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Updated analysis of digital aspects within approved COVID-19 vaccine deployment proposals

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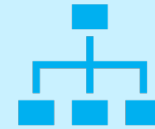


Study Focus and Approach

Building on prior analytic and review efforts, this 2023 updated proposal review aims to analyze **if** and **how** *digital aspects* have been included in COVID-19 funding requests for vaccine deployment.

To understand and explore these questions, the study approach involved three key activities including:

- Activity 1. An updated quantitative review of proposals
- Activity 2. Qualitative discussions with select funders
- Activity 3. Qualitative discussions with in-country stakeholders



High-level reporting on *additional* sets of country proposals and partner funding activity since the 2022 analysis.



To the degree possible understanding how funds have been utilized, tracked, and drove impact.



Understanding where and how coordination of investments including digital aspects across donor agencies might better occur.

Executive Summary



Funding proposals examined in this study collectively accounted for ~10B USD of support during the pandemic, much of it involving digital systems and tools. Current funding processes and data granularity make it difficult to parse *how much* was utilized for digital.



The project team recommends, refining proposal processes and increasing data captured/shared to align investments across funders to **better leverage limited resources.**



Fortunately, coordinating mechanisms emerged during the pandemic, however countries still encountered variation in proposal processes across funders.



Improve coordination and support to countries by better organizing and utilizing the data that exists today to **ensure the development and sustainability of digital systems continues to advance by virtue of aligned investment.**



Funders supporting digital health investments indicated that countries augmenting existing systems and tools versus implementing new systems proved more successful in utilizing the systems for Covid-19 vaccine delivery and management.



Develop and invest in the fundamental capabilities of digital health systems enabling both improved routine delivery and preparing for future emergent scenarios. **Health systems with established digital capabilities are more resilient when faced with disruptions.**

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Background and Context

- The COVID-19 pandemic disrupted societies and health systems on a never-before-seen scope and scale.
- Even before the COVID-19 vaccine was rolled out, it was clear that **low- and middle-income countries' (LMIC)** health systems would be severely stressed in their abilities to **plan, distribute, administer, and monitor the introduction of a new vaccine that targets an entirely new population group.**

At the same time, a 2020 assessment of **health system readiness across 100 LMIC countries conducted by the World Bank** concluded that COVID-19 vaccination campaigns offered unique opportunities for countries to:

- Develop specialized digital systems to **track vaccine delivery and vaccinated individuals**
- **Notify people to return** on schedule for second doses
- **Monitor vaccine safety** and report adverse reactions following immunization
- Utilize ready-to-scale digital innovations exist that can **support efficient and equitable deployment** of COVID-19 vaccines under tight timelines

Background and Context cont.

2020: WHO & UNICEF identified similar opportunities as the World Bank analysis.



Established a joint WHO-UNICEF COVAX innovation working group to identify and fast track guidance on standards and approaches for leveraging already mature digital solutions to support COVID-19 vaccine distribution.



2021: this group provided guidance to countries through global and regional webinars and publications.

(NDVPs) National Deployment and Vaccination Plans

NDVPs were encouraged to include innovative approaches grounded in country specific challenges, culture, and capacities.

Guidance was not initially available to countries on where and how to incorporate digital aspects or adoption of technologies in COVID-19 applications.

Application processes did not provide donors visibility into overlapping requests from countries – particularly as activities were often done in parallel.

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Activity 1. Update and expand analysis of funding applications for COVID-19 vaccine deployment

- **May 2022, an analysis of 311 applications to UNICEF, Gavi, Global Fund and World Bank** conducted.
 - Digital aspects prioritized immunization information systems, vaccine acceptance and uptake as well as COVID-19 surveillance.
- **May 2023, update included 62 additional applications** from the 3rd UNICEF/Gavi window as well as relevant applications from Global Fund and World Bank.

Expanded analysis explored:

- *What change in digital aspects within applications can be seen across the time period?*
 - *Early Access Window (EAW) to Need Based Window (NBW) to 3rd window*
- *How do funding priorities vary across funding agencies related to digital aspects?*
- *What degree of duplication of investments across digital aspects between donors?*

Definition of **Digital Aspect**: is the development or use of digital technologies to improve health in line with the established WHO definition of digital health (the field of knowledge and practice associated with the use of digital technologies to improve health).

Activity 1. Description of applications

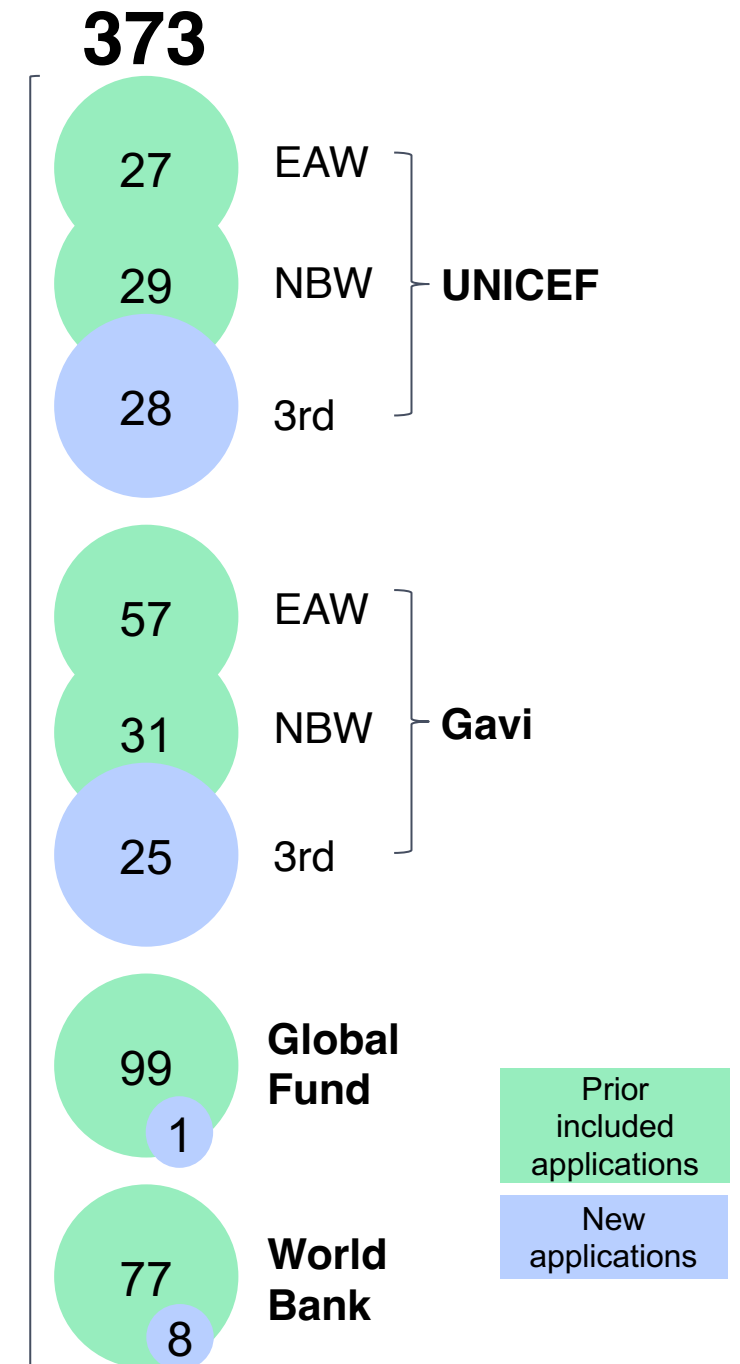
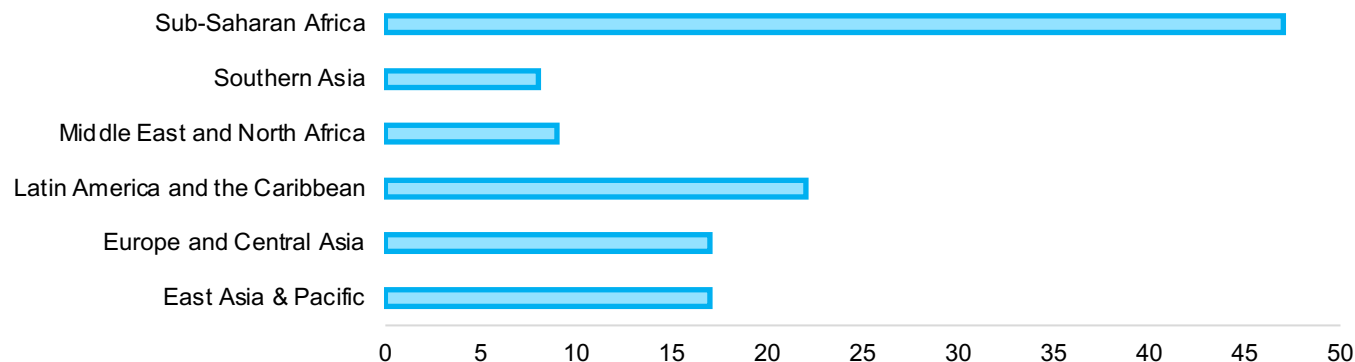
In total, **373 applications** were reviewed from **123 countries**. Most from Sub-Saharan Africa.

