Memorandum on Federal Republic of Nigeria Programme Audit report

The attached Gavi Audit and Investigations report sets out the conclusions of the programme audit of Gavi's support to Nigeria's Federal Ministry of Health executed through its National Primary Health Care Development Agency (NPHCDA). The audit was conducted between 12 July and 11 August 2021. The audit reviewed NPHCDA's management of Gavi's in-kind support and technical assistance to the immunisation programme during the three-year audit period 1 January 2018 to 31 December 2020. Specifically, the audit covered Nigeria's use of Gavi's contributions delivered as vaccines, immunisation supplies and cold chain equipment, as well as two initial shipments of COVAX vaccines received during the six-month period to June 2021.

The report Executive Summary (pages 3 to 5) sets out the key conclusions, the details of which are described in the body of the report:

1. There is an overall audit rating of "Ineffective," which means, "multiple significant and/or material issue(s) were noted. Internal controls, governance and risk management processes are not adequately designed and are not generally effective. The nature of these issues is such that the achievement of objectives is seriously compromised."

2. In total, fourteen issues were identified in the following areas: (i) Vaccine Supply Chain Management; (ii) Immunisation data management; (iii) Cold Chain Equipment; and (iv) Targeted Country Assistance. The report also included observations on the Federal Government entities' progress against the National Strategy for Immunisation and PHC System Strengthening (NISIPSS) Accountability Framework during the two-year period 1 January 2019 to 31 December 2020.

3. To address the risks associated with the findings, the audit team raised twenty-three recommendations, of which ten were rated as high priority.

4. Key findings were that:

    a. The central level cold chain storage capacity was inadequate, due to delays in the planned refurbishment and construction of vaccine distribution hubs;
    b. Supply chain decision-making regarding the forecasting, distribution, and estimations of wastage rates was sub-optimal. This was largely attributable to the absence of a Vaccine Logistic Management Information System or appropriate data analytics;
    c. There were weaknesses in vaccine management practices including: the lack of monitoring of potential temperature breaches during transportation; incomplete manual records; absence of physical stock count; inaccurate stock records; and non-compliance with Earliest Expiry, First Out principles;
    d. There were inaccuracies in the immunisation data reported and weak data governance

processes. Errors were identified in the documentation, collation, monitoring and reporting of data. Although several data quality initiatives were stipulated in the Nigeria Strategy for Immunisation and Primary Health Care System Strengthening (NSIPSS), these were not accomplished, and no credible survey results were finalised since 2018, due to insufficient progress in the implementation of national data quality improvement plan;

e. Suitable preventive and restorative maintenance plans were not in place for cold chain equipment; and the deployment of further cold chain equipment was based on an outdated gap assessment; and
f. Unsatisfactory progress was made towards achieving the NSIPSS Accountability Framework indicators. As of August 2021, only four out of nineteen indicators were met in 2019 and 2020.

In 2022, the findings of the programme audit were discussed with the Federal Ministry of Health's agency, the National Primary Health Care Development Agency (NPHCDA). They accepted the audit findings, acknowledged the weaknesses identified, and committed to implement a detailed management action plan. The Gavi Secretariat continues to work with the FMOH and NPHCDA to ensure that their commitments are met.

Geneva, October 2022

PROGRAMME AUDIT REPORT

Federal Republic of Nigeria

August 2021

Gavi
The Vaccine Alliance

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1. Executive Summary

1.1 Overall audit opinion

Overall audit opinion:

The audit team assessed the Federal Ministry of Health's management of Gavi support during the three-year period 2018-2020 as **"Ineffective"**, which means, "multiple significant and/or (a) material issue(s) noted. Internal controls, governance and risk management processes are not adequately designed and/or are not generally effective. The nature of these issues is such that the achievement of objectives is seriously compromised."

Through our audit procedures, we have identified high risk issues relating to vaccine and supply chain management, data management and cold chain equipment monitoring. To address the risks associated with the findings, the audit team raised 23 recommendations, of which ten were rated as high priority and need to be addressed by implementing remedial measures.

1.2 Summary of key audit findings

Table 1: Summary of key audit findings

* The audit ratings attributed to each section of this report, the level of risk assigned to each audit issue and each recommendation, are defined in Annex 2 of this report.

1.3 Summary of findings

Through our audit procedures, we have identified nine high risk and five medium risk issues relating to the use and management of Gavi support. The high-risk issues are summarised below. The detailed findings are in Section 4 of this report.

Vaccine Supply Chain Management
The country's central level cold chain storage capacity was inadequate. Although Gavi made USD 5.5m funding available in 2019 to implement a new "hub-structure" to help expand the limited cold chain storage, this was not promptly followed through as no plan was finalised and construction was significantly delayed. The constraints in storage were exacerbated by the recent ramp-up in COVID-19 vaccine arrivals. As a result of a glut in vaccines at central level, some doses had to be temporarily stored outside the cold chain, buffer stocks were lower than desirable, and the country was forced to adopt a split vaccine delivery schedule, increasing transaction costs.

There was no "vaccine logistics management information system" (vLMIS) in place, resulting in poor visibility over the quantities of vaccines available throughout the supply chain, undermining decision-making on resupply and forecasting processes, as well as limiting the National Primary Health Care Development Agency's (NPHCDA's) ability to monitor consumption and wastage rates. Controls were lacking in order to ensure compliance with First Expiry First Out (FEFO) principles.

The audit also observed sub-optimal vaccine management behaviours, including indications of some vaccines being exposed to heat as well as lapses in temperature monitoring during delivery, potentially putting the integrity of vaccines at risk. At the sub-national level, key controls such as maintaining proper stock records and undertaking regular physical count of inventories was not done, increasing the likelihood of vaccine wastage or loss.

Gavi COVAX support – In August 2021, Nigeria received and subsequently used 7.9m COVID-19 doses supplied by the COVAX Facility. The audit team noted some good practices in the management of these doses such as: the creation of COVID-19 task team at national and subnational levels; regular reporting of vaccination and stock data; low wastage; procurement of ultra-cold chain equipment; and increased security during vaccine transportation. Despite innovations in this initial phase of the response, it was recognised that the risks of managing COVID-19 vaccines continued to increase thereafter, due to additional complexities in managing larger volumes of a wider range of formulations. Therefore, these findings should not be interpreted as providing assurance over the future management of COVID-19 support provided by COVAX.

Immunisation Data Management
There were discrepancies in the administrative coverage data, with significant mismatches when comparing the national immunisation coverage to results from periodic independent coverage surveys, undermining the credibility of the coverage reported. Moreover, the audit team demonstrated by triangulating the immunisation data in the District Health Information System (DHIS2) with the volume of vaccines distributed, that the administrative coverage was overstated compared with the actual doses available.

Management processes and governance underpinning the documentation, collation, monitoring and reporting of immunisation data were weak. The audit team identified inconsistencies in the source data across 64% of the Primary Health Care (PHC) facilities and most of the local government areas (LGAs) that it visited. Furthermore, less than half of the PHC facilities had a process in place to report cases of Adverse Effects Following Immunisation (AEFI).

Although several data quality initiatives were stipulated in the Nigeria Strategy for Immunisation and PHC System Strengthening (NSIPSS), these were not accomplished, and no credible survey results were finalised since 2018. Similarly, NPHCDA's progress in implementing its Data Quality Improvement Plan (DQIP) activities lagged. Without a proper DQIP monitoring framework in place, NPHCDA was unable to effectively track its relevant performance indicators. It was recognised that the COVID-19 pandemic resulted in the deferral of several data and survey activities.

Cold Chain Equipment
Past Effective Vaccine Management assessments (EVMs) from 2014 and 2017 highlighted gaps in the cold chain, and the need to increase storage capacity and improve equipment maintenance at the service delivery level. In

2018, the Government was awarded a CCE grant from Gavi, following an assessment which indicated that more than half its wards had no cold chain storage, and more than 40% of its equipment was dilapidated or broken.

However, by the time Gavi's agent procured and shipped additional CCE to Nigeria between 2019 - 2021, this assessment was out of date, resulting in several sites not initially prioritised to receive equipment being without cold chain. Lack of key controls such as undertaking regular preventative and restorative maintenance, and keeping an up-to-date register of fixed assets, resulted in poor visibility and management over the country's CCE infrastructure, thus, perpetuating gaps in the cold chain capacity at subnational level.

Targeted Country Assistance
There was a lack of ownership and accountability over the country's technical assistance funded by Gavi.

Accountability Framework
In 2018, recognising the country's high-impact status with low immunisation rates, the Gavi Board exceptionally approved to extend Gavi's support to the Federal Government of Nigeria (FGON) for ten years, in alignment with the FGON's NSIPSS strategic plan covering the period 2018-2028. An accountability framework (AF) was developed in consultation between the Government and the Gavi Alliance, in order to monitor Nigeria's progress against agreed targets and indicators, and to provide oversight over implementation of the NSIPSS goals and objectives. This framework was put into effect in May 2019, following approval by the Nigerian Ministry of Finance, Ministry of Budget and National Planning and the Federal Ministry of Health.

The audit team reviewed the Federal Government entities' progress against the AF. In August 2021, only four out of nineteen indicators had been met by the FGON in 2019 and 2020. At least two AF indicators were not yet applicable, as they were dependent on the completion of prior activities. Specifically, essential surveys and wastage studies were delayed (for which the FGON shared responsibility with other entities). The FGON was therefore not able to establish a suitable baseline at the outset and begin measuring progress on: (i) increases in immunisation coverage and PHC services; (ii) better RI data quality at national and sub-national levels; and (iii) improved accountability including ensuring vaccine wastage rates remained within tolerance.

For some indicators, the necessary supporting information was not on file, or the evidence provided was not aligned with that stipulated in the AF. The country's drawn-out progress in implementing its immunisation strategy, as suggested by AF under-performance, could result in the country not achieving its objectives, prior to the reduction of Gavi support and transition.

2. Objectives and Scope

2.1 Audit Objective

In line with the Partnership Framework Agreement and Gavi's Transparency and Accountability Policy, countries that receive Gavi's support are periodically subject to programme audit, with the primary objective of providing reasonable assurance that resources were used as intended in accordance with agreed terms and conditions, and that resources were applied to the designated objectives.

2.2 Audit Scope

A risk-based audit approach was adopted, informed by the audit team's risk assessment across key areas of the immunisation programme supported by Gavi. Areas included: Vaccine and Supply Chain Management, Programme and Data Management, Cold Chain Equipment Management and the effectiveness of Targeted Country Assistance. The audit scope covered a three-year period from 2018 – 2020.

In addition, the audit reviewed the FGON's performance against the Accountability Framework indicators. This Framework was agreed and signed in May 2019 by the Government of Nigeria and Gavi.

Gavi's total cash and vaccine support provided to Nigeria as of 31 December 2020 is summarised in Table 2 below. During the audit period, Gavi channelled all its cash grants through its Alliance Partners, primarily UNICEF and WHO. Gavi's cash totalling USD 112.61 million that were disbursed to UNICEF and WHO were excluded from the audit scope.

The audit team also conducted a high-level vaccine supply chain review of vaccines against COVID-19 provided through Gavi COVAX. At the time of the fieldwork in August 2021, Nigeria had received 7.92 million doses from COVAX, as per Table 3 below

Table 2: Traditional vaccines - cash and vaccine support as of 31 December 2020

Amounts in USD		Amounts in scope			
Vaccines, Cold Chain and devices support	**2002 - 2017**	**2018**	**2019**	**2020**	**Total (in USD)**
Pentavalent vaccine	144,669,194	1,247,525	4,626,530	853,340	151,396,589
Pneumococcal vaccine	208,336,446	15,832,176	21,188,391	32,502,835	277,859,848
Yellow Fever vaccine - Routine	39,711,793	-	-	-	39,711,793
Yellow Fever vaccine - Campaign	34,808,493	11,542,686	30,731,615	51,377,456	128,460,250
Inactivated polio vaccine - Routine	30,455,518	8,253,122	23,863,627	25,928,285	88,500,552
Meningitis A vaccine - Routine	-	6,257,724	-	1,671,504	7,929,228
Meningitis A vaccine - Campaign	56,057,711	22,057,844	-	3,342,972	81,458,527
Measles vaccine (1st & 2nd dose) - Routine	-	-	4,362,751	3,405,196	7,767,947
Measles vaccine - Campaign	29,388,413	4,674,132	8,043,026	288,995	41,816,575
Injection Safety Devices	12,610,218		-	-	12,610,218
Devices & Diagnostics (Routine + Campaign)	3,703,547	913,777	5,867,425	5,973,650	16,458,399
Cold Chain Equipment Optimisation Platform	-	-	22,999,223	(193)	22,999,030
Total vaccines, cold chain & devices	**559,741,333**	**70,778,986**	**121,682,588**	**124,766,050**	**876,968,956**
Total TCA support (from 2016)	**4,491,049**	**4,649,496**	**6,339,475**	**8,570,485**	**24,050,505**
Total Cash grants	**199,349,706**	**13,716,878**	**67,230,152**	**31,114,814**	**311,411,551**
Grand Total	**763,582,088**	**89,145,360**	**195,252,215**	**164,451,349**	**1,212,431,012**

Table 3: COVAX – Vaccine support as of 1 August 2021

COVID-19 vaccines support from the COVAX Facility (Gavi)	Doses
AZ SII/ Covishield	3,924,000
Moderna mRNA	4,000,080
Total	**7,924,080**

As some parts of this report were prepared based on the findings from a sample of States, this means that the findings cannot necessarily be considered representative for all 36 States and one federal capital territory of Nigeria.

See Annex 4 for the list of facilities visited by the audit team.

