billion), contributions to the development of COVID-19 tools were made, indemnity and liability agreements were established, billions of COVID-19 tools were procured and delivered, country systems and plans were developed, and a range of other global functions were performed (for example, technology transfer and support to manufacturing). At the same time, and despite the best intentions and unprecedented efforts, ACT-A's model had weaknesses and multiple challenges still exist when it comes to equitable distribution of COVID-19 tools. This fact might not be surprising given that ACT-A was created during a global emergency and that it built on a global health architecture that was ill-prepared to deal with a pandemic. This is the starting point for this evaluation – it asks: *What can we learn from ACT-A for future pandemic preparedness and response? Should the world rely on the same (or similar) model or could a different model be more effective?*

Finally, for the development of lessons, the evaluation team took into account that multiple other PPR processes are underway, such as the launch of the Financial Intermediary Fund for Pandemic Prevention, Preparedness and Response (FIF) on September 8-9, 2022,[16] and

the ongoing global process to negotiate a convention, agreement, or other international instrument under the Constitution of the WHO to strengthen pandemic prevention, preparedness, and response.[17]

1.4 Evaluation methodology

A comprehensive overview of the evaluation methodology is included in the inception report of the external evaluation.[18] The evaluation team developed the inception report in coordination with the Reference Group overseeing the evaluation between July 11 and 29, 2022. The inception report defined the scope, methodology, data collection and analysis tools, and overall evaluation framework.

The evaluation is based on a mixed-method design. Four complementary methods were used to collect data:

1. A document and database analysis
2. Semi-structured key informant interviews and focus group discussions
3. Online surveys
4. Online platform for open-ended stakeholder submissions

The data was collected between August 1 and September 20, 2022.

We triangulated the findings of the document analysis, the interviews, the online surveys, and the open-ended submissions. For each evaluation area and question, we present data from the range of sources and methods we used in the evaluation in order to provide a broad range of perspectives. As requested by the ToR, we also highlight if the results are incoherent across different groups and methods.

1.4.1 Document and database analysis

Our document review included documents by ACT-A and its co-convening agencies and other partners. In addition, we assessed peer-reviewed and grey literature on ACT-A's set-up, operating model, funding, achievements, and challenges. To identify the peer-reviewed literature, we searched the MEDLINE and Scopus databases for relevant literature. In addition, we identified grey literature using Google Scholar search. In total, we reviewed about 200 documents (Annex 2).

In addition to the literature review, we used four databases to analyse the performance of ACT-A's four pillars:

- The **Global COVID-19 Access Tracker** (https://www.covid19globaltracker.org/) to track progress towards the global targets for access to COVID-19 vaccines, treatment including oxygen, tests, and personal protective equipment (PPE). The access tracker draws on multiple databases, including the following from which we extracted data:
    - The **COVID-19 Delivery Partnership Information Hub** (https://infohub.crd.co/), which tracks vaccine deliveries, coverage, and vaccinations rates across countries.
    - The **FIND SARS-COV-2 Test Tracker** (https://www.finddx.org/covid-19/test-tracker/), which tracks COVID-19 testing rates across countries.

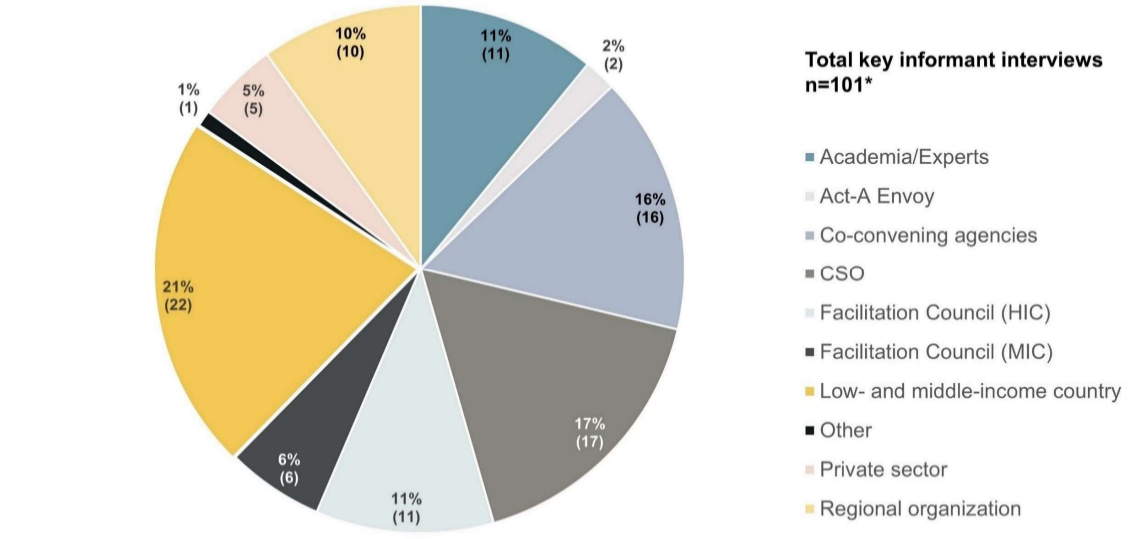
- The **ACT-Accelerator Commitment Tracker** (https://www.who.int/publications/m/item/access-to-covid-19-tools-tracker) to track funding commitments made by donors against ACT-Accelerator Pillar budgets (including fair-share calculations).
- The **UNICEF COVID-19 Market Dashboard** (https://www.unicef.org/supply/covid-19-market-dashboard) to track overall vaccine deliveries, COVAX deliveries, overall vaccine donations, and COVAX donations over time across countries as well as syringe and safety box deliveries across countries.
- **WHO Coronavirus Dashboard**, which includes data on COVID-19 cases, deaths, and vaccinations (https://covid19.who.int/).

1.4.2 Key informant interviews

We conducted over 90 key informant interviews (KIIs) in August and September 2022. In addition, we organized two focus group discussions with civil society and community representatives: Four CSO representatives attended the first focus group discussion (August 17, 2022), and an additional six representatives attended the second focus group (September 13, 2022).

In total, 101 stakeholders were consulted through this process (Figure 1). The most represented group of actors who participated in the KIIs and focus groups were low- and middle-income country representatives (21%). Facilitation Council members and representatives from co-convening agencies, CSOs, regional organizations, and academia had roughly equal representations in the KIIs and focus groups. The KIIs allowed the views from stakeholders with different types of expertise and backgrounds to be collected, providing a broad and diverse spectrum of views on ACT-A. The full list of key informants is included in Annex 3. Information from the interviews was clustered by stakeholder group and key questions and themes to identify key take-aways across these groups. The clustering also enabled us to describe contrasting views on key themes, as requested by the ToR of the evaluation. For specific questions, such as the contributions of ACT-A at country level, we assessed the results by (sub-)region (see Section 4).

Figure 1. Types of actors represented through the KIIs and focus group discussions



*Includes 10 focus group participants

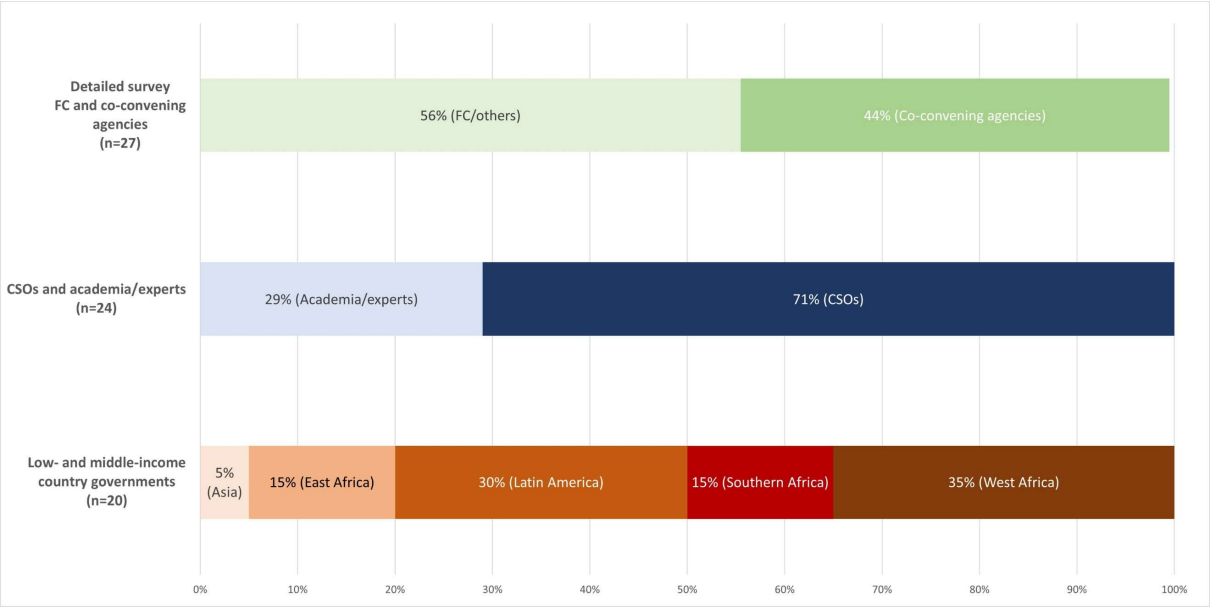
1.4.3 Online surveys

We conducted three online surveys to include a range of voices and perspectives and ensure that a broad audience would be reached for relevant input. In total, 71 institutions and experts completed a survey. Each of the three surveys targeted a different type of respondent.

- **Detailed survey for targeted stakeholders:** A detailed survey with 42 closed and open-ended questions was completed by 27 institutional respondents – mostly Facilitation Council members and co-convening agencies. These respondents were all actively involved and highly familiar with ACT-A. All co-convening agencies completed the survey (in total, 12 agency representatives), 13 FC members, and two others (one expert, and the ACT-A Hub). Of the FC members, 10 were high-income countries (HICs), two were upper-middle-income countries (UMICs), and one was a lower-middle-income country.
- **CSO survey:** This survey included 16 closed and open-ended questions and was completed by 17 civil society and community representatives. In addition, a slightly shorter version of this survey was completed by 7 academic experts who were invited based on a suggestion by the ACT-A CSO representatives.[19]
- **Survey for governments of low- and middle-income countries:** A survey with 12 closed and open-ended questions was completed by representatives from low- and middle-income countries with no direct involvement in ACT-A's global structures. As these respondents had less knowledge about ACT-A's global structures and processes, the survey aimed to capture their perspectives on ACT-A's contributions to the national COVID-19 responses. In total, 20 LMIC representatives completed the survey.[20]

Figure 2 provides an overview of the survey respondents. Annex 4 includes a list of all survey respondents.[21] Survey results were stratified by stakeholder group.

Figure 2. Overview of targeted respondents across the three online surveys



1.4.4 Online platform for stakeholder submissions

At the suggestion of the Reference Group, a platform for open-ended submissions was established on the ACT-A Hub website. The purpose of the open-ended submissions was to provide countries, CSOs, private sector stakeholders, and others the opportunity to comment on ACT-A's achievements, challenges, and lessons learnt. Stakeholders were invited to submit documents with a maximum length of 1,000 words. A total of 13 stakeholders (10 countries, one industry association, one WHO regional office, and one ACT-A partner) submitted responses (Annex 5). These submissions fed into the analysis.

1.4.5 Limitations

First, the evaluation was performed in three months (July 11–October 10, 2022) and covered a broad scope of perspectives. As such, it was not possible to assess in detail the achievements and challenges of each of the four pillars. Rather the evaluation provides evidence on key strategic issues to develop lessons learnt for the future. Other evaluations are underway to assess the work of the pillars or pillar co-convening agencies in greater depth.[22] Second, the tight timeframe of the evaluation affected the participation of specific country groups in the online survey. More specifically, it would have been useful if a larger group of Asian countries had completed the online survey. Third, while substantial data is available on vaccine procurement and coverage, there is less data available on diagnostics, therapeutics (including oxygen), and PPE. For example, the UNICEF COVID-19 Market Dashboard provides substantial data on vaccines and immunization equipment deliveries, allowing for assessments by regions, country-income group, and over time. The dashboard, however, has limited data on therapeutics, diagnostics, and PPE.

1.5 Structure of this report

This document is organized as follows: First we present the findings on ACT-A's mandate and operating model (Section 2). Next, we analyse the role of financing and resource mobilization (Section 3) and discuss the performance of ACT-A and its four pillars (Section 4). In Section 5, we discuss the role of the external environment. Challenges, gaps, and missed opportunities are discussed across Sections 2-5. Section 6 provides the lessons learnt.

2. ACT-A's mandate and operating model

In this section, we first describe ACT-A's operating model, including its overall structure, mode of operation, the main actors involved, and the key ACT-A forums (Section 2.1). We then provide findings related to evaluation area 1 'Mandate', which covers the evaluation questions 1-2 (Section 2.2), as well as evaluation area 2, 'Set-up and structure', which covers the evaluation questions 3-9 (Section 2.3).

2.1 Overview: ACT-A's operating model

ACT-A was deliberately established as an informal coordinating mechanism, leveraging the existing global health architecture to mobilise a rapid global response to the pandemic.[23] As such, ACT-A was a voluntary partnership and did not represent a new legal structure or a centralized decision-making entity. In fact, the explicit intention at the outset of ACT-A was not to develop new governance mechanisms.[24] It was formed to facilitate, but not formally institutionalize, linkages between global health stakeholders to respond to the COVID-19

pandemic in a coordinated manner, and specifically to develop and equitably distribute MCMs. This approach relied on existing governance structures to provide accountability.

ACT-A was organized into three vertical pillars – Vaccines (COVAX), Therapeutics, and Diagnostics. In addition, the Health Systems Connector was created as a cross-cutting pillar, which in 2021 became the Health System Response Connector (HSRC). In addition, there was the Access and Allocation workstream led by WHO, which developed frameworks and mechanisms to promote an equitable allocation of COVID-19 tools.

The Vaccines, Diagnostics, and Therapeutics pillars took on both upstream and downstream work in their respective areas. The HSRC was designed horizontally to support complementary areas in strengthening health systems, PPE, and oxygen (which was moved to the Therapeutics pillar in early 2021) and connecting to country needs by addressing key bottlenecks. Each pillar is led by a different group of co-convening agencies. Figure 3 includes the co-convening agencies according to the "ACT-A Q2 Quarterly Update, 1 April – 30 June 2022.[25] However, over time, the pillar leadership changed. Annex 6 includes an overview of the pillars, including its co-conveners, from March 2021.[26] The work of each pillar was divided into workstreams and respective inter-agency working groups. Organizational participation in these working groups extended beyond co-convening and lead organizations to enable broad participation and expertise (Annex 6).

Leaders from each of the agencies made up the 'Principals Group', which also includes industry associations and CSOs.[27,28] The Principals meet weekly, coordinated by the ACT-Accelerator Executive Hub and co-chaired by the WHO Special Envoys. In these meetings, participants discussed key developments and challenges, and the overall strategic direction of ACT-A.

ACT-A's first investment case from June 2020 mentions that several donor countries formed a 'Facilitation Group'. This group formally transitioned into the 'Facilitation Council' in September 2020, replacing the initial donor-driven group. In addition to its founding donors, the FC comprised market shapers, additional government representatives from the Global South, regional organizations, civil society, and private philanthropy (see Annex 6 for the membership of the FC). In its ToRs, the FC's mandate is described as follows: "To provide high-level political leadership and enabling advice to facilitate the work of the Access to COVID-19 Tools Accelerator (ACT-A) (…) The advice of the Council would include advocacy for collective approaches to solutions in the global interest and for the mobilization of additional resources as needed." It set up four working groups to structure its work and to provide high-level political leadership.[29]

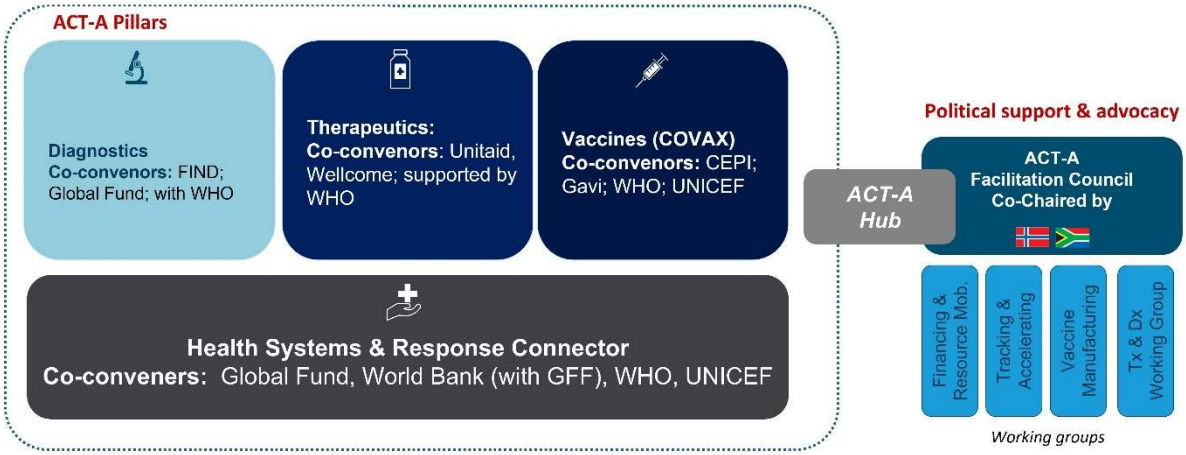
CSOs and communities are represented in the FC and its working groups, and they were also included in the workstreams of the different pillars and other pillar-specific groups, (see Section 2.3). A platform for ACT-A civil society and community representatives was created to support the coordination of civil society and community representation across all the ACT-A pillars.[30]

The ACT-Accelerator Executive Hub, hosted by WHO, plays a coordination function and aims to facilitate synergies across the partnership. It serves as the secretariat for the FC, supporting its meetings as well as those of the FC co-chairs and working groups. The Hub coordinates the Principals Group, as well as hosting and coordinating regular meetings for specific activities across ACT-A partners and pillars, including Communications, Resource

Mobilization, and CSO engagement. The Hub also gathered, synthesized, and shared cross-pillar information, developing joint publications and reports on behalf of the ACT-A membership. It also reports commitments between donors and agencies, via the Commitment Tracker.

The ACT-A partnership developed strategic budget and planning documents, with the most recent one being for the period October 2021-September 2022.[31]

Figure 3. ACT-A's pillars and Facilitation Council[32]



2.2 ACT-A's mandate

In this sub-section, we address the evaluation questions 1 and 2, which include multiple dimensions that need to be unpacked. These questions touch upon the relevance and appropriateness of ACT-A's mandate, objectives, and targets, especially with respect to equity. In addition, the questions refer to the scope and overall level of ambition. While these dimensions are interlinked, they each require a somewhat different angle. We thus address the relevance and equity aspects first (2.2.1), and then the scope of the mandate.

2.2.1 ACT-A's mandate: Relevance and equity

Key finding: Most government representatives from low-income and lower-middle income countries reported that ACT-A's mandate was very relevant to them, as they lack the means to develop and self-procure MCMs. However, the original targets (2 billion vaccines, 245 million therapeutics, and 500 million diagnostics delivered by mid/end 2021) were defined without sufficient input from low- and middle-income countries, which resulted in weak ownership.

In its first investment case from June 2020, ACT-A described its aim to "develop essential health products for the fight against COVID-19 and to ensure they are distributed equitably through a rapid and ambitious programme of work to develop, test, bring to market, procure and distribute new diagnostics, drugs and technologies, while taking steps to help ensure health systems can deliver these tools to the people who need them."[33]

Most government representatives from low-income and lower-middle income countries reported during the interviews and through the online survey that ACT-A's mandate was relevant or highly relevant to them, as they lack the means and resources to develop and

self-procure MCMs. UMICs reported that ACT-A initially appeared relevant to them, but ultimately failed to meet their expectations (see Section 4 for more details).

COVAX and the COVAX Facility, administered by Gavi, took on a global scope and could in theory have played an important vaccine procurement role for HICs (the other pillars focused on low-income and middle-income countries). As we discuss in Section 2.2.2, COVAX's direct relevance for HICs as a vaccine procurer was low. However, HICs considered ACT-A as a key platform to coordinate their support for low- and middle-income countries. In this sense, ACT-A was highly relevant to HICs.

ACT-A's investment case set initial targets: two billion vaccine doses globally by the end of 2021, as well as 245 million therapeutic courses and 500 million tests to low- and middle-income countries by mid-2021, respectively. These targets were set at a time when no one knew if and at what time the different products would be made available and how the market situation would look. As such, target setting was difficult. In addition, the targets were ambitious as was highlighted by multiple key informants from all stakeholder groups. The targets were also ambitious from a historical perspective. Gavi, for example, helped to vaccinate 822 million children through routine immunization programmes between 2000 and 2019 according to its 2019 progress report, which shows the high level of ambition of COVAX.[34] Thus, ACT-A set the bar high, and the agencies took a substantial risk by committing to these targets (when the targets were set, major challenges included low chances of vaccine and therapeutic development success within the first year, a need to manage manufacturing risks to increase production capacity ahead of regulatory approval, and significant equity risks in the distribution of vaccines).

ACT-A agencies determined the targets without ensuring proper input from the eventual recipients and end users, particularly LICs and LMICs. This was a strategic mistake. A case in point is the original COVAX target of achieving a vaccination coverage rate of 20% across countries by the end of 2020, which was set by WHO.[35] WHO's fair vaccine allocation model had two elements:

- "An initial proportional allocation of doses to countries until all countries reach enough quantities to cover 20% of their population
- A follow-up phase to expand coverage to other populations. If severe supply constraints persist, a weighted allocation approach would be adopted, taking account of a country's COVID threat and vulnerability."[36]

While the rationale was to protect and prioritize populations at greatest risk of death from COVID-19, the 20% target was communicated at a time when HICs aimed for much higher coverage levels (70% and more). This disparity undermined a fair vaccine allocation based on the WHO-led model. It is widely documented that stakeholders from LICs and LMICs, as well as CSOs and academics, criticized the Global North for the unequal access to vaccines.[37] In this context, multiple key informants commented that low- and middle-income countries should have been more meaningfully involved in the target-setting. Multiple CSOs and some representatives from African countries and regional organizations criticized the targets as inequitable. Others mentioned that COVAX and the WHO should have communicated that the 20% target was by no means a ceiling.

In response to perceived inequity, new regional initiatives were formed (e.g., the African Vaccine Acquisition Trust (AVAT)). CSOs and academics also criticized other aspects of the

targets, commenting that the 'total volume' targets ignored differences between and within countries. With regards to the allocation, CSOs, and academics also raised that other sources of vaccines (i.e., total coverage levels) were not initially taken into account in the allocation decisions.[38]

2.2.2 Scope of ACT-A's pillars

Key finding: The global scope of the Vaccines Pillar (COVAX) was too ambitious. Originally, the COVAX Facility was positioned to act as the key purchasing agent for the world. While such an ambition was laudable, key informants said it was unrealistic to assume that HICs would purchase their vaccines through COVAX, delegating the authority over R&D and allocation decisions to a global partnership. As the self-financing arm of the COVAX Facility did not meet expectations, COVAX was unable to play the market shaping role it envisioned. Many key informants suggested a more targeted and less ambitious approach would have been more useful.

