WHO Member States Briefing

August 13, 2020

CEPI Gavi The Vaccine Alliance World Health Organization

Objectives

1

Provide a short recap on the COVAX vision

2

Provide an update on developments since last briefing

3

Present an overview of the COVAX Facility

4

Share next steps to join the COVAX Facility

Our vision for the COVAX Facility

Our goals

To support the largest actively managed portfolio of vaccine candidates globally

To deliver 2 billion doses by end of 2021

To offer a compelling return on investment by delivering COVID-19 vaccines as quickly as possible

To guarantee fair and equitable access to COVID-19 vaccines for all participants

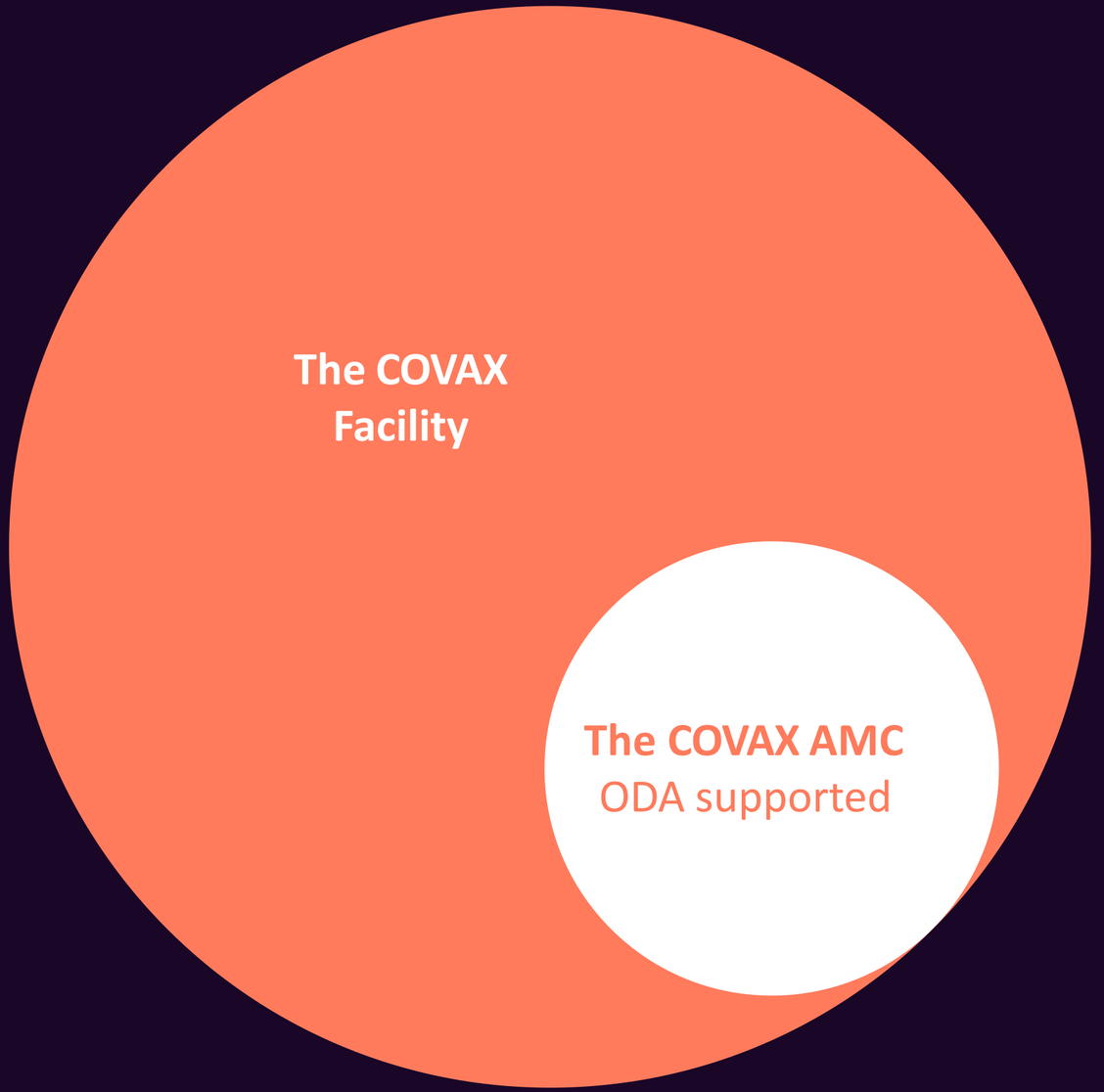
To end the acute phase of the pandemic by the end of 2021

COVAX: an end-to-end solution

Bold ideas and brilliant innovation for the worst global health crisis in 100 years

The COVAX Facility serves all participants

The COVAX AMC is an instrument for ODA-eligible countries



For all participants

For ODA-eligible participants

The Facility connects a pool of demand to a pool of supply

Bold ideas and brilliant innovation for the worst global health crisis in 100 years

Pooled demand

Participants

Consolidates buying power and provides participants access to a broad and actively-managed portfolio

The COVAX Facility

Pooled supply

Manufacturers

Provides manufacturers access to a massive, demand-assured market

An Active Portfolio Management is supporting COVAX ambition to deliver 2B doses by end of 2021