2.3 Audit approach

The audit team conducted its scoping mission between 30 May and 12 June 2021. Subsequently the team undertook its fieldwork between 12 July and 11 August 2021. The team visited a total of 70 entities across the national and sub-national levels, including: the National Strategic Cold Store (NSCS) Federal Capital Territory (FCT), five zonal stores, six states, 15 Local Government Areas (LGA) and 42 Primary Health Care Facilities (PHCs). See Annex 4 for the complete list of sites visited.

Throughout both the scoping and fieldwork, the audit team interacted with the National Primary Health Care Development Agency (NPHCDA); select State Primary Health Care Development Agencies (SPHDA); officers and health workers from Local Government Areas (LGA) and Primary Health Care (PHC) facilities; Gavi Alliance partners; and various other in-country stakeholders. The team held a separate briefing session at each of the six States to present and validate its findings pertaining to the State.

2.4 Context

Nigeria's immunisation programme is one of the largest recipients of Gavi's support, in terms of vaccines and cash grants. Over the years, the Gavi Board and Secretariat, as well as the Alliance partners have contributed significantly to a proactive engagement process with the country. Examples of key interventions including the Board's deliberations on the Nigeria investment, contributions to the development of the 10-year Nigeria Strategy for Immunisation and PHC System Strengthening (NSIPSS), crafting and endorsing the Gavi accountability framework, completing the prior programme audit process in 2016, and maintaining a dedicated country-support team, exemplify the intense involvement.

According to 2016/2017 Multiple Indicator Cluster Survey (MICS), only 33% of Nigerian children aged 12-23 months received their third dose of DPT by their first birthday, well below the agreed 80% national target of the National Strategic Health Development Plan (NSHDP II) 2018 – 2022. The slow pace of improvement in Nigeria's immunisation coverage has resulted in it having a relatively large number of children who have not received a first dose of DPT. This equates to a leading indicator for identifying the country as having significant "zero-dose" children, a key focus area for Gavi's strategy for the period 2021 - 2025. In addition, Nigeria is one of the few Gavi-supported countries yet to introduce Rotavirus and Human Papilloma Virus (HPV) vaccines into its routine immunisation schedule.

To achieve improved immunisation coverage outcomes, the country's key operational elements need to function in an efficient and effective manner including its: service delivery; logistics; supply chain; disease surveillance; advocacy and communication; sustainable financing; programme management; and human and institutional resources. Based on the audit team's preliminary risk assessment, the audit prioritised these national immunisation programme components.

3. Background

3.1 Introduction

Gavi Vaccines and cash support

Gavi has provided vaccines and cash support to the Government of Nigeria since 2002. Prior to 2014, Gavi disbursed most of its cash support directly to FMOH's National Primary Health Care Development Agency (NPHCDA). Since 2015, cash grants have been channelled through Gavi Alliance Partners, primarily WHO and UNICEF. The total vaccine and cash grant support provided to the Nigerian immunisation programmes during the period 2002 – 2020 amounted to USD 1,188,380,507. During the same period, Gavi provided additional USD 24,050,505 under the framework of Targeted Country Assistance (TCA). These TCA funds were disbursed to the Gavi Alliance's core and extended partners. A detailed breakdown of the Gavi grants by type is shown in Table 2 above.

Vaccine supply chain – overall architecture

Nigeria is a federal republic comprising 36 states and the Federal Capital Territory (FCT). Within these states there are 774 Local Government Areas (LGAs) and 9,564 wards. Immunization services are delivered in over 30,000 primary health care (PHC) facilities spread across the federation.

Currently, the national immunisation supply chain operates a five-tier system that comprises of national, zonal, state, LGA, and PHC facilities as illustrated in Annex 5. Through NSIPSS, the NPHCDA proposed to redesign its vaccine supply chain from a five-tier system to a four-tier system, comprising national, state, LGA and PHC levels, in effect by adjusting the role of the zonal level. Three national hubs will be hosted in Lagos, Abuja, and Kano, each being well-positioned with access to inbound international flights. The remaining zonal stores in Bauchi, Delta and Enugu will continue as back-up stores. At the time of the audit in August 2021, the three-hub system was not yet operationalised.

The Department of Logistics and Health Commodities (DL&HC) under NPHCDA directly oversees the operations of the National Strategic Cold Store (NSCS) in Abuja and the six zonal cold stores, located in Bauchi, Delta, Enugu, Lagos, Niger and Kano, one for each of the six geopolitical zones. DL&HC manages the national forecasting and quantification, warehousing, inventory control and distribution up to the state level. Procurement of the vaccines and related supplies is undertaken by UNICEF supply division.

Vaccines are distributed from the central to zonal and state level quarterly, using a push-system based on each state's pre-set targets. Each of the 37 State Primary Health Care Management Agency/Boards manage their respective 37 state-level cold stores, while further down at the LGA level the Primary Healthcare Departments perform similar functions. The timing of distribution from the states to the LGAs varies between quarterly to monthly push-based supplies, and thereafter distribution from LGA to the PHCs is usually monthly. Under the federated system, each individual State has responsibility for overall vaccine storage, inventory control and distribution, down to the LGAs, with the LGAs managing last mile distribution to the PHCs.

A framework of cascading technical oversight and guidance roughly mirrors the first three tiers of the current supply chain structure. This consists of the National Logistics Working Group (NLWG), six Zonal Logistics Working Groups (ZLWGs) and 37 State Logistics Working Groups (SLWGs) which provide the necessary support across the national, zonal, and state levels, respectively. Each LGA team reports to their respective SLWG and is responsible for vaccine supply chain at the LGA and the PHC levels. At the central level, there are direct lines of communication between the NLWG and other working groups. There is also regular communication between the ZLWGs and SLWGs, given that these structures met on regularly in accordance with their specific terms of references.

Vaccine supply data

No overall vaccine logistic management information system (vLMIS) was in place. Stock monitoring and management was sub-optimal as data quality issues existed across all levels of the immunisation supply chain, with low data consistency between logistics and programme data. The lack of data integrity limited the accuracy of data-driven decision-making and impaired accountability for the use of vaccines at all levels.

The country's 10-year strategy document NSIPSS 2018 – 2028 stipulated strategies to improve the quality of vaccine supply data. This included implementing: (i) a vaccine accountability framework to codify requirements and strengthen rewards and sanctions measures; (ii) a systematic monitoring system to measure the performance of vaccine supply chain management against key indicators, i.e., Vaccine Accountability Framework and Visibility and Analytics Network (VAN); (iii) a systems tie-up between NAVISION (an enterprise resource planning solution) and DHIS2 (the country's primary health information system) to increase visibility over actual vaccine consumption and distribution practices.

NPHCDA implemented NAVISION in early 2020 but thereafter the system was withdrawn citing its limitations. As of August 2021, NPHCDA had not implemented its remaining two data initiatives.

Immunisation data

Nigeria is estimated to have approximately 25% of the world's unimmunised children.[1] There are significant discrepancies between the national administrative data and periodic survey data. For example, in 2016, the reported Penta 3 administrative coverage was 106%, in contrast to the 2016 Multiple Indicator Cluster Surveys/ National Immunisation Coverage Survey (MICS/NICS) whose reported coverage was 33%, effectively a difference of 73%. The immunisation coverage survey data results significantly varied from State to State. For example, from a 3% coverage rate in Sokoto (a Northern State), compared to an 80% coverage in Lagos (a Southern State). The absence of reliable target population being defined across all levels also detracts from the quality of compiled data analyses. In effect, the country's oversight over its immunisation programme is hampered due to lack of accurate routine immunisation data.

According to NPHCDA, subsequent surveys show improved coverage and gradual reduction in the disparity between survey and admin coverage, for example: NDHS 2018 - 50% vs. admin coverage of 84%; SMART 2018 - 57% vs. admin coverage of 84%; and SMART 2019[2] - 67% vs. admin coverage of 80%. Based on discussions with Gavi's country support team and other stakeholders, the audit team understands that the SMART survey methodology was not suited to the Nigerian context. However, the 2018 NDHS results confirmed a positive trajectory.

To supplement for the poor quality of administrative DHIS2 data, Nigeria has increasingly undertaken survey coverages to validate its immunisation data. Thus, the country was able to use its 2016 MICS/NICS data to group its states into various categories based on the survey performance data. Based on both their overall low immunisation coverage and the number of under-immunised children, National Emergency Routine Immunization Coordination Centre (NERICC) prioritised 18 states for an intensive support. Gavi further prioritised eight out of 18 states to receive direct funding. Gavi's decision was based on lowest performing states and the presence of other partners in the 18 states.

The country's 10-year NSIPSS strategy (2018 – 2028) stipulated several strategies to improve the quality of immunisation data. As a result, in 2019, NERICC revised its Data Quality Improvement Plan (DQIP) to align its data management interventions and timelines with NSIPSS, such that the revised Improvement Plan now covers the period 2019 to 2023.

In December 2018, the Interagency Coordination Committee (ICC) formally validated that DHIS2 should be the primary reporting platform for routine immunisation data. This resulted in a transition process which completed in December 2019, once immunisation data sources had been progressively migrated from the prior District Vaccination Data Management system over to DHIS2.

At the Health Facilities, RI data is compiled by either the facility in-charge, nurse or immunisation officer depending on the size of the facility. After immunisation sessions, the data is first captured in a tally sheet. At the end of the day totals are transferred to the immunisation registers. Every month, the Health Facilities prepare a summary report which is submitted to the LGA's data officer. The data flow from the health facilities to the LGAs is a paper-based process, and at the LGA the data is entered in DHIS2. At the national level, the DHIS2 data is consolidated, analysed, and reported.

Targeted Country Assistance

Gavi funds TCA to provide additional catalytic technical assistance and strengthen capacity building tailored to specific needs of the national immunisation programme. During 2018 – 2020, Gavi funded approximately USD 15.2 million of TCA in support of the Nigeria programme. This assistance was provided through a range of Gavi Alliance partners including UNICEF, WHO, the World Bank as well as another six partners, most of which were locally based.

3.2 Entities involved in the executing and managing Gavi's funds

National

The federal government, through its Federal Ministry of Health and NPHCDA, is responsible for overall heath policymaking, sector planning, coordination, and regulation. NPHCDA was established in 1992 as a parastatal to the Federal Ministry of Health, to lead and support the implementation of quality, sustainable PHC services through PHC policy development, advocacy, resource mobilisation and capacity building, as well as partnership, and collaboration with relevant stakeholders. NPHCDA is also responsible for the State Primary Health Care Development Agencies (SPHCDA),

[1] According to Independent Review Committee (IRC) report of January 2019.

[2] The 2019 SMART report was not provided to the audit team.

that are mandated to implement PHC policy, and ensure community engagement through various village and ward committees.

Sub-national

State Ministries of Health (SMOH) as managed by their SPHCDA, are responsible for coordinating and overseeing the provision of primary health care services. LGAs are responsible for the delivery of PHC, including health prevention and promotion activities. The Primary health facilities are state-owned, encompassing a network of primary health centres, community health posts, clinics, and dispensaries. State executive councils, and ministries of local government and community affairs are instrumental in approval and decision-making processes related to PHC.

3.3 Good Practices

The Gavi audit team noted several ongoing initiatives that were designed to improve the national immunisation programme. In June 2021, NPHCDA issued its immunisation supply chain (iSC) policy along with updated standard operating procedures (SOPs). Updates to the SOPs were largely based upon findings from the 2017 Effective Vaccine Management assessment (EVM).

Established Logistics Working Groups (LWG) exist at national, zonal and state levels, with responsibility for strengthening vaccine logistics as per their Terms of References (TOR). These groups continue to actively meet and discuss vaccine logistics, as evidenced by the minutes on file.

The national immunisation programme has also benefitted from its EVM assessments, which are done on a four-year cycle. The past two assessments indicate an improvement from 2014 (rated as 67%) until 2017 (rated as 69%), a net increase of 2%.

NPHCDA, with support from the alliance partners, is leading the effort to redesign its supply chain from a five-tier to four tier system. This redesign is expected to address the capacity gaps at the national level and improve periodic supply of vaccines to the subnational levels. To ensure that its vaccines are effectively distributed, NPHCDA engaged a third-party logistics (3PL) service provider responsible for the quarterly vaccine distributions between national, zonal, and states vaccine stores.

During the audit team's visits to selected sites, they observed that functional back-up power sources and remote temperature monitors were in place at both national and State levels in case of electricity supply failures. Other good practices observed include vaccine temperatures being regularly monitored and recorded by most PHCs.

3.4 Operational Challenges due to the COVID pandemic

On 27th February 2020, Nigeria confirmed its first COVID-19 case. While the country did not declare a national emergency, several measures were instituted by the Federal Government of Nigeria through the presidential task force and the Federal Ministry of Health, to curtail the spread of the disease and protect the health of Nigerians. The measures included closure of non-essential activities; closure of schools; embargo on international flights etc. This disrupted the overall national health programmes, including Gavi-supported immunisation programmes.

The pandemic strained already limited human resources in the health sector, with manpower diverted from other health services to provide care for COVID-19 patients and thereafter conduct the vaccinations. While not unique to Nigeria, several of the COVID-19 vaccine formulations received by the country required ultra-cold chain storage which was only available at the central vaccine store. In general, vials of COVID-19 vaccines are not labelled with a Vaccine Vial Monitor, and some vaccine batches arrived in Nigeria with a short shelf life. This created a burden on the logistics system as it attempted to prioritise the earliest-expiry-first-out principle, and to redirect vaccines from low absorption to high absorption states.