Out of the **373 applications** from UNICEF, Gavi, Global Fund and World Bank, **322 (86%)** had at least one digital aspect.

Of the **322 applications**, **890 digital aspects** were identified. Of these **808 (91%)** included sufficient detail for costing of the digital aspect.

- Lack of costing detail identified most significantly in World Bank applications.

Number of countries with at least one application by UNICEF region



Activity 1. Description of applications - overall funding

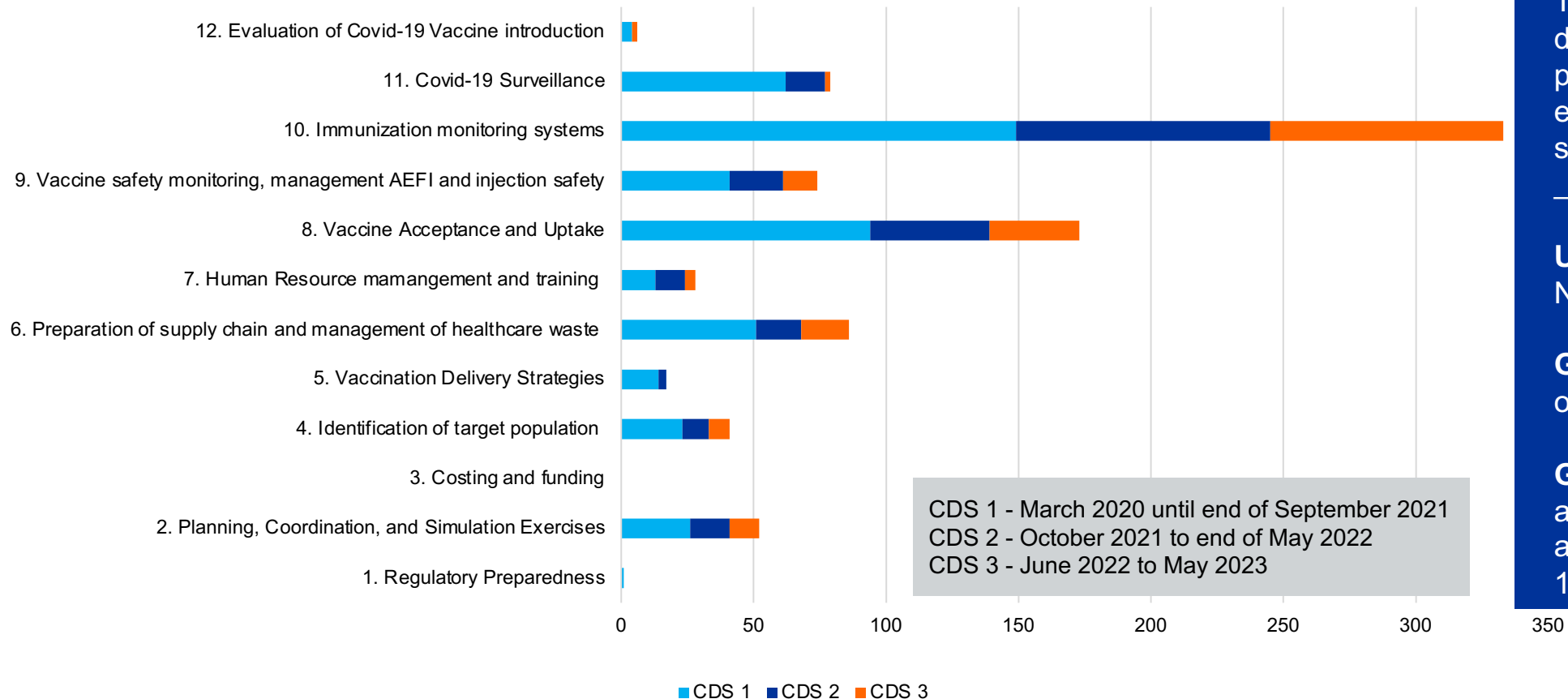
- In total, approximately 10,000 mUSD funded through the 373 application **of which 322 included at least one digital aspect (the 322 totalled ~9,500 mUSD*)**.
- Of the 9 500mUSD, the largest contributors were Global Fund and World Bank. Notably these were less specific in digital health aspects and do not provide the same granularity of Covid-19 Delivery Support (CDS) funding through UNICEF and Gavi.

	UNICEF			Gavi			Global Fund	World Bank
Funding Window	EAW	NBW	3rd	EAW	NBW	3rd	All windows	All windows
Total Funding (mUSD)	81 mUSD			113 mUSD			2,353 mUSD	6,740 mUSD
All Applications (N=373)	27	29	28	57	31	25	100	85
	19 mUSD	18 mUSD	44 mUSD	204 mUSD	442 mUSD	210 mUSD	2,353 mUSD	6,740 mUSD
Total Amount funded (mUSD)	13 mUSD	16 mUSD	42 mUSD	183 mUSD	427 mUSD	197 mUSD	2,175 mUSD	6,441 mUSD
Applications with Digital Aspects (N=322)	21	24	22	51	28	24	82	70

*Based on granularity of the data available and detailed proposal review the project team believes but can't confirm whether all funding was designated to digital systems and tools.

Activity 1. Digital aspects over time (all analyzed funders)

National Deployment Vaccination Plan (NDVP) - Digital aspects over time



Key Takeaway:

There was a notable increase in digital aspects across the later proposals rounds, also more elaborate descriptions of digital systems and tools.

UNICEF applications focused on NDVP 2, 7, 8, 9 and 10.

Gavi applications focused on NDVP category 8, 9 and 10.

Global Fund and World Bank applications included many digital aspects in NDVP category 6, 8, 10 and 11.

Activity 1. Digital aspects funded over time

UNICEF: Digital aspects and related funding increased over time, both in absolute and relative terms.

Gavi: More mixed picture, digital aspects increased in relation to the number of applications across the windows, but the funding decreased, both in absolute and relative terms.

Global Fund and World Bank: the largest contributors, and notably less specific in digital health aspects and do not offer the same granularity of CDS funding in comparison to UNICEF and Gavi.

Funding Window	UNICEF			Gavi			Global Fund	World Bank
	EAW	NBW	3rd	EAW	NBW	3rd	All windows	All windows
Applications with Digital Aspects (N=322)	21	24	22	51	28	24	82	70
Total Amount funded (mUSD)	13 mUSD	16 mUSD	42 mUSD	183 mUSD	427 mUSD	197 mUSD	2,175 mUSD	6,441 mUSD
All Digital Aspects with costing data (N=808) in mUSD	3.5 mUSD	5.8 mUSD	18 mUSD	74 mUSD	48 mUSD	26 mUSD	300 mUSD	859 mUSD
Percent of Total Amount Funded	27%	36%	43%	40%	11%	13%	14%	13%

Activity 1. Key takeaways

Key Takeaway:

Across COVID-19 Delivery Support (CDS) windows there was a notable increase in digital aspects and descriptions of digital systems and tools within applications; due in part to increasing coordination and communication efforts from global and country teams.