HIGHLY PRELIMINARY – FOR REVIEW

Active Portfolio Management

Diverse Portfolio

Candidates across 4 technology platforms

Investments in R&D and manufacturing to accelerate production of doses

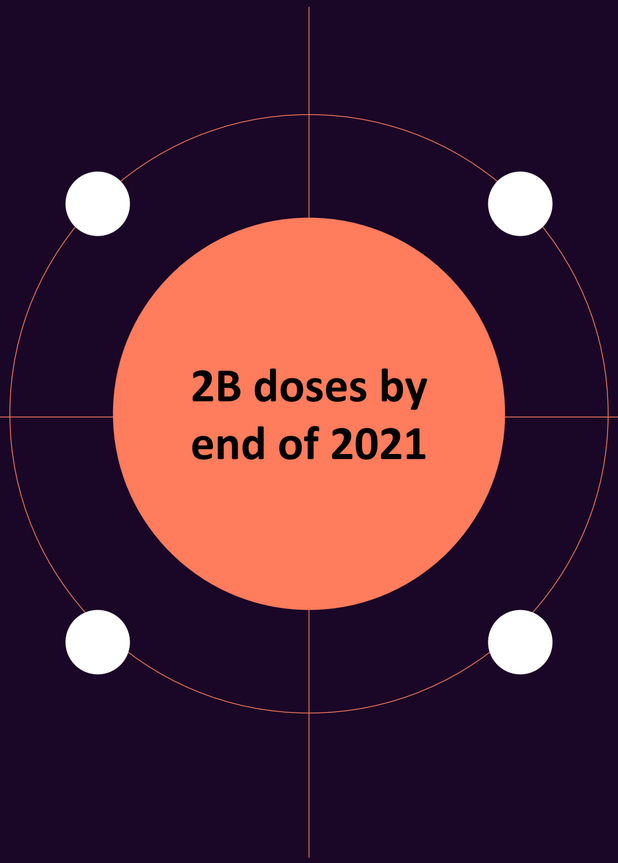
Portfolio spanning various Geographies

Expert and Industry support

150+ developers plans reviewed by experts

Best in class view of external landscape

Industry is fully engaged and supportive



Flexibility to put resources…

… behind the most promising vaccine candidates out of the 100+ in development

Discussions to include BMGF portfolio within COVAX to leverage 2nd wave/ generation of vaccine candidates

Ongoing negotiations with major vaccine manufacturers to optimize use of resources

Continuous assessment of opportunities…

…to expand portfolio e.g., single dose vaccine, new antigens, continued geographical spread, special populations

Advanced discussions with all assets in the clinic on manufacturing e.g., capacity planning

COVAX Facility Dose Allocation

Doses

950M + 950M + 100M = 2B

- 950M: Procured through Facility by HICs and UMICs
- 950M: AMC doses for LICs and LMICs (AMC 92)
- 100M: Buffer for emergency deployment
- 2B: Doses secured by end 2021

Goal

- Protect public health and minimize societal and economic impact by reducing COVID-19 mortality
- Equal allocation between LICs, LMICs and UMICs, HICs as we seek to reach 20% of the population*

Priorities

1. **Health and social care workers**
2. **High-risk adults**
3. **Further priority groups**

Timing

LICs, LMICs receive doses at the same time as UMICs and HICs**

Timing is based on country need, vulnerability and COVID-19 threat

*In alignment with WHO Allocation Framework
**Rollout of doses subject to availability of funds

Development since the last briefing

26 candidates are in the clinic, with 5 currently in Phase IIb/III

	Phase I	Phase I/II	Phase IIa	Phase IIb / III and III	Registration / introduction
Viral vectors	Shenzhen GIMI aAPC	Shenzhen GIMI LV-SMENP-DC Gamaleya rAd5, rAd26 Janssen Ad26.COV2-S	Cansino Ad5	AstraZeneca AZD1222	
RNA	CureVac CVnCoV Walvax Biotech mRNA	Imperial saRNA		Pfizer / BioNTech mRNA-BNT162 Moderna mRNA-1273	
DNA		Genexine GX-19 Inovio INO-4800 Osaka /AnGes AG0301 Cadila 2019-nCov vaccine			
Protein sub-unit	Medicago VLP Vaxine Covax-19 Queensland UQ-1-SARS-CoV-2-Sclamp Clover SCB-2019	Novavax NVX-CoV2373	Anhui Zhifei Recombinant		
Inactivated		Bharat Biotech BBV 152 Institute of Medical Biology, CAMS Beijing Institute of Biotechnology		Wuhan Institute of Biological Products Sinovac Biotech	

CEPI COVID-19 vaccine portfolio currently consists of 9 projects, 7 in the clinic

	DNA / mRNA			Viral vector			Protein		
COVID-19	**Inovio**	**Moderna**	**CureVac**	**Merck / Themis**	**AstraZeneca / Univ. Oxford**	**University of Hong Kong**	**Novavax**	**Clover BioPharma**	**University of Queensland / CSL**
Location	USA	USA	Germany	USA / Austria	UK	China	USA	China	Australia
Platform	DNA	mRNA	mRNA	Viral Vector	Viral Vector	Viral Vector	Protein	Protein	Protein
Antigen / Adjuvant	Full-length S protein	Full-length S protein	Full-length S protein	Full-length S protein	Full-length S protein	Receptor Binding Domain / AS03	Full-length S protein / saponin-based Matrix-M	Full-length S protein/AS03 or CPG1018	Full-length S protein / MF59 or AS03 or CPG1018
Current phase	Phase I/II	Phase III	Phase I	Preclinical	Phase III	Preclinical	Phase I/II	Phase I	Phase I