4. Audit Findings

4.1 Vaccine Supply Chain Management

4.1.1 Delay in operationalisation of the Immunisation Supply Chain Policy and Governance structures

Context and Criteria

The effective management of a supply chain requires a broad consideration of the stewardship, finance, infrastructure, human resources as well as an end-to-end perspective of the supply chain. One of the areas emphasised in the 2019 NSIPSS framework was the need to overhaul supply chain systems through strengthening both leadership and accountability, at the national as well as state and LGA levels. Within this context, the National Logistic Working Group, steered by NPHCDA, was responsible for developing the first immunisation supply chain (iSC) policy. The policy was expected to help the national immunisation programme to achieve the WHO-recommended minimum threshold established by the effective vaccine management assessment (EVM) assessment process. The 2017 Nigeria EVM score across the entire supply chain was 69%. Though this was an improvement compared to the past scores, it still fell short of the recommended minimum threshold of 80%.

Condition

The audit team reviewed the evolution and development of the iSC policy, its alignment with Gavi's supply chain guiding principles, and implementation status.

Delayed finalisation of the iSC policy - NPHCDA missed the deadline of 2019 in finalising its first iSC policy. The policy was approved and endorsed in June 2021 and was not yet disseminated across all health system levels at the time of the audit. Given this delay, the audit could not assess the effectiveness of the policy but did note that the overall formulation was aligned with Gavi's recommended supply chain principles.

Policy implementation framework not in place – Although the iSC policy was approved in June 2021, it did not include an implementation framework in place to accompany the policy. Given that the policy was approved only two months prior to the audit, the audit team recognises that NPHCDA would need some time to operationalise the policy. The national immunisation programme team attributed the lack of a framework to a shortfall of resources which were diverted to focus on the COVID-19 response. Without a suitable implementation framework, there is a risk that following its dissemination, the policy might not be put into effect. It also requires that the necessary capable, competent personnel at each level of the supply chain are available to follow through on the policy and make the necessary changes across all levels. Also, certain policy requirements may need to be updated, to remain pertinent as the country moves over to its hub structure.

Root Cause

The delays in policy formulation were linked to the late start of the TCA support from the alliance partners, funding constraints, and the emergence of COVID-19 interventions that changed the priorities and focus of NPHCDA.

Recommendation 1/ Priority - Medium

NPHCDA should develop a suitable implementation framework, including plan and budget, as well as the necessary resources, to operationalise its 2021 immunisation supply chain policy. This framework should indicate key timelines for the activities, as well to articulate appropriate mechanisms for follow-up, support, monitoring and supervision.

Management comments

The recommendation is agreed.

Risk / Impact / Implications	Responsibility	Deadline / Timetable
Without a suitable, costed implementation framework and plan to operationalise the immunisation supply chain policy, there is a risk that it may not be implemented, or its outcomes not achieved.	DLHC, NLWG	December 2022

4.1.2 Inaccuracies in vaccine forecasting

Context and Criteria

A national vaccine forecast predetermines the quantity and type of each antigen to be procured and delivered in fulfilment of the pre-set targets, coverage and allowable wastage rates, for both routine immunisation (RI) and supplementary immunisation activities (SIA). NPHCDA undertook its forecast to align with the budgeting cycle in May of each year. Beginning 2020 the country began conducting state-level forecasts, to consider evidence-based specificities, and thereafter aggregate these into the national-level forecast.

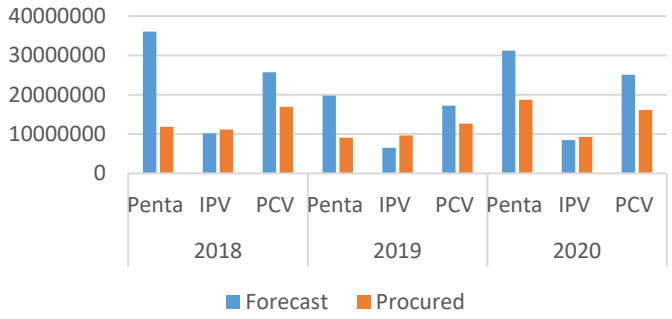
Condition

The audit team reviewed the forecasting and demand planning process and determined that a structured process for forecasting and quantification was in place, led by the national logistics working group, with support from the alliance and extended partners. The following opportunities for improvement were noted:

Inaccurate wastage inputs – The wastage factors used were based on standard WHO regional wastage rates, rather than drawing upon the country's actual wastage as experienced by states and health facilities, reflecting the local challenges and contexts.

Forecast accuracy – The audit team noted that for the past three years, there were significant inaccuracies between forecast vaccines and the actual quantities procured. Variances in forecast ranged from 22% to 52% as indicated in Figure 1, with both Penta and PCV forecasts being consistently overstated, while IPV was understated. In discussions, NPHCDA suggested that the IPV variances were attributed to data quality issues exacerbated due to absence of vLMIS, variable wastage rates, delayed procurement approvals at national level, and inadequate global vaccine availability to meet demand. In future, to address Nigeria's significant number of under-immunised children, including those who have not received any immunisations, it is important to strengthen the country's capability and its alignment between an accurate forecast and its national consumption.

. Figure 1: Forecast vs. doses procured; Penta, IPV and PCV



Lack of periodic review – The audit noted that vaccine forecasting was done once a year without any further periodic reviews. Given the significant variances, and in accordance with effective forecasting principles, periodic reviews should be conducted so as to realign the forecasted quantities with actual demand and to revisit the accuracy of original assumptions.

Inadequate documentation of the forecasting process - The good practice of documenting the forecasting process was not followed. The audit team noted that the documentation supporting various decisions were not held centrally on file. This included missing forecast assumptions and meeting minutes (because these were not finalised, or were stored on personal PCs). In addition, NPHCDA lacked dedicated server space to store all its official records.

Recommendation 2/ Priority - High

NPHCDA should: (i) review its vaccine consumption data at least twice a year to update its forecasts; and (ii) put in place a process which captures data on actual wastage rates, in order to increase the accuracy of its national and State level forecasts (refer to Recommendation 10).

Recommendation 3/ Priority - Medium

NPHCDA should ensure that the necessary documentation supporting its forecasting process, key decisions and assumptions, is consistently put on file for future reference.

<table>
<tr><td>Root Cause
The current forecast process set its targets primarily based upon each state’s anticipated population. There was little use of historical data from actual consumption due an absence of a vaccine logistics management information system. Although various stop gap measures were in place (e.g., the “open data kits” tool) these measures were limited in value, as they only contributed partial data towards the forecasting process. The lack of suitable server space hampered the storage, retrieval and access to permanent records, including forecast documentation.</td><td colspan="2"></td></tr>
<tr><td rowspan="2">Risk / Impact / Implications
Accuracy in wastage rates helps to capture each States’ contribution towards under-immunised targets and focus upon optimising vaccine use. Inaccurate forecasting may lead to vaccines being wasted if the quantities procured are excessive, or to missed immunisation opportunities if there are insufficient quantities, that result in vaccine stock-outs.</td><td colspan="2">Management comments
Recommendation 2 agreed. Recommendation 3 is currently being practised; however, the country will work to strengthen the forecast documentation.</td></tr>
<tr><td>Responsibility
NLWG</td><td>Deadline / Timetable
Recommendation 2i: twice a year; 2ii: December 2022</td></tr>
</table>

4.1.3 Inadequate central level cold chain storage capacity

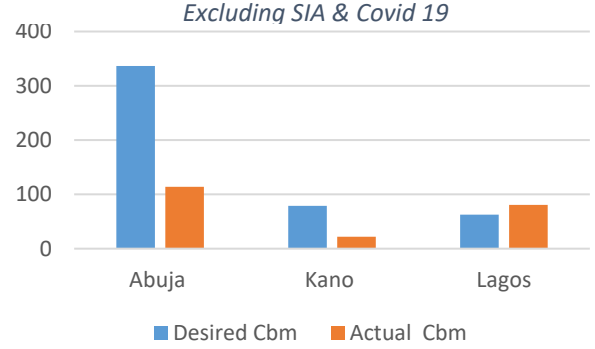
Context and Criteria

The volume of vaccines handled by the country significantly increased since 2010 and will continue to do so for several years due to an overall increase in demand for immunisation as well the introduction of new vaccines, both of which require additional storage capacity across the cold chain. The rapid introduction of COVID-19 vaccines adds further pressure on the storage capacity. If the cold chain is compromised, this could result in a loss of potency for the vaccines affected, as well as disrupt the vaccine distribution.

Condition

The audit team reviewed the existing vaccine storage capacity at the central level, i.e., national strategic cold store (NSCS) in Abuja, as well as five zonal stores (Lagos, Kano, Bauchi, Delta, and Enugu), and considered vaccine storage and inventory control practices. The team made the following observations:

Figure 2: RI storage capacity at the 3 hubs Excluding SIA & Covid 19



Inadequate storage capacity (central level) - The audit team undertook a cold chain volume analysis at the central level and noted that the existing capacity only met 42% of storage needs for routine immunisation (see Figure 2 illustration) forecasted for 2021. The situation was further exacerbated by an increase in vaccine volumes due to additional doses for SIA and COVID-19 activities. At the time of the audit, the auditors noted that the Measles SIA vaccines were stored in NSCS's corridors (see Annex 14, Annex Figure 5). According to NPHCDA, these doses were to be moved into the cold chain as soon as space became available after pushing the existing vaccines down to the zonal stores.

WHO guidelines stipulate that vaccine manufacturers often use different types of coolant-packs with varying performance and limited cold life hours. Guidelines further suggest that the vaccines shipments could only be kept outside the cold room for a limited duration up to 24 hours after the arrival.

Delays in redesigning vaccine distribution hubs (central level) **-** Gavi, by 2019, had made USD 5.5m available for the activity 'System Design and Health Construction' which comprised of construction of hubs and system design. NPHCDA was unable to fully use these funds as it did not prepare a cohesive plan (demonstrating all system design components) which was a prerequisite for accessing the funds. The funds were sourced from Health Systems Strengthening grants provided by Gavi through a tripartite agreement between Gavi, UNICEF and NPHCDA.

As a result, there have been delays in putting in place the necessary "hub-structure" for three sites (at Abuja, Kano and Lagos[3]) to increase the limited cold chain storage. No timelines have been established for completion of the works. The three hubs, when finalised, will support decentralised vaccine management as these hubs would be able to directly receive international vaccine shipments.

Recommendation 4/ Priority - High

Given the importance and the complexity of successfully re-engineering the supply chain to the proposed "hub model," NPHCDA should put in place a project management team responsible for preparing a cohesive plan and overseeing the implementation. Since an increasing volume of vaccines is to be handled by the Abuja, Kano and Lagos hubs, the construction at these sites should be expedited.

Recommendation 5/ Priority - Medium

NPHCDA should secure funding so that it can insure its vaccines against damage or loss.

[3] For Kano hub, NPHCDA has secured a funding agreement with the World Bank. Financing for the other two hubs is supported by Gavi.

Split international shipments (central level) and frequent vaccine issuances - The audit team also noted that at the central level, international shipments were frequently received across split consignments (rather than an entire quarterly shipment). Furthermore, due to storage constraints, the central level also increased its frequency of vaccine issuances which were not aligned with the downstream distribution schedule.

Inability to comply with the quarterly distribution schedule (central level) – The audit team observed that although the central vaccine distribution schedule specified quarterly shipments to the zonal and states stores, NPHCDA was unable to follow this due to insufficient capacity to hold enough volumes for a quarter.

Inability to maintain required buffer levels (central level) – In the absence of a quarterly distribution schedule, NPHCDA was unable to maintain its vaccine buffer stocks at 25% at the central level since the vaccines were frequently pushed down to the zonal and states stores when additional vaccines arrived at NSCS. However, given the national ambition of achieving a decentralised supply chain through the 3hub structure, the required buffer levels at each level of the supply chain need to be reassessed.

Lack of insurance coverage (central level) – None of the routine immunisation or SIA vaccines in the stores visited by the audit team were insured due to budgetary constraints at NPHCDA level.

Root Cause

Several root causes were identified including;

- Delays by NPHCDA in finalising the implementation of its 3-hub model, following the 2019 NSIPSS committing to enhance and expand the country's cold-chain storage capacity;
- There was no project management team or clear terms of reference with defined responsibilities for redesigning the central hubs. The responsibility was delegated to a focal point within the NLWG who is responsible for tracking progress tracking and reporting on the hub redesign but with no responsibility for critical decision making processes within the budgeting and financial management processes; and
- There were delays in the budget approval at Gavi and within UNICEF's vendor procurement process.

Management comments

Recommendation 4: Gavi Country Support Team will follow up with NPHCDA, UNICEF and other stakeholders to accomplish necessary steps preceding the implementation of the cohesive plan. The implementation is scheduled to start from September 2022.

Recommendation 5: Agreed. Given the prevailing tight fiscal space for the FGoN, the NPHCDA will work with Gavi and other donors to explore the possibility of accessing funds to insure the vaccines and devices

Risk / Impact / Implications	Responsibility	Deadline / Timetable
• Delays in shelving vaccines potentially exposes them to temperatures outside of the recommended range. • Due to storage capacity constraints, international shipments arriving at the central level were frequently received across several split consignment resulting in increased transaction costs. • Inability to hold buffer stocks, and quarterly supplies to zones and states are not met on time. • In the unlikely event of a fire, burglary, or natural disaster, if major assets such as large volumes of vaccines are not insured, significant losses could occur.	Recommendation 4: Gavi, UNICEF and NPHCDA Recommendation 5: NPHCDA	Recommendation 4: September 2022 Recommendation 5: December 2022

4.1.4 Vaccine temperature was not monitored during distribution

Context and Criteria

Vaccines and ancillary products need to be distributed down to the last mile in the right condition, quantity, place, and time, in order to support programmatic activities. If vaccines are transported at unsafe temperatures, improperly handled and packed, or conveyed in poor conditions, this could decrease their potency. It is therefore imperative that appropriate cost-effective distribution models are put in place to deliver potent vaccines to the stores and health facilities.