Opportunities:

- Align and leverage digital aspect categorization within application processes for all funders.
- Maintain and refine the function of coordinating groups across funders post-pandemic.
- Transparently include other funders data in global reporting.

Discussion:

What might it take to routinely capture and leverage greater precision from proposals for all audiences?

Key Takeaway:

The analysis **clearly indicates duplication of investments across funders in the same country**. However, given the limited description within applications and in validation with MoH discussions it is difficult to interpret whether this is intentional or even problematic.

Opportunities:

- Develop summary digital aspect reporting across funders to better align application processes.

Discussion:

What degree of reprogramming from application to deployment should be expected? How might this impact the application request process and evaluation efforts?

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Activity 2. Qualitative discussions with select funders

Objective:

Gather a broader picture of COVID-19 digital aspect funding efforts related to data tracking, internal processes, and outcomes measured throughout the pandemic timeline.

Methods:

Semi-structured discussions with select funding partners (Gavi, UNICEF, and USAID).

Results:

While Activity 1 suggests a need for strengthening application processes, Activity 2 found coordination internally and across funders was a challenge when needing to work quickly as well as effectively. Further retrospective study can help improve coordination mechanisms in preparation for future emergencies.

Activity 2. Internal Process reflections from funders

Key Takeaway:

Proposal processes needed to evolve **more rapidly and in alignment across funders** to accommodate shifts in pandemic response efforts.

- Funding organizations had differing approaches and tolerances when balancing information requested in proposals and the degree to which new systems and tools (vs. existing) were suggested.
- Early in the pandemic some funders were intentional in requesting less detail from countries to enable quicker deployment of funds.

Key Takeaway:

Coordination structures **within** funding organizations proved challenging when needing to work rapidly and at greater scale.

- Existing internal silos hampered coordination within funding organizations when increased speed of decisions was needed.
- Challenges communicating across levels was exacerbated – within headquarters and with country programs. Successful coordination appeared ad-hoc, not systematic (ex. instances of headquarters being brought in too late and with minimal ability to course correct and guide).



*We heard the countries and how they were overwhelmed, and I think one of the first big push[es] and changes we did **was to stop pushing new innovations in the countries**. We've been saying that now it's a pandemic, let's focus on what you have in country and what is already known as working for you. – funder on shifting mindset*



Activity 2. Coordination reflections from funders

Key Takeaway:

Coordination did occur but suggests ongoing opportunities for improvement.

Funders made significant efforts to discuss and align processes with partner organizations and countries, particularly in support of vaccine roll-out. Further distinguishing and codifying how these coordination structures can work optimally in urgent and non-urgent times is needed to benefit fully.

- The Digital Health Center of Excellence (DICE), COVID Vaccine Delivery Partnership, Collaborative Learning Agenda, and COVID-19 readiness and delivery group **were all examples of these positive coordinating mechanisms.**
- WHO COVAX partner portal emerged as helpful tool for visibility and alignment with countries.



"It took a lot of effort [to coordinate across partners] because all of the information was just scattered everywhere.

It took a lot of effort to monitor what was going on because it was not being captured systematically across multiple streams."



-Global Funder

Activity 2. Coordination and Funding suggestions

Discussions highlighted several challenges which indicated opportunities for improvement:

- **Define coordinating mechanism structure and governance** - distinguishing more clearly who needs to be involved in each coordinating mechanism, with what role, and when is critical to working collectively at speed.
- **Initiate data collection and tracking earlier** – COVID delivery partnership was helpful in providing needed information but was delayed in being set up. Utilize this and other efforts to improve information flows and reporting.
- **Ongoing tool refinement and standardization** – the WHO COVAX partner portal proved difficult for users to navigate and highlights a need for refinement, particularly related to information format and terminology.
- **Right-sizing risk and information collection** – proposals across funders varied widely making comparison and assessment difficult.

Additionally, funders should consider assisting countries in adopting tested digital tools and systems **NOW, ahead of future emergencies**. Funders should prioritize and fund digital health strategy development and system architecture to ensure countries can flexibly deliver during periods of urgency.

Activity 2. Funding Process suggestions

Across funders there was a notable appetite for retrospective analysis and identification of helpful practices that emerged during the pandemic to build more responsive structures.

- Funders are eager to better **understand the impact of pandemic era investments** and how to best position future digital efforts while acknowledging and addressing current data and reporting limitations.
- There is an increasing need to uniformly introduce digital health **technical expertise to proposal development processes and engage with countries** on digital transformation **at an earlier stage**.
- Reflections have re-confirmed that continuing focus on foundational digital system investments before crises emerge, will result in the **sustainable, adaptable, and resilient digital health systems** needed.

Key Takeaway:

The broader ecosystem should capture this learning quickly as several organizations indicated re-structuring internal teams and shifting personnel post-pandemic.

It is also important that these outputs be shared transparently across the ecosystem to improve coordination between organizations.

Activity 2. Further discussion and Supports

- Funders had trouble with communication chains internally and with other funders.
 - What might it take to strengthen the country to global feedback loops to enable quicker and more certain application of funding?
 - What strategies can be implemented to streamline the proposal process striking a balance between providing comprehensive information in proposals and maintaining response speed during emergencies?
- How can organizations develop more robust indicators for assessing the impact on health assessments? For conducting impact evaluations on COVID-19 funding?
- How can funding organizations prioritize investment across the space in digital health capabilities during routine times to ensure better preparedness for future pandemics?

Existing tools and supports

- WHO – Digital Implementation Investment Guide (DIIG)
- WHO/ITU Building Blocks
- Digital Readiness Assessment Tool
- Principles for Digital Development
- Project Optimize Planning Tool
- WHO Global Strategy on Digital Health
- WHO SMART Guidelines

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Activity 3. Qualitative discussions with in-country stakeholders

Objective:

Discern a broader picture of COVID-19 digital aspect funding efforts from a country perspective.

Methods:

Semi-structured discussions with in-country representatives.

Results:

Activity 3 highlighted the myriad of coordination challenges that exist at country level, but also indicated an opportunity to better align funding processes to meet country needs more holistically.

Activity 3. Reflections from in-country stakeholders on funding processes

Single LMIC country MoH team, AFRO implementation group:

Key Takeaway:

Coordination, communication and staff turnover at a country level contributed to missed opportunities across the funding windows for more timely and better utilization of funds.

- The country applied for CDS1 and CDS3 funding but missed an opportunity for CDS2 due to staff turnover.
- The same country was misaligned with a funder in the fulfillment of a request and received a lower amount than expected. This misalignment resulted in future shifts away from digital specific requests.

Key Takeaway:

Funding was supportive of important rollout efforts but fell short of overall need.

- The country's CDS3 application covered digital tablets, but not enough for the increased number of vaccination sites.
- Funding available did not focus on or fully enable the country to establish a needed IT and digital health department.

Key Takeaway:

Addressing and distinguishing between funder priorities was not viewed as an issue.

- There was no indication of known duplication across application requests across funders.
- Some ongoing coordination was inhibited by not being part of budget planning conversations with each funder.

Activity 3. Suggestions based on in-country stakeholder discussion

- Develop and leverage **national digital health strategies/plans** to align investment and establish and grow the fundamental capabilities of digital health systems to support routine health delivery.
- Initiate and continue **country-led analyses of health priorities**, capacities of the health system to further leverage pandemic investments in long-term system enhancement.
- **Increase transparency** in reporting regarding utilization of funds and their impacts; providing assurance that efforts are in alignment with global best practices.

Activity 3. Further discussion

- What tools and processes could be enabled for countries to make coordination across funders easier?
- What approach and support is needed to assist countries in reprogramming funds as needs on the ground shift?