The Diagnostics and Therapeutics pillars had a focus on low- and middle-income countries. In contrast, COVAX adopted a global lens, aiming to accelerate progress across the full vaccine value chain to achieve equitable global access and uptake. In June 2020, COVAX set out its objectives as "speeding up the search for effective vaccines for all countries" and "supporting the building of manufacturing capabilities and buying supply, ahead of time, so that two billion doses can be distributed fairly in the places of greatest need, worldwide, by the end of 2021".[39]

COVAX aimed to be the vaccine procurer on behalf of all countries to maximize collective buying power. The expectation was to pool demand globally to bring greater leverage to price and volume negotiations with manufacturers. In addition, a global scope would have allowed COVAX to equitably distribute vaccines between higher and lower-income countries. Eventually, the COVAX Facility included 195 participants representing over 90% of the global population. The COVAX Facility involved a two-pronged approach: The COVAX advance market commitment (AMC) mechanism enabled donor contributions to procure vaccines for the 92 lowest-income countries (31 LICs, 49 LMICs, and 12 IDA-eligible UMICs).[40] As argued in a study by Thornton et al., technically, the COVAX AMC is a group of Advanced Purchase Agreements (APAs).[41,42] According to the study, the term AMC was used because donors were familiar with it and already had a budget line for an AMC for the pneumococcal conjugate vaccines).

The COVAX Facility offered two arrangements for self-financing participants. The "Committed Purchase Arrangement" and the "Optional Purchase Agreement".[43] Under the Committed Purchase Agreement, participants effectively committed to purchase a set number of vaccines that, once available, will be fairly and equitably allocated amongst participants.[44] COVAX also offered Optional Purchase Arrangements to self-financing participants that were prepared to pay more upfront (higher-income countries paying for their own dose allocations). These participants were allowed to opt in or out of certain products, and they were also permitted to increase their coverage ceilings, which was criticized by experts as breaking with the principle of equal treatment between the AMC group and the self-financing participants.[45, 46,47]

While commentators acknowledged that COVAX taking an "all-for-one-and-one-for-all approach to defeating the pandemic (…) would have led to the best outcomes for everyone

and was our best hope for ending the pandemic quickly", they also highlighted that "the world doesn't really work this way."[48,49,50] Between May and August 2020, HICs had entered into multiple deals with manufacturers, ordering at risk enough doses to vaccinate their entire populations multiple times. Commentators argued that HICs were initially interested in hedging their risk through COVAX in case the vaccines they had invested in were not successful. However, as their R&D investments turned out to be successful, many of them bypassed COVAX. As a result, the scale of COVAX was insufficient to shape markets.[51]

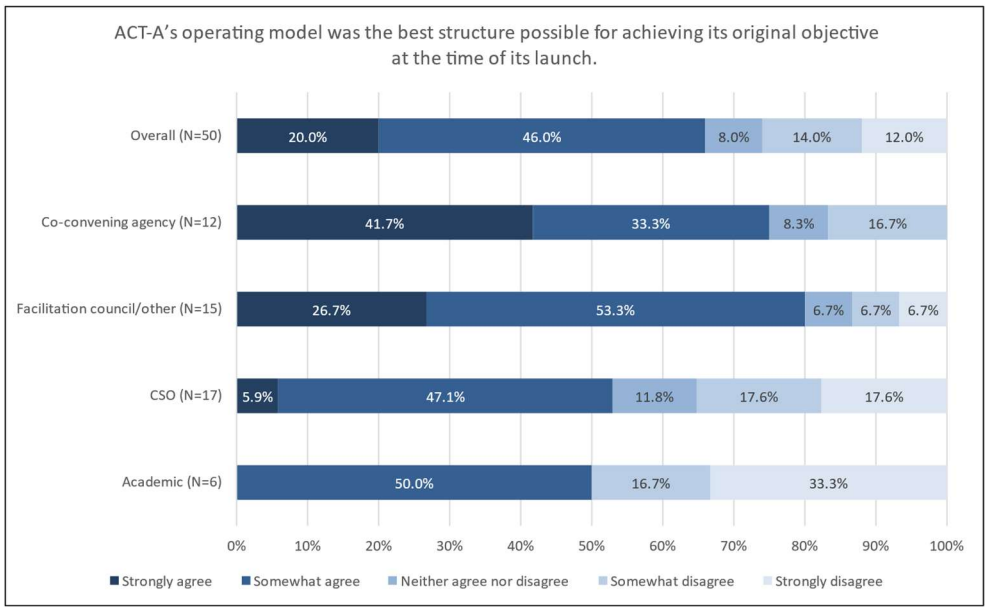
Many key informants interviewed for this evaluation agreed that a more targeted and less ambitious approach would have been more useful for COVAX. It was very ambitious and unrealistic to assume that HICs would purchase their vaccines through COVAX, i.e., essentially delegating the authority over R&D and allocation decisions to a multilateral partnership. This quickly became clear, and consequently there was an opportunity to develop a more targeted approach for COVAX. As we discuss in Section 4.1 below, the number of doses delivered through the self-financing arm is small compared to the doses for the AMC, with self-financing countries being unsatisfied with the received support. Overall, the global scope of the COVAX Facility appears to be too ambitious, which is an important learning for the future.

2.3 Strengths and weaknesses ACT-A's operating model

Key finding: ACT-A facilitated a rapid response and an unprecedented level of coordination and collaboration between global health agencies to address the COVID-19 pandemic. When ACT-A was set-up, the main priority was to have a rapid response to the COVID-19 pandemic. At the time, establishing new structures – for example, a single legal entity with associated centralised governance – was widely considered unrealistic given the urgent need for a speedy response. Most key informants commended the rapid creation of ACT-A in a highly challenging global environment. Many also emphasized that ACT-A was designed to reinforce coordination and collaboration and that it has achieved this goal. The pillars and the working groups within each pillar were created quickly and were useful to address immediate challenges related to the pandemic across the value chain.

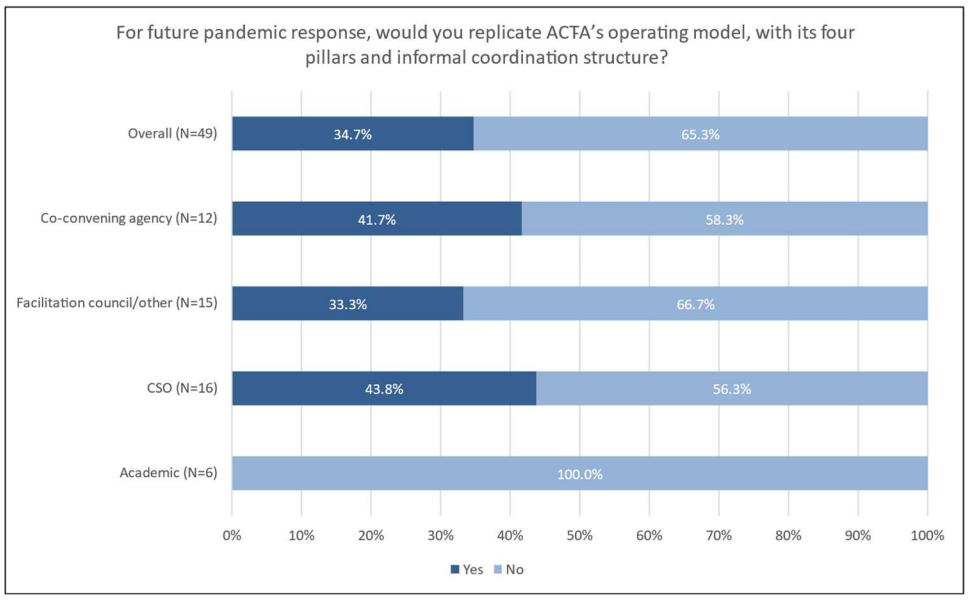
This is also reflected in the results of the online survey. Two-thirds of survey respondents (66.0%) agreed that ACT-A's operating model was the best possible structure for achieving ACT-A's objectives at the time of the launch (Figure 4). Particularly FC members and co-convening agencies acknowledged that the ACT-A model was the best possible structure in the context of a very difficult working environment, a fragmented global health architecture, and a challenging global emergency situation. CSOs and academics had more of a mixed view, with 53.0% and 50.0% of CSO and academic respondents respectively agreeing that the model was the best possible design given the challenging context in early 2020. These groups highlighted that a speedy response was inappropriately prioritized over other key considerations, such as the meaningful representation of low- and middle-income countries and civil society, and accountability for funding and results. In addition, certain key agencies were not involved in the early design, most noticeably UNICEF, despite the agencies' key role in procurement for health and global development more broadly.

Figure 4. ACT-A's operating model and achievement of original objective. Source: Online survey



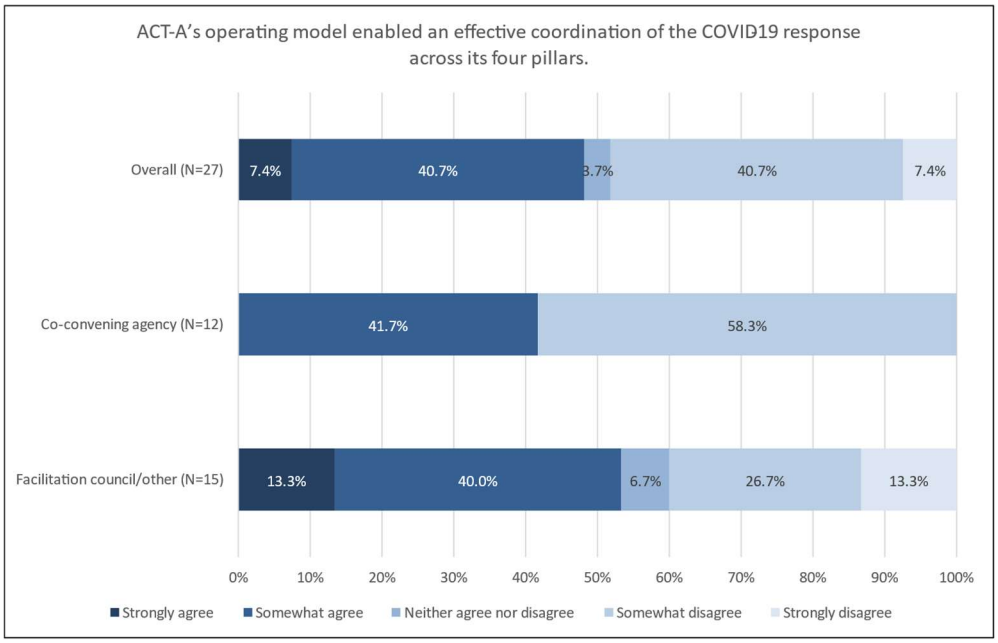
Key finding: ACT-A's informal coordination model is insufficient for a future pandemic response. A different design will be needed to address future pandemics. Only 34.7% of survey respondents would replicate ACT-A's operating model, with its four pillars and informal coordination structure, in the next pandemic (Figure 5). All stakeholder groups reported that the operating model is insufficient, and that it should not be replicated in the future. There were four major areas of concern: limited cross-pillar and within-pillar coordination, lack of accountability, insufficient involvement of low- and middle-income countries and to some extent of CSOs. In addition, the HSRC was widely perceived as being ill-focussed, disconnected from the three vertical pillars, and largely dysfunctional (see below).

Figure 5. Replication of ACT-A's model for future pandemic responses. Source: Online survey



Key finding: Principal Group meetings were considered as useful but overall cross-pillar coordination was perceived as too limited. Key informants reported that the weekly Principal Group meetings established a new level of coordination between the agencies, and that both the ACT-A Hub and the Special Envoys contributed to effective meetings and overall coordination. One challenge raised by multiple key informants was that the cross-pillar coordination through the 'Thursday evening calls' helped to coordinate the agency leads, but that coordination did not necessarily trickle down to lower management levels. In addition, while coordination and information sharing took place, cross-pillar action often remained too limited. Key informants, for example, mentioned that there was limited coordination on upstream investments, such as R&D. From a scientific and product development perspective, there should have been much more collaboration between the vertical pillars, but they operated largely independent of each other. The general lack of coordination between actors working on R&D was perceived as an issue rooted in the global health architecture, i.e., key informants emphasized the need for enhanced collaboration between R&D agencies across product types. There would also have been the opportunity to leverage the cross-pillar structures to coordinate the delivery of different COVID-19 tools, but this did not happen very much according to key informants. Some observers thus commented that little true coordination happened across the pillars. In fact, 58.3% of the co-convening agencies "somewhat disagreed" that ACT-A enabled effective cross-pillar coordination (Figure 6).

Figure 6. ACT-A's operating model and effective coordination <u>across</u> its four pillars. Source: Online survey

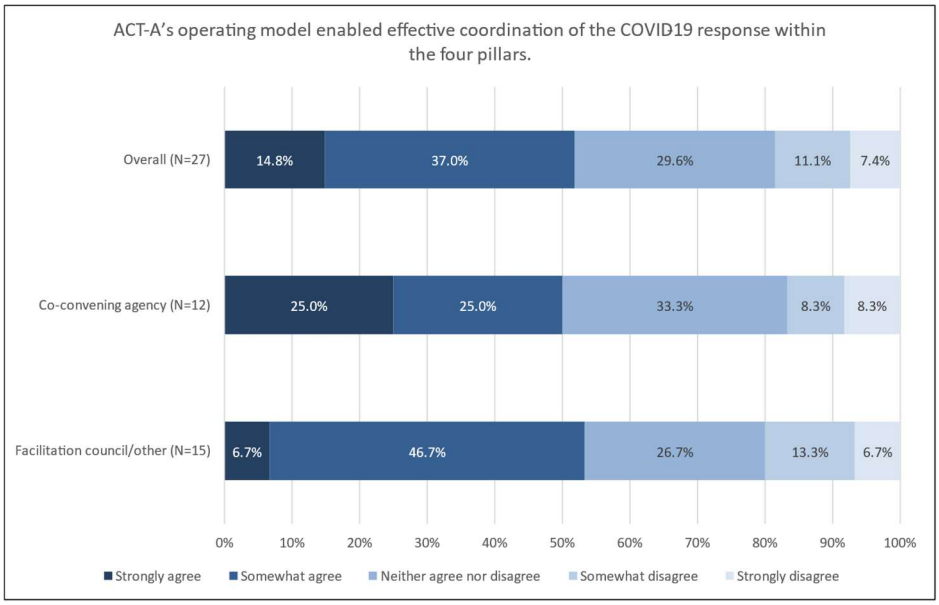


Key finding: Coordination within the pillars worked best for the Vaccines pillar due to longstanding working relationships between the actors involved. However, the decentralized and multi-layered decision-making model slowed down the response. Overall, within-pillar coordination varied quite considerably. Many key informants emphasized that across the four pillars, collaboration was best in COVAX because of the longstanding relationships between Gavi, UNICEF, WHO, and others for routine immunizations. In addition, Gavi and WHO had already collaborated in the past in the International Coordinating Group (ICG) on Vaccine Provision, which coordinates the

provision of vaccines during outbreaks (e.g., yellow fever; Ebola). According to the key informants, the least effective coordination occurred in the HSRC. Key informants gave multiple reasons for this. One frequently mentioned point were discordant views and approaches of the World Bank and WHO. Another point was that the HSRC had a difficult role – it was perceived as a residual, taking responsibility for everything that the vertical pillars did not want to take on. An additional point was the lack of strategic planning by the pillar. Finally, the HSRC had very limited practical and operational engagement with other pillars (see Section 4.4 for more details).

Survey responses suggest that the coordination within the pillars was suboptimal. Only 50.0% of the co-convening agencies agreed that ACT-A's operating model enabled effective collaboration within the four pillars (Figure 7). While the model promoted basic coordination and information sharing, it essentially relied on the goodwill of each agency to support each other. At the same time, each agency was reliant on its own governance bodies, which at times had different views on the appropriate response. This issue slowed down decision-making and was detrimental to rapid action, showing the limits of a decentralized and multi-layered model.

Figure 7. ACT-A's operating model and effective coordination within its four pillars. Source: Online survey



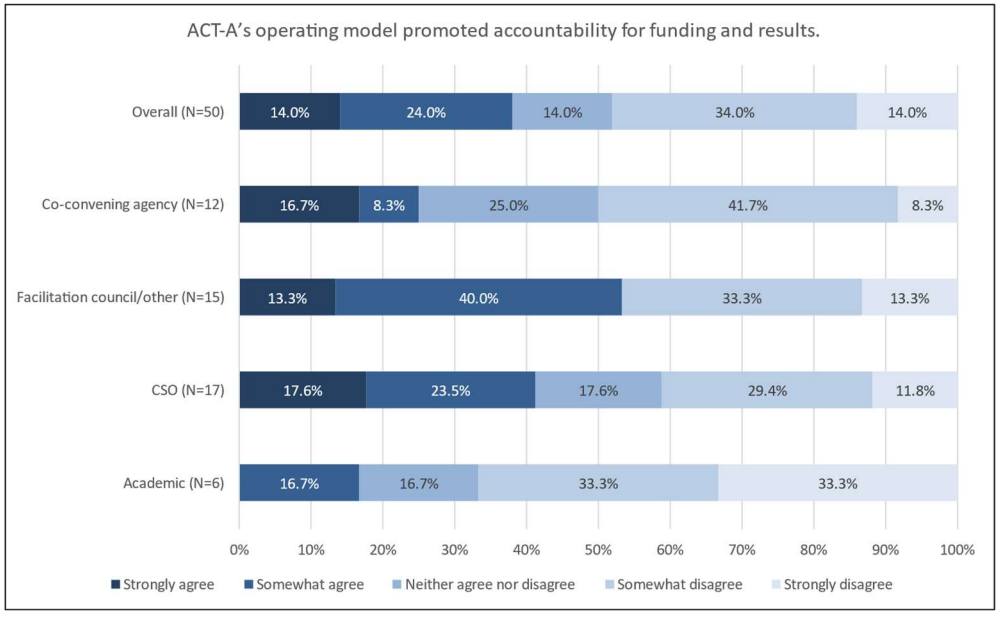
Key finding: Accountability and transparency were not sufficiently promoted by the ACT-A model. Prioritizing speed of response and using existing global health agencies to respond to the pandemic has to some extent compromised accountability and transparency. First, many studies have criticized the governance model of ACT-A (and its pillars), concluding that the roles of the agencies within the ACT-A decision-making process are unclear due to the complex structures and the absence of a defined decision-making body, obscuring who might be accountable to whom and for what.[52] Instead, ACT-A had multiple decision-making centres and uneven arrangements for information transparency, inhibiting accountability and meaningful participation. According to these studies, ACT-A by design lacked strong transparency and accountability mechanisms and thus afforded too much influence to donors and corporate partners.[53,54,55]

Second, while some key informants from civil society echoed these concerns, a range of CSO representatives argued that the degree of accountability and transparency varied

across the pillars and agencies involved. According to these CSOs, certain agencies were more accountable than others because of their strong and inclusive Boards. However, CSOs commented that the Boards were less able to exert oversight over the COVID-19 response compared to the core work of the agencies. Donors acknowledged that each of the agencies have strong accountability mechanisms in place, but they also emphasized the need for stronger reporting on ACT-A funding and results. Some of them expressed disappointment that the FC did not play a stronger oversight role.[56] Other key informants argued that there was no structure to enable collective accountability. Yet other key informants highlighted the useful contributions of the COVID-19 Access Tracker, the ACT-Accelerator Commitment Tracker, and the UNICEF COVID-19 Market Dashboard, which contributed to transparency and as such to accountability. However, there were also stakeholders who criticized that these data systems were created unilaterally, and in an ad-hoc manner by agencies.

Third, the survey results confirm the evidence from the document review and the KIIs. Only 38.0% of survey respondents agreed that ACT-A's operating model sufficiently promoted accountability (Figure 8). Views among FC respondents were split in half: while 53.3% believed that ACT-A's model promoted accountability, 46.7% disagreed, flagging ACT-A's inability to precisely track or communicate results due to a decentralized accountability mechanism, and delegating that role to individual agencies and pillars. Two-thirds of respondents from academia (66.6%) and 50.0% from co-convening agencies disagreed with the proposition that the ACT-A model promoted accountability. Both a lack of transparency with regards to decision-making, allocations of resources, and reporting, as well as the informal structure and overall complexity were identified as the primary challenges. Thus, even though each agency has its own established accountability mechanisms, ACT-A's model did not promote collective accountability in a sufficient way. This resulted in a lack of trust and ownership, and some reputational damage.

Figure 8. ACT-A's operating model and accountability for funding and results. Source: Online survey



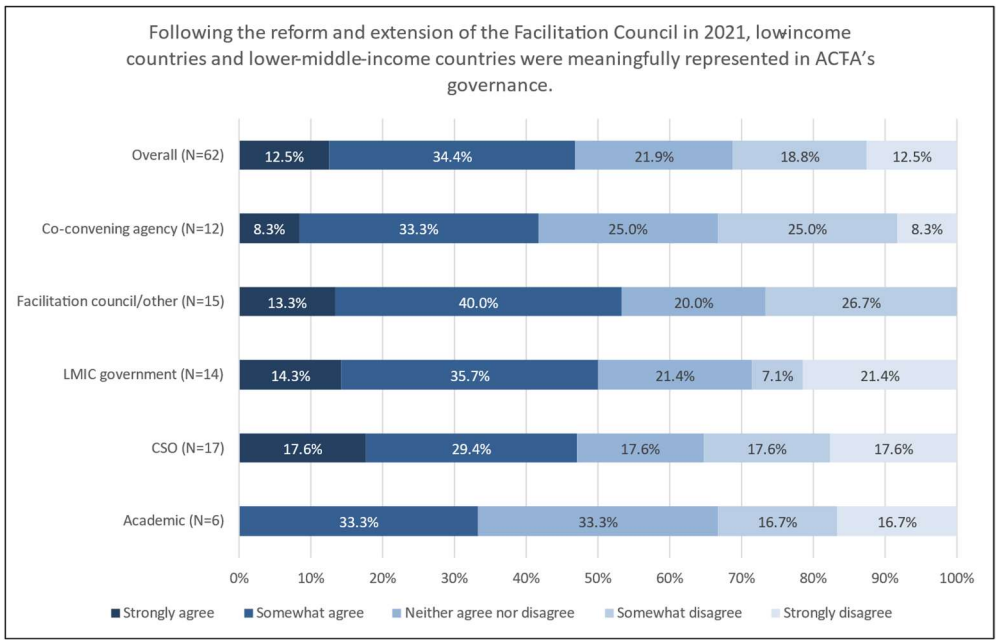
Key finding: LIC and LMIC governments were insufficiently included in ACT-A's model, resulting in a lack of ownership and affecting the delivery of COVID tools. The ACT-A strategic mid-term review found insufficient inclusion and meaningful engagement of LICs and LMICs, regional bodies, CSOs, and community representatives, an aspect that is

also highlighted by many other studies.[57,58] Analysing the role of LICs and LMICs requires taking on different angles. The first angle relates to the creation of ACT-A. The main point here is that no LIC and LMIC government was involved in the creation or initial governance of ACT-A. At best, countries were included indirectly through regional organizations, such as the African Union (AU). Again, the intent was to rapidly respond to the pandemic, and there was the underlying assumption that LICs and LMICs would be represented through the existing governance models of the co-convening agencies. Second, the degree to which LICs and LMICs are represented in the Boards of the co-convening agencies varies, with certain agencies having a stronger involvement of countries (and civil society; see below) in their governance. Third, while the FC was co-chaired by South Africa and involved India and Indonesia (both LMICs) as well as regional groupings, there was limited participation of LICs and LMICs. The ACT-A strategic review highlighted this gap; in response, six additional countries were included in late 2021 (Annex 6). Survey results show that even after the expansion of the FC, less than half of respondents think that LICs and LMICs are meaningfully included in ACT-A (Figure 9).

