



COVID-19 vaccination integration assessment

Ghana Case Study
April 2024

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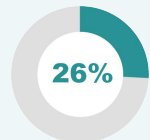
Background



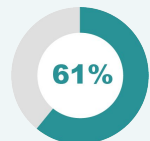
Background and Rationale

Despite progress in COVID-19 vaccine introduction, global **coverage remains suboptimal**:

By April 2023, overall population coverage:



Low-income countries: 26% fully vaccinated¹



Lower middle-income countries (LMICs): 61% fully vaccinated

Countries anticipate **waning financial, technical, and vaccine support** from external partners as the pandemic transitions.

Integration* is a key **strategy for long-term sustainability of COVID-19 vaccination**.

The study will generate evidence on **how LMICs including Ghana have and plan to integrate COVID-19 vaccination with health systems**.

¹GAVI. 2023. COVID-19 vaccine coverage continues to increase in low-income countries.

<https://www.gavi.org/vaccineswork/covid-19-vaccine-coverage-continues-increase-lower-income-countries#:~:text=Gavi%27s%20latest%20COVAX%20data%20brief.a%20global%20average%20of%2066%25>

*By integration, we mean the degree to which COVID-19 vaccination has been or will be merged with other components of the health system in terms of governance, management, service delivery, procurement, supply chain, information systems, financing, and service delivery—including integration with other essential health services (e.g., antenatal care [ANC], human immunodeficiency virus [HIV], noncommunicable diseases [NCDs], routine immunization [RI]).

Multi-country Assessment Methods and Scope



Assessments in:

Benin	India (Tamil Nadu state)
Ethiopia	Mozambique
Ghana	Nigeria
Liberia	

Country selection criteria:

- Innovators in integration.
- Performance on COVID-19 vaccinations and routine immunization (RI).
- USAID target or Pfizer priority countries.
- Geographic contexts.

Data collection:

Key informant interviews with stakeholders involved in implementing integration activities and broader health system strengthening efforts:

- Ministry of Health (MOH), COVID-19 task force officials.
- National Expanded Program on Immunization (EPI) and National Immunization Technical Advisory Group (NITAG) members, heads of COVID-19 vaccination units at subnational levels.
- Development partners/agencies.
- Civil society organizations, implementing partners, public and private providers.

Focus group discussions (FGDs) with health workers.

Ghana Background



According to the Ghana Health Service (GHS), as of January 3, 2024, COVID-19 primary series¹ vaccination rates were:

- **Eligible population²:** 57%.

Priority groups for vaccination:

Phase 1: Health workers; frontline security personnel; persons with underlying medical conditions; persons 60 years and above; religious leaders; and executive, legislature, and judiciary staff.

Phase 2: Other essential service providers and security agency staff.

Phase 3: General public (all people over 18 years, except those who are pregnant).

Phase 4: Pregnant people and people under the age of 18.

¹Two doses for most COVID-19 vaccines available in the country, except Johnson & Johnson vaccine, whose primary series requires only one dose.

²Eligible people in Ghana are those aged 15 and above

COVID-19 Vaccination in Ghana

COVID-19 vaccine rollout started March 1, 2021 and focused on three of the most affected administrative regions: Greater Accra, Ashanti, and Central. These regions included 43 hotspot districts.

The GHS supplies COVID-19 vaccines, which are administered at no cost to priority groups at health facilities, schools, parks, police stations, churches, taxi stations, etc.

Vaccine brands administered in Ghana include AstraZeneca, Janssen, Moderna, Pfizer-BioNTech, and Sputnik-V.

Vaccine rollout depended on the availability of vaccine cold storage units which the EPI uses for RI.

The EPI was responsible for managing and monitoring vaccine supply, logistics/equipment, and implementation of vaccination strategies tailored to particular populations.



Summary of COVID-19 Vaccination in Ghana



36.9M 

Total COVID-19 vaccine doses received.

28.5M 

Total COVID-19 vaccine doses administered.