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Appendix

Activity 1. Methodological overview

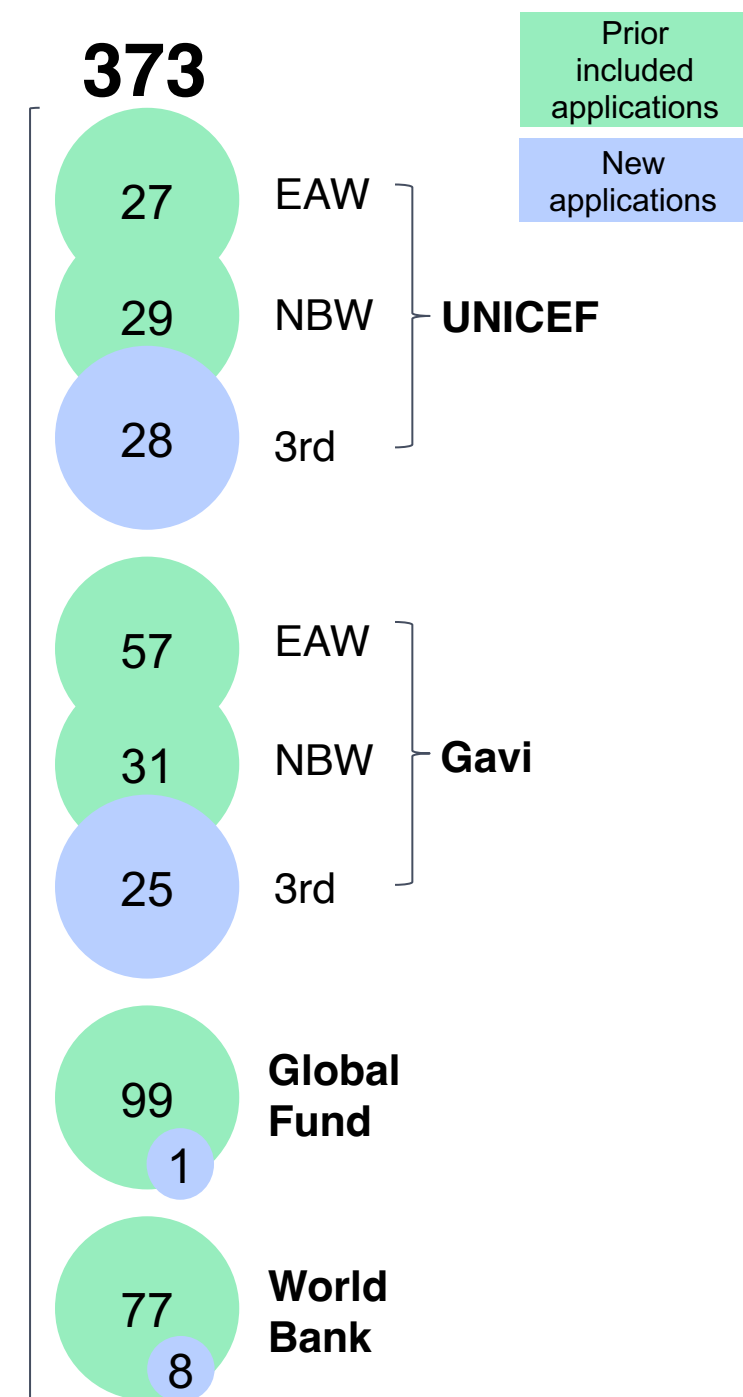
Method

1. Included documents: All publicly available (until 1st of May 2023) early access, needs based and 3rd window CDS applications for Gavi and UNICEF, Global Fund C19RM and World Bank COVID-19 Response AF (Additional Financing) applications were included in the review.
2. Data abstraction: Each document was read in full and searched by list of keywords representing various potential digital aspects, whereafter the data were abstracted based on NDVP pillars. Where funding information was available is was added.

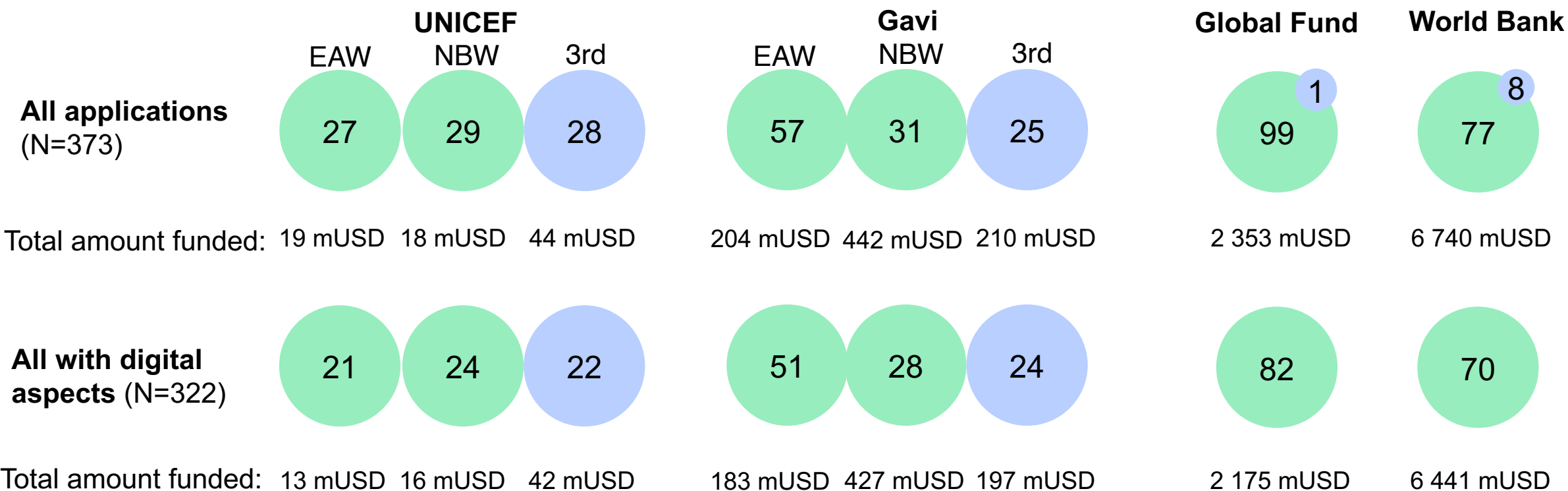
Limitations:

1. For Global Fund and World Bank applications detailed descriptions of digital or potentially digital aspects of proposed activities were often lacking even though they might be implied by the planned activities.
2. Further, funding amounts were often not clearly linked to a specific digital aspects, hence these numbers should be considered with caution. Also, it is not always clear what has been implemented already, what is planned and how (if it is not already functioning) digital aspects will be implemented.

Note: Time for CDS 1 is until end of September 2021, Time for CDS 2 is October 2021 to end of May 2022, Time for CDS 3 is from June 2022 to May 2023. This was applied to Global Fund and World Bank applications where relevant.