Overall, the majority of key informants described ACT-A as having a top-down character because it sacrificed inclusion for the (perceived) ability to respond to the pandemic in a rapid manner. The lack of inclusion compromised ownership of ACT-A's goals. Countries reported that their inputs were often not seriously considered, for example on affordability and local manufacturing. In addition, the lack of involvement has likely impacted the delivery of tools because those who were supposed to benefit from them were not or only insufficiently involved in the decision-making and planning processes. Many key informants reported that ACT-A was largely focused on the development and procurement of MCMs, while there was insufficient focus on delivery aspects and country readiness. It is likely that delivery aspects would have received much more attention if LICs and LMICs had been on the table. Another example relates to oxygen – while there was a clear need for oxygen, efforts to boost access to medical oxygen were insufficient in 2021. Again, it is unlikely that oxygen would have been neglected if LIC and LMIC representatives were included in ACT-A.

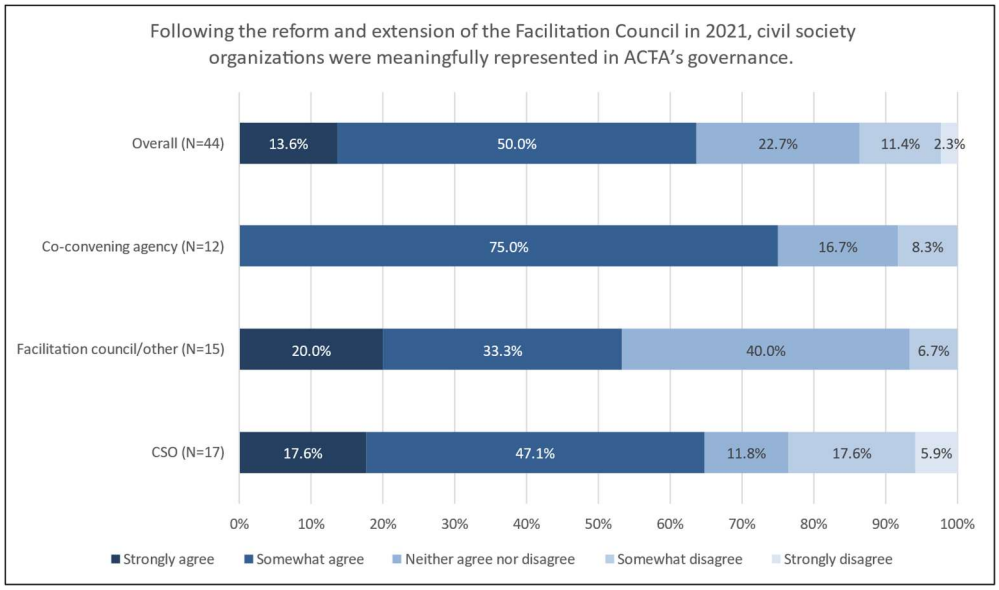
Countries also mentioned that it was hard to understand allocation decisions. Representatives from African regional organizations reported that they quickly lost interest in participating in the working groups because they did not feel that their views were heard (as mentioned in Section 2.2.1, this lack of meaningful inclusion and ownership contributed to the creation of multiple new AU initiatives, such as AVAT).

Figure 9. Representation of LICs and LMICs in ACT-A's governance. Source: Online survey



Key finding: There was little involvement of civil society and community representatives when ACT-A was launched, but this has changed during 2021 and 2022. The ACT-A strategic review traced the process of CSO involvement in ACT-A. While CSOs had limited involvement in ACT-A's set-up, CSOs were represented across all ACT-A pillars by early 2021. As of September 2022, there were 47 ACT-A civil society and community representatives. In interviews and the focus group meetings, civil society and community representatives reported that the Diagnostics and Therapeutics pillars were fast to include CSOs but that COVAX was slower to include CSO representatives. In June 2020, over 175 civil society organisations and individuals, including Médecins Sans Frontières (MSF) Access Campaign, wrote an open letter to Gavi's Board demanding better representation of civil society and communities in the Facility and COVAX AMC.[59] About two thirds of survey respondents think that CSOs are now sufficiently included in ACT-A's governance (Figure 10).

Figure 10. Representation of CSOs in ACT-A's governance. Source: Online survey



Key finding: The Facilitation Council contributed to high-level advocacy, resource mobilization, and alignment of ACT-A partners around key strategic issues. Meaningful inclusion of low- and lower-middle-income countries and CSOs was an issue, as highlighted by ACT-A's mid-term strategic review. In addition, some stakeholders commented that the FC only created transaction costs, without brining additional value.

The FC provided a platform for engagement and coordinated input, as well as knowledge sharing. Between September 2020 and September 2022, 11 high-level FC meetings were organized to exchange information and to some extent support alignment of donors, low- and middle-income countries, CSOs and others around key strategic issues.[60]

As mentioned in Section 2.1, the FC also initiated four working groups to focus on emerging issues. The Financial and Resource Mobilization Working Group was considered as being very active and useful by a range of key informants, including donors, CSOs, and some agencies. It served as a location to craft overarching fundraising request documents, such as the Strategic Plan and Budget (October 2021-September 2022). It helped to aggregate demand and to reduce areas of overlap between different sources of finance and agencies. The working group was also instrumental in the coordination of resource mobilization through the FC resource mobilization campaign (joint plan and budget, and joint brand in a 'flotilla' arrangement[61]). It also developed the fair-share financing model, which was perceived as useful by multiple stakeholders (see below) and contributed to transparency for financing. However, some agencies opposed this view, highlighting that the FC's work only created transaction costs and slowed down processes by embarking on comprehensive funding needs analysis in a rapidly evolving pandemic and supply scenario. Overall, these stakeholders reported that ACT-A did not add value in terms of resource mobilization – it was perceived as unhelpful. These stakeholders commented that the co-convening agencies were the ones who drove the fundraising, with coordination rather taking place within the pillars.

The Council also served as a platform to launch strategic reviews of ACT-A. The strategic mid-term review, released in October 2021, found insufficient representation of low- and lower-middle-income countries and of CSO and community representatives in ACT-A, which led to an expansion of the FC membership. The review also recommended and – according to some observers – contributed to better interaction between ACT-A and WHO's Health Emergencies Programme, and led to an agreement to create a combined data and monitoring platform to enhance access and utility of various dashboards and monitoring sites.

Overall, the FC met the need of donors to have formal representation and it also allowed for some engagement in strategic discussions. There was also regular (but light) reporting on key aspects by the pillars. While some donors had expected that the FC would play a stronger role in accountability for funding and results, this was not part of its official mandate – a fact that was also raised by agencies. And while the FC contributed to overall coordination, it did not contribute to stronger pillar coordination (it was not mandated to do so).

In this context, multiple key informants highlighted that the key role of political leadership is to keep pandemic preparedness and response high on the global agenda, to track overall progress on pandemic preparedness and response, and to provide high-level political guidance. Interviewees referenced different studies making this case. For example, the Independent Panel for Pandemic Preparedness and Response (IPPPR) argued that a senior political leader-level council for pandemic preparedness and response should be established under the General Assembly of the United Nations (UNGA).[62] WHO suggested to establish a Global Health Emergency Council and a Committee on Health Emergencies of the World Health Assembly.[63] Others highlighted the G20 Joint *Finance* and *Health Task Force* as a possibility to create sustained leadership for pandemic preparedness and response.[64]

Box 1: Key lessons learnt from ACT-A's operational model

ACT-A enabled a rapid response and an unprecedented level of coordination and collaboration between global health agencies to address the COVID-19 pandemic. At the same time, a speedy response was inappropriately prioritized over other key considerations, such as the meaningful representation of low- and middle-income countries and civil society, accountability for funding and results, and fast and effective decision-making. Key lessons for future pandemic response include:

- A global model for procurement might be overly ambitious for future pandemic response. It is likely that there will be similar patterns in future pandemics in the sense that HICs will aim to procure vaccines for their own populations. A more targeted approach, i.e., a focus on a smaller set of lowest-income countries, might be more effective.
- Early inclusion of low- and middle-income countries and civil society is critical to create ownership for mandates and objectives, and to ensure that a delivery lens is fully integrated from the beginning.
- An informal structure may enable light-touch coordination, but it can also slow down decision-making, be insufficient for promoting deeper collaboration between actors, and limit accountability. Future models should not give up on the network model, but there is need to establish stronger governance to ensure deeper collaboration, promote more accountability for funding and results, and to fulfil specific functions, such as resource allocation.

- The pillar structure also revealed limits of the global health architecture. While there is strong collaboration across actors for vaccines, other pillars faced challenges including less well-established working relationships and lack of clarity in the leadership structure and roles between agencies. There is need for enhanced coordination between the different global partnerships working on health R&D. Going forward, a new platform should be established that involves all key R&D partnerships and coordinates R&D across product types and diseases.
- The creation of a high-level political body, as suggested by the IPPPR and others, could help to keep pandemic preparedness and response high on the global agenda.

3. Financing and resource mobilization

This section provides findings related to evaluation area 3 'Financing and resource mobilization', which covers the evaluation questions 10-15.

3.1 Funding mobilized and distributed across the pillars

Key finding: The ACT-A agencies, with support from the FC Financial & Resource Mobilization Working Group, raised substantial funding, but ACT-A also faced significant funding gaps.

As ACT-A was not created as a new legal entity, resource mobilization was led by the co-convening agencies. Each agency mobilized and managed funds through their own financial systems. Through this procedure, donors pledged funds to specific pillars and agencies based on ACT-A's joint investment asks.[65] The FC's Financial & Resource Mobilization Working Group supported the resource mobilization. It formulated joint funding frameworks and investment case documents to monitor funding gaps and measure the mobilisation efforts required.[66] The joint funding frameworks included breakdowns of the funding needs of each pillar, among other information.

Overall, ACT-A contributors committed a total of US$23.5 billion as of September 5, 2022.[67] The pledges were made for two periods:

- US$17.8 billion was pledged before October 29, 2021 and accounted against the 2020-2021 need, and
- US$5.7 billion was pledged after October 29, 2021 and accounted against the 2021-2022 need.

Over two-thirds of all survey respondents recognized this as a significant amount (70.5%; Annex 7). Among the challenges raised, both CSOs and co-convening agencies highlighted a lack of diversity in the pool of funders – 72% of all funding was provided by six government donors.[68]

Across the entire implementation period, there were significant funding gaps across both periods (Figure 11). The funding gaps amounted to US$15.4 billion and US$11.1 billion for the first and second budget periods respectively.[69] As such, just over one quarter of overall survey respondents believed that ACT-A was adequately funded (Figure 12). While 46.6% of FC members considered ACT-A as adequately funded, one-third of them disagreed. Co-convening agencies and CSOs were less positive, with over half of respondents from each group disagreeing that ACT-A was adequately funded.[70]

Figure 11. Funding gap across the two periods. Source: ACT-A Commitment Tracker

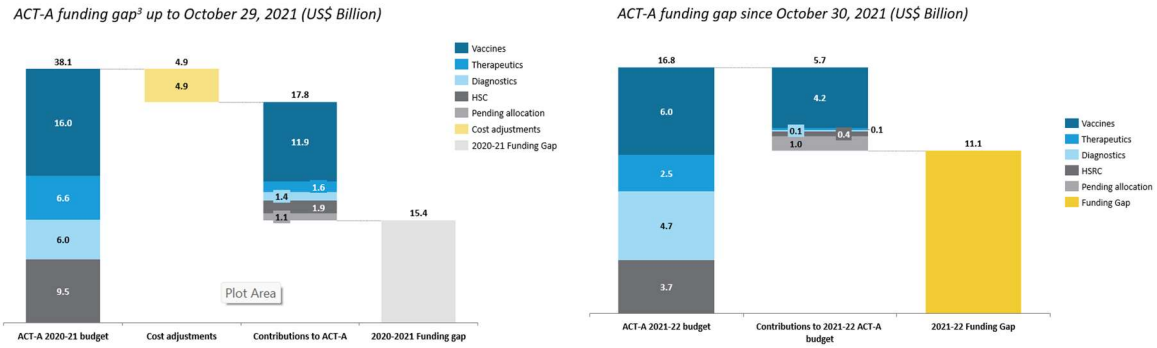
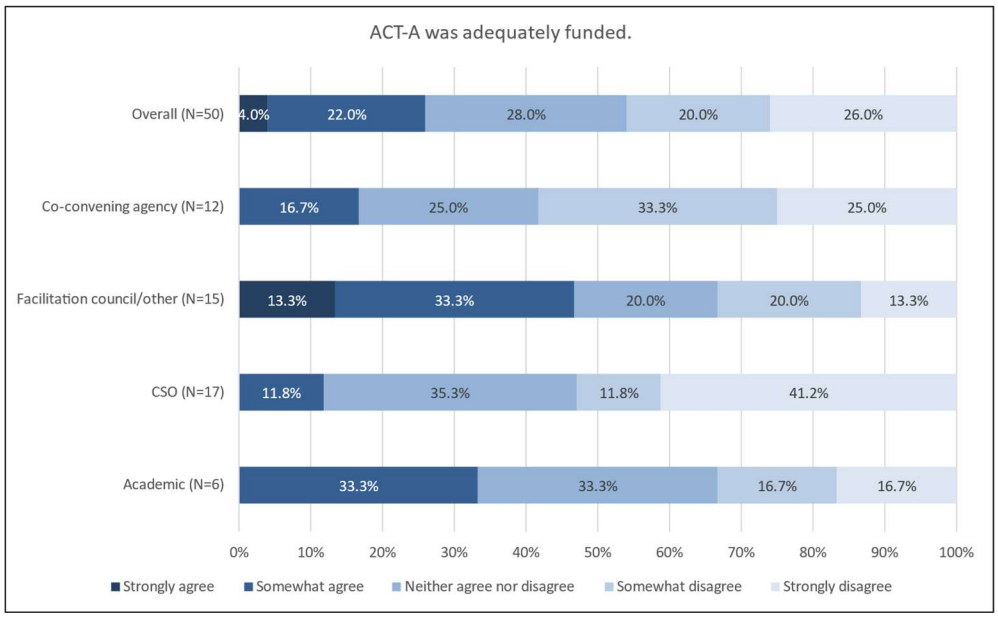


Figure 12. Respondents' views on the adequacy of ACT-A's funding. Source: Online survey



Key finding: The Vaccines pillar received over two-thirds of total funding, and some stakeholders think that this was at the expense of the other pillars. The Vaccines pillar was most successful in resource mobilization – 68.5% of all pledges were made towards this pillar (Figure 13). The Therapeutics, Diagnostics, and Health Systems pillars each received less than 10% of the total ACT-A funding.[71] The distribution of resources across the pillars and the strong donor interest towards COVAX were cited extensively by CSOs and some co-convening agencies as a key challenge with respect to the performance of the three non-vaccine pillars. Nearly half of all survey respondents (48.7%) disagreed that funding mobilized at or around ACT-A pledging events was adequately allocated (Figure 14). The rate was even higher among stakeholders outside the FC – two-thirds of respondents from co-convening agencies and CSOs and academia said funding was not adequately allocated. Several studies have also criticized the insufficient funding allocated to health systems in the poorest countries; only a limited amount of funding was provided to the HSRC.[72, 73]

Figure 13. Funding by ACT-A pillar and type of funder. Source: ACT-A Commitment-Tracker

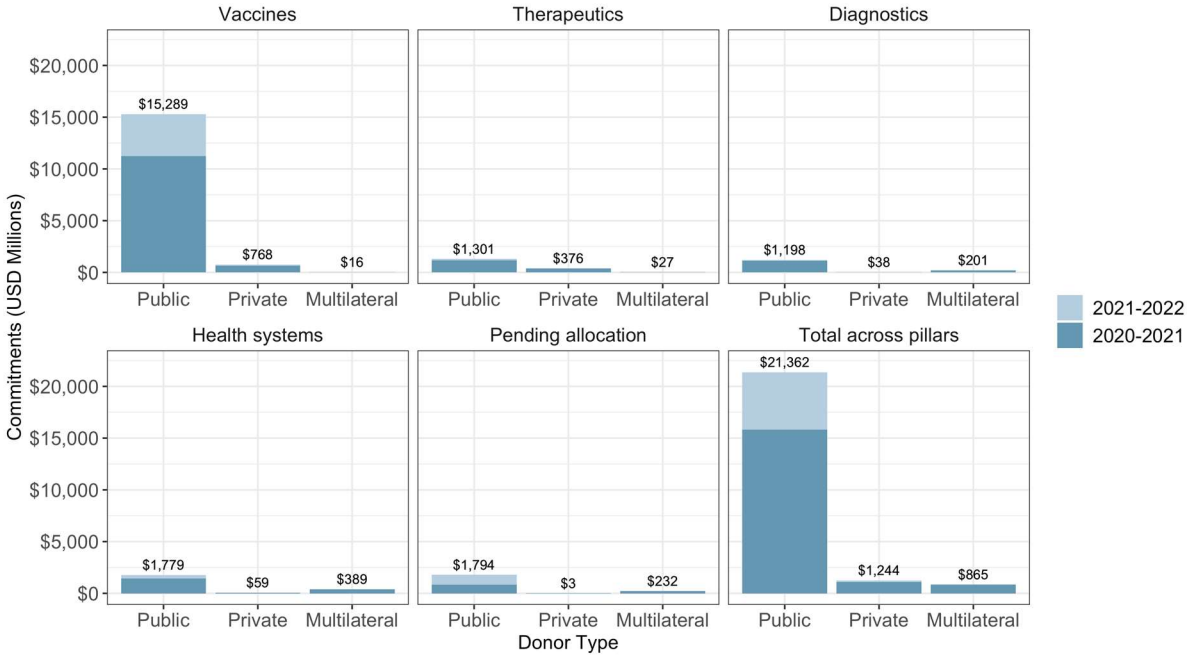
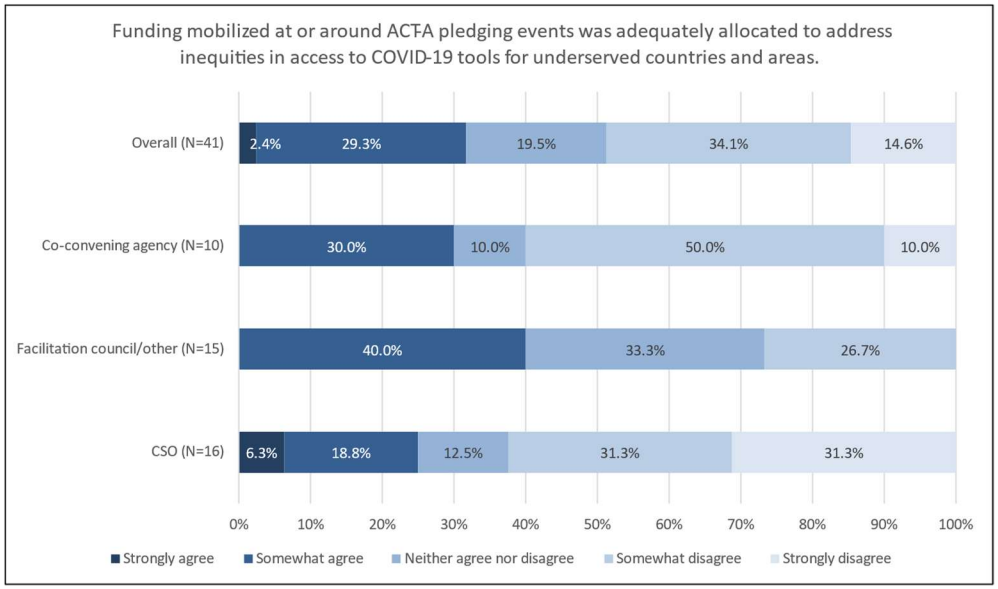


Figure 14. Respondents' views about allocation of resources. Source: Online survey



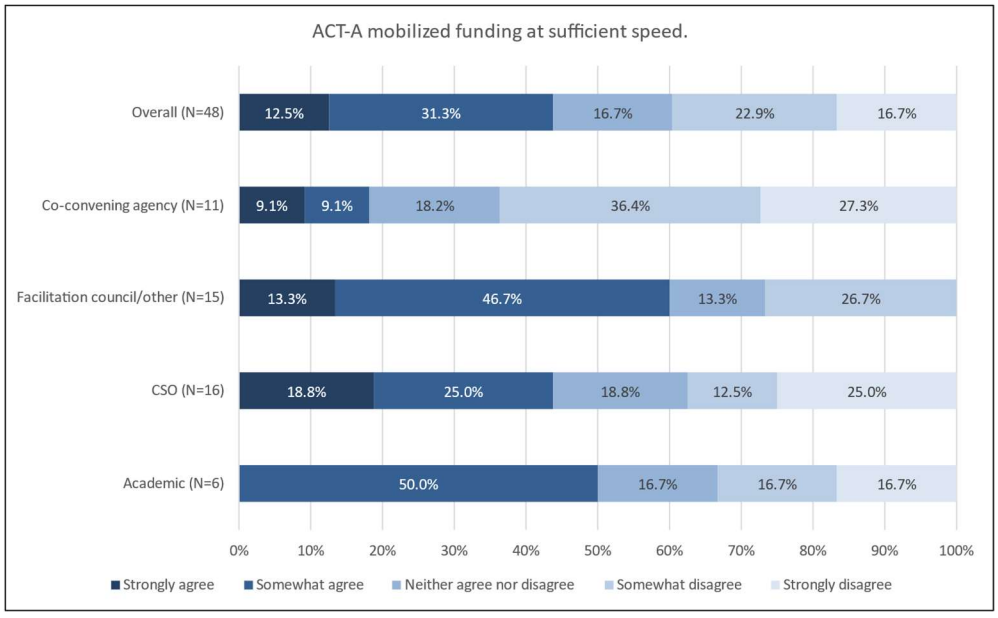
3.2 Speed of financing

Key finding: Funding was not mobilized at sufficient speed. Key informants across stakeholder groups highlighted that the lack of early funding was a key barrier to the response. The survey responses provide a more mixed picture: Overall, 43.8% of survey respondents agreed that ACT-A was funded at sufficient speed, but 39.6% of respondents disagreed (Figure 15). There were substantial differences between stakeholder groups, particularly between co-convening agencies and FC members. Almost two-thirds (63.7%) of co-convening agencies disagreed that ACT-A mobilized funds at sufficient speed, pointing to

the inability to quickly procure tools and secure deals in 2020. In contrast, only 26.7% of FC members thought that funds came late.