Condition

The audit team reviewed the mechanism used for distributing vaccines including "long haul" and "last mile" elements. Currently the volumes of vaccines scheduled for distribution are pre-determined using a push system. Insufficient cold chain storage capacity at the central level also affects the frequency and volume of distributions, including split consignments to minimise inventory levels at central. Each state's pre-set targets per antigen are generated from population data to determine the overall vaccine allotment which is then spread throughout the year. Top up adjustments are calculated, based on each store's theoretical maximum capacity for each vaccine. The states regularly provide stock balance data including LGA balances, so that the store supplying vaccines can calculate the net quantity to replenish the state stores back to their maximum capacity.

At the national level, NPHCDA contracted third-party logistics (3PL) in 2017 to provide a vaccine distribution service to the Zonal and State stores. This top-down federal mandate to distribute vaccines went only as far as the state level, thereafter each state was responsible for ensuring last mile delivery to its respective LGAs and PHCs. In principle, the service provider was expected to distribute vaccines to the zonal and state-level once every quarter. However due to the cold chain capacity constraints at NSCS in Abuja, the frequency of 3PL's distributions increased, while consignments size was reduced and split across multiple trips. This arrangement predated NPHCDA's application to Gavi for CCEOP support. In its CCEOP grant application, NPHCDA indicated that it was satisfied with 3PL's cost-effectiveness, and did not indicate any plan to request and/or mobilise additional financial support to purchase refrigerated trucks for distribution.

National level (NSCS to Zonal and State Store) **–** The service provider's contract did not require 3PL to use refrigerated trucks when distributing vaccines, hence cold boxes containing ice packs were used to maintain the temperature integrity of the vaccines during transit. The absence of refrigerated trucks was attributed to inadequate funding. The cold boxes were expected to maintain the desired temperature during transit periods of up to 72 hours, but temperature monitoring devices were not used to ensure that there were no temperate breaches. According to NPHCDA, freeze tags were used for freeze-sensitive vaccines during transportation from National to Zonal stores.

The audit team noted that two zonal stores (Kano and Bauchi) had reported losses due to the Vaccine Vial Monitor (VVM) recording significant temperature exposure at the time of the vaccine being received, as for example was documented in the Kano zonal store "damage register." Due to a lack or an absence of documentation across the health system tracking temperature breaches, the audit team was unable to establish the occurrence of such prolonged accumulated exposures outside the vaccines' tolerance range.

State Level (State – LGA – Ward – PHC) – Distribution of vaccines from state to lower levels is the responsibility of each State under its respective SPHCDA's management. The audit team made the following observations relating to the subnational level:

Recommendation 6/ Priority – High

NPHCDA should undertake a cost effectiveness analysis to determine if investment in the refrigerated trucks would provide better value for money and operational efficiency. Thereafter, if the analysis supports the investment case, NPHCDA should develop a plan with the alliance partners, in order to mobilise the necessary resources.

If/when refrigerated trucks are not used, NPHCDA should use appropriate temperature monitoring devices to ensure the continuous temperature monitoring of vaccines.

Recommendation 7/ Priority – Medium

NPHCDA should institute and document a mechanism to verify and validate that the 3PL companies strictly deliver vaccines under the 72 hours window.

Recommendation 8/ Priority – High

NPHCDA and the state level stores are recommended to ensure that the VVM status is always checked and recorded during the hand-over of vaccines deliveries/ receipts between storekeepers working across different tiers and levels of the health system.

Recommendation 9/ Priority – Medium

NPHCDA should advocate that the States and LGAs earmark and budget sufficient funds to finance vaccine distribution transit costs at the state and LGA level.

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<tr><td colspan="2">

- At state level, vaccine distribution practices vary from state to state with a mix of 3PL, use of government-owned vehicles and sometimes out of pocket (personal resources) by health care providers. In the six states visited, four (Kano, Bauchi, Sokoto, and Lagos) had engaged the services of 3PL to distribute vaccines from state to LGA and LGA to health facility level. In Edo state the LGAs picked up vaccines from the state stores using budgetary allocation while in Enugu state no unified system exists and often staff used their personal funds to move vaccines from the LGA to the PHC.
- Consistent with other tiers, the vaccines were packaged in cold boxes during their next phase of transit, however the temperature in the cold boxes was not monitored. While majority of the PHCs can be accessed within the “accepted” 72-hour period, other PHCs were less accessible due to poor road conditions, weather disruptions or insecurity. It was noted that individuals handling the vaccines largely relied upon the VVM status to determine if there was any significant heat exposure. It was recognised that such an approach was limited, as it cannot identify or address all the whole spectrum of possible temperature breaches.

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Root Cause

- Budgetary constraints forced NPHCDA to rely on transporting vaccines in cold boxes in transit.
- Advocacy challenges at the states’ level in order to persuade them regarding the need to prioritise the vaccine supply chain and to allocate scarce resources towards strengthening vaccine logistics.

</td><td>

Management comments

R6: Use of refrigerated trucks is not currently within NPHCDA’s plans in the medium term. Once the time is right, NPHCDA will decide on this. For now, NPHCDA will continue the use of cold boxes and appropriate temperature monitoring devices for vaccines distribution, while strengthening reporting.
R7: Agreed
R8: Although this is already ongoing, NLWG will intensify efforts to ensure 100% implementation of VVM checks
R9: NPHCDA has been advocating for this for many years, with no success. The government plans to incorporate the cost of vaccine distribution from national to the last mile into the federal vaccine procurement costs.

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<tr><td>

Risk / Impact / Implications

Vaccines damaged due to exposure to inappropriate temperature.

</td><td>

Responsibility

R6-R9: NLWG, NPHCDA

</td><td>

Deadline / Timetable

R6: Ongoing
R7: December 2022
R8: Ongoing
R9: Dec 2022

</td></tr>
</table>

4.1.5 Lack of logistic management information systems, unreliable stock data, and poor stock management practices

Context and Criteria

Effective vaccine inventory management practices involve robust control over inventory, based on well-established standard operating procedures (SOPs) for goods receipts; storage; picking and packing; order verifications; batch control; VVM and expiration tracking; buffer stock management; reorder level management; stock taking procedures; vehicle loading for dispatch; records maintenance; and a stable inventory management system.

Condition

The audit team noted the following issues from its visits to the National Strategic Cold Store (NSCS) in Abuja, five zonal stores, six state stores, 15 LGA stores and 42 primary health care facilities:

Central Level

No Vaccine Logistic Management Information System - The stock records were manual, including vaccine registers, stock ledgers and bin cards. The absence of an automated vLMIS system did not allow for effective stock management. Despite NPHCDA 's prior commitment as per the 2018 NSIPSS to implement a vLMIS, there was no credible follow-through or progress as of August 2021.

Based on discussion with Gavi Country Support Team and NPHCDA, the Audit Team attributes the delay in vLMIS implementation to both NPHCDA and NOVEL-T, the firm contracted by Gavi to identify a suitable vLMIS software. According to NPHCDA, it has decided to expand the use of an Open LMIS which was first rolled out to the states for managing COVID-19 vaccines to routine immunisation.

Incomplete SMT data - Two sets of stock records were maintained in parallel at the central level. However, records between the interim excel-based stock management tool (SMT) and the manual vaccine ledgers did not reconcile. Furthermore, the SMT records were not up to date. There was a backlog of up to four months in updating entries, demonstrating that SMT was not used as a primary record, nor could it be used for decision-making purposes.

Non-compliance with Earliest Expiry, First Out - There was no evidence of compliance with EEFO principles given that the data entries into the vaccine registers were compromised, as they did not accurately capture critical information such as batch numbers and expirations. For example, when recording an incoming shipment, frequently a single batch number and expiry date was recorded and applied across the entire shipment, even though it was made up of multiple batches of the same antigen with different expiry dates.

Subnational levels

Manual stock ledgers were not updated - The manual stock ledgers were not properly updated at all levels as many entries were not done in real-time. Retroactive recording exposed the process to the risk of errors due to failure to accurately recall the past events. Only 14 out of 39 (36%) PHCs visited maintained their stock ledgers up to date, and furthermore three PHCs had no ledger in place at all.

Recommendation 10/ Priority - High

NPHCDA, in coordination with Gavi and its alliance partners, should finalise the choice of vLMIS and prepare a costed plan for its implementation and rollout. The vLMIS is crucial for the implementation of the new iSC policy. It will provide critical data for several supply chain related decisions such as, forecasting (actual consumption and wastage), vaccine distribution, expiry and VVM monitoring, storage capacity planning for Supplementary Immunisation campaigns etc.

Recommendation 11/ Priority - Medium

NPHCDA and SPHCDA are recommended to train all staff responsible for managing and handling vaccines to comply with the new established SOPs, particularly:

1. Maintaining accurate and real time vaccine registers, including the recording of batch numbers, expiry dates and VVM status.
2. Reviewing the consumption patterns at the corresponding subsidiary level before re-supplying their direct reports with additional vaccines.
3. Documenting, with necessary justifications, the process, results and follow up of each physical stock counts.
4. Promptly escalating and resolving temperature excursions notified by Remote Temperature Monitoring Devices. Adequately document all interventions.
5. Providing all PHCs with the required stock keeping forms/records and job aids.
6. Ensuring compliance with EEFO principles, through proper recording and spot checks.

Physical stock counts not done - There was no evidence on file that physical stock count and any reconciliation of records with the vaccine registers took place. This lapse applied to more than half of all the State stores visited by the audit team stores including: three out of six (50%) of States, nine out of 15 (60%) LGAs, and 24 out of 42 (58%) of PHCs.

Incomplete stock management records - Although the zonal and state stores recorded the batch and expiry of vaccines on receiving them, the same practice was not applied when the zonal and state stores issued vaccines to the lower levels. 15 out of 42 (46%) of PHCs visited lacked records for data entry. In addition, job-aids and guidelines for inventory management were lacking at 49% of PHCs visited.

Inaccurate records of the vaccine movements between the various levels – The audit team noted discrepancies in stock reconciliations between receipts and the corresponding issuances for 2020 at all levels and all sites visited. Five out of six states (83%), 14 out of 15 LGAs (93%) and 31 out of 42 PHCs (74%) had discrepancies following the stock reconciliation. Discrepancy incidents between the quantity of vaccines issued and the corresponding amount received by other stores were identified for multiple vaccines across all levels, including one out of five zonal stores (20%); two out of seven States (40%); and 43% LGA to PHC. In addition, 13 of 42 (31%) of PHCs visited had no records for verification.

Gaps in supply chain data transfer to central level for decision making

- There were gaps in the process of transferring actual vaccine consumption data from the PHC to the national level. At the LGA level there was a lack of proper collation and reporting of the vaccine consumption data. As a result, the computation of accurate vaccine wastage rates and vaccine forecasts were negatively impacted.
- The use of DHIS2 was suboptimal, as various data fields relating to the vaccine utilisation form were not used, and instead only the number of vaccine vials opened was recorded. This created an information gap on useful supply chain data which was not provided or recorded for decision making at the central level.

As a compensatory measure, it was reported that the Open Data Kit platform's records on closing balances were used for re-supply decisions. The audit team questioned the integrity of this data for which there was no evidence of any action taken to arrive at the numbers reported in the ODK.

Temperature monitoring and records **-** Remote temperature monitoring devices were available at the central, Zonal and State vaccine stores. The audit team noted instances of alerts escalated to stage 3 where director of the logistics was notified when store security/ assistance (stage 1) and warehouse manager (stage 2) had failed to respond. Even with stage 3 alerts, there was no evidence of any intervention taken to resolve the issue notifications. The audit team was unable to establish how, when or whether such issues were resolved; or if any vaccines were damaged as a consequence.

Root Cause

Data errors could be attributed to: (i) absence of a proper vLMIS (ii) errors in recording of vaccine receipts and issuances; and (iii) gaps or errors in the stock records, including missing data due to poor filing, records that were misplaced, or inconsistencies in stock balances being carried forward.

The process for identifying and correcting errors and gaps in stock records was ineffective. There was a poor follow up of stock management issues identified through support supervision. Despite some issues being repeatedly raised from supervision, there was no documented evidence of adequate follow-up by the central, zonal, state and LGA levels.

Management comments

R10: Already done

R11: Agreed. Although the country recently concluded a nationwide Vaccine Management Training that addresses these issues, the NLWG will also leverage other trainings and engagement opportunities with national, state, LGA, and PHC teams to ensure adherence

Risk / Impact / Implications	Responsibility	Deadline / Timetable
• Supply chain data inconsistencies compromise key decision-making processes such as, resupply and forecasting. • Failure to comply with the newly established Standard Operating Procedures may result in unavailability of vaccines, wasted doses from poor stock turn-over, and ultimately missed opportunities to immunise more children. • Inadequate monitoring, supervision, insufficient feedback and follow-up of results could lead to issues not being promptly addressed and is suggestive of poor value for money resulting from monitoring and supervision activities.	R10: Not applicable R11: NLWG	R10: Not applicable R11: Dec 2022

4.1.6 Unsatisfactory waste management

Context and Criteria

The June 2021 immunisation supply chain policy (section 3, chapter 10) prescribes the proper management of immunisation waste. The policy requires waste disposal and prohibits prior practices of open burning or burying of used immunisation materials including needles, syringes, and vials. The policy also mandates for an incinerator to be maintained for each senatorial district, funded by the respective State, and a costed waste management plan for all levels of the supply chain. Proper wastage management and disposal is critical to safeguarding the environment against harm, degradation, and counterfeiting of vaccines.