Speed

Scale

Access

Current BMGF portfolio being evaluated for inclusion in COVAX

	Protein						Viral vector	saRNA	Inactivated
COVID-19	**Candidate #1**	**Candidate #2**	**Candidate #3**	**Candidate #4**	**Candidate #5**	**Candidate #6**	**Candidate #7**	**Candidate #8**	**Candidate #9**
Location	South Korea	China	India	India	USA	China	USA	UK	Global (multi-manufacturer partnership)
Platform	Protein (CHO + E.coli)	Protein (Pichia)	Protein (Pichia)	Protein (Pichia)	Protein (CHO + E.coli)	Protein (CHO)	Viral vector / DNA (HEK)	saRNA	Inactivated (Eggs)
Antigen / Adjuvant	RBD-NP	RBD	RBD	RBD-VLP	RBD-NP	RBD-dimer	Full length S protein	Full length S protein	Full length S protein
Current phase	Tech Transfer	Late discovery	Discovery	Late discovery	Tech transfer	Phase I	Late discovery	Phase I	Late discovery

BMGF "Wave 2" portfolio selected based on potential for combination of attributes relative to leading SARS-CoV2 vaccine candidates:


Higher Potency


Existing Manufacturing Capacity


Lower Cost of Goods


Novel Approach

Early clinical data

Immune response

- Binding and neutralizing antibody induced with all candidates
- Cellular immune responses induced
- Level of response cannot be directly compared as different methodology used between vaccines

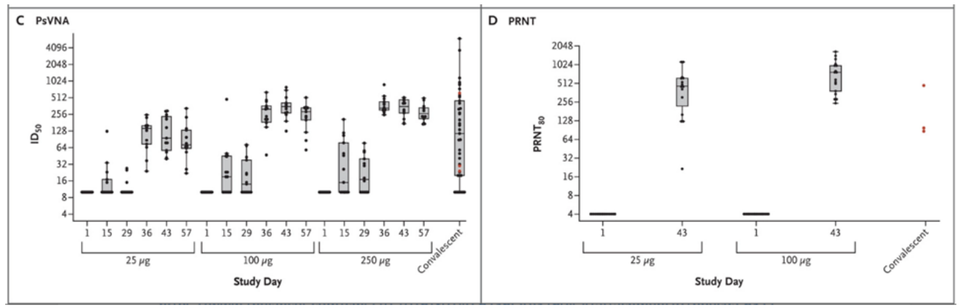
Safety profile

- Generally well tolerated
- Some vaccines have more reactogenicity after the second dose

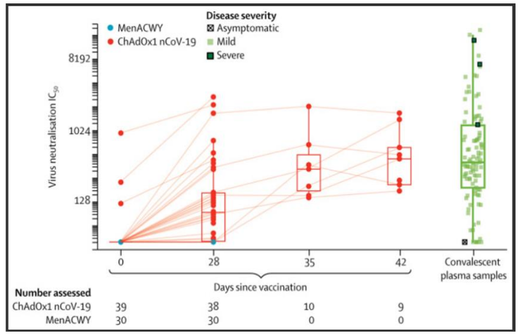
Conclusions

- Early data promising
- Efficacy trials needed to see if they protect from COVID-19

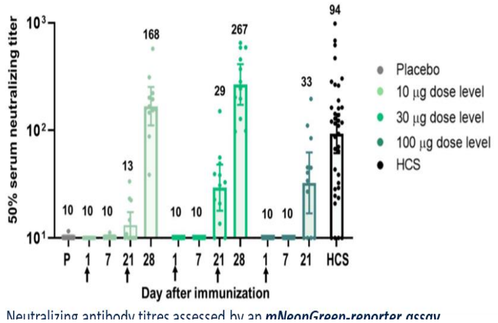
Jackson et al NEJM 2020 (Moderna)



Folegatti et al Lancet 2020. U. Oxford/AZ



From Mulligan et al medRxiv 2020. Pfizer/BioNtech



Neutralizing antibody titres assessed by an *mNeonGreen-reporter assay*

Zhu et al Lancet 2020 Cansino

	Day 14				Day 28			
	Low dose group (n=36)	Middle dose group (n=36)	High dose group (n=36)	p value	Low dose group (n=36)	Middle dose group (n=36)	High dose group (n=36)	p value
ELISA antibodies to the receptor binding domain								
GMT	76·5 (44·3–132·0)	91·2 (55·9–148·7)	132·6 (80·7–218·0)	0·29	615·8 (405·4–935·5)	806·0 (528·2–1229·9)	1445·8 (935·5–2234·5)	0·016
≥4-fold increase	16 (44%)	18 (50%)	22 (61%)	0·35	35 (97%)	34 (94%)	36 (100%)	0·77
Neutralising antibodies to live SARS-CoV-2								
GMT	8·2 (5·8–11·5)	9·6 (6·6–14·1)	12·7 (8·5–19·0)	0·24	14·5 (9·6–21·8)	16·2 (10·4–25·2)	34·0 (22·6–50·1)	0·0082
≥4-fold increase	10 (28%)	11 (31%)	15 (42%)	0·42	18 (50%)	18 (50%)	27 (75%)	0·046

Data are mean (95% CI) or n (%). The p values are the result of comparison across the three dose groups. If the difference was significant across the three groups, the differences between groups were estimated with 95% CIs. SARS-CoV-2=severe acute respiratory syndrome coronavirus 2. GMT=geometric mean titre.