Donors made initial pledges to ACT-A in mid-2020, but the agencies only received much of the funding in late 2020 and early 2021.[74] Agency leads argued that the timing of funds slowed down the response by some agencies. COVAX was mentioned multiple times because it was unable to make deals at risk due to lack of funding[75] in mid-2020, i.e., at a time when HICs placed their orders. By August 2020, before any vaccines had been licensed, some HICs had already signed APAs amounting to an estimated average of five doses per person, enough to fully vaccinate each national citizen more than twice.[76] COVAX was empowered to purchase at risk (in advance of regulatory emergency use authorization), but it had little funding available. In August/September 2020, the Gates Foundation provided at-risk funding of US$300 million to COVAX.[77] The funding was used to enter an APA with the Serum Institute of India to (potentially) manufacture and supply an initial 200 million doses of the AstraZeneca vaccine to COVAX. In June 2020, AstraZeneca and the Serum Institute had announced a licensing and technology transfer agreement, which allowed the Indian producer to manufacture its own branded version of the Oxford/AstraZeneca vaccine upon licensure or WHO prequalification.[78] COVAX's ability to procure at risk was therefore low in mid-2020.

Figure 15. Respondents' views on the speed at which funds were mobilized. Source: Online survey



One group of key informants, particularly HICs and some experts, were sceptical about the impact of early financing. This group argued that HICs exerted a lot of influence on manufacturers, and that earlier funding would not have made a fundamental difference. Their main argument is that HICs have more bargaining power and will find ways to secure early doses. Another group of our key informants argued that the timing of funding and the inability to make substantial at-risk deals impeded the response, and that earlier funding would have helped to put COVAX on more equal footing with HICs. This view is supported by a World Bank study, which argued that the lack of timely financing for purchases of vaccines impeded the global response.[79] According to the study, 60–75% of the delay in vaccine deliveries to low- and middle-income countries was attributable to them signing purchase agreements later than high-income countries, which placed them further behind in the delivery line.

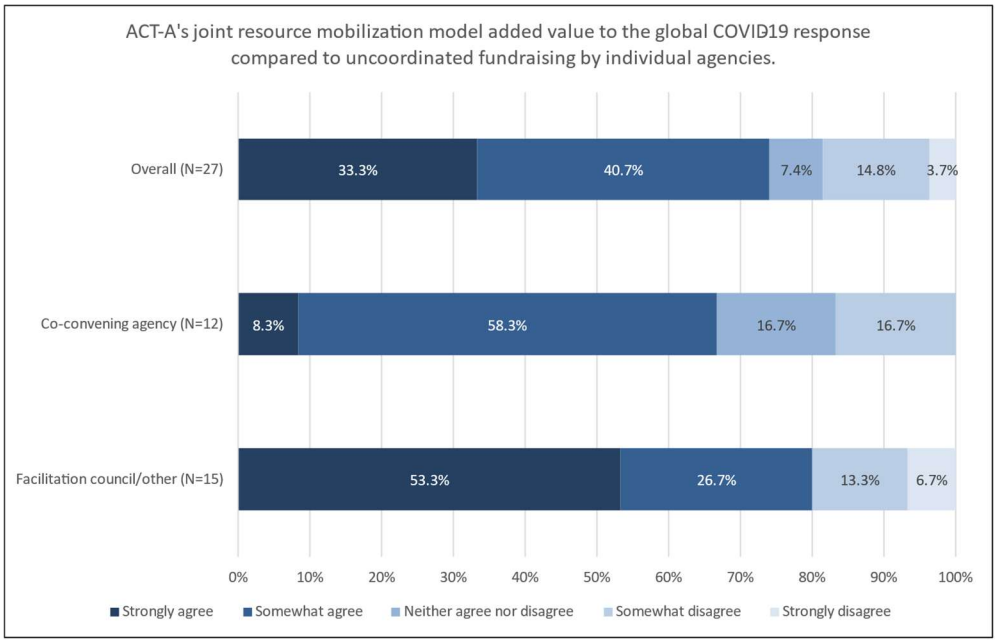
Pandemics require a quick response, and there is no time to fundraise. A key lesson from ACT-A is that there must be an available pool of contingent funding for “day zero” response and commitments – that is, funding must be committed before the next pandemic, and available immediately.[80]

3.3 Resource mobilization model

Key finding: Joint resource mobilization was a successful fundraising approach, and the fair-share approach contributed to fundraising. An earlier analysis commissioned by the ACT-A Hub found that ACT-A’s joint resource mobilization efforts were perceived as having added great value to global resource mobilization efforts.[81] The study was based on an online survey and interviews with agency resource mobilization and communications leads, ACT-A Facilitation Council Financial and Resource Mobilization Working Group members, and the ACT-A Hub team, among others. According to this study, the joint strategy and budget, alignment of agencies, and provision of investment case materials to donors were critical success factors in mobilising resources. The two main challenges were competition among agencies and difficulty prioritizing funding needs.

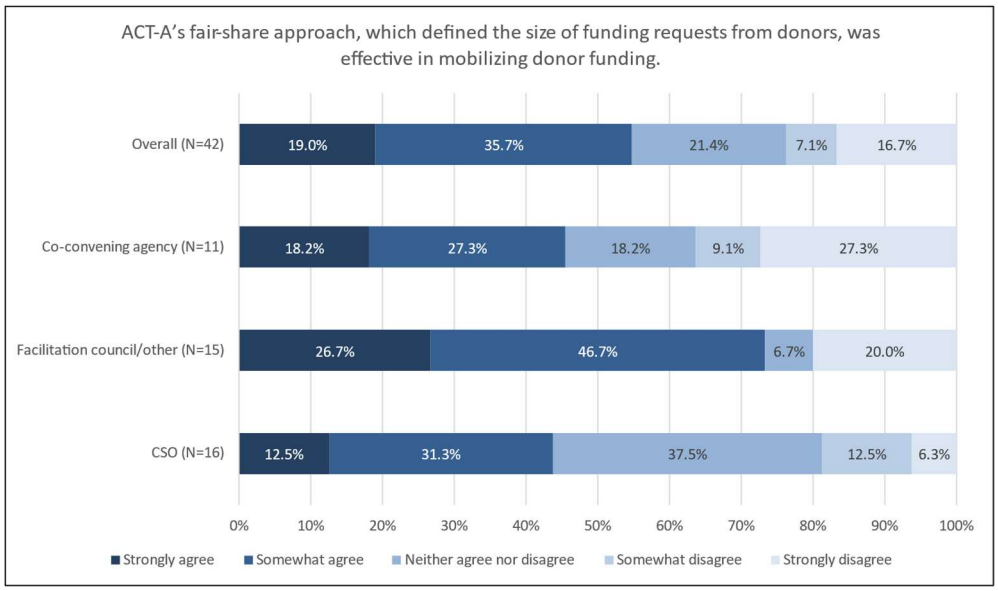
Our survey aligned with these findings, with 74.0% respondents overall believing that a joint resource mobilization model was preferable compared to uncoordinated fundraising efforts (Figure 16). Some co-convening agencies criticized a duplication of efforts and competition between different agencies as key challenges – concerns that were also raised by the participants in the recent review commissioned by the ACT-A Hub.[82] Respondents from both the FC and co-convening agencies made several recommendations to improve the model in the future. These included a clearer distribution of responsibilities, better coordination and communication between agencies, co-hosting mobilization events, and considering a more direct allocation of resources to national governments and agencies. As highlighted above, a small minority of stakeholders considered the resource mobilization model as having no added value, emphasizing that the fundraising was done by the individual agencies.

Figure 16. Respondents’ views about the joint resource mobilization model. Source: Online survey



Respondents had more disparate views on the effectiveness of ACT-A's fair-share approach (Figure 17).[83] While 54.7% agreed it was an effective approach, 24% disagreed. Over two thirds of respondents from the Facilitation Council agreed that the fair-share model was useful because it allowed them to better advocate for resources. However, FC members also mentioned that the fair-share approach failed to enlarge the existing donor base and mobilize substantial funding beyond a core group of donors. Co-convening agencies had more diverse views: 45.5% found it effective while 36.4% did not. Respondents commented that while the approach was effective with some donors, it might have dis-incentivized strong donors to contribute to their full potential, i.e., beyond the fair-share. Among respondents from CSOs, 43.8% supported the fair-share approach, but 20.0% disagreed. With ACT-A being a largely global process, CSOs questioned the ability of its fair-share approach to resonate with national governments, who had little incentive to fund ACT-A compared to first-hand COVID-19 countermeasures.

Figure 17. Respondents' views on the fair-share approach's ability to mobilize donor funding. Source: Online survey



Key finding: The resource mobilization model could potentially be complemented by a joint pool of funding that is able to allocate resources based on need. While 38.4% of survey respondents believed that the resource mobilization model should be replicated in future pandemics, 41.8% disagreed with this (Figure 18). Respondents highlighted that the allocation of funds could have been more needs-based as highlighted above. A substantial share of respondents thought that a central funding pool could have been a useful addition to the resource mobilization model. Almost half of survey respondents agreed (48.1%) that a funding pool could have contributed a better allocation of funding across the pillars (Figure 19). Those respondents argued that it would have allowed for a stronger need-based allocation. However, stakeholders also highlighted that the creation of such a pool takes time and would be complicated to negotiate.

Figure 18. Respondents' views on the replicability of the resource mobilization model. Source: Online survey

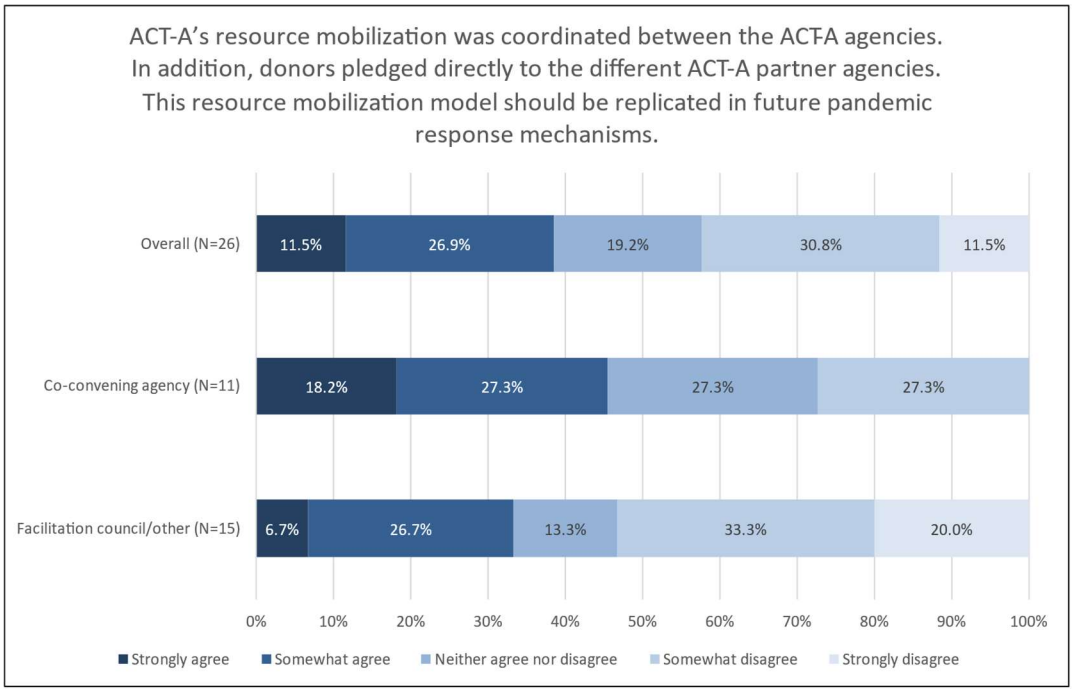
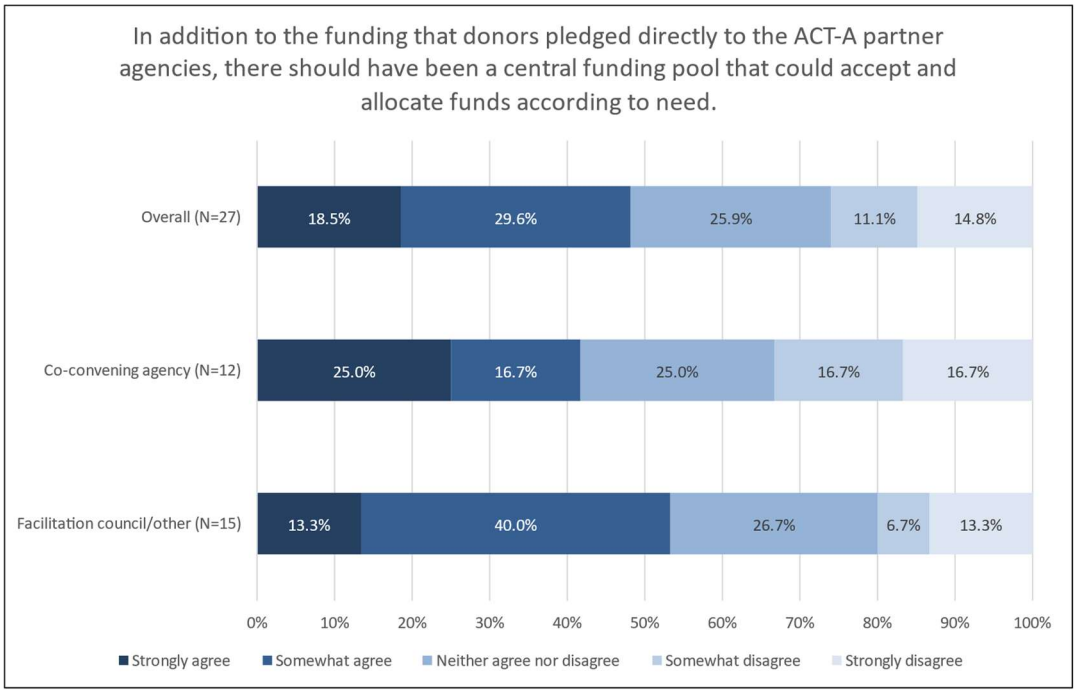


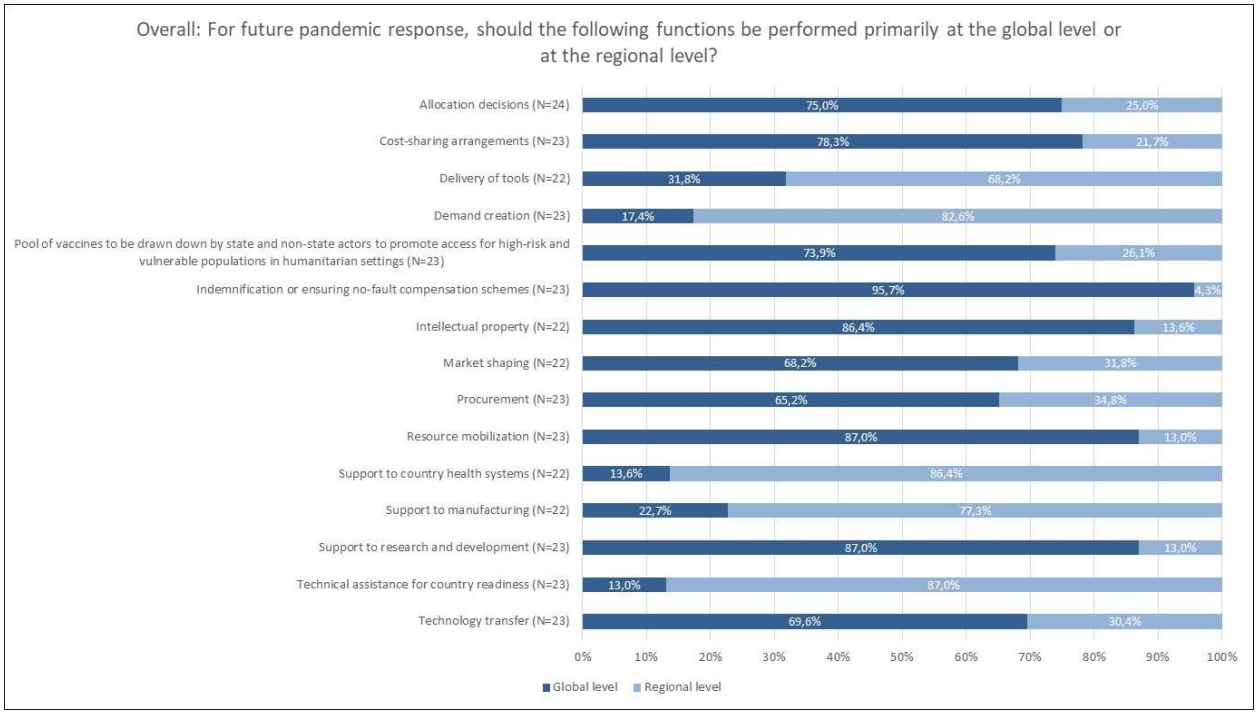
Figure 19. Respondents' views on the creation of a central funding pool. Source: Online survey



Key finding: In the future, regional organizations should play a larger role in pandemic preparedness and response, and work between global and regional actors should be better coordinated. Key informants emphasized that regional organizations played a key role in the pandemic, for example through newly founded institutions in Africa and through the multilateral development banks, such as the Asian Development Bank (ADB). ADB's Asia Pacific Vaccine Access Facility delivered 426.9 million vaccine doses by February 2022 (of

which 96 million were cost shared with COVAX). It also committed funding of US$4.1 billion, with a cumulative vaccine delivery target of over 1 billion doses.[84] AVAT also contributed to vaccine procurement in African countries (Annex 8). Multiple key informants argued that ACT-A's scope was very ambitious in the sense that it could take care of development, market shaping, procurement, delivery, and equitable allocation. Overall, the response was considered as too centralized. One interviewee mentioned that there was a "vacuum which resulted in a pushback by regional entities". In addition, the level of collaboration between the global agencies and some regional agencies was perceived as insufficient. While a broad spectrum of actors reported during the interviews that regional organizations should play a larger role in future pandemic response, the survey results show a more diverse picture (Figure 20). Survey respondents highlighted that many of the functions need to be performed at both levels.

Figure 20. Performance of functions across levels. Source: Online survey



Box 2: Key lessons learnt from ACT-A's financing and resource mobilization

ACT-A mobilized substantial financing, but it also faced a large funding gap, and the Vaccines pillar was more successful in terms of resource mobilization than the other three pillars. In addition, donors did not provide funding in a timely manner, which hindered a stronger global COVID-19 response. At the same time, the agencies were not sufficiently prepared to quickly allocate and disburse the funding to countries. Key lessons for future pandemic response include:

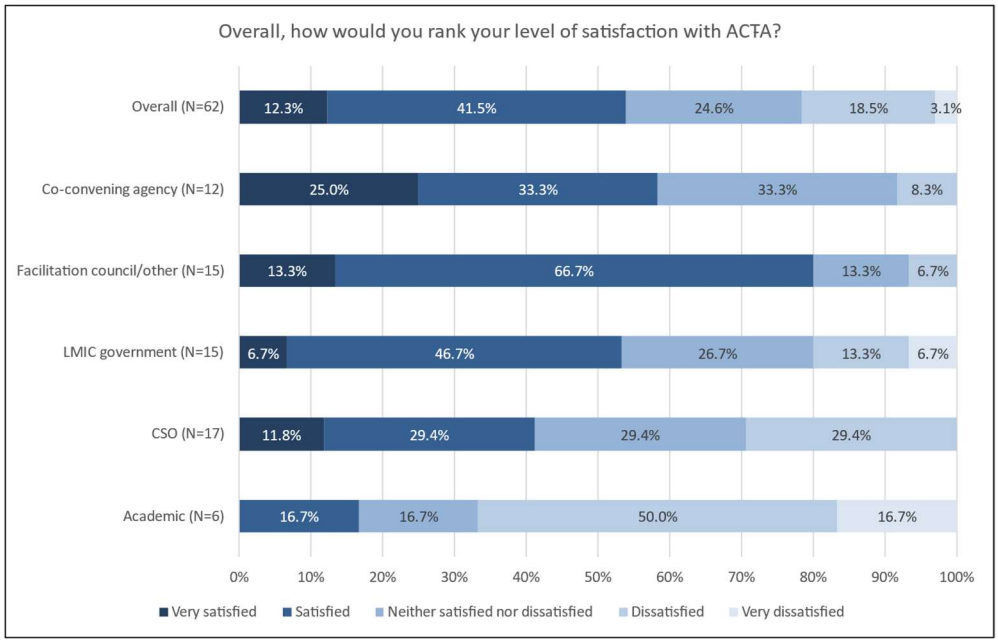
- Contingent funding needs to be available on day zero of the next pandemic. There is no time to wait for funding mobilization. A pandemic Advance Commitment Facility with access to a credit line could help to secure orders earlier to promote a faster and more equitable global response than during COVID-19.[85] While it is beyond the scope of this evaluation to provide details on such a facility, it will be important that it relies on strong and inclusive governance. It should also involve a group of regional buyers. Overall, it will be important to have a stronger representation of regional bodies to allow for better coordination between global and regional efforts.

- Even if early and contingent funding was in place, it will be important to mobilise additional funding. A coordinated resource mobilization approach appears to be more beneficial than individual agency efforts. Future models should build on the fundraising approach of ACT-A.
- A central funding pool, which allows for a stronger needs-based allocation, could be a useful addition. However, stakeholders have mixed views about the usefulness and feasibility of such a pool.
- The joint resource mobilization could be complemented by a fair-share model. However, the model would have to be agreed upon in advance to ensure wide ownership. In addition, there needs to be clear communication that the model aim is not to define a ceiling but rather a minimum amount to be pledged by donors.
- Regional organizations should play a stronger role in future pandemic response. Global and regional players need to better coordinate their work.

4. Performance of ACT-A and its four pillars

Key finding: The majority of surveyed stakeholders was satisfied with ACT-A. Across all survey respondents, more than half (53.8%) were very satisfied or satisfied with ACT-A, while only a fifth (21.6%) were dissatisfied or very dissatisfied with it. Overall, this result might also be interpreted in the sense that stakeholders appreciated the counterfactual – an uncoordinated global response, i.e., a response without ACT-A. The lowest level of satisfaction was reported by academics (33.4%) and CSOs (41.2%). In contrast, 58.3% of the co-convening agencies and 80.0% of FC members were satisfied or very satisfied with ACT-A (Figure 21).