14.8M 

Persons receiving at least one dose
(71.6% of 20.7M target)

11.7M 

Persons receiving primary series of vaccination
(56.7% of 20.7M target)

Assessment Objectives

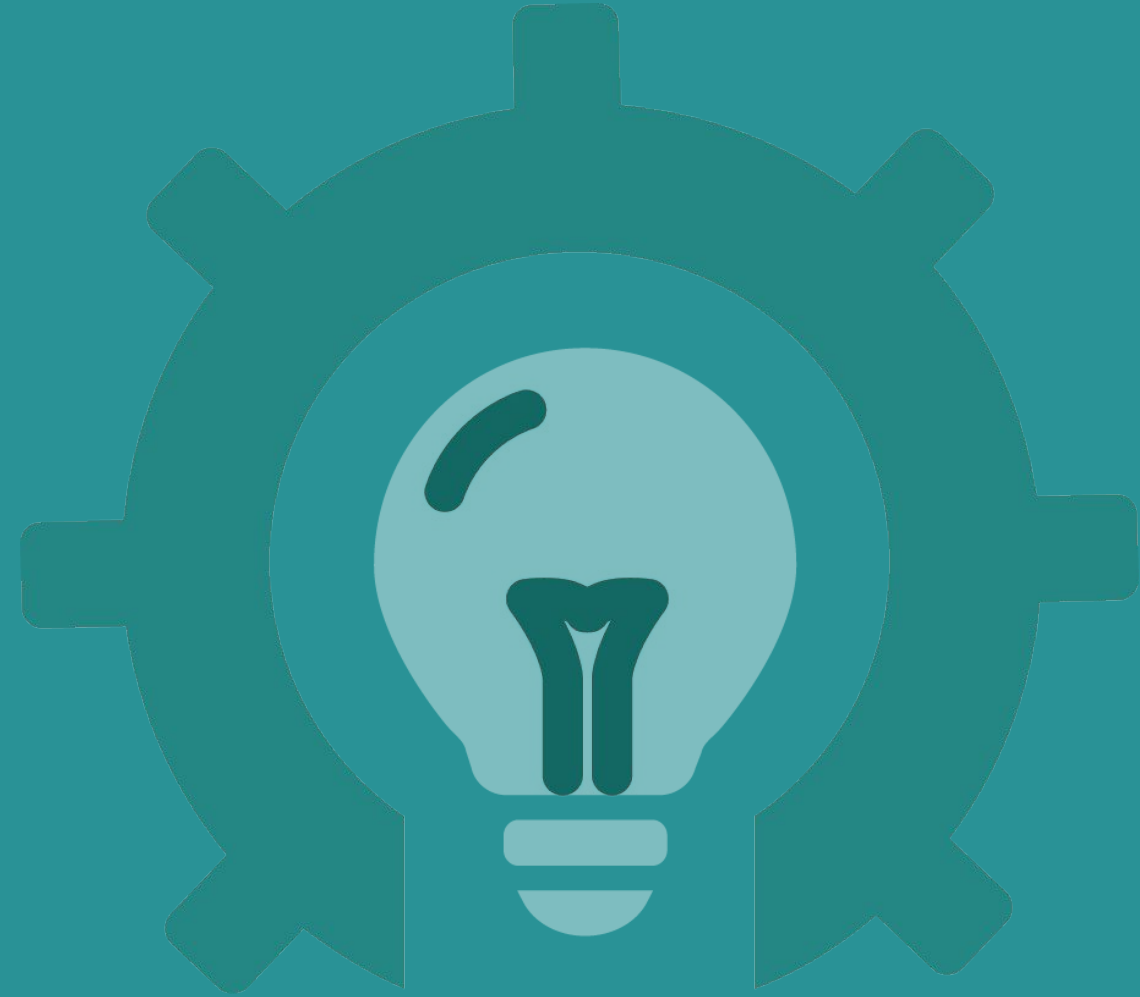


Assess the status and thinking about the future integration of COVID-19 vaccinations for priority groups with essential health programs and health system functions.



Compile lessons about the integration of COVID-19 vaccinations from the urgent response phase of the pandemic.

Methods



Research Questions

1

What have governments planned for sustaining COVID-19 vaccinations for priority populations?

2

What is the thinking/decisions concerning the operational integration of COVID-19 vaccinations with:

- Other essential health services.
- Other health system and vaccination functions.