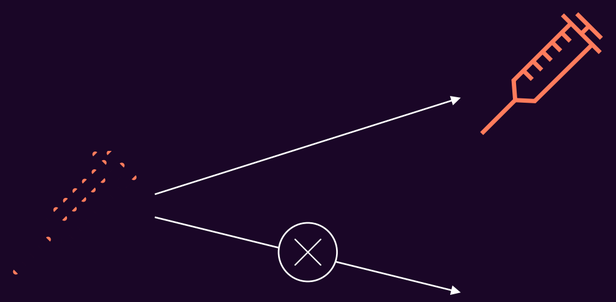
Table 3: **Specific antibody responses to the receptor binding domain, and neutralising antibodies to live SARS-CoV-2**

Financing and structure of deals

No single vaccine is guaranteed to succeed or has enough capacity …

For planning purposes, the Facility is targeting to 2 B doses by end of 2021

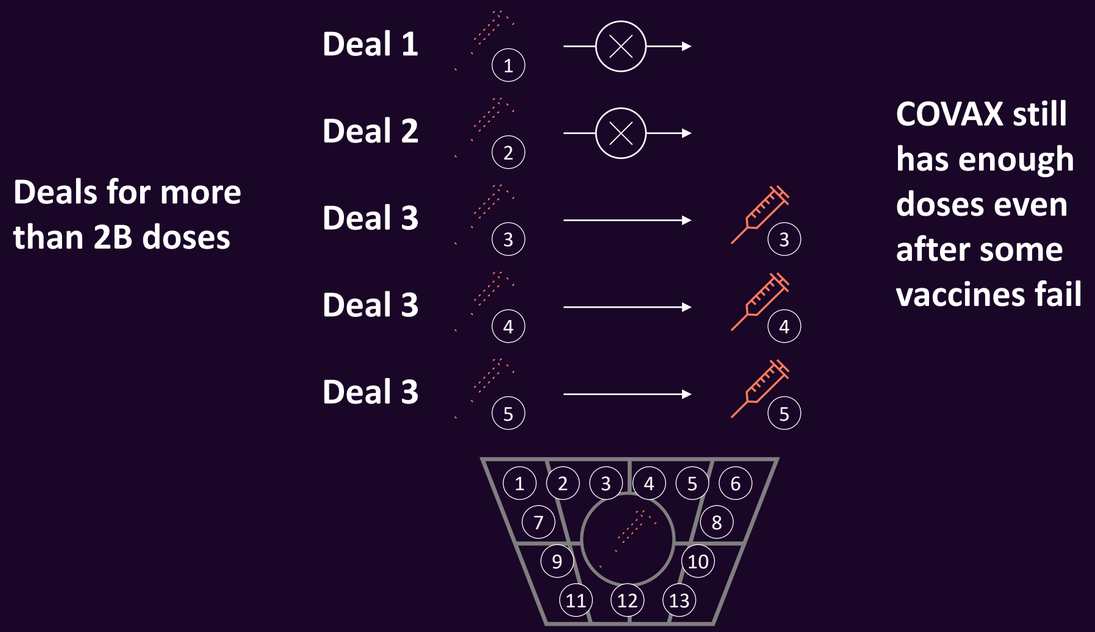
- Many vaccines in development – none guaranteed to succeed
- No single manufacturer has the capacity to supply the global volume required



Single deals might fail

… COVAX thus selected a basket of vaccines to mitigate these risks

- A **basket of deals is needed** to increase the chances of delivering 2B doses by end of 2021
- **Deals for more than 2 B doses are needed** to account for the risk of unsuccessful development

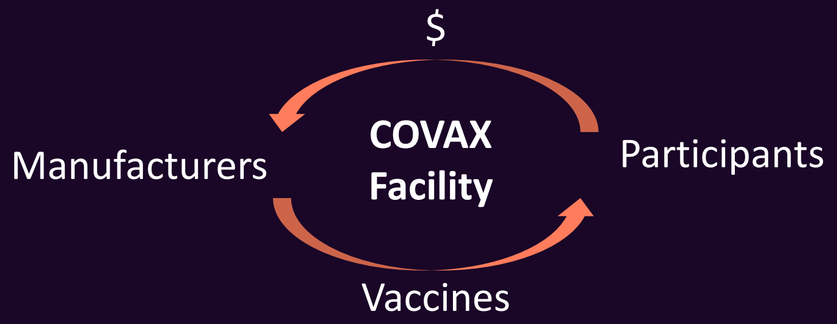


A diversified portfolio is needed to diversify risk and create capacity to scale

COVAX is creating a basket of 10-15 vaccines

The overall financial structure of the Facility

The COVAX Facility cost principles



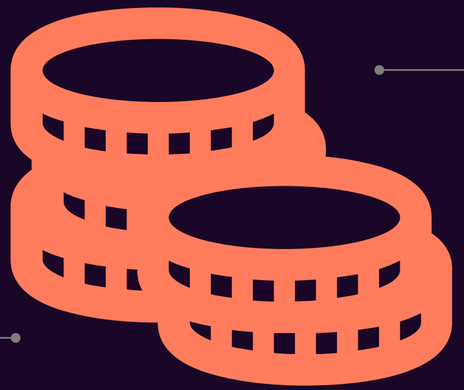
- **Negotiate to achieve minimal returns pricing**
- **Costs passed through to participants "as-is"**
- **Full transparency**
- **Participant choice & optionality**
- **Participants involvement in Facility governance**

Three COVAX Facility cost categories

Speed / access premium (~15-20%)
Payments made to manufacturers:

- To accelerate investments manufacturers would otherwise delay (e.g., technology transfer)
- As down payments for Advance Purchase Agreements

Ex-factory cost(~80-85%)
Variable cost to manufacturers of producing the doses



Facility operating costs (<3%)