Figure 21: Level of satisfaction with ACT-A. Source: Online survey



4.1 Vaccines Pillar

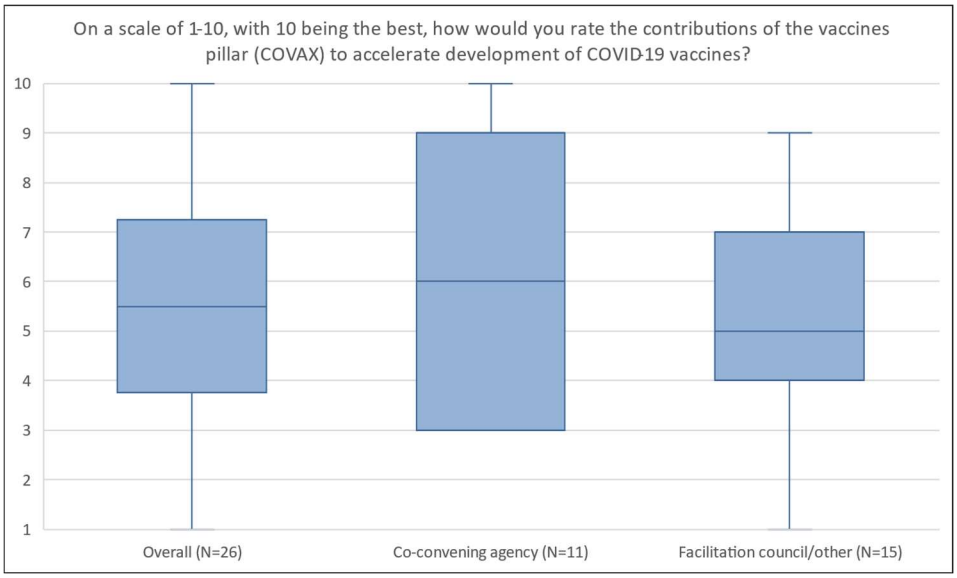
4.1.1 Upstream performance of the Vaccines pillar (COVAX)

Key finding: COVAX contributed to the development of COVID-19 vaccines through CEPI's investments into vaccine candidates and trials. Regarding its upstream work goals, COVAX set the goal of "ensuring the most promising vaccine candidates receive the funding they need, and that regulatory conditions be in place to allow a safe, seamless passage from early stages of development through to licensure and use."[86] CEPI moved quickly, already making investments in R&D that were attached to access commitments beginning in January 2020. In March 2020, CEPI already made an urgent call for US$2 billion to support the development of COVID-19 vaccines.[87] At the time ACT-A's first investment case was released (June 2020), over 200 vaccine candidates were under development around the world. By September 2020, COVAX held the world's largest and most diverse R&D portfolio of COVID-19 vaccines.[88] As of September 2022, the Vaccines pillar had invested at least US$1.2 billion of R&D funding into a portfolio of 14 vaccine candidates against SARSCoV-2, including four targeting variants. Three of these (Oxford/AstraZeneca, Moderna, and Novavax) have been granted Emergency Use Listing (EUL) by WHO, preventing disease and death around the world. Of these three vaccines, COVAX contributed R&D investments amounting to US$384 million for Oxford/AstraZeneca, US$1 million for Moderna, and US$399 million for Novavax.[89] Two additional vaccines (Biological E [India] and SK bioscience [South Korea]) have been approved by their respective national regulators.[90] Of these two vaccines, COVAX contributed R&D investments amounting to US$13.7 million for Biological E and US$210 million for SK bioscience.[91,] In addition, CEPI/COVAX provided an upfront investment of US$177 million to Dynavax to expand its capacity and to supply CpG adjuvant to Biological E and Clover.

Vaccine experts interviewed for this evaluation argued that CEPI's investment into the Novavax vaccine was crucial, and that this vaccine would likely not have come to the market without CEPI funding. CEPI also supported the manufacturing network of Novavax. In addition, the experts argued that it is more difficult to say to what extent CEPI contributed to the development of the Oxford/AstraZeneca vaccine, which was based on an existing partnership and included technical support. While CEPI's investment was substantial, it was small compared to the funding provided by the US government as part of Operation Warp Speed, the UK government, and the European Union. CEPI's investment in Moderna was neglectable compared the funding by the US government. Overall, the experts commended CEPI for its work, demanding future investments into CEPI to strengthen future pandemic preparedness and response. In this context, it is also important to note that vaccine development is high risk – not all investments will be successful. As such, a portfolio approach, as implemented by CEPI, is key for future pandemic preparedness and response.

Figure 22 shows survey respondent ratings, on a scale of 1-10, of the contributions of COVAX to accelerating the development of COVID-19 vaccines. The median ranking across all respondents was 5.5 out of 10.

Figure 22. Respondent ratings of COVAX's contribution to accelerating the development of COVID-19 vaccines. Source: Online survey



Key finding: Other COVAX contributions were the establishment of an indemnification and liability system and a no-fault compensation mechanism, contributions to technology transfer, and support to vaccine manufacturing through the Manufacturing Taskforce. COVAX developed a standard indemnity and liability system for all vaccines procured by COVAX and AMC countries, including a no-fault compensation mechanism to further reduce the risk for manufacturers.[92] Due to this system, countries did not have to negotiate separate agreements with vaccine manufacturers. COVAX also standardized the indemnity and liability system that manufacturers asked for – without standardization, there may have been different requirements from each manufacturer. Key informants commented that this was an important function fulfilled by COVAX, reducing the administrative, financial, and legal burden to countries, ensuring faster access to vaccines, and providing an efficient and reliable compensation mechanism.

COVAX also helped with technology transfer and manufacturing. As discussed in Section 3, Gavi, in partnership with the Bill and Melinda Gates Foundation, invested US$300 million in the Serum Institute to manufacture and supply COVAX with the vaccine of Oxford/AstraZeneca.[93] This investment was linked to a technology transfer agreement that allowed the Serum Institute of India to manufacture its own brand of the vaccine (Covishield). The role played by COVAX in the deal itself is unclear. However, the agreement shows the value of technology transfer to increasing vaccine doses for LICs and LMICs.[94]

With regard to manufacturing, COVAX established a Manufacturing Task Force to address short-, medium-, and long-term challenges to global COVID-19 vaccine manufacturing. Key objectives defined by the task force included facilitating and expediating cross-border transit of raw and single-use materials, improving visibility of manufacturing input supplies, expanding regional fill and finish capacity, upgrading LMIC manufacturing facilities, increasing and sustaining regulatory and manufacturing workforces in LMICs, and establishing commercially sustainable regional supply chains within the global manufacturing ecosystem.[95] A key achievement of the Manufacturing Task Force has been the launch of the COVAX Marketplace, which matches raw material and consumables suppliers with vaccine manufacturers, and vice versa, to enable vaccine production bottlenecked by supply chain

constraints and scarcity of critical materials. Other successes have included engagement with key governments and stakeholders across LICs and LMICs to build roadmaps and modelling approaches for improving local and regional manufacturing and supply chain capabilities over the coming years.[96] The work of the task force also resulted in another important outcome, the establishment of WHO's mRNA hubs.[97]

Despite contributions made by COVAX to COVID-19 vaccine technology transfer and manufacturing, multiple key informants have commented that COVAX should have done more to expand globally distributed vaccine manufacturing capability and could have put much greater emphasis on technology transfer. In particular, CSOs criticized that the COVAX agencies did not show strong support for a TRIPS waiver, as suggested by multiple governments, CSOs, and others.[98,99,100]

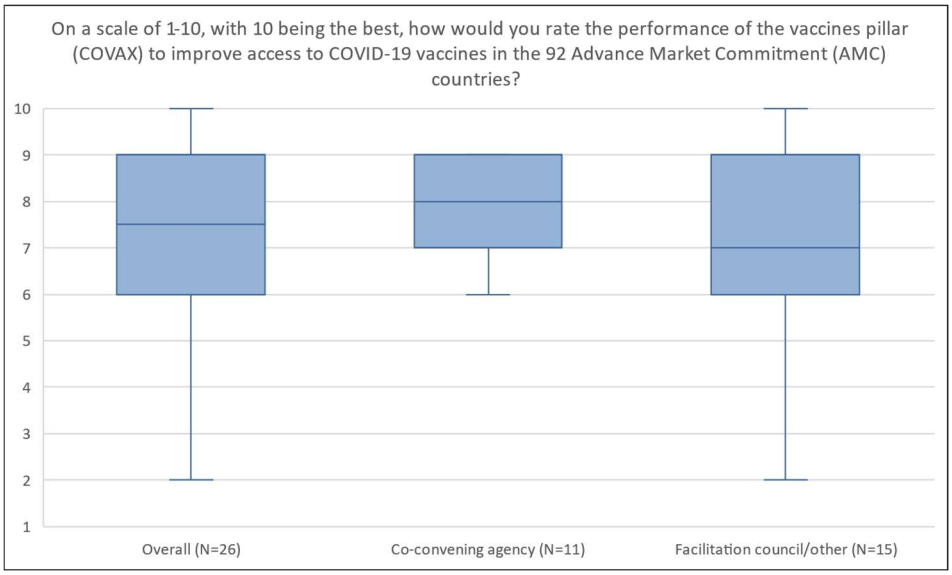
4.1.2 Downstream performance of the Vaccines pillar (COVAX)

Key finding: The COVID-19 vaccine rollout has been the fastest in global history and unprecedented in scale. By the end of 2021, COVAX delivered almost 950 million doses of vaccines, of which 54% came from APAs and 46% from donations. COVAX almost reached its 2021 target for AMC countries, delivering 833 million doses of the targeted 950 million doses. It fell short of its 2021 targets for self-financing participants and the humanitarian buffer.

Figure 23 shows survey respondent ratings, on a scale of 1-10, of the performance of COVAX in improving access to COVID-19 vaccines in the 92 AMC countries. The median ranking across all respondents was 7.5, the highest survey rating across the four pillars. Many key informants commented that COVAX's downstream performance, while insufficient, was unprecedented. There were, however, also key informants that held a diametrically opposed view, arguing that COVAX largely failed to deliver vaccines in time and at scale to countries. Civil society representatives and academics were particularly critical about COVAX's contributions to equitable access to COVID-19 vaccines. Several key informants from Africa, including from African regional organizations and the African COVID-19 Commission, pointed to the inequitable global access to COVID-19 vaccines, arguing that COVAX largely failed.

The diverging views of key informants are also reflected in multiple studies, articles, and papers. A study by the Center for Global Development (CGD) showed that the COVID-19 vaccine rollout has been the fastest in global history and unprecedented in scale.[101] The COVID-19 vaccination campaign achieved more widespread coverage worldwide in one year than any comparator vaccination rollout did in three years. A range of studies took a different stance, focussing more strongly or solely on the considerable global inequalities in access to COVID-19 vaccines to date.[102]

Figure 24. Respondent ratings of COVAX's performance in improving access to COVID-19 vaccines in the 92 AMC countries. Source: Online survey



COVAX aimed to procure two billion vaccine doses by the end of 2021: 950 million doses for AMC countries, 950 million doses for self-financing participants, 50 million doses for the Humanitarian Buffer, and 50 million doses for contingency. The list of the AMC-eligible countries and economies includes 31 LICs, 49 LMICs, and 12 IDA-eligible UMICs (based on 2018 and 2019 World Bank GNI data).[103]

In January 2021, the first COVAX vaccines were made available in India, and on 24 February 2021, an initial batch of COVAX vaccines arrived in Ghana, constituting COVAX's first international delivery – a historically fast delivery.[104] However, in April 2021, an export ban was imposed by India, and supplies from the Serum Institute came to a stop until late 2021.[105] In addition, supplies from other producers were also delayed due to limited manufacturing capacity and other issues, such as lack of raw materials. In addition, there were regulatory issues and a difficult market situation because of the competition with HICs for limited doses (as discussed in Sections 2 and 3).

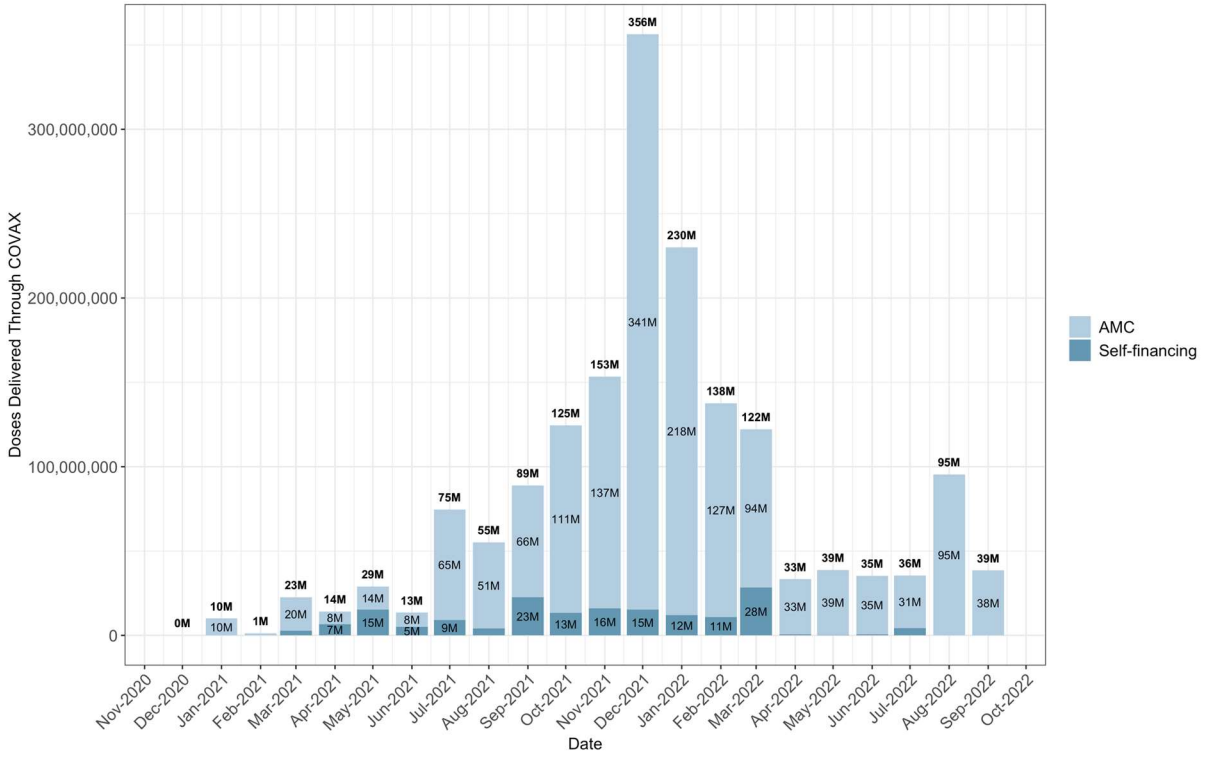
The supply situation improved towards the end of 2021 due to vaccines donations, new doses of additional APAs, and to some extent the lift of the export ban in India. By the end of 2021, COVAX delivered 832.5 million doses of COVID-19 vaccines to AMC countries, 110.8 million doses to self-financing countries, and 1.6 million as part of the Humanitarian Buffer – a total of 944.9 million doses according to the UNICEF COVID-19 Market Dashboard. The dashboard data differs slightly from the data of Gavi's 2021 progress report, according to which 946.6 million doses were delivered in 2021 (829 million doses to 86 AMC countries, 116 million to SFPs, and 1.6 million doses for the buffer).[106]

As such, COVAX almost reached its 2021 target for AMC countries, delivering 832.5 million doses compared to a target of 950 million doses. However, it fell short of its overall 2021 target (2 billion doses) – mostly because it did not reach its target for self-financing participants. In addition, the target for the Humanitarian Buffer was not met. Furthermore, 70.8% (589.6 million doses) of vaccines delivered through COVAX to AMC countries in 2021 were delivered in the fourth quarter, mostly in December of that year (Figure 25).

Gavi's 2021 progress report shows that 46% of doses delivered in 2021 were donations.[107] HICs that overbought vaccines have donated bilaterally to countries through COVAX, the AU, and/or UNICEF. Donations were crucial when COVAX was struggling for supply in 2021;

however, they have important drawbacks. A key issue was that occasionally donated vaccines had a short shelf-life (especially AstraZeneca's vaccines), making it logistically more challenging to deliver them to countries and ensure they are used. In addition, donations made it more difficult to respond to the demand preferences of countries. Multiple donors also reported that COVAX was initially reluctant to accept donations, and that there could have been opportunities to deliver donated vaccines to countries much earlier. However, the donations came with massive logistical challenges, a fact recognized[108] and eventually managed by the COVAX Facility. Nevertheless, the factors which led to vaccine donations might be repeated in future pandemics. As such, future response mechanisms need to include donation management as a design component from the start.

Figure 25. COVAX deliveries over time by COVAX status, as of September 15, 2022. Data is from the UNICEF COVID-19 Market Dashboard (https://www.unicef.org/supply/covid-19-market-dashboard).



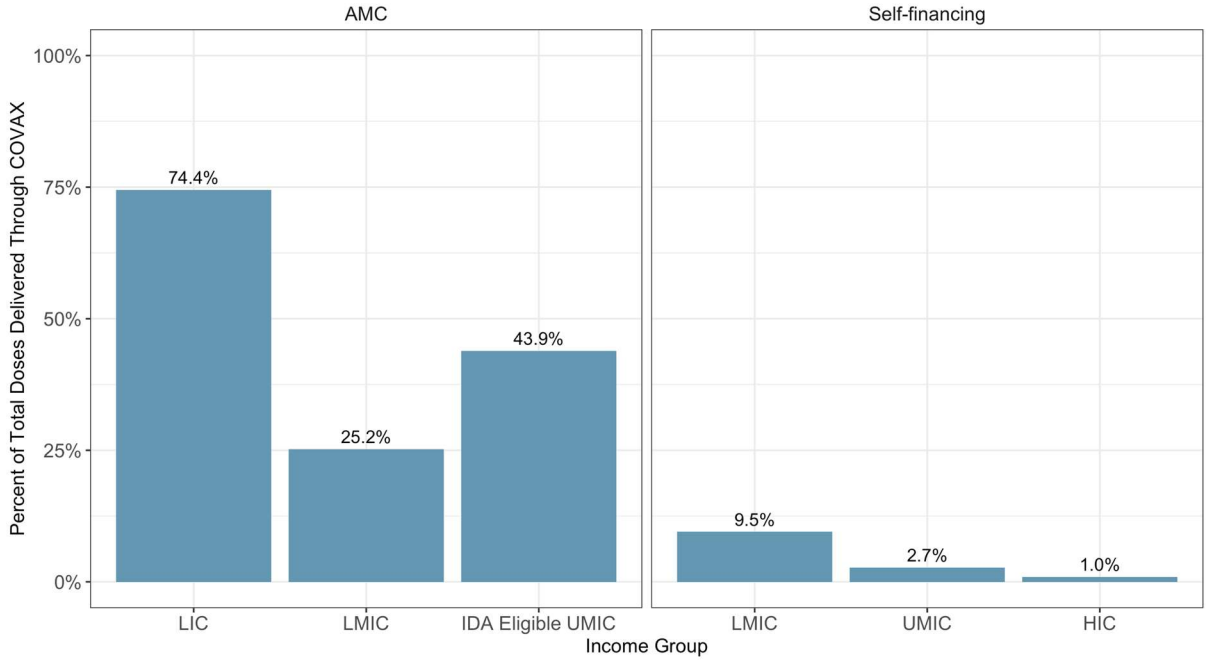
A recent modelling study estimated the impact of COVAX vaccinations in the first year.[109] According to this study, vaccinations in 83 COVAX AMC countries averted 7.4 million excess deaths (range: 6.8–7.7 million).

Key finding: As of September 15, 2022, COVAX delivered 1.72 billion doses to AMC and self-financing countries. Three-quarters of all COVID-19 vaccine doses delivered to LICs came from COVAX, and COVAX also provided a quarter of all doses to those LMICs that are part of the AMC. Despite these achievements, substantial inequities in vaccination coverage persist globally.

Of the 1.72 billion doses delivered by COVAX, 1.54 billion went to AMC countries with LMICs receiving 1.28 billion, LICs receiving 255.7 million, and IDA-eligible UMICs receiving 4.69 million.[110] The remaining 168.2 million went to self-financing countries. Among AMC

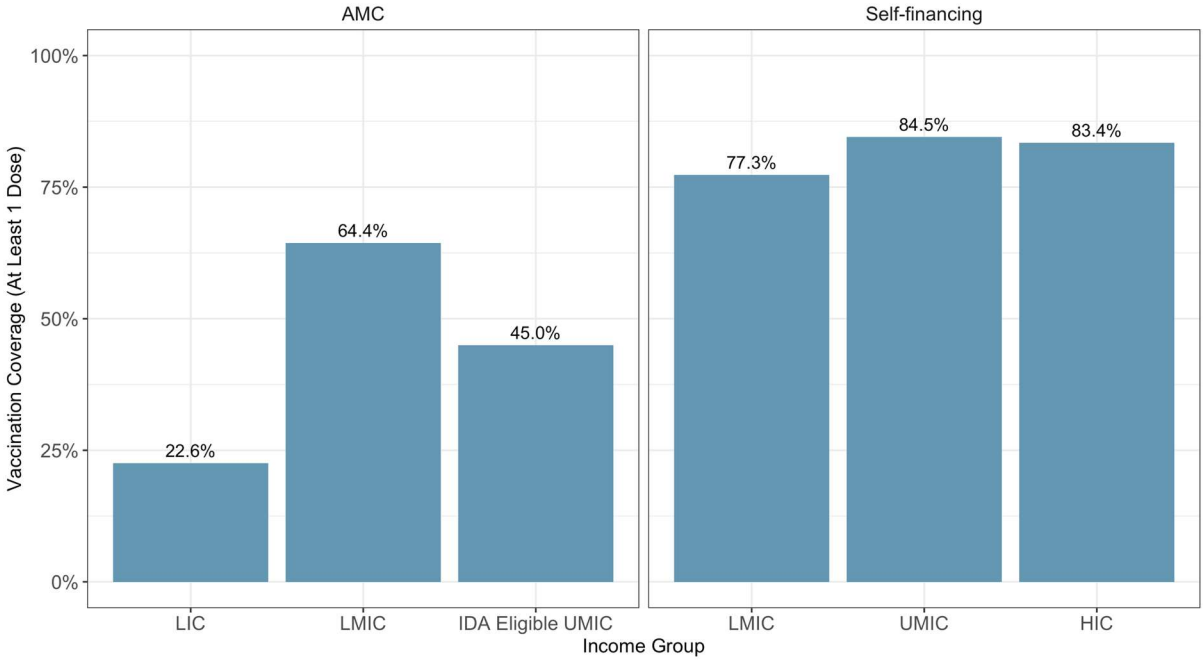
countries, LICs received 74.4% of their vaccine doses from COVAX, whereas LMICs and IDA-eligible UMICs received 25.2% and 43.9% of their vaccines from COVAX, respectively (as of September 15, 2022). Among self-financing countries, LMICs received 9.5% of their vaccine doses from COVAX whereas UMICs and HICs received 2.7% and 1.0% of their vaccine doses from COVAX, respectively (Figure 26).

Figure 26. Percent of total doses delivered that came through COVAX by COVAX status and income group, as of September 15, 2022. Data is from the Global COVID-19 Access Tracker (https://infohub.crd.co/).



As highlighted above, despite COVAX's efforts, significant inequities in vaccination coverage remain. Figure 27 shows vaccine coverage (defined as at least one dose per individual) in AMC and self-financing countries as of September 15, 2022. Among AMC countries, LMICs have the highest coverage with 64.4% of the population having received at least one dose, followed by IDA-eligible UMICs at 45.0% and LICs at 22.6%.[111] Across WHO regions, the Africa region has by far the lowest coverage level (26.8%; Annex 8). WHO set the global goal of 70% coverage with COVID-19 vaccines in all countries by mid-2022. However, this goal referred to all sources of supply, not solely vaccines from COVAX. While the COVAX pillar acknowledged the 70% target (through WHO as a core COVAX partner), the COVAX Facility never formally adopted the 70% target.[112]

Figure 27. COVID-19 vaccine coverage (at least one dose) by COVAX status and income group, as of September 15, 2022. Data is from the Global COVID-19 Access Tracker (https://infohub.crd.co/).