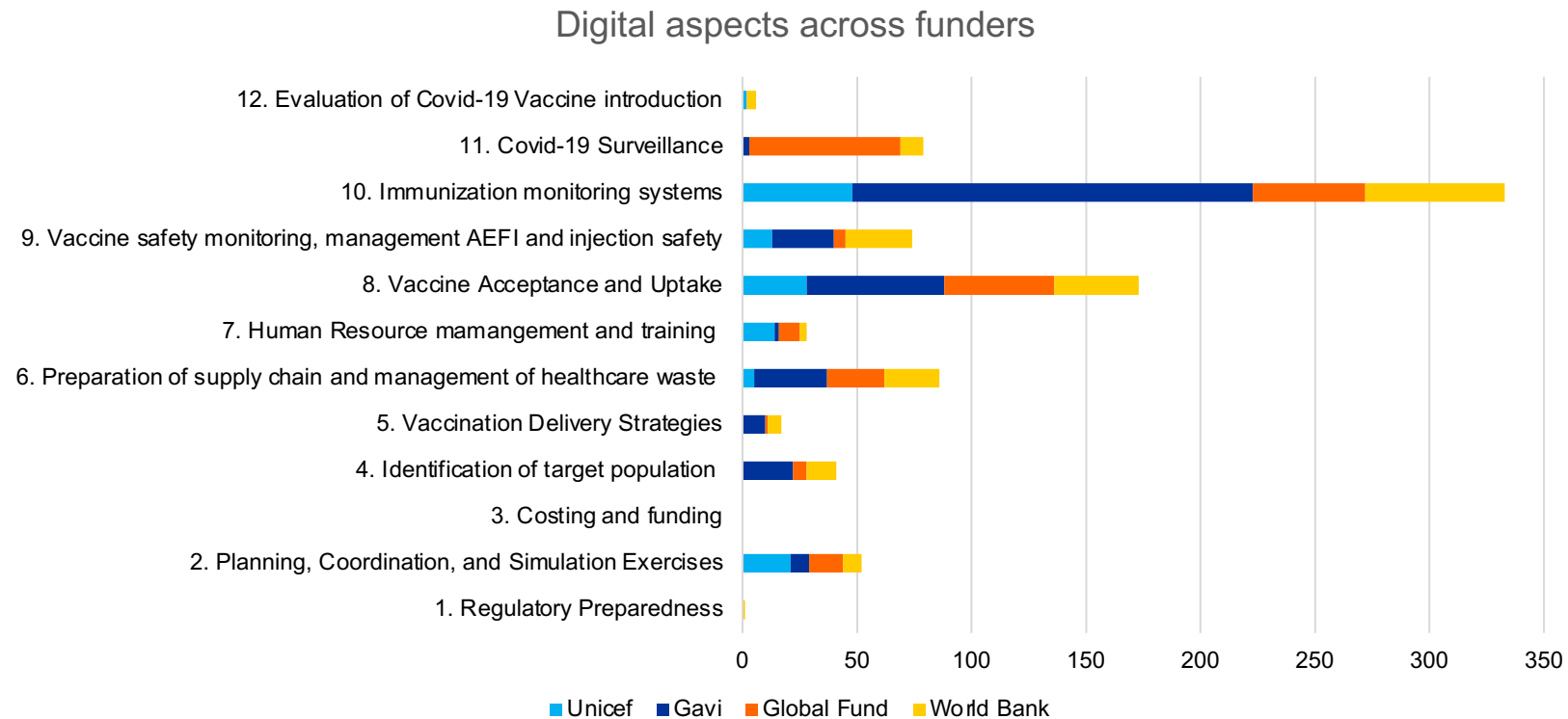


Activity 1. Description of applications - Funding



- In total, approximately 10 000 mUSD funded through the 373 application (of which 322 included at least one digital aspect – the 322 totalled ~9 500 mUSD). Based on granularity of the data available the project team assumes it is an overstatement to assume all funding was designated to digital systems and tools.
- Of the 9 500mUSD, the largest contributors were Global Fund and World Bank. Notably these were less specific in digital health aspects and do not provide the same granularity of CDS funding through UNICEF and Gavi.

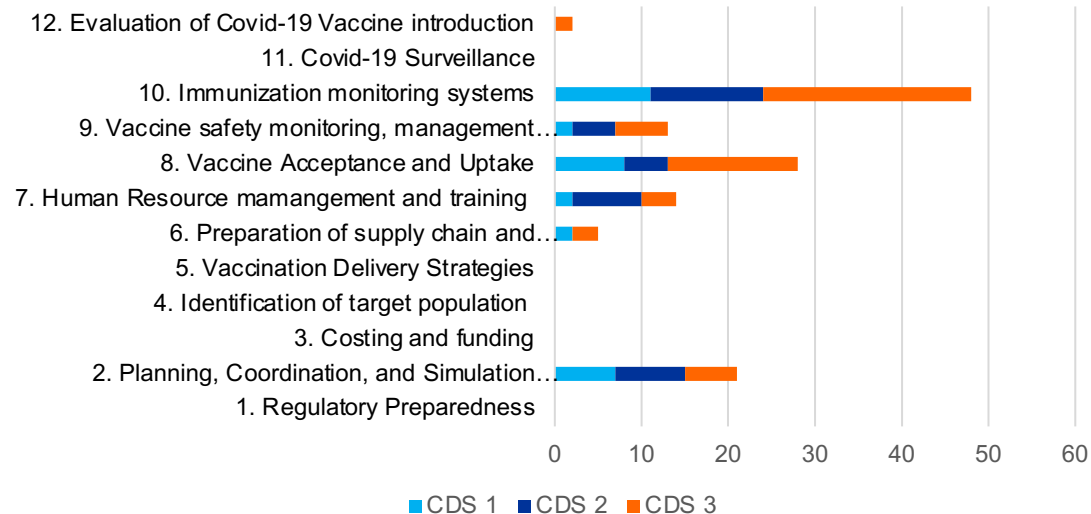
Activity 1. Digital aspects across funders



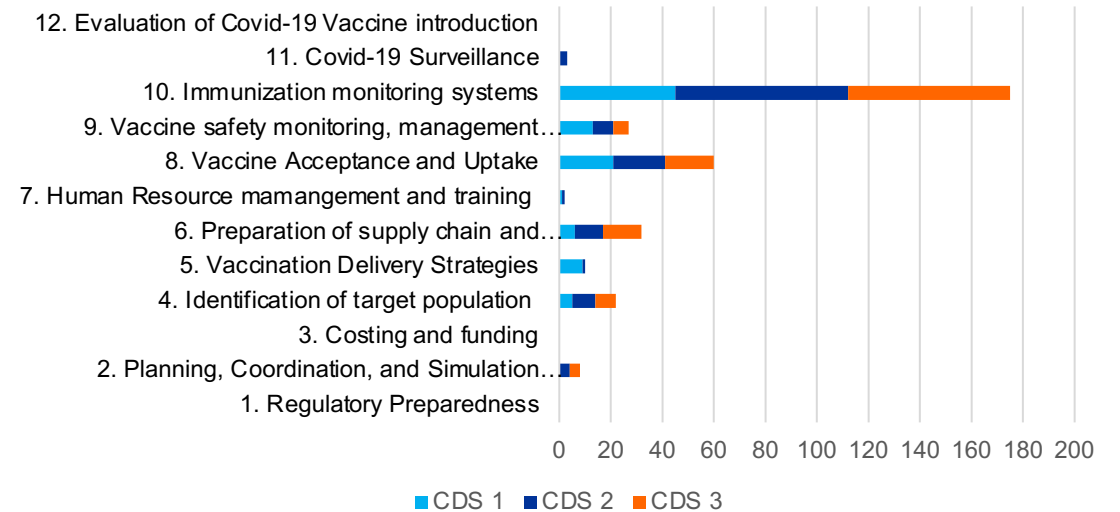
- UNICEF applications were focused on NDVP 2, 7, 8, 9 and 10 while Gavi applications were more focused on NDVP category 8, 9 and 10. Global Fund and World Bank applications included many digital aspects in NDVP category 6, 8, 10 and 11.
- The digital aspects follow the traditional and strategic focus of the different donors, however, there exists some overlap and potential duplication.

Activity 1. Digital aspects over time (only UNICEF and Gavi)