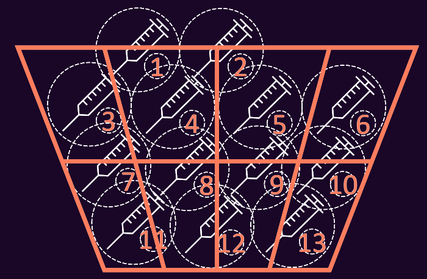
- Cost of limiting risk exposure and reducing upfront payment requirements (e.g., insurance and interest associated with debt financing)
- Management fees (e.g., staff costs)

…and have modelled the costs associated with this portfolio as precisely as possible

This is a weighted average for vaccines with tiered prices

Illustrative portfolio

Candidate	Estimated ex-factory cost, $/dose	Estimated # of doses by end 2021, M doses	Total ex-factory cost by end 2021, $ M
Selected candidate 1	- Confidential -		
Selected candidate 2			
Selected candidate 3			
Selected candidate 4			
Selected candidate 5			
Selected candidate 6			
Selected candidate 7			
Selected candidate 8			
Selected candidate 9			
Selected candidate 10			
Selected candidate 11			
Selected candidate 12			
Selected candidate 13			
TOTAL	*Weighted average* **8.70**	**4,141**	**36,031**



All numbers are estimates based on best current available knowledge

The vaccines in the portfolio have **different prices** given the different technology platforms and manufacturing locations

To reach 2 B by end of 2021, the Facility is planning **for deals up to 4 B doses to account for a 50% attrition rate**

The total **ex-factory cost are estimated at ~$20 B** due to an expected ~50% attrition rate

Self-Financing Participants make a binding financial commitment upon joining …

All-inclusive estimated cost per dose

$10-11

×

Expected # of doses per regimen

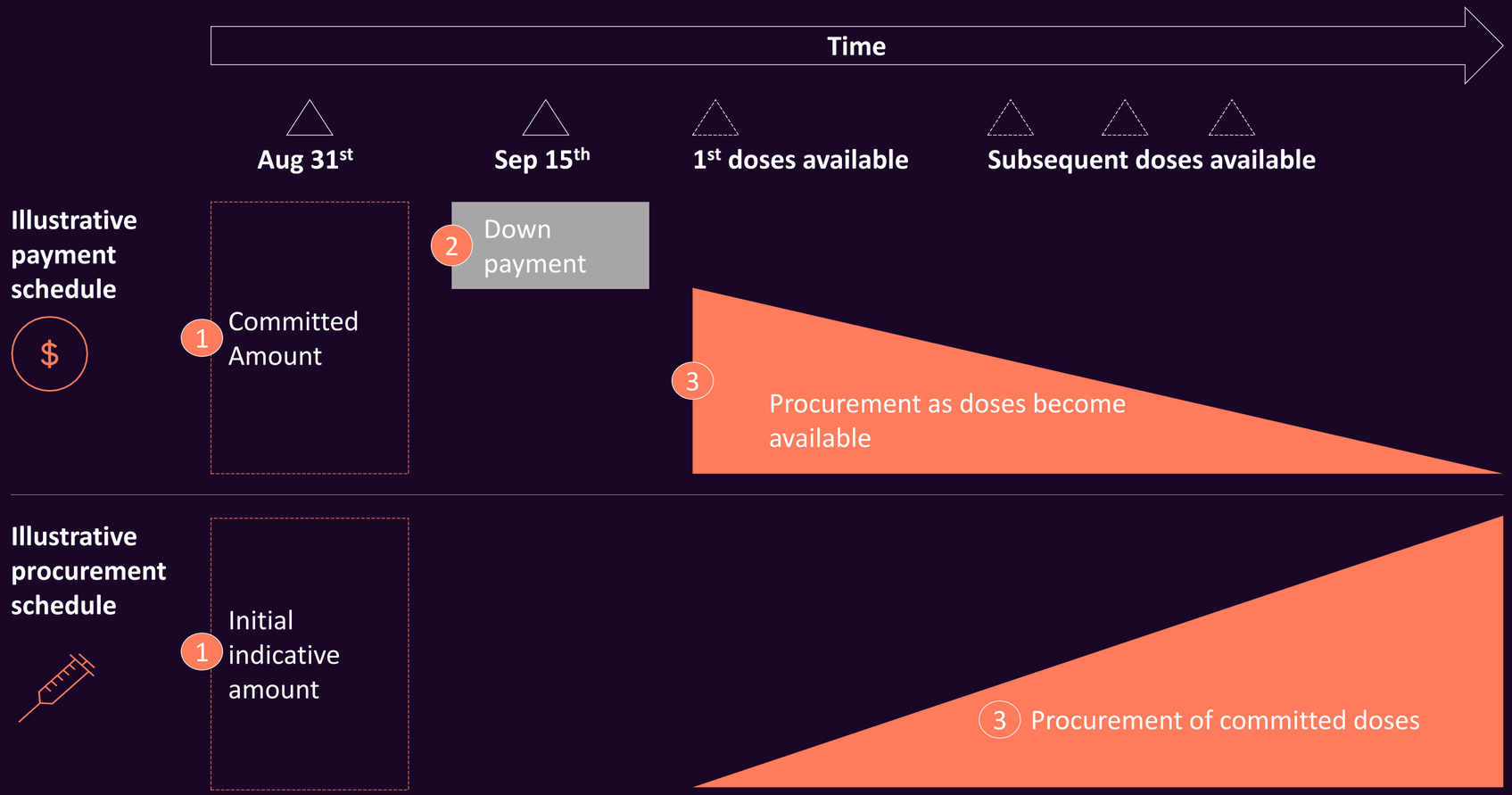
2

×

Agreed percentage of participants' population

The Committed Amount represents the total binding financial commitment that Self Financing participants make