While delivery was initially assumed to be taken care of by other actors (especially through the HSRC), concerns about country readiness and absorption led to new funding commitments. In June 2021, the Gavi Board approved funding of US$775 million to support the delivery of COVAX-funded doses in AMC countries over two years.[113] The funding came in addition to a previously Board-approved envelope of US$150 million in delivery support (October 2020).[114] The US$775 million were mainly allocated across two funding windows: COVID-19 Delivery Support Early Access Window (US$ 270 million) to fund vaccine roll-out costs through small grants of up to US$15 million. In addition, the COVID-19 Delivery Support Needs-Based Window received US$330 million. It was designed to support vaccine roll-out and scale up through larger grants. The remaining US$175 million were for various support types, including crosscutting delivery support. A third COVID-19 Delivery Support funding window was readied for launch by early July 2022, making available an additional US$600 million in funding for countries to use towards improving high-risk coverage, achieving national adult coverage targets, and activities to better integrate COVID-19 and routine immunisation.[115]

COVAX also made substantial investments in standard cold-chain equipment (2 to 8°C) and ultra-cold chain (-60 to -80°C).[116] By the end of 2021, UNICEF delivered over 800 ultra-cold chain freezers to nearly 70 countries, with a storage capacity of up to 200 million mRNA vaccines. Around two-thirds of the deliveries were completed on behalf of COVAX.[117]

In January 2022, the COVID-19 Vaccine Delivery Partnership (CoVDP) was launched.[118] It was based on the earlier work of the COVAX Country Readiness and Delivery workstream, which, in addition to other contributions, helped to ensure that countries developed COVID-19 National Deployment and Vaccination Plans and assessed country readiness to introduce vaccines using tools, such as the COVID-19 Vaccine Introduction Readiness Assessment Tool.[119]

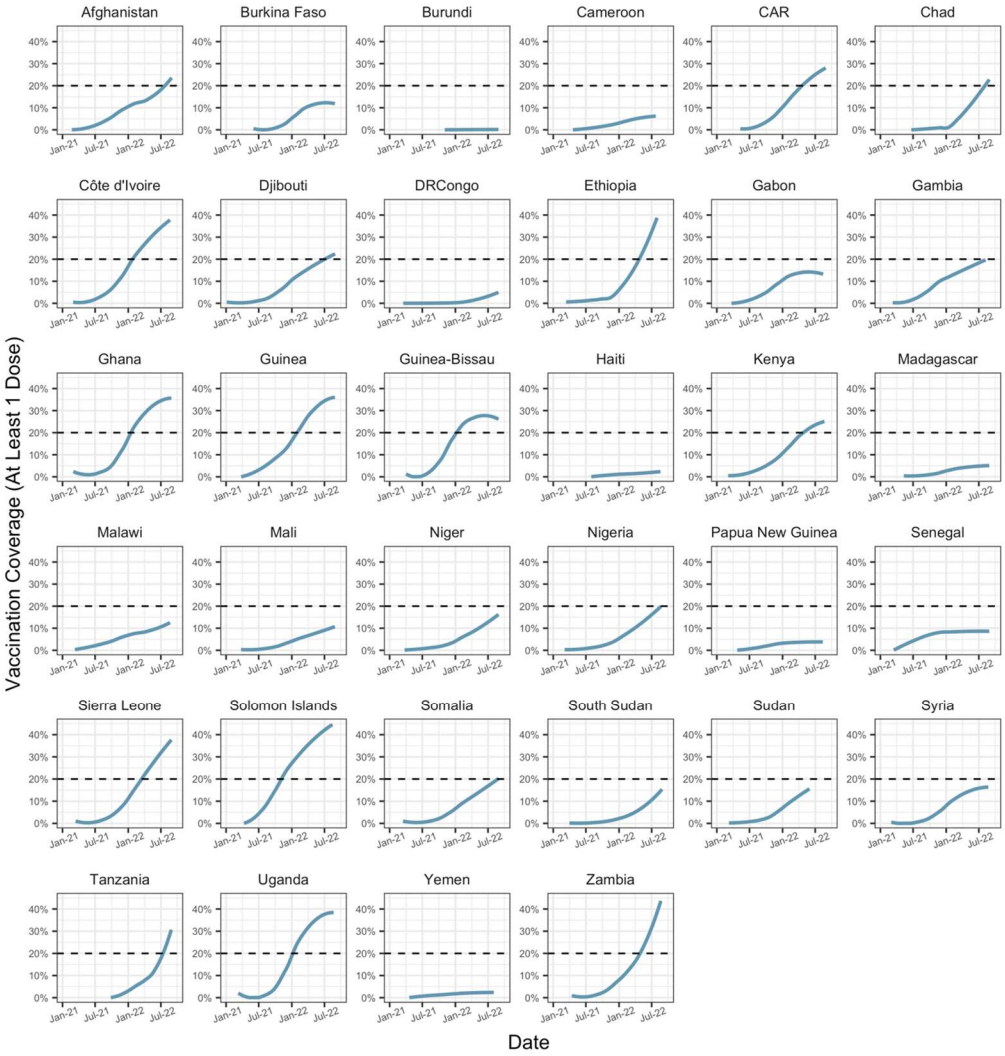
CoVDP is a joint initiative by UNICEF, WHO, and Gavi. It supports the 92 AMC countries and focuses foremost on 34 countries with <10% COVID-19 coverage at the time of its launch, providing concerted support to a targeted group of countries. The interagency initiative focuses on supporting countries to reach their national objectives with a focus on high priority groups, on the way to global targets.[120] It brings partners together around the principle of "one team, one plan, and one budget" to align support to governments and to ensure country ownership.

Building on experiences from other emergency responses, CoVDP supports political advocacy and engagement, leverages funding from its core partners through an accelerated process, and lines up technical assistance.[121] More specifically, the initiative "leverages capacities and resources, coordinating with in-country, regional and global partners to find innovative, rapid solutions to access flexible funding, support equitable demand planning, resolve operational bottlenecks, and provide support for political engagement."[122,123]

CoVDP has established processes that allow for the alignment of urgent funding needs and enable the quick disbursement of funds mobilized by Gavi, WHO and UNICEF. For example, in Chad, CoVDP mobilized delivery funding of $4.9 million within 5 days for a vaccination campaign before Ramadan. As a result, Chad administered 1.6 million vaccine doses within ten days, equivalent to 52% of the national target, reaching health workers, refugees and nomads and increasing vaccination coverage from <1% to 13%.[124]

This approach was successful according to the most recent coverage data. Figure 28 depicts COVID-19 vaccine coverage (defined as at least one dose per individual) in each of the 34 CoVDP countries over time from January 2021 to September 2022. As of September 2022, 16 of the 34 countries achieved a COVID-19 vaccination coverage rate of at least 20%. CoVDP played a key role to catalyse support in 23 of the 34 countries (as of September 2022), but several countries (e.g., Uganda, Cote d'Ivoire, and Zambia) moved forward without the need for dedicated CoVDP support; these countries leveraged existing in-country expertise and additional support provided through the UNICEF and WHO regional offices. In addition, in two countries CoVDP's engagement has not yet yielded the desired result.[125] Critics argued that CoVDP's focus on vaccines is too narrow – they argue that a more holistic investment approach should have been taken to strengthen health systems in a more sustainable way, rather than focusing narrowly on boosting vaccine coverage.

Figure 28. COVID-19 vaccine coverage in the 34 CoVDP focus countries, January–September 2022. Data is from the Global COVID-19 Access Tracker (https://infohub.crd.co/).



Key finding: The humanitarian buffer came late and did not deliver as anticipated. On March 22, 2021, the Gavi Board approved ringfencing 5% of AMC funding for vaccine doses to be deployed via the Humanitarian Buffer – a key component of the COVAX Buffer intended to ensure access to COVID-19 vaccines for high-risk populations in humanitarian settings. CSOs advocated for the inclusion of non-governmental purchasers in a June 23, 2021 letter, arguing that humanitarian actors are key for the delivery of vaccines to the most vulnerable populations.[126] The COVAX Facility should allow for non-governmental purchasers to buy COVID-19 vaccines at the lowest price and directly from manufacturers. The Humanitarian Buffer was established alongside the Inter-Agency Standing Committee in 2021 to prioritize reaching those considered the most vulnerable and at risk of being neglected by national vaccination efforts.[127] However, COVAX has had an impact in humanitarian settings through other channels. As of mid-June 2022, COVAX supplied 320 million doses to humanitarian settings – specifically, COVAX has been the majority supplier of COVID-19 doses administered in the 28 countries with a humanitarian response plan. [128]

Key informants commented that it took a long time to create the Humanitarian Buffer, and CSOs in particular emphasized that the buffer is “inaccessible” to non-governmental

humanitarian actors.[129, 130] According to CSOs, one obstacle was the indemnification scheme. Manufacturers require humanitarian agencies to sign the standard COVAX indemnity agreement, freeing manufacturers from any liability in case of any adverse side effects. While countries that have received doses via COVAX have signed this agreement, the situation is more difficult for civil society – for them, it is much harder to take on such a risk. In April 2022, MSF reported on a case in Syria, arguing that the "legal framework [placed] an excessive liability on field-based humanitarian organisations carrying out the operations".[131]

In June 2022, Gavi released a discussion paper on humanitarian access to pandemic vaccines. The paper emphasizes the complexities of working outside a "state-based immunisation architecture" ("importation of novel vaccines into conflict-zones and cross-border movement where governments are not directly supporting or undertaking the product consignment is extremely difficult in terms of securing regulatory approvals and, particularly, import licenses").[132] The paper also shows that by May 2022, five manufacturers had agreed to waive general indemnity and liability obligations for doses delivered via the Humanitarian Buffer, emphasizing the efforts made to make the buffer more accessible. However, the paper also mentions that the "waivers did not cover the full gamut of risks as vaccines move through the chain from procurement to delivery to administration, and the general approach of shifting liability away from manufacturers obligated someone else to take on those risks. This necessitated extended risk-sharing negotiations between manufacturers, Gavi, WHO, UNICEF and applicant agencies over end-to-end residual risks". Overall, indemnification and liability issues seem to continue to be a factor that needs to be addressed in future among factors.

Key finding: The self-financing arm of the COVAX Facility did not deliver as anticipated. As mentioned in Section 2, most HICs hardly used the self-financing arm of COVAX because they secured effective vaccines through bilateral deals. Latin American governments were not satisfied with the performance of COVAX in improving access to COVID-19 vaccines in their countries. For example, 67% of the Latin American countries surveyed, somewhat or strongly disagreed with the statement that "ACT-A's support was delivered in a timely manner to the country I represent". A lack of predictability in COVAX's contract documents and with respect to vaccine delivery have contributed to this sentiment as well as dissatisfaction with the timing of COVAX deliveries. Consequently, Latin American countries found it easier, and in some cases cheaper, to make deals with vaccine producers directly rather than procuring vaccines through COVAX. These sentiments were not limited to Latin America. Thailand, for example, did not join COVAX due in part to dissatisfaction with the contracts which failed to guarantee specific volumes of doses by specific points in time. Other UMICs also reported that the deliveries through the self-financing arm were largely irrelevant to them.

4.2 Therapeutics Pillar

4.2.1 Upstream performance of the Therapeutics pillar

Key finding: The Therapeutics Pillar was held back by complex science, as well as by insufficient coordination across the various players and limited funding. Key informants provided a relatively consistent set of messages on the upstream performance of the Therapeutics pillar. First, key informants commented that drugs for acute viral infections are complex to develop and that there are only few such treatments, except for influenza. The science itself is difficult. Second, the Therapeutics pillar brought together agencies with

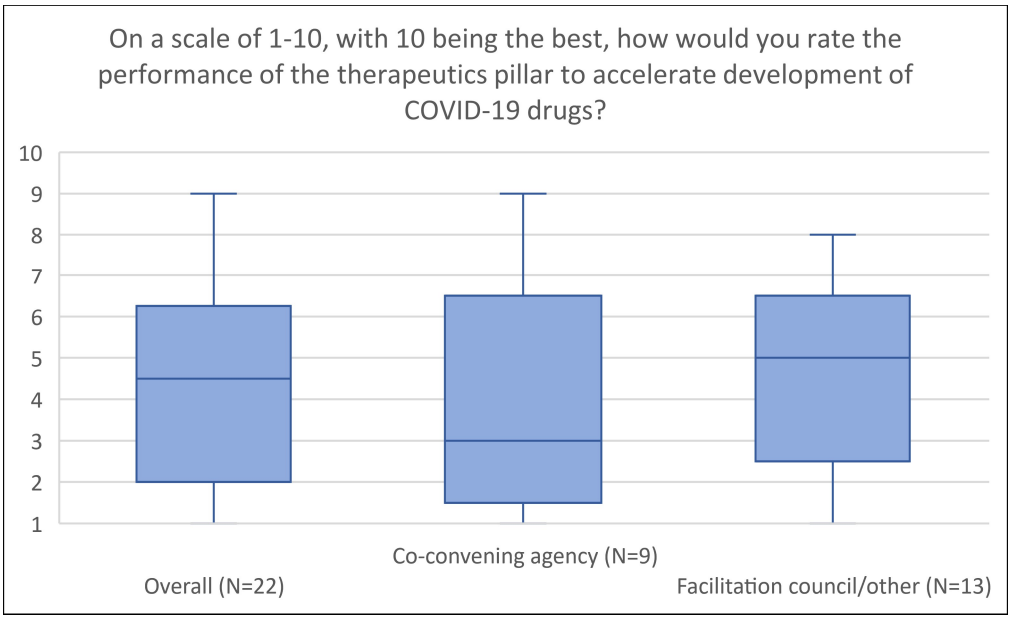
expertise across the value chain and developed an investment case in 2020.[133] An extended network of partners, including industry representatives, country representatives, and civil society and community organizations, among others, was created. However, many key informants also commented that the pillar was a rather loose alliance. There was insufficient leadership, and coordination between the working groups was considered to be incohesive, with individual members unaware of the work done by other working groups and/or other stakeholders outside the pillar. Overall, it appeared to be multiple organizations working in a siloed rather than a coordinated manner. This made it difficult to achieve joint progress, and the informal coordination structure made it hard to settle disagreements and solve problems effectively. For example, key informants reported that the participating agencies pursued a range of options – repurposed drugs (short term), monoclonal antibodies (medium term), and antiviral drugs – but that there was no coordinated and prioritized approach.

Third the pillar was underfunded and should have received at least the same amount of funding as the Vaccines pillar received for its upstream work. Donors, however, commented that the focus and perception of progress was less compelling to them. Donors also found it confusing that funding could be pledged to multiple agencies within one pillar. Fourth, clinical trials were conducted in a “wild west” style. Key informants reported that it took a long time to standardize clinical trial protocols, which resulted in a fragmented and often low-quality evidence basis for treatments. The concept of having a Solidarity Trial was perceived as useful, but it would have benefitted from earlier guidance and sharing of protocols. Overall, it was not seen as a success. Fifth, while IP waivers for COVID-19 vaccines were frequently discussed, some stakeholders argued that the Therapeutics pillar could have done more on technology transfer as there are only a few manufacturers, making the market situation difficult, for example compared to the vaccines market.

Despite these challenges, the Therapeutics pillar has made important contributions to the development of drugs and technology transfer. The pillar supported research that identified dexamethasone as the first life-saving therapy for COVID-19 and provided guidance on its use.[134] Through its partner the Medicines Patent Pool, it reached licensing agreements for the generic production and distribution of Pfizer’s COVID-19 oral antiviral nirmatrelvir by manufacturers in 95 low- and middle-income countries.[135] In addition, the Therapeutics pillar secured licensing agreements through the Medicines Patent Pool for the generic manufacturing of molnupiravir, another oral antiviral medication, by manufacturers in 105 countries.[136] In October 2022, the Medicines Patent Pool also signed a license agreement with Shionogi for a COVID-19 oral antiviral treatment candidate.[137]

Overall, key informants thought that a lot of good work was done by the pillar in the first two years, but they noted that no ground-breaking new drug was approved, and no outpatient therapies were cost-effective for early treatment. This is also reflected in the survey results. Figure 29 shows that the median ranking across all respondents was 4.5 out of 10.

Figure 29. Respondent ratings of the performance of the Therapeutics pillar in accelerating COVID-19 drug development. Source: Online survey



4.2.2 Downstream performance of the Therapeutics pillar

Key finding: The Therapeutics pillar failed to achieve its original delivery targets, and there remain challenges with the delivery of therapeutics. Oxygen delivery substantially improved since the pillar took over responsibility for it. The original objective of the pillar was to deliver 245 million treatment courses to low- and middle-income countries in 2021. However, the "ACT-Accelerator Prioritized Strategy & Budget for 2021" changed the target to "promote successful uptake of medical oxygen and corticosteroids for up to 12 million severe and critical patients and introduce new COVID-19 therapies for up to 100 million treatment courses across all use cases." [138,139] According to the ACT-A Quarterly Update (Q4, 2021), about 21.6 million units of dexamethasone were shipped by UNICEF and WHO between the beginning of the pandemic and the end of 2021. In addition, UNICEF shipped more than 40,000 oxygen concentrators to countries.

These limited upstream achievements can to some extent be explained by the lack of therapeutics.[140] Outpatient treatment only became available in 2022, significantly impacting delivery plans. Molnupiravir was recommended by WHO Guidelines in March 2022 and nirmatrelvir/ritonavir was recommended by WHO Guidelines in April 2022.[141,142]

However, key informants also emphasized that there was a strong focus on upstream activities, but the delivery aspects were not sufficiently prioritized. In addition, key informants also mentioned that the "Test & Treat" strategy should have been prioritized earlier in the process. Going forward, the implementation of this strategy will be key. However, there is now less demand by many countries.

Finally, key informants across stakeholder groups emphasized that the initial lack of focus on oxygen supply was a mistake. While the need for oxygen was immediately recognized – for example by WHO's Director General in April 2020[143] -- oxygen was initially placed under the Health Systems Connector, which did not manage to procure and supply oxygen at sufficient scale. At the beginning of the pandemic, oxygen was the only effective COVID-19 treatment available, and for a long time it was the only treatment available in many low-income

countries. The situation substantially improved when oxygen was moved to the Therapeutics pillar. Against a backdrop of widespread oxygen shortages across Latin America, Asia, Africa and the Middle East, the ACT-A Oxygen Emergency Taskforce was launched on 25 February 2021. The taskforce was co-chaired by Wellcome and UNITAID (now it is chaired only by UNITAID) and includes more than 20 UN and global health agencies that work together to support low- and middle-income countries to mitigate pandemic-related medical oxygen shortages. Between February – October 2021, Taskforce members mobilized more than US$700 million in grant financing to help countries avert oxygen shortages, of which US$475 million came from Global Fund grants.[144]

According to key informants, the Taskforce built on a history of collaboration between the participating organizations, assessed oxygen needs in about 120 countries, negotiated the price of liquid oxygen, and helped countries apply for and secure supplies. This work is also relevant beyond COVID-19, as oxygen is an essential medicine, for example for surgery and trauma, elderly care, pregnant women and post-partum emergencies, newborns, and other respiratory illnesses. Figures 30 and 31 show respondent ratings of the performance of the Therapeutics pillar in delivering drugs and oxygen. The median ranking across all respondents for oxygen is higher than for therapeutics.

Figure 30. Respondent ratings of the performance of the Therapeutics pillar in improving access to COVID-19 drugs in LIC, LMICs, and UMICs. Source: Online survey

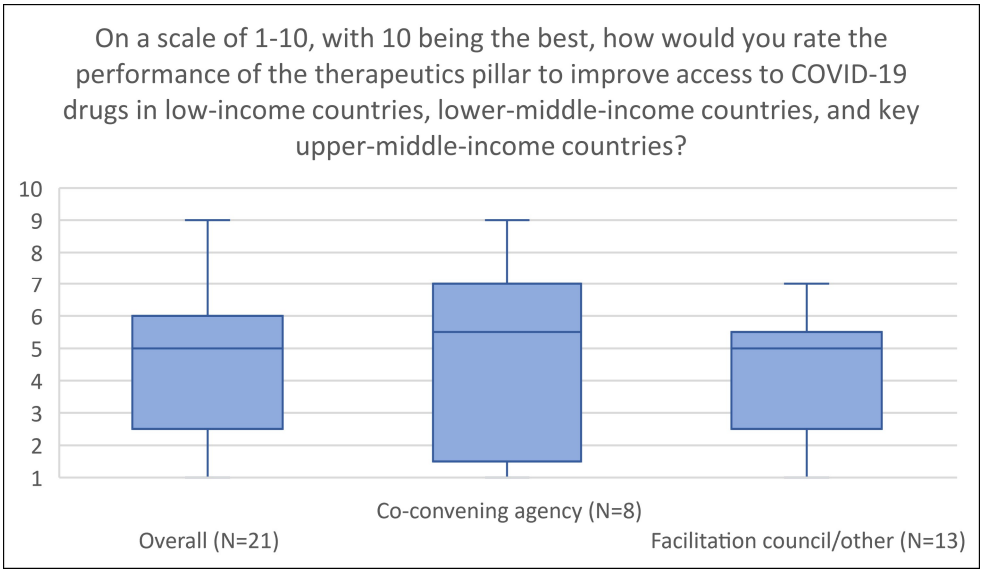
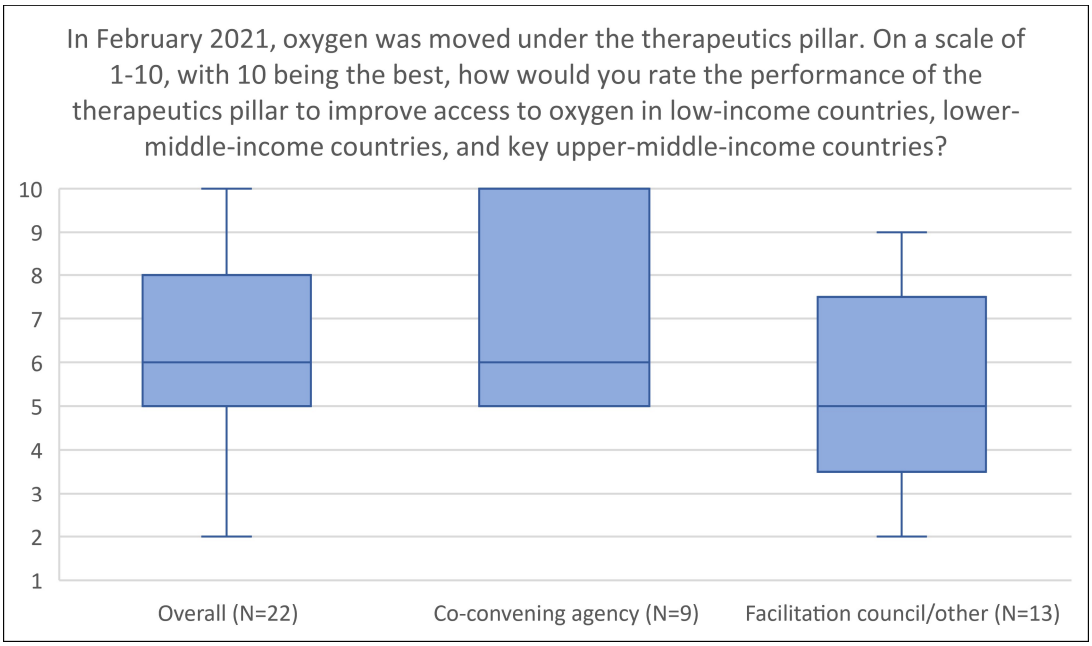