3

How are COVID-19 vaccinations planned to be (or already are) part of:

- Overall health strategies.
- Immunization strategies.
- Monitoring and evaluation systems.
- Budgeting.

4

How has integration with other essential services or health system functions helped or hindered equitable access to COVID-19 vaccination?

5

What lessons were learned from integration (or lack thereof) of COVID-19 vaccinations during the urgent pandemic response period?

Methods



Desk review of key documents globally and for each country.



Advisory group input on the approach, facilitation of collaboration, review of findings, and assistance with dissemination.



Qualitative data collection (conducted Nov–Dec 2023):

16 key informant interviews with national and sub-national government staff and implementing and development partners.

FGDs with health workers in three districts in the Greater Accra region (one per district).

To obtain representative data, the selection of districts for FGDs included urban (Ga Central District); peri-urban (Shai Osudoku District); and rural (Ada East District).

Analysis

Notes were produced to summarize each interview and FGD, guided by audio recordings to fill in gaps.

Analysis was conducted using Atlas.ti software.

- Deductive and inductive coding approaches were used.

Inter-coder reliability was ensured through discussions, group coding exercises, and principal investigator quality checks.

To summarize the extent of integration into other health services and system functions, the research team used a maturity scale,¹ assigning values based on data analysis and reflecting maturity at the current stage:

- 1 **limited/no** integrated activities.
- 2 **opportunistic** integration without planning.
- 3 strategic **plans exist/beginning** deployment.
- 4 integration **implementation underway** with some gaps.
- 5 **highly integrated** and sustainable.

¹Adapted from: [WHO/UNICEF, 2023. Operational framework for demand promotion: Integration of COVID-19 vaccination into routine immunization and primary health care](#))

Research Findings

Ghana



Current Situation: COVID-19 Vaccination

COVID-19 vaccination has slowed across Ghana, with services now primarily available upon request. The decline is attributed to vaccine shortages and limited demand generation.

“We planned to hold vaccination campaigns in secondary schools but could use only the Pfizer vaccines because of the age of the students and didn’t have enough vaccines”

- Implementing partner

“I would wish that, GHS in collaboration with the media and the social media would intensify health education on the need of the COVID vaccination. It’s like when you watch our TVs now, we have less information on COVID-19 vaccination. So to people it’s like it is no more in the system, to people there is nothing.”

- Vaccinator, peri-urban district

Nonetheless, the GHS continues to administer COVID-19 vaccinations through community outreach efforts and at health facilities.

“At my facility, we have set up a stand for the COVID-19 vaccination. Some come on their own for the vaccine. Some of the mothers too, when they come around, we talk to them about the availability of the vaccine.”

- Vaccinator, peri-urban district

Research Question 1:

What have governments planned for sustaining COVID-19 vaccinations for priority populations?

Plan for Sustaining COVID-19 Vaccinations

The sustainability of COVID-19 vaccination delivery will be ensured through its integration into the RI program.

EPI/GHS engaged national and sub-national development and implementing partners to develop the COVID-19 Integration Plan 2023. COVID-19 integration began in February 2023.

Sub-national implementers indicated that they have seen the effects of the integration plan.

“I know it has been included on paper. Because our reporting format has changed, our registers have changed and our target groups have changed meaning that certainly, we are into continuation of vaccination.”

- Sub-national implementer

Plan for Sustaining COVID-19 Vaccinations

The EPI developed the National Immunization Strategy for 2025–2030 which calls for specialized clinics to administer COVID-19 vaccination services. The specialized clinics are service delivery clinics where vaccination services are offered on specified days, e.g., ANC clinics, NCD clinics, ART clinics, etc.

“Yes, we started working on the national immunization strategy to include COVID-19 vaccines. We've finished the first draft. Once it goes through the system and the DG approves of it, it will go through the NITAG.”

- Immunization expert

The National Policy Guidelines on Immunization 2023 has been updated to include COVID-19.

The Comprehensive Multi-Year Plan 2020–2024 emphasizes integrating COVID-19 vaccination into regular immunization programs.

More information on COVID-19 vaccination integration into health and immunization strategies, monitoring, evaluation, and budget planning can be found in the research question 3 results on page 31.