… and provide a 15% down payment, with subsequent purchase of doses against the committed amount



1. **A Participant makes a binding financial commitment** (the Committed Amount) in exchange for a certain number of doses

2. 15% of the Committed Amount is **paid upfront as a Down Payment**

3. As vaccines become available, the **Participant procures doses with as much choice as possible, drawing down their Committed Amount**

The ‘COVAX AMC Group’: Eligibility

- **The ‘COVAX AMC Group’:** The scope of countries and territories eligible for support through the AMC

- In July, the Gavi Board approved 92 economies: **low income** and **lower middle-income economies,** plus other **IDA-eligible economies**

- This definition of scope focuses Gavi support on the **poorest countries and territories in the world today,** uses **recognised World Bank definitions,** and it is **completely transparent**

- **Level and extent of support** to be discussed with the Gavi Board in September

Status of expressions of interest

Status as of August 10

High income: 41 EOIs, 0.5+ B people

Upper middle income: 39 EOIs, 1.0+ B people

Low income / lower middle income: 92 AMC-eligible economies1, 3.9+ B people

Speed, Scale, Access

1. AMC-eligible economies are not required to submit an expression of interest; includes 12 IDA-eligible upper middle income economies

Allocation

Allocation framework: key features

Proportional Distribution

2B doses allocated proportionally to population to Funded and Self Financing participants[1], keeping a buffer of 5% for humanitarian emergencies and acute outbreaks

Gradual allocation

Vaccines rolled out as they are produced until participants reach their indicative target amount[2]

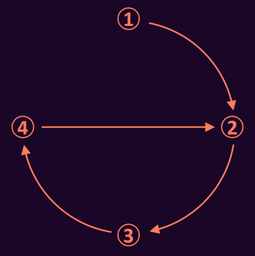
Adapting to country context

Country policies will guide national priorities for vaccine use. WHO will provide recommendations based on SAGE advice which will support country deliberations

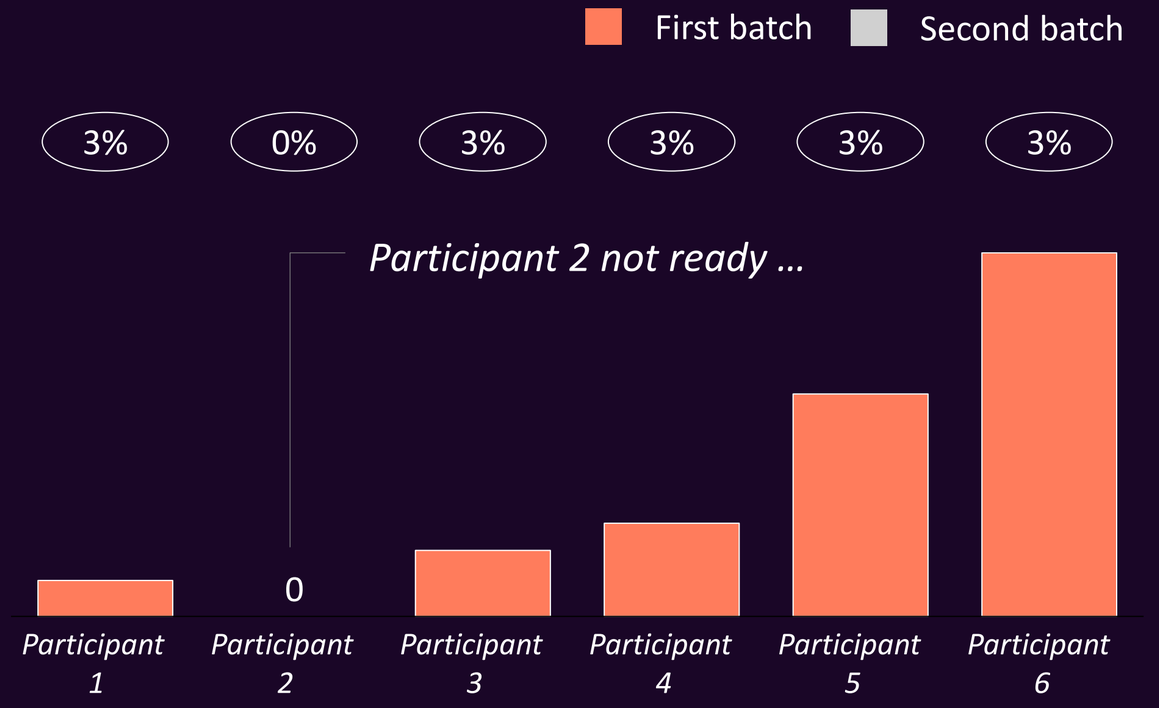
1. Allocation of doses for a participant's indicative target amount. The first phase of the allocation framework is in effect up to 20% population coverage. Funding or participant readiness constraints would not delay the distribution of vaccines to other participants.
2. Notwithstanding logistical and operational considerations, for example shipment size.