Figure 31. Respondent ratings of the Therapeutics pillar's performance in improving access to oxygen in LICs, LMICs, and UMICs. Source: Online survey



4.3 Diagnostics Pillar

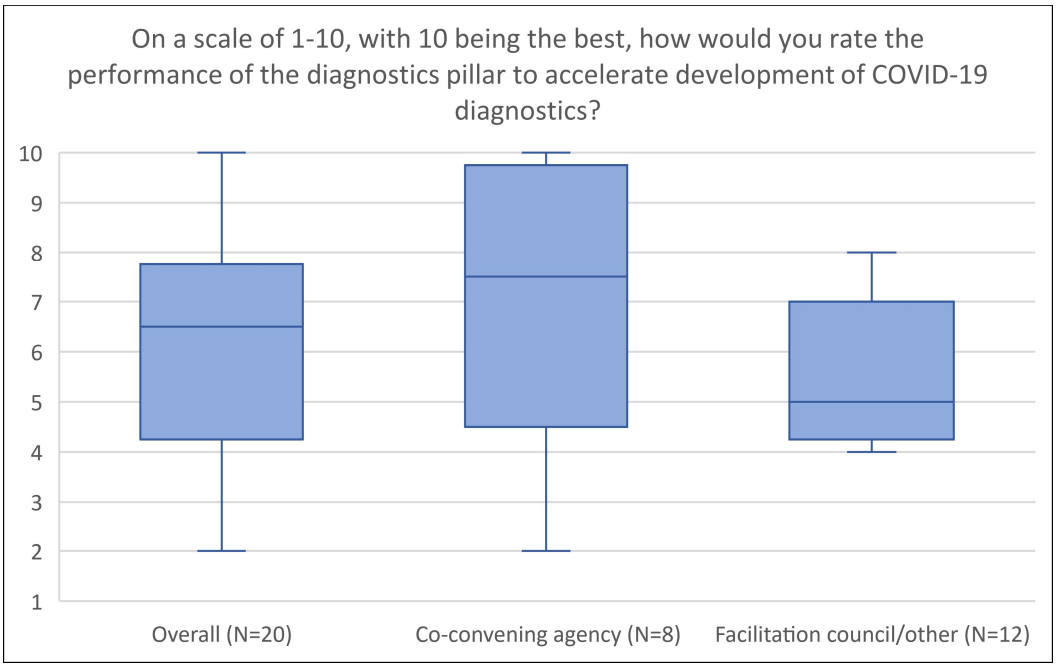
4.3.1 Upstream performance of the Diagnostics pillar

Key finding: The pillar made substantial upstream contributions. The Diagnostics pillar quickly negotiated low prices for rapid tests and molecular tests (by September 2020). These prices were embedded in global agreements, so that every test was low cost. Key informants also argued that another significant achievement of the pillar was on genomic sequencing and variant tracking. There is now a stronger global architecture to track variants of pathogens, as well as stronger cooperation between different agencies and countries, a win that could well outlast COVID. Third, another accomplishment is the support for centralized manufacturing in a number of countries in the Global South. In addition to direct investments to improve the capacity of COVID-19 test manufacturers in the Global South, the Diagnostics pillar has generated evidence for demand forecasts and needs assessments to inform local manufacturing policies, collected information to support the development of country specific testing guidelines, and secured licensing agreements to expand the manufacturing of COVID-19 tests to LICs and LMICs.[145]

The Diagnostics pillar also made substantial contributions to R&D and product assessment. Since April 2020, the Diagnostics pillar has reviewed over 200 different COVID-19 test products to support government procurement of quality tests.[146] In addition, the pillar has conducted clinical evaluations of COVID-19 test performance to facilitate regulatory approvals of self-testing products.[147] Moreover, the pillar has invested upwards of US$55 million in various manufacturers to accelerate the development of point-of-care molecular platforms as well as the availability of self-tests and antigen rapid diagnostic tests to expand COVID-19 testing in LMICs.[148]

Figure 32 depicts survey respondent ratings, on a scale of 1-10, of the performance of the Diagnostics pillar in accelerating the development of COVID-19 diagnostics. The median ranking across all respondents was 6.5.

Figure 32. Respondent ratings of the Diagnostics pillar's performance in accelerating the development of COVID-19 diagnostics. Source: Online survey



4.3.2 Downstream performance of the Diagnostics pillar

Key finding: The impact of the Diagnostics pillar was hampered by an insufficient focus on delivery and a delay in WHO clearance for self-tests. The pillar originally aimed to procure 500 million simple, accurate, and affordable diagnostic tests for use by low- and middle-income countries by mid-2021.[149] However, according to ACT-A data, a total of 146 million tests were procured and 97 million delivered by the end of 2021.[150]

With respect to the slow delivery of tests, key informants presented four main arguments, which to some extent contradict each other. First, key informants argued that the early discussions were strongly around upstream contributions, with an insufficient focus on delivery. Second, there was a lack of funding for diagnostics – an argument that was made by CSO representatives but also others from different constituencies. However, third, others argued that insufficient funding was not the challenge, and that funding was not disbursed and channelled quickly enough by the Global Fund, being the main procurement entity. As highlighted in Section 3, the lack of immediately available funding constrained the delivery of and access to tools. According to the Global Fund, at the height of the pandemic, C19RM was making monthly awards as soon as additional donor pledges were made, making that funding available to countries within weeks of a pledge announcement and in advance of the contribution actually being paid to the Global Fund itself. In addition, countries have to convert grants into purchase orders, also because their pandemic responses were evolving rapidly. According to the Global Fund, it will have awarded over US$900 million by the end of 2022.[151]

Fourth, the first WHO guidance on rapid tests ("professional use rapid tests") only came out in November 2020. Diagnostics experts also said this guidance was not strong enough. The guidance on self-testing only came out by in March 2022, about a year later than expected. This was described as a lost opportunity that worsened inequities. While everyone in HICs could buy a test in a pharmacy, people in low-income and middle-income countries outside of

India did not have access to self-tests.[152] For too long, the emphasis was on PCR rather than on rapid tests.[153] Another missed opportunity was in linking testing programs with care. A lot of testing programs were isolated and not embedded into primary health care systems. Stakeholders highlighted that this was a missed opportunity. In addition, key informants noted the lack of available treatment was a disincentive for testing, especially in places where a positive test resulted in restrictions.

Figure 33 depicts survey respondent ratings of the performance of the diagnostics pillar in improving access to COVID-19 diagnostics in the Dx 144 countries. The median ranking across all respondents was 6.

Figure 33. **Respondent ratings of the Diagnostics pillar's performance in improving access to COVID-19 diagnostics. Source: Online survey**

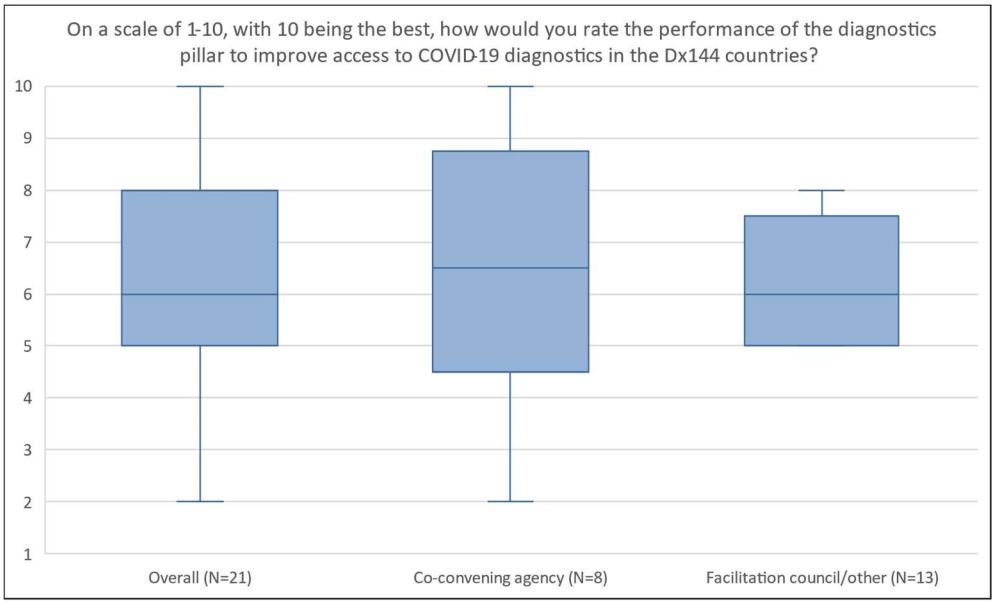
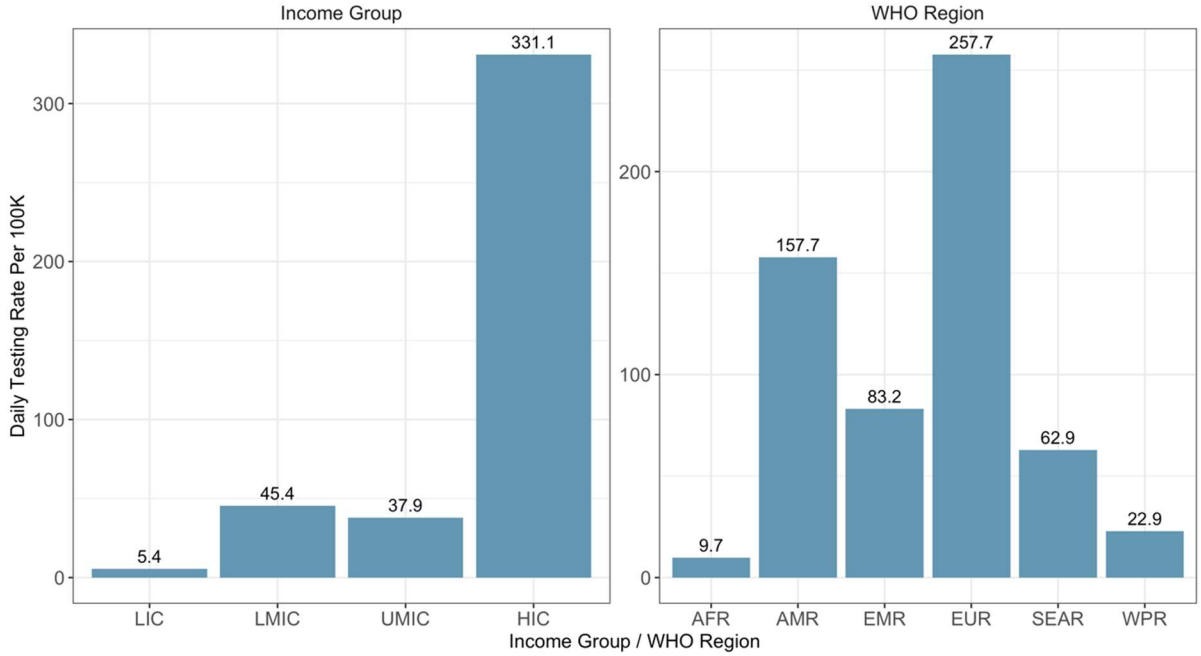


Figure 34 depicts daily COVID-19 testing rates per 100,000 population as of September 15, 2022.[154] Testing rates are lowest across LICs at 5.4 tests per day per 100,000 people followed by UMICs with a testing rate of 37.9 and LMICs with a testing rate of 45.4. The testing rate is highest across HICs at 331.1 tests per day per 100,000 people. Among WHO regions, the testing rate is lowest in the African Region at 9.7 tests per day per 100,000 people and highest in the European Region at 257.7 tests per day per 100,000 people.

Figure 34. Daily COVID-19 testing rate per 100K population, by income group and WHO region. Data is from the FIND Test Tracker (as of September 2022)

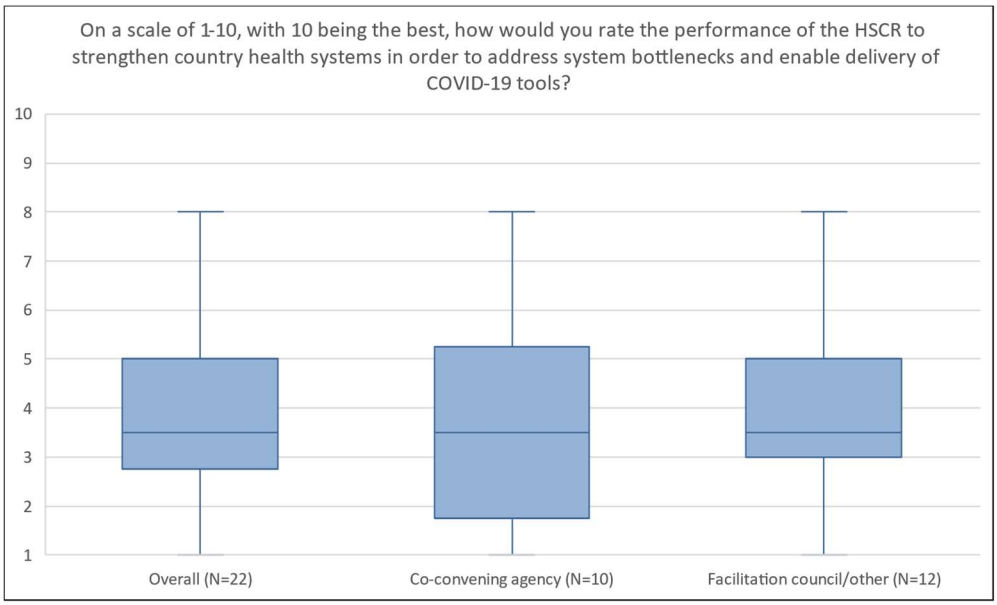


4.4 Health Systems and Response Connector

The initial vision for the Health Systems Connector (HSC, later relabeled to HSRC) was to act as a link between the three vertical pillars. It initially aimed to make oxygen and PPE available to countries as high priority commodities (oxygen was moved to the Therapeutics pillar, as mentioned above). In addition, the connector aimed to "support countries to build the required capacity and support health systems to deploy new tools effectively and efficiently when available". The vision was to support countries on key enablers, such as community engagement, front-line service delivery capacity, supply chains, integrated monitoring of service capacity in highly affected countries, health financing, private sector engagement, and integrated clinical care.[155]

Figure 35 shows respondent ratings of the performance of the HSRC pillar in strengthening country health systems to address system bottlenecks and enable the delivery of COVID-19 tools. The median ranking across all respondents, co-convening agencies, and Facilitation Council members was 3.5, the lowest rating given for any of the functions performed by any of the pillars.

Figure 35. Respondent ratings of the HSRC pillar's performance in strengthening country health systems and addressing bottlenecks. Source: Online survey

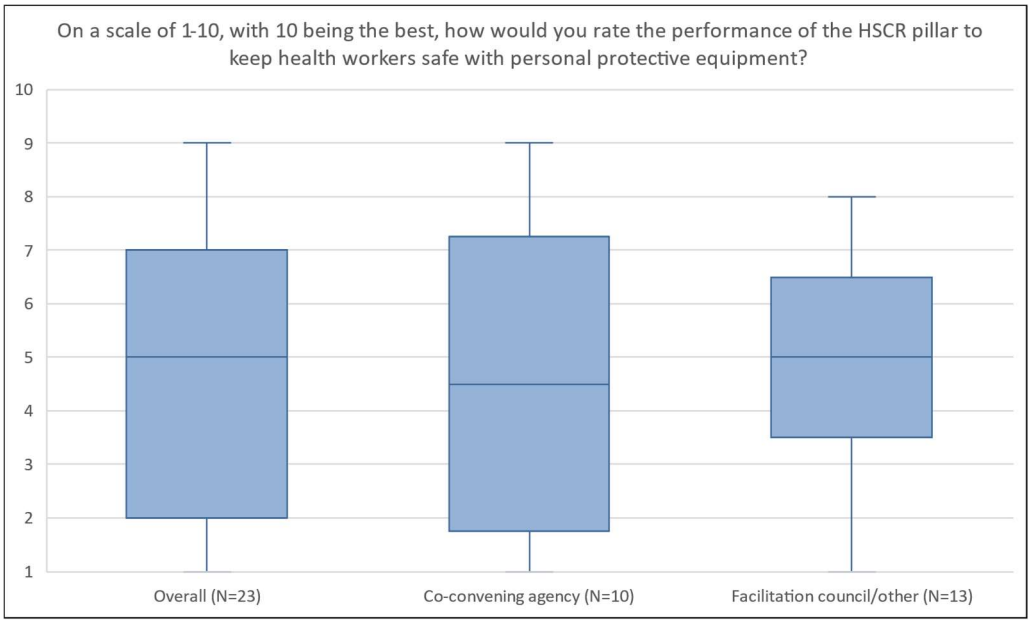


Most key informants described the pillar as largely dysfunctional over large parts of 2020 and 2021, arguing that it was misconceived and failed to deliver. Many FC members and co-convening agencies argued that the pillar confused and delayed the delivery because it raised the expectation that it would take care of delivery but did not. Key informants raised multiple serious issues. First, the initial overall approach was to strengthen health systems during an emergency instead of ensuring that strong links were built between the work of the pillars, the overall global COVID-19 response, and the country systems. This was described as a major design flaw – rather than being a pillar, it should have been a mechanism to hardwire MCMs into country systems. In this context, it was perceived as a failure that WHO's pillar work was not led by the Health Emergencies Programme but by the Health Systems department, which has expertise in strengthening health systems, but no experience in dealing with health emergencies. Only in late 2021/early 2022 did the Health Emergency Programme take responsibility of WHO's work. Second, key informants indicated that the approaches by two of the three co-leads – World Bank and WHO – differed substantially. There was overall limited collaboration, which was also reflected in the fact that the HSRC did not have the same level of strategic planning as the other three pillars. This led, thirdly, to the fact that donors were reluctant to fund the pillar – there was not enough clarity on focus, strategic direction, and roles and responsibilities. Fourth, co-convening agencies and FC members commented that they had expected in 2020 that the delivery of tools would mainly be addressed by the HSRC. This expectation was fueled by announcements of the World Bank that it would provide US$12 billion through its Covid-19 Strategic Preparedness and Response Program/Multiphase Programmatic Approach. Later, this amount was increased to US$20 billion. However, this funding did not materialize as expected, and there was much less collaboration and funding available for the response than initially expected. This was partly because the World Bank model relies on countries to request loans – this is a long process, poorly suited for a pandemic, and there was much less country demand than anticipated. Fifth, at the same time, some commentators reported that the HSRC became a residual, taking over all the activities that the other pillars did not want to pursue.

CSOs had a different view on the factors causing the pillar's problems. They made clear that the donor community did not sufficiently fund the pillar, pointing to its large funding gap. However, different from other stakeholder groups, many CSOs stressed that the lack of support for the pillar was a major missed opportunity. This view was also supported by several articles.[156,157]

Figure 36 depicts survey respondent ratings, on a scale of 1-10, of the performance of the HSRC pillar to keep health workers safe with personal protective equipment. The median ranking across all respondents and co-convening agencies was 5.

Figure 36. Respondent ratings of the HSRC pillar's performance in keeping health workers safe with PPE. Source: Online survey



4.5 Implementation of funding

Key finding: Data shared by WHO indicates that some agencies found it challenging to quickly disburse the provided funding, indicating that systems were not fully equipped to respond to an acute emergency situation.[158] The WHO data is from the first quarter of 2022; the situation might be different now (September 2022). Using this data, we compared the allocated funding (which is lower than the total funding envelop) of agencies with the funding that was implemented by the first quarter of 2022 (January-March depending on the agency). The data indicates that WHO has implemented 78% of its allocated funding (US$2.6 billion out of US$2.9 billion), UNICEF 71% (US$0.9 billion out of US$1.3 billion), the World Bank 50% (US$5.8 billion out of 11.7billion), the Global Fund (C19RM funding) implemented 40% (US$1.7 billion out of US$4.3 billion), and Gavi 34% (US$3.8 billion out of US$11.0 billion). However, there is no agreement about the underlying methodology, and other agencies argued that the definition of "funding implemented" overestimates the absorption of funds for technical assistance, while it underestimates the absorption of funds used for procurement.[159]

These data suggests that the systems of the agencies – even if COVID-related adjustments were made to them – do not allow for rapid disbursements in response to an acute

emergency. For example, while an audit of the C19RM 2020 mechanism found the ”development and design of the C19RM process to be materially adequate and effective for an emergency response”, it also highlighted that significant improvements were needed around the timely utilization of funds.[160] However, in this context, it also needs to be recognized that there is a time gap between the pledges of donors and the actual arrival of donor funding. In addition, the agencies staffed up to respond to COVID, but it takes time to recruit the needed staff, which highlights the need for surge capacity.

Box 3: Key lessons learnt from the performance of ACT-A and its pillars

The majority of stakeholders were satisfied with ACT-A, and its pillars made substantial contributions to the global COVID-19 response. At the same time, a lot can be learnt from the pillars. Key lessons for future pandemic response include:

- The delivery of tools must be prioritized and there needs to be increased focus on targeted country readiness. CoVDP appears to be a good model to build on. CoVDP is based on inter-agency collaboration and effectively connects the procurement and delivery of tools. It can also draw on rapid financing, similar to funding approaches for humanitarian agencies. In the next pandemic, CoVDP should encompass all types of MCMs.
- While a targeted approach for delivery is necessary, the HSRC was not effective and should not be replicated in the same way in a future pandemic. Instead, health systems strengthening needs to happen in-between pandemics. During a pandemic, the focus should be on ensuring strong links between the work of the pillars, the global and regional response, and country systems.
- For future pandemic response, there should be a more targeted approach on the lowest-income economies. The added value of the self-financing arm of the COVAX Facility is questionable.
- Donations may again play a key role in the next pandemic, so the system should be prepared for donation management from the start.
- There is need for a stronger approach to reach vulnerable groups, including in conflict zones and cross-border regions, among others. While this is a difficult task, an indemnification and liability scheme that works for non-governmental organizations appears to be one key element to ensure access; this scheme should be pre-negotiated before the next pandemic.
- There is need to have stronger prequalification capacities including diagnostics. Diagnostics are usually less complex to develop compared to drugs and vaccines, but they are very important throughout the pandemic, and play key roles at the beginnings of pandemics when other MCMs are not available.
- Strengthening country health systems, and especially primary health care systems, during “peace time” is a key imperative. In the past, donors were reluctant to invest in health systems and domestic funding by countries in their health systems was often too limited. It will be critical that predictable and sustainable funding is provided by donors, and that country health investments increase.