Digital aspects in Unicef CDS



Digital aspects in Gavi CDS

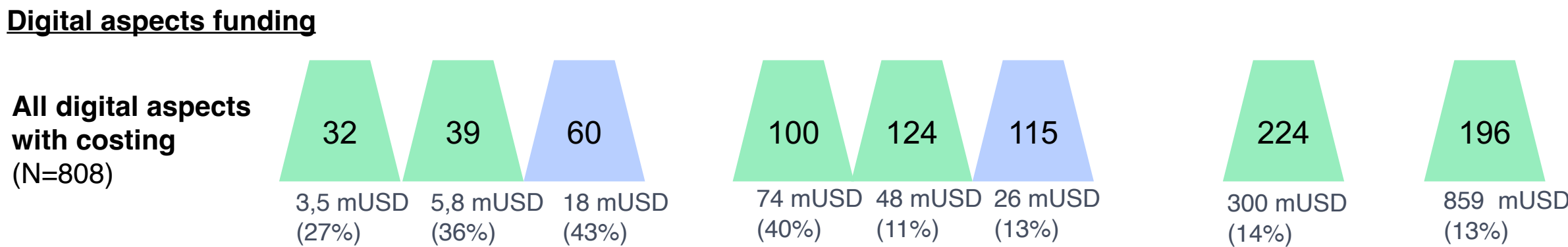
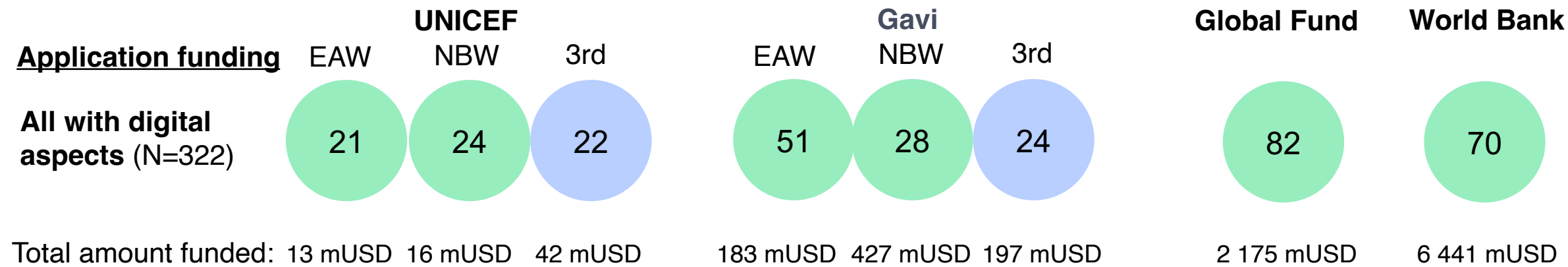


- UNICEF had a relatively high number of digital aspects to NDVP 8 and 2 which was almost constant over the funding windows, while Gavi had a relatively consistent higher number of digital aspects for NDVP 10.
- For both UNICEF and Gavi there was a shift over time of digital aspects to focus on 1) digital immunization monitoring systems, 2) update micro-planning to target hard to reach communities/low coverage area and 3) digital demand-generation activities to reach vaccine hesitant/low coverage populations in 3rd window.

Note: The difference in digital aspects can to some extent be attributed to the different profile of countries eligible for UNICEF or Gavi funding. Countries are only eligible for either UNICEF or Gavi.

Activity 1. Digital aspects over time - Funding

Prior included applications
New applications



UNICEF: Digital aspects and related funding increased over time, both in absolute and relative terms.

Gavi: More mixed picture, digital aspects have increased in relation to the number of applications across the windows, but the funding has decreased (both in absolute and relative terms).

Activity 2- Summary of approach shift pre- and post-pandemic

Pre

1. Donor speed and structure was not fast paced.
2. Strategies for funding digital were not well in place (piloted and unstructured investment)

During

1. Pandemic required fast pace.
2. A change in approach to supporting country needs quickly did not fully align with routine activities of funders

Post

1. Importance highlighted on structured digital investment and guiding countries on where to invest.
2. Importance of figuring out how to move fast but collect enough information highlighted.
3. More aware of the importance of country maturity level and lifespan of digital systems and sustainability

Study Activity 3: Coordination with AFRO – Sierra Leone and Ivory Coast country case examples

Sierra Leone

Key considerations with regards to the data

Ivory Coast

<u>Sierra Leone</u>		Key considerations with regards to the data	<u>Ivory Coast</u>	
Application funding	Nr digital aspects		Nr digital aspects	Application funding
Early access window	1	High level information on what countries wanted during the different funding windows. Limited in granularity and does not reflect actual investments.	0	Early access window
Gavi Needs based window	2		N/A	Needs based window Gavi
3rd window	N/A		3	3rd window
Global Fund	5		5	Global Fund
World Bank	2		3	World Bank
AFRO		Concrete country evaluation of immunisation information system. Does not consider what has been spent or other digital aspects that might be relevant.		AFRO
M&E assesment (July 2022)	Yes		Yes	M&E assesment (May 2022)
Operational plan	No		Yes	Operational plan

Activity 3: Ivory Coast- Digital aspects

Summary of funding applications

- Gavi EAW: 2 628 307. No digital aspect (almost all funding to vaccination staff).
- Gavi NBW: No application.
- Gavi 3rd: 13 849 726 USD
- Global Fund (June 2021): 34 722 521 USD
- World Bank (March 2021): 100 000 000 USD
- In total: **151 254 554 USD**

Funder (Window)	Description	Budget
Gavi 3rd	Equip the 49 priority districts with computer kits for the efficient management of immunization data.	120 975 USD
	Provide support for the digitization and validation of Covid and Routine immunization data. Provide support for internet connection to the 113 CPEVs, 113 CSEs and 3,000 vaccination centers for data entry into the DHIS2 at a cost of 5,000 CFA francs per month for 12 months.	347 750 USD
	Carrying out surveys, live chat, rumour tracking and awareness-raising on covid19 and routine EPI vaccination by reporters and young bloggers.	181 666 USD

Activity 3: Ivory Coast- Digital aspects cont.

Funder (Window)	Description	Budget
Global Fund	<p>Recruiting technical assistance to develop tools for remote supervision and coaching of the Community Health Directorate (national consultant fees for 21 days). Developing an online version of the COVID-19 prevention and community case management training module (National Institute of Public Health service fee)</p>	1 116 614 USD
	<p>Maintaining the community mechanism for real-time notification and monitoring of alert cases of diseases under surveillance and unusual health events, including COVID-19, via the health-intégrée mobile platform (INHP and Save the Children) (SCI budget No. 1404). 8. Quickly building capacity in the Field Epidemiology Training Program on COVID-19 in the 20 districts most affected by COVID-19 on data quality, analysis and interpretation, and on the use of innovative software (Center for Disease Control/African Field Epidemiology Network). 40. Integrating COVID-19 surveillance and periodic reporting, including on contact tracing, into existing geospatial information system platforms: a. Technical assistance to support the process of integrating surveillance into the geospatial information system b. Technical workshop to transfer data management from the private provider to the Health Information Systems and Information Directorate (DIIS) (workshop with 25 participants, three days, Abidjan);c. Consensus workshop on COVID-19 indicators (workshop with 25 participants, two days, Abidjan). 41. Investing in the integrated HIV, TB, malaria and/or cross-cutting data systems for periodic reporting and surveillance that require more funding than initially foreseen in the grants due to COVID-19</p>	1 748 423 USD
	<p>3. Developing messages and producing content to raise awareness of COVID-19, including vaccination, taking into account the needs of vulnerable groups: a. Recruiting specific technical expertise to produce messages, design culturally adapted content, taking into account the specific features of vulnerable groups, and testing them (flat rate for the communications firm): i. SMS, radio messages, TV messages, public posters, ads on websites, advertising banners, awareness-raising banners on the three diseases, flyers, etc.; ii. Three audio and video ads/sketches to raise awareness among PLHIV of the link between HIV and COVID, and of vaccination; three audio and video ads/sketches to raise awareness of the importance of TB control in the context of COVID-19; three audio and video ads/sketches on the importance of malaria control in the context of COVID-19; posters; digital videos; and banners for websites. g. Hiring technical assistance to upgrade data masking and integrate a COVID-19/human rights and access to treatment field (national IT consultant fee for five days).</p>	549 902 USD
	<p>Quickly building capacity in the Field Epidemiology Training Program on COVID-19 in the 20 districts most affected by COVID-19 on data quality, analysis and interpretation, and on the use of innovative software (Center for Disease Control/African Field Epidemiology Network). Strengthening community surveillance based on the event-based surveillance strategy in the 20 districts most affected by COVID-19, including CSO community monitoring committees and contact tracing carried out by pooling the community mechanism for real-time notification and monitoring of alert cases of diseases under surveillance (Center for Disease Control/African Field Epidemiology Network).</p>	1 015 580 USD
	<p>Recruiting technical assistance (TA) to develop and implement plans to link laboratory data with key epidemiological data to enable rapid data analysis and interconnectivity with digital medical records, logistics management information systems and health management information systems:</p>	302 473 USD

Activity 3: Ivory Coast- Digital aspects cont.