Condition

Following a review of the wastage management policies and practices at all levels of the supply chain, the audit team found several instances of non-compliance with the wastage management policy:

Inadequate management of waste transfer – PHCs were required to collect and aggregate all waste for transfer to their respective LGAs for further management, as disposal at the PHC level was prohibited. However, the transfer of waste from PHCs to LGAs was sporadic and was constrained by the insufficient funding for reverse logistics.

Continued use of non-recommended disposal methods (PHCs) - Several health facilities visited by the audit team stated that they continued to either burn or bury their immunisation waste, since they lacked the necessary resources to transfer it back to the LGAs for incineration. NPHCDA stated that in most States, sharps waste was taken to the LGAs for incineration while other waste was burned and buried at PHC as per the existing policy. However, the audit team observed both sharps and other waste stored at some PHCs without any plan for transferring it to the LGA level.

Irrespective of the relevant policy of the time, the audit team expected better management and disposal of wastes because several Gavi grant funds were allocated for procurement of incinerators and other waste management activities. Some grant applications mentioned that each LGA had waste management committees with plans to dispose of waste using incinerators in line with global best practices. To name a few, budget for incinerators were allocated as a component of several grants: e.g., YF phase 5 2021, VIG Men A 2016, Men A SIA 2017 etc. Investments in waste management, particularly for campaigns, were therefore expected (as stated in the grant applications) to benefit the routine immunisation programme.

Waste material taking up valuable storage space (LGAs) – The audit team viewed wasted piles of empty vials and sharps occupying space at the LGA level which otherwise would have been useful for immunisation related activities, without a disposal plan, see Annex 14 for pictorial evidence.

Root Cause

Although responsibility for waste management was decentralised to lower tiers of the supply chain, this was not matched by appropriate funding, dedicated budget lines, and costed waste management plans. NPHCDA had not developed a costed waste management plan, as required by the supply chain policy, nor had it identified or allocated suitable funds or budget, for this purpose.

Recommendation 12/ Priority - Medium

NPHCDA and SPHCDA are recommended to fully cost out waste management plans, to support the implementation and disposal of waste across the supply chain. In addition, appropriate resources need to mobilise so that the States can budget for wastage disposal and reverse logistics management.

Management comments

Agreed

Risk / Impact / Implications	Responsibility	Deadline / Timetable
• Inadequate management of wastes such as vials, sharps and infectious materials can potentially lead to negative health impacts on the community and health workers. • The absence of operational funding for waste management is likely to result in subnational stores seeking alternative, unsanctioned disposal methods or could result in viable storage space being used to contain waste as it accumulates. • If used vials are not properly disposed of, they could be diverted or abused for counterfeiting purposes, in particular for high-demand COVID-19 vaccines.	NPHCDA, SPHCDAs	December 2022

4.2 Immunisation Data Management

4.2.1 Irregularities in administrative immunisation coverage

Context and Criteria

Gavi's application guidelines require Gavi-supported countries to improve data availability, data quality and use of data for their planning, programme management, understanding and documentation of results. The guidelines encourage the use of immunisation coverage data as an ongoing institutionalized process for better planning, improved programme performance and resource management.

In 2010, Nigeria adopted DHIS2 platform as its National Health Management Information System. In 2014, the Government, in collaboration with health development partners, developed the DHIS2 Routine Immunisation (RI) module and dashboard which was piloted in Kano state. By December 2017, the RI module was rolled out to all 36 states and the Federal Capital Territory, with all states now reporting their RI data through this module. The DHIS2 RI module and dashboard was funded by the Bill & Melinda Gates Foundation and the US Centres for Disease Control and Prevention.[4]

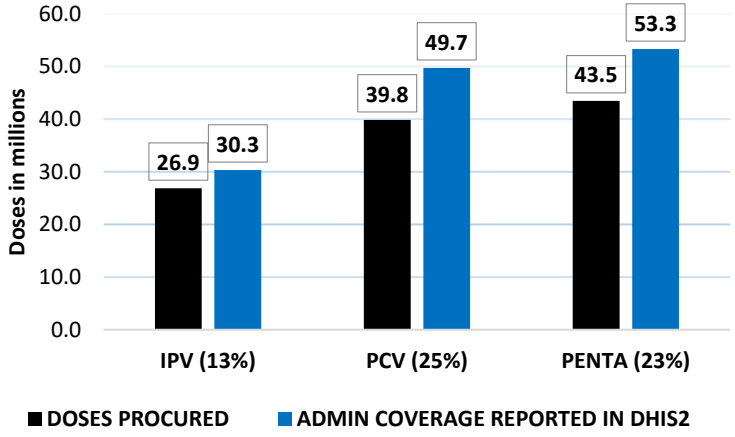
Disparities between RI administrative data and survey coverage estimates are significant and continue to persist. For example, there was a 72% overall discrepancy between the administrative data and the last 2016 independent coverage survey (MICS/NICS) which was the agreed survey type to measure the immunisation coverage in Nigeria. Having recognised the inaccuracies in its DHIS2 immunisation administrative data, NPHCDA committed to reduce this discrepancy as stipulated in the national strategy NSIPSS 2018 - 2028. According to NPHCDA, a 57% coverage rate was reported by the 2018 National Demographic and Health Survey (NDHS) which suggests a gradual reduction in the disparity between the Survey and the 84% administrative data coverage reported.

Condition

At national level - The audit team triangulated data for the period Jan 2019 to Jun 2021, comparing the number of vaccinations reported in DHIS2 and the total available vaccine doses in the country during the same period. The results revealed that more children were reported to have been vaccinated than the actual vaccine doses available, see Figure 3. The analysis reconfirms that the coverage data at the national level is inaccurate. According to NPHCDA, the issue might be limited to some select states and therefore an overall generalisation is inaccurate.

Limitations and assumptions

Figure 3: Doses procured vs. doses administered Jan 2019 to Jun 2021



Recommendation 13/ Priority - High

It is recommended that NPHCDA and SPHCDA:

- Routinely perform a triangulation of its immunisation data between doses distributed, vaccine utilisation and administrative coverage; and
- Consistently complete data verification and validation exercises at the health facility levels as required by the National Data Management standard operating procedures.

[4] Implementing the routine immunisation data module and dashboard of DHIS2 in Nigeria, 2014–2019, published 21 July 2020.

As reported in section 4.1.5, the audit team noted that the stock ledgers at national level were not up to date. For example, as of August 2021, the excel-based SMT currently in use had no data entries recorded for the 7-month period, June to December 2020, and therefore SMT could not be relied upon to track the movements of stock. Total vaccine shipments received at NSCS for the same period was assumed to be the total vaccine available in the country. Given NSCS's inability to maintain buffer stock, the assumption is that all vaccines it received were quickly pushed out to the state stores. The audit team's analysis was not adjusted for the country's stated vaccine wastage rates, which would increase the unexplained gap between vaccine doses available in country and the vaccination reported. Adjustments were made for Penta opening balance due to a large stock balance brought forward in 2019. For IPV, the audit adjusted reported numbers in DHIS2 by adding the data from the National Emergency Operation Centre (NEOC) for all campaigns during the period. According to NPHCDA the IPV campaign adopted fractional dosing. However, NPHCDA did not provide any documentary evidence such as vaccine stock and coverage data to the Gavi audit team. ***At sub-national level –*** The audit team compared the total number of doses dispensed at PHC level and the total number of children reported for the period July 2019 to January 2020. The findings at 98% of the PHCs visited (41 out of 42) were consistent with the finding at national level, i.e., more children were reported to have been vaccinated than the actual vaccines doses available for this period.		
Root Cause Several factors could contribute to the erroneous administrative immunisation data including data input errors at the PHC and LGA levels (see section 0), absence of effective data supervision and data verification processes (see section 0); and slow progress in applying the data quality implementation plan (see section 0). Furthermore, according to NSIPSS, NPHCDA had committed to perform a triangulation of data across various sources. Data triangulation could have helped NPHCDA to identify data anomalies, offering the possibility for data correction. NSIPSS also mentioned that NPHCDA was also supposed to further develop the LGA staff capacity on using the DHIS2 platform for more detailed analysis and data triangulation. However, this was not done.	Management comments Agreed	
Risk / Impact / Implications Unexplained data anomalies undermine the credibility of the reported immunisation administrative coverage. Reporting inaccurate coverage via Gavi's performance framework is not compliant with the Partnership Framework Agreement. Lack of reliable vaccination coverage compromises the immunisation programme's ability to identify susceptible and unvaccinated groups; and better track communicable diseases.	Responsibility NPHCDA, SPHCDAs	Deadline / Timetable December 2022

4.2.2 Delays in conducting surveys to provide timely and reliable information for decision making

Context and Criteria

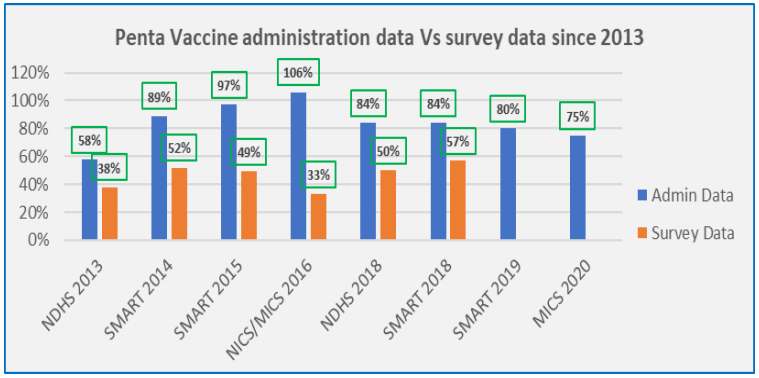
It is recognised that Nigeria has significant discrepancies between its survey and administration data. Having recognised and knowing that the data lacks integrity, NPHCDA committed to address and reduce this discrepancy as stipulated in the NSIPSS (2018). NPHCDA has also accepted MICS/NICS survey result as more accurate compared to its own admin data.

The NSIPSS includes strategies on conducting annual surveys to provide timely and reliable information for decision making. These strategies include: (a) Annual coverage surveys using a methodology acceptable to both the government and partners. This involves using existing survey approaches such as Standardized Monitoring and Assessment of Relief and Transitions (SMART), (b) Every three years to conduct a comprehensive survey, i.e., the Multiple Indicator Cluster Survey/National Immunization Coverage Survey (MICS/NICS) which provides additional details; and (c) conduct sero-surveillance to ascertain the true immunisation status of children, especially in environments where immunisation coverage is low.

Condition

To date, the intervals between surveys were often long and inconsistent. Furthermore, there were challenges in comparing results across surveys which used different methodologies. Surveys that currently provide immunisation coverage include Nigeria Demographic and Health Survey (NDHS), NICS/MICS and the SMART survey.

Figure 4: Penta – administrative vs. survey data since 2013



Nigeria uses a mix of different surveys which include:

a) SMART survey - a national nutrition and health survey conducted by UNICEF using a small sample size compared to the other surveys. Its scope was expanded to include the annual immunisation information needs, which according to the DQIP plan, was expected to be conducted every year. However, in the Nigerian context, the SMART surveys are unacceptable to Gavi and its partners due to the methodological differences related to younger children. Further, the last SMART survey was conducted in early 2019, and the report was not disseminated due to non-concurrence on findings. The 2019 SMART report (draft or final) was not available for review.

b) MICS/NICS - As stipulated in the Accountability Framework, MICS/NICS were to be conducted every three years, to provide additional details on immunisation coverage. The last MICS/NICS was conducted in 2016. In 2020, NPHCDA, with support from UNICEF, was due to begin data collection for the survey, so as publish the results by September 2021. Nevertheless, as of August 2021, the fieldwork for the survey had not yet begun. According to UNICEF, the start of data collection was deferred until September 2021.

According to NPHCDA, it plans to harmonise the methodologies used in surveys to make them acceptable to most of the partners supporting the immunisation programme.

Recommendation 14/ Priority - High

It is recommended that NPHCDA, in collaboration with its partners, prioritise and fast track the publication of the MICS/ NICS survey result; use the result to triangulate data; design appropriate targeted strategies and methodologies to boost the coverage; and address gaps in data quality (refer to recommendations 15 to 18 below)

<table>
<tr><td>Post audit fieldwork update – As of April 2022, the Gavi audit team was informed that the survey data collection was completed, and preliminary estimates were produced. However, the survey report was not yet finalised as the validation of survey findings and production of final estimates of immunisation indicators were pending.

In effect, due to an absence of credible survey results, NPHCDA has not been able to compare its administrative data with a survey result since 2018. Therefore, any improvement or change in data quality during the past three years remains unknown without any recent data points to corroborate the current status.</td><td colspan="2"></td></tr>
<tr><td rowspan="2">Root Cause
Planning delays and disruption caused by COVID-19 pandemic resulted in deferring data and survey activities.</td><td colspan="2">Management comments

Agreed</td></tr>
<tr><td>Risk / Impact / Implications
Without timely, regular surveys, NPHCDA is unable to demonstrate improvements in the quality of its coverage data. The lack of data points also compromises relevance/pertinence of the Grant Performance Framework (GPF) indicators. In addition, in the absence of the survey results, progress against Accountability Framework indicators (i.e., 8 and 9), for period 2019 and 2020 could not be measured.