4.6 Country perspectives of ACT-A: West Africa

The evaluation included key informant interviews and survey responses from seven West African countries (The Gambia, Ghana, Guinea, Liberia, Nigeria, Senegal, and Togo). All respondents were actively involved in the COVID-19 response in different capacities, ranging

from developing and organizing response strategies, to planning and implementation at the national or sub-national levels, and coordinating the efforts of partner and bilateral organizations. Despite a high level of involvement of the respondents in the national COVID-19 response, most respondents were not familiar with the terms ACT-A and/or Access to COVID-19 Tools Accelerator. However, all key informants were conversant with the work of ACT-A's pillars.

Relevance of ACT-A: ACT-A's mandate and targets were relevant to each of the focus countries in West Africa. All the countries, being low-income and having weak health systems, required external support to augment their limited domestic resources in response to the pandemic. ACT-A partners provided both technical and financial support. In Guinea, partners were crucial in strengthening the health system through the provision of technical support, medical equipment, and life-saving commodities. In Gambia, access to COVID-19 tools, especially vaccines, was helpful because the country would not have been able to afford these. In Liberia, ACT-A partners made testing and vaccination possible through the Diagnostics and Vaccines pillars. In Nigeria, ACT-A's design was relevant in helping Nigeria curb community spread amongst its vast population through the Diagnostics and Therapeutics pillars. COVAX made vaccines available in Nigeria. In Ghana, ACT-A provided diagnostics support, making testing possible through the provision of test kits, which also enhanced Ghana's capacity for genomic sequencing in determining the different variants of the virus affecting the population. This was especially crucial for Ghana, as it closely aligned with the national strategy of conducting mass testing and identifying dominant strains of the virus. Ghana was also the first country that received an international delivery of vaccines from COVAX. On February 24, 2021, a first batch of 600,000 doses of AstraZeneca arrived in the country.[161]

ACT-A's contributions: All countries reported significant support from ACT-A through at least three pillars. All the countries received support through the Diagnostics, Vaccines and Therapeutics pillars, whereas the HSRC pillar did not meet expectations in some countries. In Nigeria and The Gambia, ACT-A's support via the Diagnostics pillar helped strengthen laboratories. The Nigerian Center for Disease Control, National Institute for Pharmaceutical Research and Development (NIPRED), and Nigerian Institute of Medical Research (NIMR) laboratories were all equipped to carry out COVID-19 tests and were adequately staffed for conducting such diagnostics. At the onset of the pandemic, only the Medical Research Council (MRC) laboratory in Gambia had the capacity to carry out COVID tests. With ACT-A's support, the National Public Health laboratory at the Ministry of Health was set up for COVID-19 testing with staff trained at the MRC and in Dakar.

Ghana benefited substantially from COVAX. According to the UNICEF Dashboard, Ghana has received 32.3 million doses, of which 23.2 million were from COVAX. The country also benefited from the Diagnostics, Therapeutics, and HSRC pillars through the provision of testing and sequencing tools, PPE, and other medical supplies and life-saving commodities, including oxygen supplies. Liberia highlighted that it benefited from the Diagnostics, Vaccines, and Therapeutics pillars. ACT-A partners made testing possible through the supply of test kits. COVAX also contributed significantly to Liberia's COVID-19 vaccination coverage (according to data from the Global Access Tracker, Liberia has 53% coverage). Other life-saving commodities were also supplied. The Gambia also reported that it benefited from staff being trained as part of the Expanded Programme on Immunization (EPI). This support also snowballed into other areas of the health system. For instance, some of the trainings conducted will benefit people during other health emergencies (e.g., the monkeypox

outbreak), as those actively involved in responding to the COVID-19 pandemic will be prepared to respond to future pandemics. Across all the countries, partners including WHO, GAVI, UNICEF, Global Fund, and UNITAID played pivotal roles in providing access to these supports.

In Togo, where vaccines have been largely available, 26% of the population vaccinated – this would not have been possible without COVAX.[162] All treatment centers were also provided with life-saving commodities including oxygen, which reduced case fatality rates. The majority of the population, most importantly vulnerable groups, were vaccinated with priority as soon as the relevant tools were available. This raised awareness among other countries to encourage their vulnerable populations to take up the available services. For example, when it was observed in Liberia that more men were getting immunized, women were encouraged to get vaccinated once vaccines were available, thanks to the help of the initiative.

Besides ACT-A's support, all the countries reported receiving significant aid from other sources, including regional and bilateral organizations.[163] AVAT was commended for its role and achievement in helping most countries get vaccines that they would not have been able to obtain otherwise, given that each of the countries individually would not have been able to compete in the global market. AVAT's support was considered helpful in that it augmented ACT-A's interventions.

Gaps and challenges: Although all the countries lauded the ACT-A initiative and the benefits it presented, ACT-A was not without its challenges. Most notably amongst a number of challenges highlighted by respondents was a perception of inequitable vaccine distribution. All the countries were left stranded when vaccines did not arrive in time, which negatively impacted on their response planning and outcomes projections. Second, the interventions mostly focused on getting tools to the countries without proper consideration of the logistics of getting them to remote regions. According to country key informants, ACT-A partners made a good effort to deliver vaccines, but this was not sufficient, as the vaccines needed to reach local populations, most of whom live in rural settings. Distributing vaccines to these areas requires significant funding in terms of cold chain infrastructure and transportation costs. COVAX has also recognized these delivery challenges and emphasized that investing during a pandemic is not a sustainable strategy. Countries also mentioned that more and earlier focus was needed on demand creation to tackle vaccine hesitancy. Effective communication and sensitization within communities (demand creation), and the management of COVID-19 vaccine misinformation and disinformation required significant investment that was not provided for. Moreover, for countries which had access to funding, funds granted through partners such as the Global Fund required protocols that proved difficult in emergency situations and caused delays. These protocols ought to be relaxed to facilitate rapid access to funding, and consequently rapid action.

Lessons Learned: The respondents noted the following as key lessons learned, from which Africa can build sustainable health systems and achieve health security in its states: First, AVAT has shown that it is possible for African countries to organize themselves, mobilize resources, and become competitive in the global market, as evidenced by the COVID-19 vaccines acquisition. This initiative can be expanded in scope to acquire other essential health commodities to combat diseases prevalent in Africa. Although funding is required to make these efforts sustainable, institutions like AVAT should not be quickly dismissed but instead strengthened to take on more responsibilities, as the premature disbandment of such

facilities can result in fragmented and inefficient task forces. Second, more than ever before, it has become imperative for African countries to prioritize enhancing their own capacities for the local production of vaccines and other essential health commodities. Hence, there is a need for greater collaboration amongst African nations to achieve this. Nations like Nigeria, Senegal, and South Africa are expected to take the lead in this regard.

Given existing constraints in terms of resources, most of the countries believe that emergency functions for infectious disease outbreaks need to be enhanced at the global and regional levels: First, interventions should be geared towards strengthening health systems through technical and financial support so as to enhance disease preparedness. Specific mentions included surveillance, a strengthening of diagnostic and human resources capacities in healthcare, and logistical support, including cold chain infrastructure. Second, respondents urged that countries should be provided with emergency funds that are accessible within 24–48 hours to enable swift action, as bureaucratic obstacles to accessing funds have resulted in delays and negative outcomes. Finally, respondents stated a need for better global coordination and advocated for equity in terms of global access to medications, therapeutics, and vaccines to ensure that vital tools are made available to weaker or poorer countries in a timely manner. However, African countries appreciated that they were not affected as gravely as other countries in terms of fatalities and economic hardship.

4.7 Country perspectives of ACT-A: Southern Africa

The following section builds interviews and survey responses from five countries in Southern Africa (Botswana, Eswatini, Malawi, Namibia, and Zambia).

Relevance of ACT-A: ACT-A's mandate and targets were relevant to each of the focus countries in Southern Africa. In Botswana, ACT-A was central to getting access to diagnostics. In Zambia, infrastructure development and access to COVID-19 tools, therapeutics, and diagnostic tools supported the country and accelerated equitable access to services for the general population that would otherwise not have been available due to limited resources. In Malawi, ACT-A provided rapid coordination support to the country and further supported the acquisition of vaccines. As both Eswatini and Namibia were unable to buy vaccines directly from manufacturers, COVAX supplies were important to these countries. For Namibia, ACT-A also supported timely information sharing through the Strategic Advisory Group.

ACT-A's contributions: All countries reported receiving support, with the Vaccines pillar making the greatest contributions. COVAX enabled Botswana to reach a high vaccination coverage. The country also reported receiving support from the Diagnostics pillar through the Global Fund. In addition to having benefited from the Vaccines pillar, Malawi also benefited from the Therapeutics and HSRC pillars through the provision of oxygen support and PPE. In Eswatini, ACT-A contributed to the equitable distribution of vaccines, despite limited doses being available. Zambia benefited from the deployment of vaccines, and the Diagnostics, Therapeutics, and HSRC pillars also made contributions through the provision of tools, including PPE. Zambia also reported several long-term benefits from ACT-A, including improved infrastructure and a strengthened national health system. For example, investments that were made will now be used for routine immunization, while outreach programmes that were used to increase vaccination coverage will be used to support future immunization campaigns. Besides support received from ACT-A's partners, all countries highlighted having received support from other regional organizations, above all the African

Union and AVAT. These organizations provided different levels of support, ranging from the procurement of supplies, including PPE and vaccines, to logistical and knowledge support. Their assistance was seen as complementary to ACT-A and facilitated the delivery of tools and services. For instance, in Botswana, COVAX facilitated the acquisition of vaccines, while AVAT supported the deployment of vaccines. As a result, a million doses could be delivered in the space of only five months.

Gaps and challenges: While all countries viewed the ACT-A initiative as having been instrumental to the countries' responses to COVID-19, several challenges were nonetheless identified. One challenge identified was the slow and inequitable rollout of vaccines. Initial delays in receiving vaccines led countries to miss their targets, negatively impacting the public health response. Vaccine hesitancy also contributed to vaccination rates that fell short of expectations. In the future, stronger demand creation will be key. Most interventions also failed to consider the infrastructure barriers faced by most of these countries. Insufficient funding was provided to support the deployment of vaccines. The short shelf life of the vaccines, combined with increased vaccine hesitancy, made it hard for countries to procure vaccines in bulk, slowing down the overall response. Finally, the lack of national or regional assessment capacities was a hindrance to the approval of vaccines and other products.

Lessons learned: All respondents identified coordination and partnerships between different countries as a significant achievement of ACT-A. Respondents also identified several points that countries in Southern Africa should build upon to improve their response to health emergencies and general preparedness: First, strengthening health systems will substantially improve health equity. This includes improvements in coordination and collaboration between different stakeholders, improved communication, and better infrastructure. A well-functioning and responsive health system needs to be supported with adequate financial and human resources. Second, increased investments in research and development are urgently needed. Low-income countries should also be included in this. Third, in preparation for future emergencies, some respondents highlighted the need to stockpile non-perishable supplies for emergencies. Fourth, surveillance systems need to be strengthened and resources mobilized at speed early on.

4.8 Country perspective of ACT-A: Latin America

This evaluation included key informant interviews and survey responses in five countries in Latin America (Argentina, Colombia, Costa Rica, Paraguay, and Mexico).

Relevance and contributions of ACT-A: Overall, the mandate and objectives of ACT-A were relevant to the countries in Latin America. The countries were supported by the Vaccines pillar. Costa Rica and Mexico also benefited from the Diagnostics pillar.

Gaps and challenges; The countries in Latin America were largely disappointed with ACT-A's performance. Specifically, governments were unsatisfied with the delivery of vaccines which slowed down their response. Two-thirds of the Latin American countries surveyed said they somewhat or strongly disagreed with the statement that "ACT-A's support was delivered in a timely manner". Second, a lack of predictability in the contract documents and a lack of transparency with respect to vaccine delivery led to dissatisfaction.

Lessons learned: Based on Latin American countries' experience with ACT-A and specifically with COVAX, several lessons can be learned and taken into consideration in the future: Terms of reference and contracts need to be simplified to improve transparency and predictability. Second, there is a need to create mechanisms that facilitate technology

transfer and improve manufacturing capacity. Third, in the future, regional responses, including for pooled procurement and quality assessment, supported by sufficient capacity-building, were considered as the preferred way to respond to health emergencies.

5. How external factors affected the performance of ACT-A and its four pillars

ACT-A's mid-term strategic review identified several external factors that hampered ACT-A's ability to deliver on its objectives. These included the rapidly changing epidemiological landscape, vaccine nationalism, vaccine hesitancy, and geopolitical tensions, among other factors.[164]

Results from our analysis to some extent align with the findings from the mid-term review. The three external factors that survey respondents found to have most hampered ACT-A's ability to deliver on its overarching objectives were insufficient manufacturing capacity, unhelpful member state responses to COVID-19, and issues around "last mile" implementation. Groups differed only slightly in their views on the most influential factors. Co-convening agencies perceived insufficient commitments for global access, insufficient manufacturing capacities, and export bans as the top three external factors. Respondents from the FC viewed manufacturing capacity as the main factor. In addition, responses by FC members indicated that three other factors – export bans, member states' responses to COVID-19, and "last mile" implementation issues – equally affected ACT-A's ability to deliver. CSOs and academia considered insufficient manufacturing capacity, member states' responses to COVID-19, and insufficient technology transfer as most important (Table 1).

Table 1. Top three most influential external factors affecting ACT-A's ability to deliver on its overarching objectives by group of respondents.

Overall	Co-convening agencies	FC/others	CSOs and academia
Manufacturing capacities	Commitments for global access	Manufacturing capacities	Manufacturing capacities
Member states' responses to COVID-19	Manufacturing capacities	Export bans Member states' responses to COVID-19 "Last mile" implementation	Member states' responses to COVID-19
"Last mile" implementation	Export bans		Technology transfer

First, insufficient manufacturing capacity heavily affected ACT-A's ability to deliver on its mandate. By March 2020, there was an estimated 40% gap between manufacturing needs and capacity globally.[165] In addition, COVAX's ability to procure was also hampered by challenges in scaling up the production capacity of key manufacturers.[166] A more general challenge is that there is only limited vaccine production capacity in many low- and middle-income countries. Currently 99% of Africa's vaccines are imported due to very limited vaccine upstream production.[167] However, limited manufacturing capacity is not only an issue for vaccine production. There is also the need to develop manufacturing capacity for

diagnostics in the Global South. Furthermore, rapid and at-scale manufacturing of medical countermeasures requires the free flow of raw materials. During the COVID-19 pandemic, trade barriers negatively impacted on the production of COVID-19 tools. Going forward, there need to be adequate trade policies to facilitate transparent and sufficient supply of raw materials.

Second, CSOs, academia, and FC members viewed member states' responses to COVID-19 as the second external factor that negatively impacted on ACT-A's ability to deliver on its objectives. Vaccine nationalism was identified as a key challenge of the COVID-19 response, with low- and middle-income countries being left behind.

Third, "last mile" implementation was viewed as one of the top three influential external factors by the FC. Respondents primarily regarded the lack of preparedness and anticipation as a key barrier to the delivery of COVID-19 tools and instruments. This disproportionately impacted on low- and middle-income countries and should have been considered at the outset of the response, with a much stronger focus on delivery and coordination between national, regional, and global agencies.

CSOs and academia viewed technology transfer as a significantly influential factor that hampered ACT-A's ability to achieve its overarching goals. Slow technology transfer, and a lack of agreement to guarantee technology transfers were viewed as some of the major challenges, with a disproportionate impact on low- and middle-income countries. Findings from the Independent Panel for Pandemic Preparedness and Response (IPPPR) supported these views and recommended increased investments in technology transfer.[168] Co-convening agencies commented in this context that commitments for access were insufficient. CSOs criticized that there was limited support by key ACT-A partners for India's and South Africa's proposal at the World Trade Organization to temporarily suspend intellectual property rights.[169]

6. Lessons learnt from ACT-A

ACT-A enabled a rapid response and an unprecedented level of coordination and collaboration between global health agencies to address the COVID-19 pandemic. At the same time, there are multiple lessons to be learnt from ACT-A.

We organized the lessons learnt across four areas: R&D coordination, contingent funding platform for MCMs, global functions, and regional manufacturing and health systems (see Table ES1 for a summary). These areas are linked. They represent critical elements of an end-to-end approach, including R&D, market shaping, procurement, technology transfer, manufacturing, and delivery. R&D is critical in-between pandemics, as are the strengthening of global functions, manufacturing capacity, and health systems. During a crisis, the availability of contingent funding for R&D and procurement is critical, so it will be key to design governance arrangements to advance these areas in a coordinated way. The suggested MCM funding facility must link closely with the suggested R&D platform. The governance mechanisms for the R&D platform and the MCM financing facility will have to be developed in future work but can build on the findings and principles presented here. With respect to global functions, WHO will have to play a key role.

1. R&D coordination

Increased R&D coordination and leadership are essential to develop MCMs for future pandemics. Based on ACT-A's vertical pillars, structures with clear lead agencies for R&D on diagnostics, therapeutics, and vaccines should be defined. In addition, a joint platform should be established to coordinate the work across the three product areas.

The evaluation found that the agencies working on R&D did not sufficiently coordinate their R&D efforts across and to some extent within the pillars. The evaluation showed that clear leadership is critical to mobilize attention to and investments in R&D, and to facilitate and oversee progress across the pipeline to the delivery and uptake of new tools.

Moving forward, we recommend enhanced coordination through three permanent MCM structures for each product type, with defined leads for diagnostics, therapeutics, and vaccines. In addition, we recommend that R&D agencies create a joint platform to facilitate coordination, including on (i) scientific exchange; (ii) priority setting for the R&D agenda and investments, and (iii) technology transfer and IP management to create competitive markets and the availability of affordable, low-cost products.

2. Contingent funding platform for MCMs

Future pandemic response must enable immediate access to initial funding for at-risk development and procurement. A pandemic Advance Commitment Facility – with access to a credit line, inclusive and accountable governance structure, and a targeted scope – should be established to enable a fast, equitable global response in a future pandemic.

Day zero funding: The evaluation indicated that contingent funding for MCMs must be available on day zero of the next pandemic. In a pandemic, there is no time to wait and mobilize funding. Even when expedited, the usual process of developing funding requests, generating pledges, securing cash, etc. is inappropriate for health emergency situations. We recommend establishing an Advance Commitment Facility with access to a credit line to ensure availability of funding on day zero and to secure orders for MCMs in the case of a pandemic. The facility would host a pooled fund for initial allocation for R&D and at-risk procurement. The facility needs to involve agencies working on R&D, as well as global and regional procurement platforms to make evidence-based funding decisions and provide support to the most vulnerable and lowest-income countries.

Resource mobilization: Even with early and contingent funding in place, additional funding will be necessary. We recommend building on ACT-A's coordinated resource mobilization approach. Agencies should coordinate their resource mobilization efforts to mobilize funding for their own organizational focus areas. In addition, a complementary pool of funding could be created to allocate some of the funding according to scientific evidence and need as the pandemic evolves. A fair-share model, agreed upon by countries in advance, could support joint resource mobilization efforts.

Decision-making: The Advance Commitment Facility should feature a formalized governance structure with transparent decision-making and early and meaningful inclusion of low- and middle-income countries as well as of civil society. A decision-making authority will

be needed to allocate funding from the Advance Commitment Facility (it could also oversee a possible complementary funding pool).

Broad inclusion: The evaluation also showed that an inclusive structure is critical to create ownership for mandates and objectives, and to ensure that delivery and implementation of MCMs are prioritized and planned for from the beginning. Strong representation of regional actors in the facility governance should build on strengthened regional platforms, including to support regional procurement.

Scope and procurement platforms: The Advance Commitment Facility should target its funding towards countries with the lowest income. Fully global models for procurement (as initially adopted by COVAX) are overly ambitious and unrealistic. Instead, we suggest a larger group of procurement platforms, i.e., a 'club of buyers', as suggested by multiple key informants. Global and regional platforms need to define their respective roles and responsibilities to avoid competition across levels and geographies.

Delivery model: The evaluation showed that strengthening health systems during an emergency is not possible. This needs to happen in-between pandemics (see #4 below). Instead, there should have been a mechanism to address country bottlenecks to ensure delivery of MCMs in countries. For vaccines, the CoVDP has achieved significant results in a short period of time. For the future, we recommend a 'CoVDP-type' interagency model for delivery support and coordination, led by an operational agency, that covers all MCMs and focuses on countries in greatest need of support.

Donation management: While product donations present additional complexities over direct procurement, they may play an important role in the next pandemic. The system should be prepared and well-equipped to manage donations early on in the pandemic response.

3. Global functions

At the global level, critical functions must be improved for pandemic preparedness and response, including political leadership, indemnification/no-fault compensation mechanisms, technology transfer, rapid prequalification, and data.

Leadership: Global leadership is necessary to keep pandemic preparedness and response high on the global agenda, to track progress, and to provide high-level political guidance and oversight. While different models are currently being discussed (e.g., under the UNGA, WHO and the G20), it would be important to create a high-level political body, possibly including a small secretariat. In addition, the inclusion of low-income and lower-middle income governments needs to be ensured – a forum of G20 countries only will be insufficient.

Indemnification and no-fault compensation mechanisms were a key contribution of COVAX. For the future, it will be important to have mechanism that works for non-governmental actors, as this was one challenge for the Humanitarian Buffer.

Technology transfer is crucial for equitable access to MCMs, and there needs to be a stronger emphasis on it in the future. Pandemic treaty negotiations at WHO should be leveraged to facilitate the development of more equitable access agreements. As highlighted above, the suggested R&D coordination platform needs also to proactively facilitate technology transfer.

Prequalification: Access to certain diagnostic types was delayed due to late WHO clearance (especially for self-tests). Diagnostics are usually less complex to develop than drugs and vaccines. They are very important throughout the pandemic, especially at the beginning of pandemics when other MCMs are not available. Fast prequalification (as well as in-country regulatory approval) of diagnostics is thus needed to enable rapid availability during emergencies. Strengthening WHO's prequalification capacity for diagnostics is crucial.

Data: Multiple databases and tracking platforms and approaches were created by different agencies at different times. There was increasing coordination over time. Data availability is key to accountability and transparency – data system needs should be formulated in advance and implemented in a more explicit and purposeful manner through common frameworks, standards, and databases.

4. Regional manufacturing and health systems

Building regional manufacturing capacity in a sustainable manner is important for pandemic preparedness. In addition, the health systems of countries must also be strengthened in-between pandemics.

The lack of distributed manufacturing capacity, in particularly for vaccines and diagnostics, was identified as the key external barrier for ACT-A. Multiple efforts are underway to strengthen manufacturing capacity across regions, for example through WHO's mRNA hubs in Africa and other regions,[170] as well as through the Diagnostics pillar investments to boost global production and strengthen local manufacturing capacity in Africa and Latin America. Manufacturing capacity needs to be supported over the long term and needs to be part of planning for sustainable business models and routine immunization and testing market demand.

Strengthening country health systems, and especially primary health care systems, during "peace time" is also imperative (e.g., surveillance, workforce). The FIF is envisioned to play a key role in developing countries' future preparedness capacity. Donor and low- and middle-income countries themselves have to jointly ensure that the systems are ready when the next pandemic hits.

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