Funder (Window)	Description	Budget
World Bank	The AF will cover costs to: (a) support health district teams and supervisors at the central level investigate severe cases and clusters of AEFIs; (b) ensure the coordination and functionality of the technical and expert structures involved in the management of AEFI, including the Ad hoc committee of AEFI experts; (c) collect and transport biological samples from cases of AEFI to designated laboratories, and analysis of samples (d) develop and adapt tools and guidelines for M&E of the vaccination campaign and to detect AEFIs; (e) implement an electronic notification system for cases of AEFI;	N/A
	(iii) information dissemination and collection to ensure that information on COVID-19 is consistent and channeled through a limited amount of recognized platform (e.g. training on effective communication or communication officers within the MSHP, development of a website that serves as the main platform to disseminate COVID-19 related information, production and dissemination and mass media campaigns through radio, television, SMS, newspaper, internet and social media).	1 900 000 USD
	This sub-component will continue to support national-level M&E of prevention and preparedness interventions, and support capacity building in M&E. These include: (i) the adaptation of international tools and / or the revision of existing tools and systems (e.g. Health Management Information System (HMIS), GTS, District Vaccination Data Management Tool (DVDMT), etc.); (ii) the acquisition of tablets and the configuration for the collection and transmission of data via DHIS2; and (iii) M&E of the distribution of the COVID-19 vaccine, including for AEFI; (iv) capacity building of local immunization actors on new tools and the strengthening of existing data and monitoring systems (immunization and public health) to allow the monitoring of the deployment of COVID-19 vaccines and the continuous monitoring of routine immunization; (v) the implementation of a baseline sero-prevalence study; and (vi) several studies and surveys related to the vaccination campaign.	5 600 000 USD

- Overlap of digital aspects, particularly concerning vaccine acceptance/demand, Covid-19 surveillance and immunization monitoring systems.
- All funding either in 2021 (World Bank, Global Fund) or in late 2022 (Gavi 3rd).

Activity 3: Ivory Coast - Digital aspects cont.

WHO AFRO Assessment May 2022

Tools used at vaccination sites	Electronic tool	Offline record exist	% if vaccination sites using electronic tool	% of data archived on electronic platform	Collection of aggregate data outside the electronic tool	Means of transmission for daily/weekly reports	Report based on data from the electronic platform	Data on vaccination status on new cases in treatment centres collected	Management of the platform
Electronic and paper-based	DHIS2 & SAH analytics. Realtime synchronization. Individual and aggregate data.	No	55	10	Yes	DHIS2	Yes	No	Completely outsourced

Activity 3: Ivory Coast - Digital aspects cont.

WHO AFRO Operational plan July-December 2022

Description	Budget
Acquire tablets for data entry in the immunization sites	183 762 USD
Acquire laptop computers for data management in the health districts	72 347 USD
Train the data entry agents at the immunization sites	135 852 USD
Provide mobile data (Data) to the immunization sites	30 537 USD
Provide mobile data (Data) to the health districts	4 542 USD
Data harmonization and validation meeting	80 386 USD
Train the data entry agents responsible for catching up on data entry	44 453 USD
Compensation for data entry agents	321 029 USD
Mobile data for the transmission of data in the context of catching up	4 180 USD
Supervision of agents in training and monitoring of data entry	32 154 USD
SAH Analytics and DHIS2 platform interoperability meetings	4 823 USD
Recruit a NOB consultant to support the DCPEV in coordinating activities to strengthen the management of COVID-19 immunization data	13 666 USD
Total	927 731 USD

Activity 3: Sierra Leone - Digital aspects

Summary of funding applications

- Gavi EAW: 967 689 USD
- Gavi NBW: 2 444 155 USD
- Gavi 3rd: No application
- Global Fund (Aug 2021): 31 551 255 USD
- World Bank (May 2021): 8 500 000 USD
- In total: **43 463 099 USD**

Funder (Window)	Description	Budget
Gavi EAW	Human resource to support, printing of vaccine data collection data collection tools, supportive supervision, procurement of electronic tablets for real time data capture,	135 476 USD
Gavi NBW	Procurement of Computers and Assesseries for M &E. The capacity of the M& Team will be strengthened from national to district level. This will include support for training of district M&E, district data entry clerks and vaccination teams on DHIS2, security of the data in the backend, coordination with various stakeholders for timely provision of data bundles, incentives for data clerks, support for printing and distribution of the reporting tools and supporting district teams in monitoring of the data at the national level and regular supervision at district and vaccination sites.	3465 USD
Gavi NBW	The training on DHIS2 Online vaccine stock management tools will be conducted for effective stock management across supply chain levels. This will facilitate stock visibility at the sub-national level real time. This visibility will lessen vaccine wastages at the districts; as stock adequacy and other immunization supply chain performance will be monitored real-time.	N/A

Activity 3: Sierra Leone - Digital aspects cont.

Funder (Window)	Description	Budget
Global Fund	<p>Training of Staff on Case Identification and Reporting - FETP Intermediate Training. Graduates will support the following activities:</p> <ul style="list-style-type: none"> a. Use of digital tools (eCBDS and eIDSR) for case investigation, contact tracing and remote follow up for contact and quarantine monitoring including cross-border surveillance b. In-service trainings for health care workers on hospital based active case search and COVID-19 co-infection screening for influenza like illness (ILI)/ severe acute respiratory infections (SARI), TB, etc. c. Support monitoring of case and contact data to identify trends and hot spots. <p>5. Integrating mortality surveillance into the routine reporting in the existing HMIS platform - TA for Development of the mortality surveillance system</p> <p>6. Integrating mortality surveillance into the routine reporting in the existing HMIS platform - Data collectors training.</p>	362 949 USD
	<p>Surveillance systems: Specific activities to be supported under this intervention are:</p> <ul style="list-style-type: none"> 1. Strengthening reporting and collection of data on mortality 2. Rolling out the Electronic Case-Based Disease Surveillance system (eCBDS) for tracking of cases 3. Strengthening current electronic integrated disease surveillance and response systems (eIDSR) 4. Conducting periodic assessments to determine level of improvement of health facilities and community system for responding to the COVID-19 outbreak. 5. Establishing an M&E system for COVID-19 response and integrate into the current M&E systems. 6. Establishing an electronic laboratory information management system (LIMS) 7. Establishing systems for virtual training of health workers and CHWs through videos, webinars on the COVID-19 response and new approaches to case management. 	695 140 USD
	<p>Supply chain activities: 1. Quantification of COVID-19 product needs (Forecasting, supply planning and capacity building) 2. Procurement of COVID-19 health products for facilities and programs. 3. Distribution of health products from Central Medical Stores to Healthcare facilities nationwide 4. Rollout of mSupply software to select facilities as a pilot to 20 Peripheral Health Units, review and follow up visits to selected districts. This is realistic because there is a firm knowledge base from the previous rollout exercises at the districts.</p>	1 390 484 USD
	<p>M-supply: Adapt and apply existing Health Management Information Systems to monitor progress and coverage among different at-risk and marginalized groups in order to facilitate vaccine delivery and timely reporting. Other activities that will enhance data management include: recruitment and training of data clerks at the national and district level to support DHIS 2 and AEFI data entry, as well as printing of vaccination cards, registers, and screening forms. Provision will also be made for laptops, modems, data bundles and annual internet subscription for national supervisors for data quality management.</p>	563 722 USD
	<p>Training to revise campaign operational and microplan to enhance digitalization of operations including:</p> <ul style="list-style-type: none"> a) geo-referencing /digital location mapping, b) adaptation of digital/mobile tools to enhance efficiency and minimize crowding during the LLINs distribution. 	280 274 USD

Activity 3: Sierra Leone - Digital aspects cont.