Research Question 2:

What is the thinking/decisions concerning the operational integration of COVID-19 vaccinations with:

- Other essential health services (e.g., antenatal care [ANC], non-communicable diseases [NCDs], HIV, TB, primary health care[PHC])
- Other health system and vaccination functions (e.g., service delivery, human resources, training, procurement, cold chain, supply/distribution systems, information systems, demand generation, supervision, and community engagement)?

Status of Integration of COVID-19 Vaccinations with Health Services

The maturity of integration into health services and health system functions is in the strategic planning or beginning of deployment stage.



The purpose of including COVID-19 vaccinations in immunization guidelines and strategies is to integrate them with maternal and child health services (RI, antenatal care, family planning) and other chronic and follow-up services like HIV, TB, and NCDs.



The EPI is the main coordinator and implementer of COVID-19 vaccination integration.



Some implementing partners observed that the national policy guidelines on immunization permitted COVID-19 vaccines to be given during special clinic days at health facilities.

Status of the Integration of COVID-19 Vaccinations with Other Health Services

Health program	Maturity scale*	Explanation
RI	4	<p>Urgent phase: Health workers were given guidelines to provide COVID-19 vaccination with RI services. Integrated COVID-19 and RI services were provided at the facility level and during mobile deliveries.</p> <p>Planned: RI teams at the facility level will continue to provide COVID-19 vaccinations through outreach and facility based delivery.</p>
ANC	2	<p>Urgent phase: Vaccination of pregnant women was phase 4 of prioritization. COVID-19 vaccines were provided in ANC clinics at the health facility level. Additionally, health care workers mobilized pregnant women in communities during outreaches. Most pregnant women were hesitant to vaccinate due to fear of harm against unborn child.</p>
Programs for immunocompromised people (e.g., HIV, TB)	2	<p>Urgent phase: Public health facilities with HIV clinics educated and motivated patients to get COVID-19 vaccination. Nonetheless, HIV stigma was a barrier to getting vaccinated.</p> <p>Planned: According to the new immunization strategy, COVID-19 vaccines will be provided at ART clinics.</p>
Programs for older adults and/or NCD programs	2	<p>Urgent phase: Health workers facilitated awareness among older adults and motivated older people with underlying conditions to get all COVID-19 vaccination doses.</p> <p>Planned: The integration plan advocates for health workers to receive COVID-19 vaccines during outreaches and at specialized clinics. This ensures their availability to vaccinate older adults promptly in response to public education initiatives.</p>

*Values assigned based on research team's analysis of data, reflecting maturity at current stage. Scale: **1=limited/no** integrated activities; **2=opportunistic** integration without planning; **3=strategic plans exist/beginning** deployment; **4=integration implementation underway** with some gaps; **5=highly integrated** and sustainable.

(Source: [WHO/UNICEF, 2023. Operational framework for demand promotion: Integration of COVID-19 vaccination into routine immunization and primary health care](#))

Operational Integration Modalities

Two approaches for static service delivery modalities have been proposed:

- 1 Integrate COVID-19 vaccination at outpatient departments since all patients are first required to report there.
- 2 Include the COVID-19 vaccine in the RI schedule.

Participant Perspectives on Future Integration Direction

Key informants and FGD participants mentioned three strategies for integrating COVID-19 vaccination in the future.

Option 1

Integrate COVID-19 vaccination with RI to facilitate health worker access to mothers. Procure additional cold chain equipment to ensure health workers have sufficient space for COVID-19 vaccines.

Option 2

Administer COVID-19 vaccines at the outpatient department.

Option 3

Align COVID-19 vaccination schedule with those for polio and measles to make it easier for caregivers and harder to forget.

Some participants opposed integrating COVID-19 vaccination with RI and other services due to concerns about overburdening already understaffed health workforce.

Integration with Governance and Management

National and subnational informants had similar responses about governance and management.



The governance structure for COVID-19 parallels that of RI, with the MOH overseeing both. During the emergency phase, COVID-19 governance included an inter-ministerial committee chaired by the President. Currently, the Health Sector Working Group, NITAG, Inter Agency Coordinating Committee, and GHS support vaccine administration and coordination.