In absence of a timely and accurate survey data obtained through generally accepted survey methodologies, the strategic direction of the programme and coverage can only be modelled based on assumptions.</td><td>Responsibility

NPHCDA</td><td>Deadline / Timetable

December 2022</td></tr>
</table>

4.2.3 Weaknesses in the design and implementation of the Data Quality Improvement Plan

Context and Criteria

Data Quality Assessments (DQA) conducted by immunisation programmes provide a self-assessment opportunity for countries to identify their data challenges and develop improvement plans. Since 2015, Gavi required countries to perform the DQA using WHO-endorsed methodologies. Although DQA is not an annual requirement, it is recommended to be done at least every three to five years. Given the poor quality of its national routine immunisation coverage, NPHCDA committed to several data improvement initiatives in NSIPSS such as: (i) regular data quality assessments and surveys; (ii) development of data quality improvement plan (DQIP); and (iii) annual evaluations of DQIP implementation status. NPHCDA developed a DQIP for the 2017-2020, however, finalisation of the plan was delayed until March 2019. Ultimately, to align it with NSIPSS, NPHCDA relaunched a revised DQIP in September 2019 for the period 2019 -2023.

Condition

Inadequate design and tracking of the monitoring framework – In accordance with the NSIPSS, NPHCDA committed to conduct annual evaluations of the DQIP's implementation status to follow through on the resourcing and implementation of all the proposed strategies and activities. While the 2019 DQIP incorporated a monitoring framework, its milestones and performance were not consistently tracked by NPHCDA, as required. The audit team noted the following gaps:

- The proportion of States disseminating monthly RI feedback to LGAs was not measured on a quarterly basis as required. There was no evidence that this was undertaken for the 2019 DQIP.
- The proportion of States reporting improvements in Health Workers using data for action was not measured bi-annually.
- The annual variance (% gap) between SMS and DHIS2 and survey data Penta3 coverage was not measured in 2019 and 2020. The audit team observed some evidence of comparison of data between DHIS2 and SMS reporting platforms for the later period Jan - March 2021. However, there was no evidence of feedback and monitoring of the proposed action plan.

According to NPHCDA, it is unable to track the implementation of DQIP at the subnational level because most of the activities are unfunded. NPHCDA suggested that it had encouraged the states to include some of the DQIP activities in their respective annual operational plans. According to Gavi Country Support Team, funds requested for DQIP activities (included in NPHCDA's yearly budget) were much higher than the funds available in the HSS grant. The Audit Team is of an opinion that NPHCDA is responsible for prioritising DQIP activities in line with the available funds and mobilising funds for any critical activities that are underfunded or unfunded.

Additionally, some activities detailed in the DQIP were excluded from the monitoring framework which meant that they neither had targets nor mechanisms to measure their performance. For example:

- The facilitation of States to implement task-shifting of data management for health workers. This was expected to ease the administrative burden on health workers by deploying records officers in some health facilities.
- Revision and monitoring the implementation of the National Immunization Policy to include appropriate rules and regulations on data falsification.
- Scaling-up of electronic routine immunisation data capture (coverage, immunisation sessions, vaccine wastage, stock out etc.) using SMS platform. As of August 2021, the SMS reporting for RI by the health facilities was in place across only 18

Recommendation 15/ Priority - Medium

NPHCDA should budget for its outstanding DQIP activities and ensure that funding is allocated to critical areas of the plan. It should also advocate for the States to include these DQIP activities in their state budgets.

Recommendation 16/ Priority - Medium

NPHCDA should ensure that all DQIP activities are included in the performance measurement framework and are properly monitored.

priority states. According to Gavi Country Support Team, the delay is attributable in equal terms to Gavi, NPHCDA and the telecommunication firm providing SMS service.

Note: The 6-month action plan included more than the activities mentioned-above. The activities mentioned above were either the activities with audit exceptions or used as examples to support audit observations.

Delayed implementation of the activities that did not require additional funding - The data working Group at NERICC developed a six-month action plan to implement DQIP "quick win" activities, which required no new funding, and these were planned to be undertaken between January and June 2020. Some of these activities included conducting monthly DHIS2 analysis, strengthening the conduct of national and State review meetings, strengthening monthly data coordination for all programmes using the DHIS2 platform, finalisation and implementation of the Accountability Framework. As of September 2020, just one activity was completed, while five remained incomplete.

As of June 2021, 2.5 years into the DQIP period, NPHCDA reported 30 out of 48 DQIP activities as completed. However, based on the evidence, the audit team established that eight activities had not started, 10 were completed, 8 were partially completed, 15 were ongoing; and 7 had no evidence on their status.

From its field visits at state, zonal, LGA and PHC, the audit team noted that some activities that were indicated as ongoing did not translate into concrete activities, namely: (a) Data review meetings with all technical working groups at the state and LGA levels; and (b) Regular assessments of data quality across states by triangulating all data sources. (i.e., short message service, district health information system, Routine Immunization Supportive Supervision, Routine immunisation registers, tally sheets and summary forms).

According to NPHCDA, the DQIP was to be operationalised following approval of the six-month action plan, which was approved in Q1 2020, but routine activities were adversely affected due to the COVID-19 pandemic.

Root Cause

A key challenge to implementing the DQIP activities was the lack of funding at State level. Thus, States had not included the DQIP activities in their annual operational plans and budgets. Equally there was no indication of the criticality or priority for which activity to implement first, since NPHCDA did not rank the activities in the monitoring framework by importance.

The COVID-19 pandemic disrupted many implementation and coordination efforts, particularly during its onset for the period March – September 2020.

Management comments

R15: Agreed. NPHCDA will budget for the outstanding DQIP activities and solicit partner support to implement and sustain the activities to improve data quality

R16: Agreed

Risk / Impact / Implications

Failing to implement critical data quality activities threatens the quality of immunisation results and the overall direction and guidance that Management can provide to the programme.

Responsibility

NPHCDA

Deadline / Timetable

December 2022

4.2.4 Gaps in data quality assurance mechanisms

Context and Criteria

Gavi's grant application guidelines require applicant countries to improve access to good quality immunisation data by (a) conducting annual desk reviews to monitor coverage data; (b) have routine mechanisms in place to independently assess the quality of administrative data. This includes possibility of using Gavi-support to develop a plan (following annual Joint Appraisals) to improve the quality of data over time; and (c) undertake regular population-based surveys to assess immunisation coverage.

Condition

The audit team reviewed primary data tools including immunisation registers (at PHC-level), tally sheets (PHC-level), National Health Management Information System (HMIS) reporting forms (PHC and LGA levels) and other tools, such as child immunisation cards, AEFI forms etc. The audit team noted the following data quality assurance weaknesses across national and sub-national levels:

Inadequate data validation process - There was no evidence that the data recorded was reviewed or, where necessary, corrected, and subsequently validated during RI support supervision. Also, NPHCDA, through NERICC and State Emergency Routine Immunization Coordination Centre (SERICC), did not conduct the quarterly data quality surveys that it had committed to per the NSIPSS strategy. The last DQA was conducted in 2016, covering eight out of 37 states.

According to NPHCDA, the existing Lot Quality Assurance Sampling (LQAS) provided assurance over data quality. However, the audit team noted that the LQAS did not involve a data verification process i.e., tracing of the DHIS2 data to the source documents at LGA and PHCs. Instead, LQAS' primary purpose was to monitor programmatic performance such as drop-off in immunisation coverage, the conduct of fixed and mobile vaccination plans, etc. Although the LQAS was also presented in the NSIPSS as a mechanism to increase understanding of key issues affecting data quality and accurate coverage rates across the LGAs, in practice it did not involve data verification. The audit did not see any of the processes relating to data quality leading to the correction of data in DHIS2.

At some PHCs, the audit team noted that the supportive supervision review provided by different individuals on different dates were written in an identical handwriting, see Annex 12 illustrating two examples.

Inconsistent processes to identify and correct anomalies at both national and subnational levels – During weekly and monthly data review meetings, reports were extracted from DHIS2 and reviewed by the data working group (NERICC/SERICC). The audit team noted that NPHCDA was unable to demonstrate that it had a process to follow up and resolve data errors in DHIS2. Potential errors between tally sheets and monthly summary reports were neither reviewed nor investigated if found, and the audit team noted errors in the accuracy and collation of data at 64% of the PHCs visited. Similarly, for 85% of the LGAs visited, there were data inconsistencies between the LGAs source documents and what was transcribed into DHIS2. Refer to section 4.2.5 for details.

Recommendation 17/ Priority - High

NPHCDA should design and put in place a consistent, process that systematically identifies and corrects data anomalies at both national and sub-national levels.

Additionally, NPHCDA should work with the State-level data teams to ensure that immunisation data is regularly reviewed and compared to underlying records at both the LGA and PHC levels and that the results of this process are recorded and put on file.

<table>
<tr><td rowspan="2">Root Cause
Lack of funds for regular nationwide DQA.
Inconsistent or non-existent LGA-level data review meetings, as stipulated in the DQIP.
Data quality reviews not integrated in the supportive supervision.</td><td colspan="2"></td></tr>
<tr><td colspan="2">Management comments

Agreed.

There have been several efforts at the national level to systematically identify and follow up with states and LGAs on data quality issues. Examples include WHO data quality tool on DHIS2 platform and Data Quality Tracking Tool (DQTT) developed by AFENET and this is interoperable with DHIS2 platform. The outputs of DQTT are used to follow up with states every month.</td></tr>
<tr><td>Risk / Impact / Implications
Without an effective data verification and validation process, data anomalies will not be identified and promptly corrected– resulting in inaccurate or erroneous immunisation data entries. See audit observation in the section 4.2.5 for examples of data errors observed by the audit team.</td><td>Responsibility

NPHCDA</td><td>Deadline / Timetable

December 2022</td></tr>
</table>

4.2.5 Data flow process errors undermining the integrity of the data reported at national level

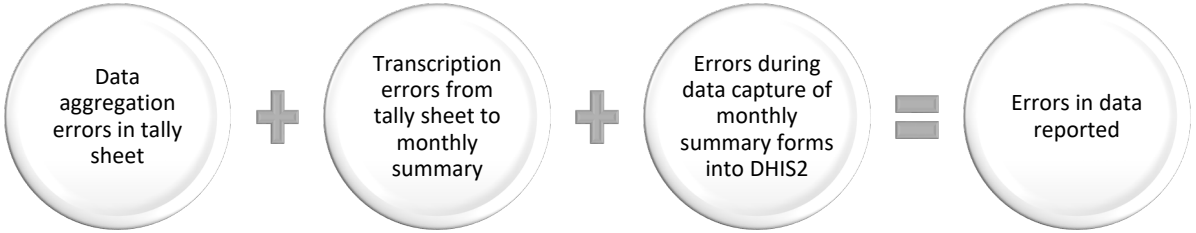
Context and Criteria

Health facilities record their routine immunisation data using a paper-based form and forward the data to the LGAs for compilation. The LGAs then collate and enter the data into DHIS2 for the attention of the State and federal level.

Condition

For the period under review, the audit team noted errors at several stages of the data flow process (illustrated below) compromising the integrity of aggregated data reported. The discrepancies were attributed to data-entry errors and a lack of data quality assurance processes.

Figure 5: Possibility of errors accumulating along the data flow process



Data discrepancies at health facility levels – At the PHC level, the audit team found discrepancies between the figures reported in the tally sheets and the numbers in the monthly reports for Pentavalent vaccine doses. This was noted in 27 out of 42 (64%) PHCs visited (Refer to Annex 10 for audit team findings for each PHC). The audit team's analysis focused on data from the period July 2019 – January 2020, the subsequent period was excluded considering potential disruptive effect of the COVID-19 pandemic on the process.

At the LGA level, the audit team also identified discrepancies between the DHIS2 data input by LGA, and the monthly PHC reports it had received. There were variances in 85% of the cases of what the LGA input into DHIS2. The aggregated variances in each LGA visited by the audit team across the seven months period ranged from 2% to 19%. Refer to Annex 11 for detailed findings.

Penta immunisations reported in DHIS2 without corresponding original source documents – In six of the LGAs visited, the audit noted instances of data reported in DHIS2 that could not be traced to any source document, i.e., PHC's monthly reports. See example below for Enugu South LGA and four of its LGAs. For detail findings, see Annex 11.

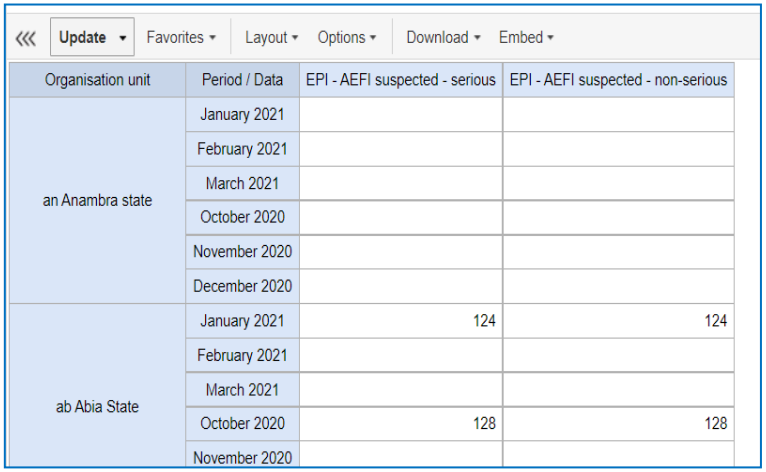
Recommendation 18/ Priority - High

NPHCDA should establish principles for a proper data validation mechanism to be put in place at the subnational level, for example, regular reviews of primary data documents at PHC prior to submission the LGA, as well as a consistent process for DHIS2 data to be checked against original, underlying records.