Funder (Window)	Description	Budget
World Bank	<p>The COVID-19 vaccines stock monitoring is being built on the existing vaccines Stock Management Tool (SMT) at the national and district levels. The SMT has daily reports on doses received, stocks utilized, and the balance by the vaccination teams.</p> <p>COVID-19 vaccination cards are issued with serial numbers. All the data in the DHIS2 will be analyzed daily and put in a dashboard at both the national and district levels to enable decision-makers to make informed decisions in a timely manner. A beneficiary and vaccine electronic tracking system has also been developed, linking it to the existing DHIS2. Both electronic and paper-based monitoring tools were developed, linking to the DHIS2. GRM specific to COVID-19 vaccination is not established. Training in electronic data entry to the vaccine surveillance system has been completed in three districts (Western Urban, Western Rural and Port Loko). The support includes training of district vaccination teams in data entries to effectively utilize the developed vaccine surveillance system, which is linked to the DHIS2.</p>	3 500 000 USD

- Overlap of digital aspects, particularly concerning supply chain, Covid-19 surveillance and immunization monitoring systems (DHIS2).
- All funding during 2021.

Activity 3: Sierra Leone - Digital aspects cont.

WHO AFRO Assessment July 2022

Tools used at vaccination sites	Electronic tool	Offline record exist	% if vaccination sites using electronic tool	% of data archived on electronic platform	Collection of aggregate data outside the electronic tool	Means of transmission for daily/weekly reports	Report based on data from the electronic platform	Data on vaccination status on new cases in treatment centres collected	Management of the platform
Electronic and paper-based	DHIS2 tracker, synchronization daily, individual data.	No	8	43	Yes	Excel template via email, Phone calls, Whatsapp	No	No	Completely outsourced

Activity 3: Philippines - Digital aspects

Summary of funding applications

- UNICEF EAW: 4 914 708 USD No digital aspect (Most for staff and transportation costs).
- UNICEF NBW: 4 500 000 USD
- UNICEF 3rd: 9 055 130 USD
- Global Fund (June 2021): 18 433 413 USD
- World Bank (March 2021): 500 000 000 USD
- In total: **536 903 251 USD**

Activity 3: Philippines – UNICEF Digital aspects cont.

Funder (Window)	Description	Budget
UNICEF NBW	Demand generation materials and activities, social mobilizers and updating of KIRA chatbot	1 928 449 USD
	Hosting of the epidemiology data insights platform used by Covid-19 surveillance and quick action unit to automat the process of data extraction, deduplication and transformation of Covid-19 related data	291 123 USD
UNICEF 3rd	Microplanning activities will be conducted especially as the coverage of routine vaccines has been declining over the past years. This will capacitate the implentors on identifying their priority communities, addressing bottlenecks, and developing work plans with solutions. These activities shall include integration of COVID-19 and routine vaccination. Conduct of 55 microplannning sessions with situational analysis; Conduct of 75 intersectoral collaborative and partner mobilization meetings; Conduct of 65 microplanning sessions re-visit and program review; Conduct of 65 health leadership and management program for local leaders; Conduct of 58 operational planning sessions	1 952 530 USD
	This is to ensure that the activities included in the microplans are effectively being implemented, and to resolve gaps and problems identified during the implementation of routine and COVID-19 vaccination.1 Printing of immunization charts. 637 Printing of monitoring tools. 66 Collection of coverage data, supportive supervision and mentoring . 90 Support for intensified and integrated monitoring visits in priority areas	434 597 USD
	The proposed guidelines in NIP AEFI Surveillance will be patterned after the current structure for COVID-19 Vaccines. This will ensure that the new processes and the new information system (AEFI InfoSys) will be properly cascaded to the health facilities. This will also ensure that the data collected through the system will be properly processed and managed, as well as give new insights in data analytics.	896 194 USD

Activity 3: Philippines – Global Fund Digital aspects cont.

Description	Budget
<p>Expansion of the OHCC dashboard for Telemedicine. The OHCC has shown success in the national capital region being a virtual platform to refer COVID-19 cases to care facilities. It is a promising platform model to integrate telehealth services for COVID-19 and for other diseases in the future. Under this FR, the telehealth services will be designed and implemented to address the expressed need among KAP for a robust virtual platform to increase patient literacy and client access to specialized services. The funding request will augment GOP funding to upgrade the OHCC Dashboard by developing its telehealth virtual service packages and procure additional computers, phones, and software to accommodate more clients.</p>	2 908 390 USD
<p>Develop the Primary Care Tracker. There is a wide gap in data collection to measure progress towards Ambisyon 2040 and the UHC goals. Although there are existing health registries and information systems which regularly collect data on certain diseases and/or health conditions, these data may not be readily available to the public and to local governments for informed decision making. Data on different SDG and National Objectives for Health indicators, disaggregated by sex, age, and geographic location down to the municipal level, need to be disseminated to foster community vigilance and trigger public health actions. Visualizing these data through a Primary Care Tracker Dashboard in a DOH Microsite would enable the different stakeholders, including local chief executives, to assess, plan, monitor and evaluate the health status and investments in health care in the communities.</p>	476 911 USD
<p>Upgrade the laboratory information management system: Equally important, the laboratory information management system is for the most part, manually implemented and the FR will support the development of a patient-centered laboratory information system like the “BalikPinas” App used OWWA.</p>	200 000 USD
<p>Conduct of COVID-19 Surveillance Research. Aside from collecting and analyzing data from COVID-19 surveillance, we also aim to pursue research and development projects that will enrich our current body of knowledge on COVID-19, improve current surveillance processes, policies and decision making related to COVID-19. FR will support research agenda setting and research & development project implementation and for COVID-19. Possible fields of study may include: (1) Epidemiologic Studies, (2) Health Policy and Systems Research, (3) Biosurveillance, and (4) Operations Research. Deployment of additional disease surveillance officers. The National Government is currently finalizing plans to transfer many of the service delivery functions of the health sector from the DOH to the local government units in accordance with the provisions of the Universal Health Care Act and a Supreme Court ruling mandating an increase in the funds allocated to local government. For surveillance systems, this would mean that many of the functions being conducted by the Regional Epidemiology and Surveillance Units (RESUs would have to be shifted to the Local Epidemiology and Surveillance Units (LESUs), including the hiring and assignment of Disease Surveillance Officers (DSOs). In this set-up, the functions of Disease Surveillance Officers shall be expanded. Apart from acting as coordinators between the LESUs, RESUs, and health facilities, they shall also be expected to:</p> <ol style="list-style-type: none"> 1. Perform burden of disease estimates. 2. Conduct case investigation for events-based surveillance. 3. Ensure compliance of selected labs to applicable sentinel surveillance guidelines. 4. Ensure proper encoding of data into national surveillance systems. 	642 427 USD
<p>Development of a patient-centered surveillance data platform. Considering the high use of mobile technology among Filipinos, having a mobile application that is connected to the national information systems will aid in making the individual case and contact monitoring, efficient.</p>	200 000 USD

Activity 3: Philippines – World Bank Digital aspects cont.

Description	Budget
<p>The project will use existing web-platforms/mobile phones to gather citizen feedback on local primary health care providers and transmit the information in real time to the responsible government body on: (i) treatment received or denied; (ii) availability of vaccines; (iii) potential side effects and additional treatment; and (iv) other challenges faced by the beneficiaries at the time of visiting the clinic including voicing grievances.</p> <p>In addition to routine immunization recording, digital certification—i.e., daily records documenting who received the vaccine from which vial and batch—will be maintained, as well as records of any adverse vaccination effects. Project M&E should ensure a mechanism to review the capacity of the national health systems to deploy vaccines universally and to reach isolated and marginalized communities and others difficult to reach. The M&E will also collect disaggregated data and information on coverage and adverse events by gender, demography, indigenous people status, location- residence, socioeconomic status, and disability. IBM will be crucial in light of the high levels of vaccine hesitancy in the Philippines. IBM could specifically generate information for the GOP on: (i) the delivery and reception of vaccines; (ii) targeting of beneficiaries; (iii) awareness by the targeted population of the program; and (iv) digitalization and implementation of new tools.</p>	7 500 000 USD
<p>To effectively address vaccine hesitancy, the component will finance public advocacy, behavior change communication, and community engagement for public acceptance of and demand creation for the COVID-19 vaccine; social and audio programs to inform planning and implementation of communication activities and also to identify and address possible misinformation and reinforce trust; social mobilization of various stakeholders—in particular mobilization of healthcare workers using UNICEF's interpersonal communication for immunization package adopted to the Philippines context.</p>	Not specified.