The governance structure at GHS extends from national level to regional, district, subdistrict, facility and community levels. The district director leads the district health management team (DHMT), in overseeing COVID-19 vaccine integration.

Integration with Supply Chain Management



Supply system: COVID-19 vaccines received at the national level are distributed to regions, districts, subdistricts, facilities, and communities. The national/central level has cold rooms with enough space to accommodate any quantity of vaccines.



Progressive integration with the existing RI system: During the urgent phase of the pandemic, COVID-19 vaccines were stored separately at the national level and distributed to regions; at the operational level, COVID-19 and RI vaccines were stored in the same refrigerators. Since the post emergency phase, storage and distribution have been integrated with the RI infrastructure and processes, following respective temperature requirements.

“COVID-19 vaccines were not stored and distributed with routine vaccines in one cold van. This time, we've integrated them. We put them together depending on the temperature requirements.”

- Implementing partner

Integration with Procurement Processes



GAVI & UNICEF supported the government of Ghana to procure equipment such as ultra cold machines and high-capacity refrigerators.



Vaccine procurement is carried out as an agreement between MoH and its partners including GAVI, UNICEF, JICA, and UPS.



COVID-19 vaccine procurement will require accurate forecasting and quantification to avoid running out of stock or overstock, which could lead to shortages and expiry, respectively.

Status of the Operational Integration of COVID-19 Vaccinations with Other Health System Functions (1/3)

Health system building block	Maturity scale rating	Explanation
Leadership and governance	4	<p>Urgent phase: An inter-ministerial committee chaired by the President of Ghana was created to support the Ministerial Advisory Board headed by the Minister of Health. There is the interagency committee for immunization (responsible for monitoring and policy supervisory role) and the technical wing, through which NITAG advises the Minister. GHS is responsible for the daily administration and vaccination deployment.</p> <p>Planned: The Health Sector Working Group chaired by the Minister of Health will be the highest decision making body under the integration plan.</p>
Service delivery	3	<p>Urgent phase: Trained vaccinators and other paramedical staff including supervisors and data entry operators were deployed from primary health care centers and hospitals to COVID-19 vaccination campaigns.</p> <p>Planned: Public health facilities will continue to deliver COVID-19 vaccines alongside RI antigens and conduct community engagement with logistical support from development partners.</p>
Health system financing	3	<p>Urgent phase: The government created budget line items for COVID-19 response activities - reflecting its significance in GHS planning and implementation efforts. Funds were allocated for cold chain management, vaccine transportation, and remuneration of staff from different units who were assigned to vaccinate. These financing modalities strengthened the logistics infrastructure for COVID-19 and RI vaccination and motivated vaccination staff. However, health workers complained about the delay and insufficiency of payments by the government.</p> <p>Planned: The same funding arrangement will be used.</p>

Status of the Operational Integration of COVID-19 Vaccinations with Other Health System Functions (2/3)

Health system building block		Maturity scale	Explanation
Health workforce	Training	3	<p>Urgent phase: The EPI organized regular trainings to provide health providers updated COVID-19 information. Staff capacity in integrated logistic management of COVID-19 and other vaccines has been improved.</p> <p>Planned: Staff at specialized clinics' will be trained to deliver COVID-19 vaccination services.</p>
	Supervision	3	<p>Urgent phase: Frequent field visits and observation of health worker practice were carried to verify compliance with COVID-19 protocol; if not, on-the-job training or interventions were provided.</p>
Medical products, vaccines, and technologies	Procurement	3	<p>Urgent phase: The EPI received vaccines from overseas and submitted samples to FDA for approval before distribution to regional cold rooms. The EPI received 80,000 Johnson & Johnson vaccine doses in mid-March 2024. New cold vans have been procured for all 16 administrative regions of Ghana.</p>
	Cold chain	3	<p>Urgent phase: COVID-19 vaccines were stored and distributed separately at the start of rollout, then integrated with RI antigens gradually.</p> <p>Planned: Regional cold chain facilities are being equipped through COVID-19 resources with walk-in cold-room equipment in the new 6 regions. Regular maintenance will be used to ensure preservation of COVID-19 and RI antigens.</p>
	Supply chain	4	<p>Urgent phase: The EPI used the Ghana Integrated Logistics Management Information System (GHILMIS) to manage COVID-19 vaccines.</p> <p>Planned: The existing GHILMIS infrastructure will be used to manage the vaccine supply.</p>