Table 4: Example LGAs in the state of Enugu South without source document for the data reported in DHIS2

Facility:	Amechi PHC		Obeagu PHC		Ibezim Medical		Eke PHC	
Data month:	Monthly report	DHIS2	Monthly report	DHIS2	Monthly report	DHIS2	Monthly report	DHIS2
July -19	No report	194	6	6	76	75	No report	76
Aug -19	249	249	2	2			93	93
Sep – 19	199	199	4	4	52	52	87	84
Oct – 19	No report	240	9	5	No report	44	127	131
Nov – 19	No report	214	No report	5	No report	61	109	146
Dec - 19	No report	239	No report	4	No report	69	No report	124
Jan - 20	No report	187	No report	17	No report	0	No report	98

Adverse event following immunisation (AEFI) not reported - Only 43% of PHCs were found to be recording AEFI cases using the tools provided. In cases where an AEFI was recorded by PHCs, the reports were either not submitted to the LGAs or the reports were received by the LGAs but were not compiled and entered in DHIS2 (examples of this were noted for three LGAs). At the national level, DHIS2 extracts for the 6-month period Oct 2020 to Mar 2021 revealed no AEFI cases reported for at least 7 States, including: Anambra, Abia, Bayelsa, Plateau, Niger, Taraba, Gombe, as well as other states. Below is a DHIS2 snapshot obtained by the audit team.



Organisation unit	Period / Data	EPI - AEFI suspected - serious	EPI - AEFI suspected - non-serious
an Anambra state	January 2021		
	February 2021		
	March 2021		
	October 2020		
	November 2020		
	December 2020		
ab Abia State	January 2021	124	124
	February 2021		
	March 2021		
	October 2020	128	128
	November 2020		

Negative drop-out rates for the Penta vaccines – The review of DHIS2 at national level revealed that some States were reporting negative figures. This implies that either Penta 1, 2 or 3 reported was erroneous. The audit team noted penta negative drop-out for four States, including Bayelsa, Ebonyi, Lagos, Nasarawa, as well the FCT occurring during the period February and March 2021. Below is a DHIS2 snapshot illustrating this, obtained by the audit team.

Figure 6: Status of monthly dropout rates for Penta (DHIS2)

State	Feb	Mar
Akwa-Ibom	5.7	7.4
Borno	11.7	12.4
Bayelsa	-6.9	8.0
Delta	7.0	8.0
Ebonyi	-3.2	3.3
Edo	3.1	7.0
Enugu	4.9	6.1
FCT	-12.6	-13.1
Jigawa	4.3	7.0
Kaduna	12.5	3.6
Katsina	11.5	16.7
Kwara	5.3	7.5
Lagos	-7.6	0.0
Nasarawa	-7.3	-2.7
Niger	5.3	2.5
Plateau	17.1	8.3
Taraba	9.3	4.2
Zamfara	17.9	12.5

According to NPHCDA, due to lack of funds in most of the states, few states held validation and review meetings; and implemented quality assurance processes as per DQIP and country's HMIS policy. The above-mentioned audit observation is based on the observations made by the audit team at the limited sites selected as audit sample. The data quality mechanisms, as mentioned by NPHCDA, were not evidenced at the sites visited by the audit team.

Root Cause

Based on the audit team's visits, it was demonstrated that too little focus was spent reviewing data issues as part of regular supportive supervision. In particularly, across the 42 PHCs and 15 LGAs visited, there were no records evidencing that data issues were identified, timebound actions proposed and follow up, or reports compiled in specific acknowledgement for what is a known, recognised issue.

Management comments

Agreed. Issues around documentation and data inconsistencies have been an issue, but there is an effort from the country to address this, e.g., the EMID and full transitioning into e-Registry. The immunisation academy – using remote learning for continuous capacity building.

Risk / Impact / Implications	Responsibility	Deadline / Timetable
Data discrepancies risk undermining the reliability and credibility of data used for decision-making across the health system.	NPHCDA	December 2022

4.3 Cold Chain Equipment

4.3.1 Inadequate monitoring of the CCE functionality and poor knowledge of cold chain capacity at the subnational level

Context and Criteria

In 2019, Gavi approved USD 23 million to procure and install 12,753 units for the benefit of the Government of Nigeria, as part of the Cold Chain Equipment Optimisation Platform (CCEOP). Using the CCEOP, the Government planned to either replace non-functional cold-chain equipment or to install units at those sites without any cold chain capacity, so as to achieve the objective of at least "one functional solar refrigerator per ward." By August 2021, NPHCDA, with UNICEF's support, had installed 2,963 units with an additional 6,346 units in the process of being deployed. While the initial phase of the CCEOP support targeted service delivery level (i.e., the PHCs), the subsequent phase targeted LGAs. Prior to this, in 2014 the government installed 1,656 solar direct drive vaccine refrigerators using Gavi's HSS support.

To maintain its cold chain equipment (CCE), the National Logistics Working Group (NLWG) developed a costed plan consistent with the processes articulated in the country's revised Guidelines for Preventive Maintenance of Immunisation Cold Chain Equipment and inspired by NPHCDA's 2018 Cold Chain Inventory and Assessment findings.

Condition

Increased CCE gap due to lack of an effective monitoring mechanism – The CCEOP investment, which was based upon the Government's original 2018 gap analysis, has not achieved the desired outcome of "one functional solar refrigerator per ward[5]". This is because some of the CCE identified as functional in the 2018 assessment subsequently broke down (possibly in due to poor maintenance). Where these non-functional CCE were not repaired or replaced, this effectively created additional cold chain needs at the sub-national level, beyond the scope of what was to be covered by the CCEOP grant.

According to NPHCDA, the CCEOP procurement plan had factored in equipment that will become obsolete or break down beyond repair during the CCEOP support period. It insisted that the Inventory Replacement and Rehabilitation Plan (IRRP) was updated on a quarterly basis.

IRRP is a tool which advises users on CCE maintenance and replacement issues. The tool also facilitates the analysis of gaps in CCE/ storage capacity. After the virtual training in October 2020, each State was expected to report every quarter using the IRRP Tool, to help diagnose their current CCE status, along with generating relevant recommendations. However, there was no evidence on file that the three-monthly reporting and follow-through occurred.

The audit team observations contradict NPHCDA's statement. First, the CCEOP procurement plan was limited to the replacement of 2,012 CCE, in selected PHCs, which were non-functional and non-compliant with WHO performance quality and safety protocols; and replacement of 519 non-functional CCE which have been in use for over 10 years. The audit team noted from the IRRP that the replacement criteria missed out on more than 800 CCE, in the Northern Zone, which were non-functional but did not meet the above-mentioned replacement criteria. Furthermore, the IRRP was not up to date at the time of the audit. At the sites visited in the audit, the team collected information of all available

Recommendation 19/ Priority - High

NPHCDA should effectively advocate and follow up to ensure that sufficient funds for repairs and maintenance are allocated in the States' budgets.

Recommendation 20/ Priority - Medium

NPHCDA should define (and promulgate) appropriate guidelines consistent with existing sub-national maintenance processes, setting out the frequency that State Maintenance Units should inspect their CCE units, so as to report their condition and status back to NPHCDA. Use of the Inventory Replacement and Rehabilitation Plan could be embedded in this requirement.

[5] A ward is a local authority area, typically used for electoral purposes. A ward is administered by a councillor, who reports directly to the LGA chairman.

equipment, and compared this against the IRRP. The audit team noted mismatches such as CCE were found non-functional but were not included in the tool; and CCE were in use/functional but in the tool. This inferred that the IRRP tool was not up to date. NPHCDA also stated that it is too early to evaluate the desired outcome as the phase 2 of the CCEOP support is yet to start. Furthermore, the fixed asset register (FAR) maintained by NPHCDA to track the functionality of CCE, was not kept up to date, resulting in the working status of CCE units (in particular those that were defective or broken) across the country not being known. There was no process for maintaining an updating FAR, including how often it should be updated. For example, as of August 2021, Kuje LGA's refrigerator was not yet repaired, 12 months after it was first reported to the State authorities. In multiple cases, broken down CCE units remained onsite unrepaired at the various facilities. In the absence of a nationwide updated FAR, it is therefore likely that the estimated nationwide CCE gap is understated. ***Inadequate preventive and restorative maintenance*** - Based on the sites visited by the audit team, 22% of CCE units at LGA-level and 43% State level units were non-functional. Specific examples of concern that the team noted include: (a) Bodinga LGA – four out of five refrigerators were broken down;(b) Nsukka LGA – five out of seven refrigerators were broken down; (c) Gwagwalada LGA – seven out of 10 refrigerators were broken down; and (d) Enugu South LGA – three out of four refrigerators were broken down. ***Lack of maintenance logs*** – 67% of the LGAs' staff responsible for CCE indicated that they were aware of the equipment's warranty conditions and the importance of preventive maintenance. However, any actual maintenance interventions were not adequately evidenced, and maintenance logs were not adequately or consistently updated (for example at Odur PHC, Nsukka PHC and Bayara).		
Root Cause There was little evidence to support that State Maintenance Units were actively functioning, there were no maintenance plans backed by the State-level funding. No quarterly IRRP reporting and follow-through occurred.	Management comments Agreed	
Risk / Impact / Implications Inaccurate or incomplete CCE gap analysis compromises decision-making on storage capacity. The lack of timely identification of broken down CCE units compromises the ability to activate or potentially benefit from warranty coverage. Without more complete and current data on the CCE infrastructure, it is unclear how the CCEOP grant objectives will be consistently met.	Responsibility NPHCDA	Deadline / Timetable December 2022

4.3.2 Unusable cold chain equipment not decommissioned

Context and Criteria

As detailed in the 2017 NPHCDA Planned Preventive Maintenance (PPM) guidelines, unserviceable and obsolete CCE equipment must be decommissioned according to the government process, by engaging the Ministry of Finance's Survey Board. At the State level, the Board is responsible for conducting annual audits to complete a list of items designated for decommissioning and disposal, and to prepare a costed plan for the decommissioning exercise.

Condition

The audit noted some irreparable and unserviceable cold chain equipment across all health system levels: National, Zonal, State, LGA and PHC. Non-functional equipment was either left within the storeroom or was placed outside the facility.

In cases where non-functional items were kept in the storeroom, this occupied working space which could have been used. As a consequence of effectively reducing the working area available, some functional equipment was housed in improper conditions; for example: under leaking roofs, areas susceptible to flooding, rooms without locks, corridors, etc.

At the AMAC store, the three fridges were required to share the same space as the office, and another two were placed outside in the corridors exposing them to potential excessive ambient temperatures. At the Bodinga LGA, one fridge was positioned under a roof prone to leaking. (See Annex 13)

There was no evidence of the State conducting annual audits to identify CCE eligible for decommissioning.

Root Cause

The country does not systematically identify unserviceable or irreparable cold chain equipment. Additionally, some staff at facility level were not trained in how to report CCE issues. Not all State governments have prioritised and allocated an appropriate budget for decommissioning.

Recommendation 21/ Priority - Medium

NPHCDA, through NLWG, should engage with the Ministry of Finance's Survey Board to conduct annual audits to identify and record all equipment that are eligible for disposal. The effort should be clearly costed, and the budget sources timely identified.

To operationalise the engagement with the MOF's Survey Board, NPHCDA is encouraged to consult UNICEF's guidance material titled '*Decommissioning and safe disposal of cold chain equipment,'* issued in April 2018. According to the guidance, there is a possibility of earning money by selling recovered refrigerant to a certified reclaimer. This money could partly contribute to expenses related to decommissioning.

Management comments

Noted

Risk / Impact / Implications

The lack of follow-through or incomplete decommissioning or disposal of non-functional CCE units creates potential environmental hazards (coolants, etc.). Furthermore, run down or dilapidated CCE units that reach the end of their useful economic life may be significantly more expensive to maintain, due to the need for frequent repairs as well as the costs of downtime and breakdown.

Responsibility

NPHCDA

Deadline / Timetable

December 2022

4.4 Targeted Country Assistance

4.4.1 Weaknesses in operationalisation of Targeted Country Assistance

Context and Criteria

Targeted country assistance (TCA) complements Gavi's support for vaccines and health system strengthening. TCA aims to bridge capacity gaps by leveraging the core competencies of Gavi Alliance partners based in-country. The nature of such support is usually determined based on a country's needs identified through country level discussions such as the joint appraisal or full portfolio planning. The support is often provided through: (i) the provision of technical expertise and information sharing; or (ii) delivering training or consulting services. The proposed TCA activities are consolidated into an annual joint plan for TCA activities (the One TA plan), aligned with the relevant programmatic areas. As a consequence, the impact of the TCA support is assessed as part of each country's overall grant performance indicators.

Condition

For the period under review, 2018 - 2020, the country received US$19.6 million targeted country assistance funding. In addition to the core Gavi alliance partners (WHO, UNICEF, World Bank), CDC and 11 expanded partners were involved in implementing the One TA plan. The TCA funds were split as USD 13,664,125 (70%) to the core partners and USD 5,895,331 (30%) to the expanded partners. Only five of the expanded partners received funds greater than USD 500,000, with Clinton Health Access Initiative being the primary recipient of most (85%) of the total funds allocated to the expanded partners.

The audit team noted the following weaknesses in the design and operating effectiveness of TCA:

Design and implementation of activities – While principal TCA areas are broadly defined in the One TA plan, the details of actual interventions are developed afterwards by the partners. Despite being a primary beneficiary of the TCA, NPHCDA was not engaged in any formal process for finalising and signing off on proposed interventions, and hence it missed an opportunity to ensure that actual interventions met the ambitions and intentions of the original TCA plan.