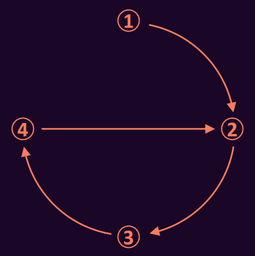
X% Received doses relative to participant‘s population

Example:
6 participants are allocated doses from 2 vaccine batches

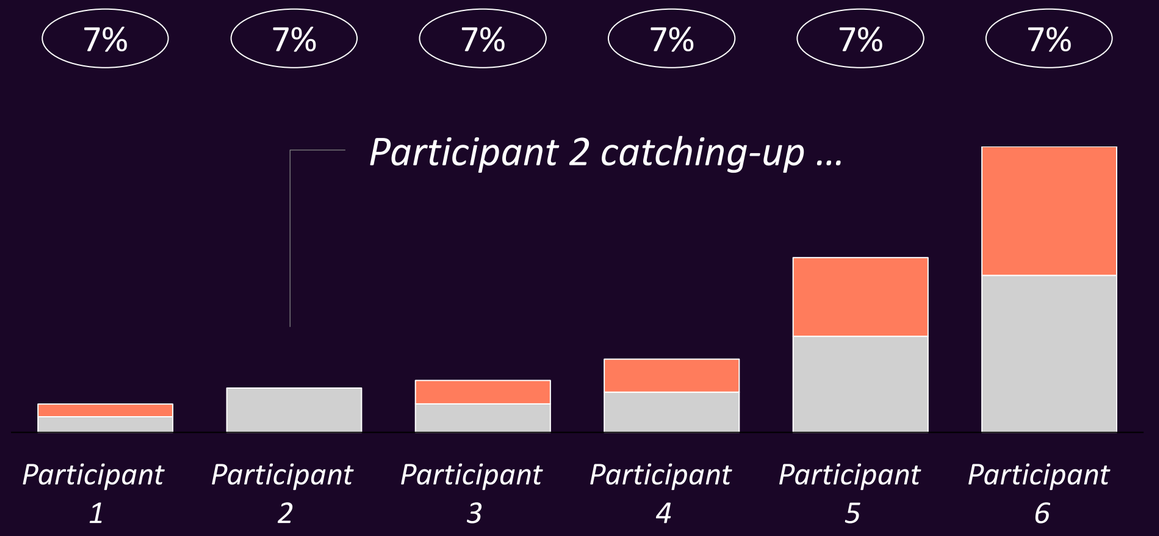


Month 1



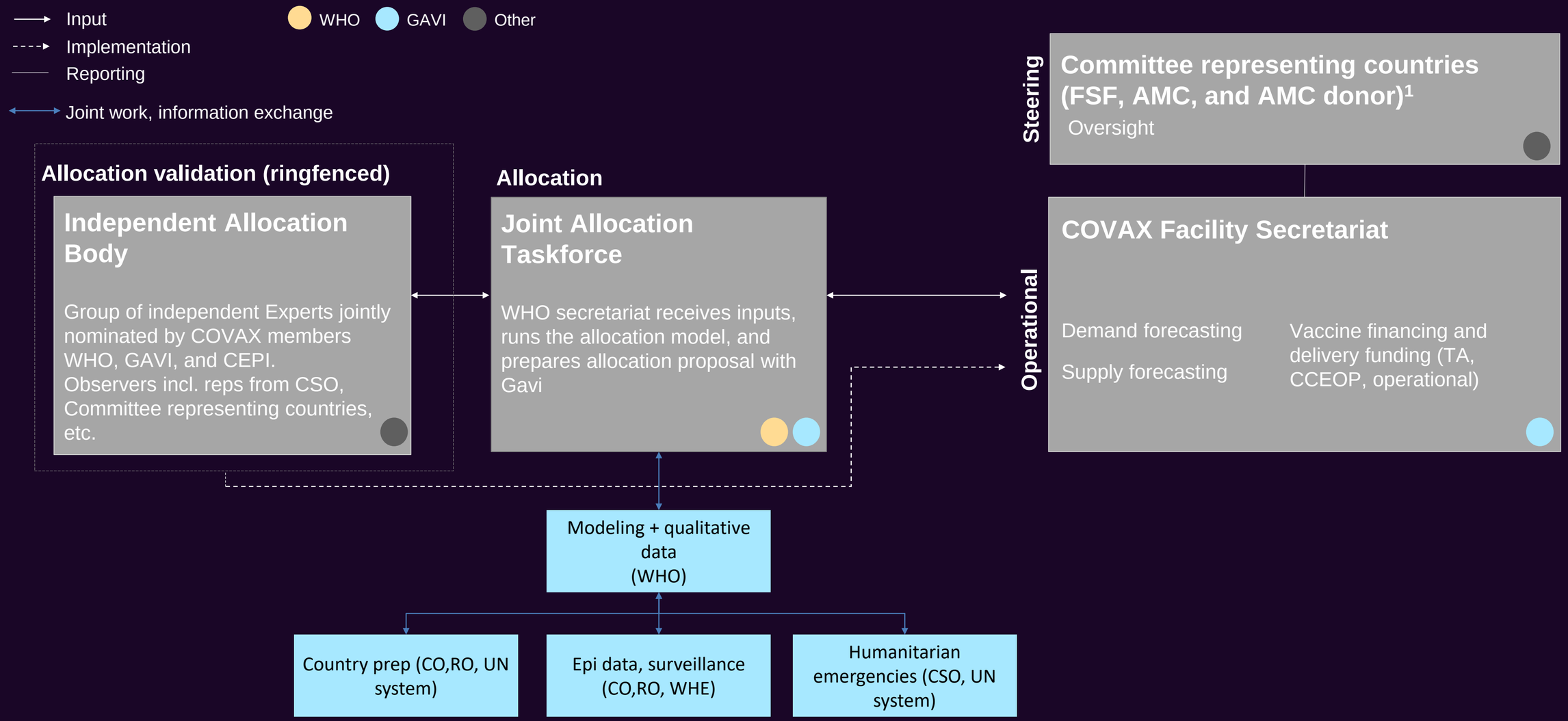


Month 2



Potential process for the allocation

Depicting only COVAX Facility bodies directly relevant to Allocation



1 The link between this Committee and the broader COVAX Facility governance is under development

Governance and delivery planning

Guiding principles behind the Facility's Governance

Structural considerations

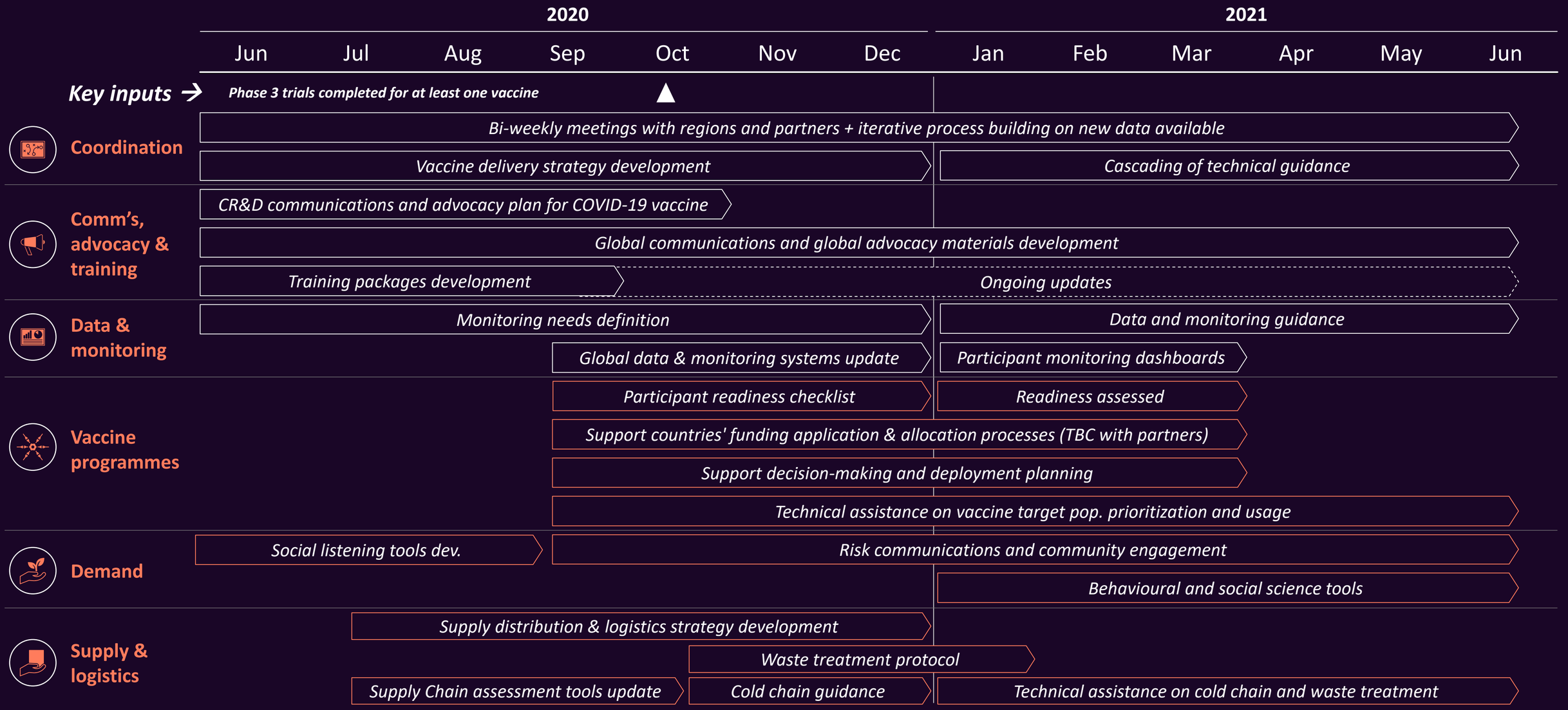
- **Build on Gavi's existing Board and Committees,** with new governance bodies established to ensure appropriate oversight (e.g. a Shareholder's Council), to avoid unnecessarily expanding existing mechanisms (principle of ACT-Accelerator)
- **Ensure an accountable and representative governance framework** to all stakeholders
- Be in place for the **entire lifespan of the Facility**

Objectives

- Enable the Facility to enter into **time and commercially sensitive transactions with varying terms**, accounting for different manufacturer profiles and needs
- **Anticipate potential needs to adapt and adjust the use of funds**, given uncertainties (e.g., disease epidemiology)
- **Ensure representation of all participants** and provide sufficient visibility

The details of the governance arrangements, including terms of engagement with civil society and other non-funded/non-funding participants, are still being refined as the Facility is established

Participant Readiness and Delivery overall timeline (work in progress)



Timelines and next steps

Timeline for the Self-Financing group

Date	Key activirty	Description
August 31	Commitment agreement to be signed	Self-financing group signs legally binding commitment agreements (English version)
September	Financing provided	As needed, self-financing participants have until 15 Sept to secure adequate financing; upfront payments provided to Facility
October (tbc)	Shareholders Council meeting	First meeting to establish final terms of reference and operating procedures; receive update on vaccine candidate pipeline and manufacturer deals

Timeline for the AMC group

Date	Key activirty	Description
August	Ongoing engagement	At a multilateral, regional, and individual level
End September	Gavi Board meeting	Decision on level and extent of support to AMC Group
Fall - tbd	Applications for COVID-19 vaccine programme	*Exact process pending*

1. AMC-eligible economies are not required to submit an expression of interest; includes 12 IDA-eligible upper middle income economies

Thank you & close

CEPI Gavi The Vaccine Alliance World Health Organization