Status of the Operational Integration of COVID-19 Vaccinations with Other Health System Functions (3/3)

Health system building block	Maturity scale	Explanation
Information systems	3	<p>Urgent phase. Health workers used to enter COVID-19 vaccination data into eTracker forms created on the Routine Health Management Information System DHIS2 database. Due to difficulties accessing DHIS2, they transferred data to Google forms. The majority of health workers reverted to paper-based record keeping.</p> <p>Planned: Some indicators will be incorporated, variables will be updated, and outputs will be linked to existing aggregate to generate harmonized reports.</p>
Demand and community engagement	2	<p>Urgent phase: Approaches to dispel myths and misconceptions about COVID-19 vaccination included community outreach and health worker education. Despite this, some community members held onto their beliefs.</p> <p>Planned: GHS will continue to use social media posts to dissipate myths and misconceptions associated with COVID-19 vaccination.</p>

Research Question 3:

How are COVID-19 vaccinations planned to be (or already are) part of overall health strategies, immunization strategies, monitoring and evaluation, and budgeting?

Status of COVID-19 Vaccination Planning

Country strategies and planning	Maturity scale	Explanation
Overall health strategies	1	No sectoral strategic plan or policy has been revised to include provisions on COVID-19 vaccination.
Immunization strategies	3	The development of a new national immunization strategy NIS (2025-2030) is underway. The NIS provides for COVID-19 vaccination delivery in specialized clinics such as ANC clinics, NCD clinics, ART clinics, etc. The current comprehensive multi-year plan includes COVID-19 vaccination components which outlines the government's plan to strengthen the immunization program holistically. The multi-year plan and National Immunization Strategy will guide implementation of COVID-19 vaccination integration.
Monitoring and evaluation	3	COVID-19 vaccination targets were given to supervisors across all districts in each region. Additionally, GHS digitalized the vaccination data collection process and developed new forms on the Open Data Kit (ODK) platform which was implemented at all levels. The new forms were adapted over time to meet demands. The country conducted a post-introduction evaluation. Finally, the EPI supervisory checklist will incorporate COVID-19 vaccination.
Budgeting	3	Funding from the Government of Ghana and implementing and development partners covered vaccine procurement and distribution, communication, and meals and transportation for health workers providing COVID-19 vaccine services. EPI plans to incorporate COVID-19 related activities budget lines into routine budget work plans.

Anticipated Challenges to Integration



Over reliance on donors for support could derail the continuous supply of COVID-19 vaccines. An unsustainable supply of COVID-19 vaccines could discourage target groups from using integrated immunization services.



The discontinuity of demand-creation activities is not conducive to countering misconceptions or raising awareness of ways to access integrated COVID-19 vaccination services.



Weaknesses in the COVID-19 data storage and reporting system could compromise planning and progress monitoring.

Unavailability of Vaccines at All Times and Levels

The shortage for certain brands of vaccines must be resolved. An unsustainable vaccine supply in the future, especially if COVAX and other supports aren't available is concerning. If this situation persists, pregnant women would not be vaccinated since J&J has been the only available vaccine for a moment which is yet to be approved for use during pregnancy in Ghana. So, certain priority groups may lose confidence in the health system's capacity to meet their demand. This may slow vaccine uptake.



Lack of Robust Data Storage and Management System

The absence of a robust data storage and management system for COVID-19 vaccines could hinder decisions about planning and performance monitoring.

“For some of the data, you cannot even authenticate their validity (COVID-19 vaccine records). Data management needs to be improved. The registers are not available. We were trained some time ago on integration but the registers are not available.”

- Vaccinator, rural district

Myths and Misconceptions

During the peak of the pandemic, myths and misconceptions about COVID-19 vaccines were widespread and some people continue to believe them. In the future, a lack of resources for community engagement/demand generation activities could result in continued misconceptions and consequently hinder vaccination uptake.

“At first, vaccinations were not difficult because there were announcements and sensitization on the radio. Later, it became difficult due to myths surrounding the vaccine. Men rejected the vaccines because they claimed it would make them impotent.”

- Vaccinator, urban district

Research Question 4:

How has integration with other essential services or health system functions helped or hindered equitable access to COVID-19 vaccination?

Ensuring Equity in the Integration Process



Gender discrimination was not revealed as an issue and COVID-19 vaccination services are provided to all individuals regardless of gender. However, demand generation activities in communities were most often led by women.



Vaccination activities were planned for underserved populations including people with disabilities and people living with HIV.



Socio-economic disparity did not emerge as a concern during discussions. Individuals from diverse economic backgrounds were vaccinated at designated health facilities.



During the FGDs, participants said that vaccination camps were organized for people who cannot attend health facilities due to their jobs. Such camps occurred in shops, farms, and factories to facilitate uptake by these workers.

Ensuring Equity in the Integration Process

Inequitable access to vaccination services was not perceived as a challenge. According to respondents, COVID-19 vaccination was available and provided to all people. They said that health care providers prioritized religious meeting places like churches to reach people from different social classes and abilities. However, there was no specific measurement for COVID-19 vaccination equity.

Health care staff took actions like the snowball approach to ensure vaccination of priority and hard-to-reach individuals. In addition, community vaccinators asked husbands to consent to the vaccination of wives:

“Women from some communities need consent from husbands to be vaccinated. So we talk to the husbands to get access to the wives to educate and vaccinate them. We also use the snowballing approach to get to our brothers from the gay community to get vaccinated.”

-Implementing partner

Research Question 5:

What lessons were learned from integration (or lack thereof) of COVID-19 vaccinations during the urgent pandemic response period?

Key Lessons from the Urgent Pandemic Response Phase



Insufficient staff limited the health system's ability integrate COVID-19 into RI and other health care services, particularly at clinics.



Lack of clear communication about the eligibility of pregnant women for COVID-19 vaccination largely contributed to their vaccine hesitancy.



Poor data management, marked by network instability and data loss, disrupted planning, monitoring, and evaluation of vaccination coverage, impeding integration efforts.



Inadequate compensation for frontline health workers offering COVID-19-related services hindered service delivery and community trust.



Collaboration between the government of Ghana through GHS, MOH, and implementing and development partners facilitated integration of COVID-19 vaccines into routine health service delivery in health facilities, improving access, especially in remote and underserved areas.

Key Lessons from the Urgent Pandemic Response Phase

The multi-sectoral COVID-19 governance structure ensured adequate resource mobilization for integration of COVID-19 vaccination into RI and other health services.

Ring financing for health care emergencies ensured procurement of transportation and ultra cold chain equipment that was eventually used to store COVID-19 and RI vaccines and fostered cold chain integration.

Unlike RI, COVID-19 integration with other essential services (ANC, HIV, TB, NCD) did not follow a careful planning process and was implemented opportunistically.

Delivery of integrated COVID-19 vaccination in specialized clinics (e.g., antenatal) helped reach vaccine-eligible people who were unlikely to seek vaccination services.

Despite considerable policy alignment efforts for COVID-19 vaccination integration, stockouts could limit access to integrated services in the future.

Conclusions

Ghana has started to integrate COVID-19 vaccination with RI and plans to sustain the integration. The National immunization strategy provides guidelines to fully merge COVID-19 vaccinations with other health services including ANC, NCD, HIV, TB, and primary health care programs.

The COVID-19 immunization delivery structure is integrated with the RI system but requires an increase in delivery capacity, particularly through strengthening the health workforce.

GHS has improved the cold chain by acquiring facilities and equipment. Moving forward, GHS will emphasize regular maintenance to protect and sustain these achievements in order to support the integrated distribution of vaccines.

COVID-19 vaccination integration with other health program services will be more efficient when the COVID-19 vaccine supply is consistent.

To create sustained demand for vaccination, GHS plans to conduct social mobilizations which will ensure that community stakeholders have reliable and consistent information and will help counter persisting vaccine hesitancy.

Policymakers do not perceive inequity in COVID-19 vaccination delivery in Ghana. In the future, there is a need to implement a specific measurement to assess vaccine equity.

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