TCA milestones reporting – There was no defined role for NPHCDA in the design of TCA performance indicators. While the partners reported their milestones directly to Gavi through an established portal, there was no country ownership to provide oversight and validate the activities undertaken.

Coordination structures – As a federated country, a range of TCA activities were implemented across the national and State levels. To do this properly requires appropriate coordination mechanisms to ensure that synergies from the State level activities are aligned with the national level. The audit team identified the following gaps:

- Inadequate linkages across the national and State level activities - The team were unable to obtain a detailed breakdown of the TCA activities identifying for each national level activity, how these were linked to parallel activities at the State level, as well as who was responsible to monitor and facilitate the interconnection, as well as to ensure that the key success indicators at each level were complementary.
- Inadequate information on the continuity and scalability of TCA investments – For example, pilot projects relating to vaccine supply chain logistics management were conducted in some States, but the results were not adequately tracked to measure the potential for scaling these up across other States.

Recommendation 22/ Priority - Medium

NPHCDA through NERICC platform, should engage in designing the TCA delivery approach to ensure that the designated activities are specific, measurable, accurate, relevant and include defined timelines.

Recommendation 23/ Priority - Medium

NPHCDA through its NERICC platform, should mature its role in holding the TCA partners to account given that it is the primary intended beneficiary, so that it can formally confirm and validate on the reported deliverables prior to these being reported by the partners via the Gavi PEF portal.

- Inadequate involvement of State-level leadership – The audit team was unable to obtain evidence that State-level leadership were engaged in the planning, tracking and implementation of State-level activities.
- Inadequate coordination of supervision and monitoring – The various supervisory visits undertaken by the TCA providers and NPHCDA were uncoordinated. The audit team noted that some health facilities received several separate visits from both NPHCDA and the TCA provider, while other facilities received few if any such visits. This indicates the need for such visits to be coordinated so they can be spread across a wider range of health facilities.

Selection process for expanded partners **-** Due to the absence of a commonly acceptable process, since 2020 the selection of expanded partners was halted from both NPHCDA and Gavi side. There is a need for NPHCDA to develop, in coordination with Gavi, an acceptable process to identify and select expanded partners.

Root Cause

The identification and defining of the technical assistance requirements and the development, assessment and performance reporting on the TCA providers' execution is a complex process involving multiple entities and agendas. While the national immunisation programme is the intended ultimate beneficiary of TCA activities, the process of documenting accountability was in part managed via Gavi's Partnership Engagement Framework (PEF) portal. There was a perception that TCA providers were largely only accountable to Gavi, resulting in the primary beneficiary not being adequately implicated in ensuring oversight and accountability over the TCA rendered.

Management comments

R22: Since the TCA plan goes beyond NERICC (includes NPSIAs, COVAX, Surveillance, etc), the TCA delivery and coordination approach will be designed and managed through the office of the Director, Department of Disease Control and Immunization.

R23: Agreed, but will be conducted by the DCI

We propose to have a dedicated team that will provide the overall coordination platform. The PIT team that was proposed in the PCA report will be a starting point for a robust and better coordination of the Gavi activities including the TCA.

Risk / Impact / Implications

Without proper accountability it is possible that the One TA plan may not achieve its desired outcomes. TCA investments may not be followed through and in the absence of effective engagement by NPHCDA and States concerned, partner facilitated TCA activities may not be delivered with a view of ensuring sustainability.

Responsibility

R22: NPHCDA (Director, DCI)
R23: NPHCDA (Director, DCI)

Deadline / Timetable

December 2022

4.5 Accountability Framework

4.5.1 Accountability framework indicators not achieved

Context and Criteria

Nigeria has been identified by Gavi as a country where its support can achieve high impact, given the historically low immunisation rates. Recognising this in 2018, the Gavi Board approved a 7-year increase to Nigeria's period, by increasing the transition deadline from 2021 to 2028. This extension also ensured that Gavi's continued support fully aligns with Nigeria's National Strategy for Immunisation and PHC System Strengthening 2018 – 2028 (NSIPSS), a ten-year plan to strengthen immunisation and PHC. At the request of the Gavi Board, the Gavi Secretariat and Alliance Partners in consultation with the Government developed an accountability framework to assess Nigeria's progress against agreed targets and indicators. The framework is a commitment to achieve the goals and objectives of the NSIPSS and to provide stewardship for its implementation at all levels. The accountability framework was signed on 28 May 2019, by the Nigerian Ministry of Finance, Ministry of Budget and National Planning and the Federal Ministry of Health. The framework requires the Government to demonstrate its commitment to immunisation by increases in year-to-year health budgetary allocations; improved programmatic equity focusing on areas with low coverage; adequate monitoring, evaluation, and implementation research; developing capability of transitioning polio eradication resources over to RI; and reimbursement of misused funds.

Achievement of the performance indicators contained in the accountability framework is critical for Gavi's decision regarding the continuation of its investment in support of NSIPSS. At an aggregate level, the Government and Gavi jointly committed to finance approximately USD 3 billion for NSIPSS interventions over the period 2018-2028, with Gavi's share totalling approximately USD 1 billion.

Condition

The audit reviewed the Federal Government entities (FGON) progress against the Accountability Framework performance indicators. The following was noted:

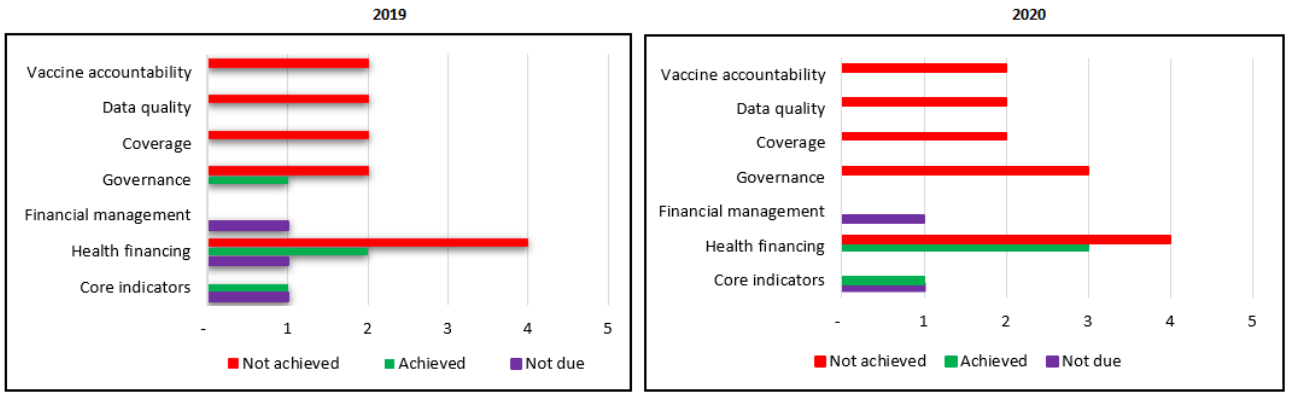
As of August 2021, the FGON had met only four indicators out of 19 in 2019 and 2020. Three indicators in 2019 and two in 2020 were not due for review, as they depended on the completion of a prior activity for which FGON was only partially responsible. The remaining indicators, i.e., 12 in 2019 and 13 in 2020 were not met. Most of the indicators that related to health financing were either not met, or the relevant information was not on file for the audit team to review. In some cases, data provided to evidence the progress was non-accredited as it came from data sources other than those stipulated in the Accountability Framework.

Essential MICS/NICS surveys and wastage studies were delayed, resulting in a suitable baseline not being established at the outset. The delay meant that a baseline was not available against which several of the Framework indicators could measure progress, such as: (i) increases in immunisation coverage and PHC services; (ii) better RI data quality at national and sub-national levels; and (iii) improved accountability including ensuring vaccine wastage rates remained within tolerance.

Figure 7: Categorisation by thematic area

Recommendation

No recommendations are raised by the Audit Team for this section. Detailed review of the accountability framework by indicator is included in Annex 16.



Root Cause

- The accountability framework established at the national level requires significant state-level engagement and ownership given that there are several indicators towards which they must contribute. NPHCDA is yet to effectively engage the states and influence their engagement on funding and implementation of activities related to the Accountability Framework.
- Several indicators are dependent on completion of surveys which have experienced numerous delays.
- There is a need for the targeted country assistance to focus on core indicators within the accountability framework.

Management comments

Responses are provided in the AF section in the annex 16

Risk / Impact / Implications

The delays in meeting the requirements of the NSIPSS accountability framework may result in the country failing to meet immunisation targets that would enable it to transition successfully out of Gavi funding.

Failure to meet immunisation goals in Nigeria, a high impact country with the largest number of zero dose children may result in inability to meet the Gavi 5.0 objectives

Responsibility

NPHCDA, Vaccine Financing and Accountability Task Team

Deadline / Timetable

December 2022

5. Annexes

Annex 1 : Acronyms

3PL	Third Party Logistics
AEFI	Adverse Effects Following Immunisation
AF	Accountability Framework
CC	Cold Chain
CCE	Cold Chain Equipment
CCEOP	Cold Chain Equipment Optimisation Platform
CDC	Centres for Disease Control and Prevention
DHIS2	District Health Information Software 2
DL&HC	Department of Logistics and Health Commodities
DPT	Diphtheria + Pertussis + Tetanus vaccine
DQIP	Data Quality Improvement Plan
DVDMT	District Vaccination Data Management Tool
EEFO	Early Expiry First Out
EVMA	Effective Vaccine Management assessment
FAR	Fixed asset register
FCT	Federal Capital Territory
FMOH	Federal Ministry of Health
GPF	Grant Performance Framework
HF	Health Facilities
HSS	Health system strengthening
IPV	inactivated poliovirus vaccine
IRRP	Inventory Replacement and Rehabilitation Plan
iSC	Immunization Supply Chain
LGA	Local Government Areas
MICS/ NICS	Multiple Indicator Cluster Surveys/ National Immunisation Coverage Survey
NDHS	Nigeria Demographic and Health Survey
NEOC	National Emergency Operation Centre
NERICC	National Emergency Routine Immunization Coordination Centre
NLWG	National Logistics Working Group
NPHCDA	National Primary Health Care Development Agency
NSCS	National Strategic Cold Store
NSIPSS	Nigeria Strategy for Immunisation and PHC System Strengthening
ODK	Open data kits
PCV	Pneumococcal conjugate vaccine
PEF	Partnership Engagement Framework
Penta	Pentavalent vaccine
PHC	Primary Health Care
PHCUOR	Primary Health Care Under One Roof
PPM	Planned Preventive Maintenance
SERICC	State Routine Immunization Coordination Centre
SLWG	State Logistics Working Groups
SMART	Standardized Monitoring and Assessment of Relief and Transitions
SMS	Short Message Service
SMT	stock management tool
SOP	Standard Operating Procedure
SPHDA	State Primary Health Care Development Agencies
TCA	Targeted Country Assistance
UNICEF	United Nations Children's Fund
USD	United States Dollars
VIG	Vaccine Introduction Grant
VVM	Vaccine Vial Monitor
WHO	World Health Organisation
ZLWG	Zonal Logistics Working Groups

Annex 2 : Methodology

Gavi's Audit and Investigations (A&I) audits are conducted in accordance with the Institute of Internal Auditors' ("the Institute") mandatory guidance which includes the definition of Internal Auditing, the Code of Ethics, and the International Standards for the Professional Practice of Internal Auditing (Standards). This mandatory guidance constitutes principles of the fundamental requirements for the professional practice of internal auditing and for evaluating the effectiveness of the audit activity's performance. The Institute of Internal Auditors' Practice Advisories, Practice Guides, and Position Papers are also be adhered to as applicable to guide operations. In addition, A&I staff will adhere to A&I's standard operating procedures manual.

The principles and details of the A&I's audit approach are described in its Board-approved Terms of Reference and Audit Manual and specific terms of reference for each engagement. These documents help our auditors to provide high quality professional work, and to operate efficiently and effectively. They help safeguard the independence of the A&I's auditors and the integrity of their work. The A&I's Audit Manual contains detailed instructions for carrying out its audits, in line with the appropriate standards and expected quality.

In general, the scope of A&I's work extends not only to the Gavi Secretariat but also to the programmes and activities carried out by Gavi's grant recipients and partners. More specifically, its scope encompasses the examination and evaluation of the adequacy and effectiveness of Gavi's governance, risk management processes, system of internal control, and the quality of performance in carrying out assigned responsibilities to achieve stated goals and objectives.

Annex 3 : Definitions – audit opinion, audit rating and prioritisation

A. Overall Audit Opinion

The audit team ascribes an audit rating for each area/section reviewed, and the summation of these audit ratings underpins the overall audit opinion. The audit ratings and overall opinion are ranked according to the following scale:

Effective	**No issues or few minor issues noted**. Internal controls, governance and risk management processes are adequately designed, consistently well implemented, and effective to provide reasonable assurance that the objectives will be met.
Partially Effective	**Moderate issues noted.** Internal controls, governance and risk management practices are adequately designed, generally well implemented, but one or a limited number of issues were identified that may present a moderate risk to the achievement of the objectives.
Needs significant improvement	**One or few significant issues noted.** Internal controls, governance and risk management practices have some weaknesses in design or operating effectiveness such that, until they are addressed, there is not yet reasonable assurance that the objectives are likely to be met.
Ineffective	**Multiple significant and/or (a) material issue(s) noted.** Internal controls, governance and risk management processes are not adequately designed and/or are not generally effective. The nature of these issues is such that the achievement of objectives is seriously compromised**.**

B. Issue Rating

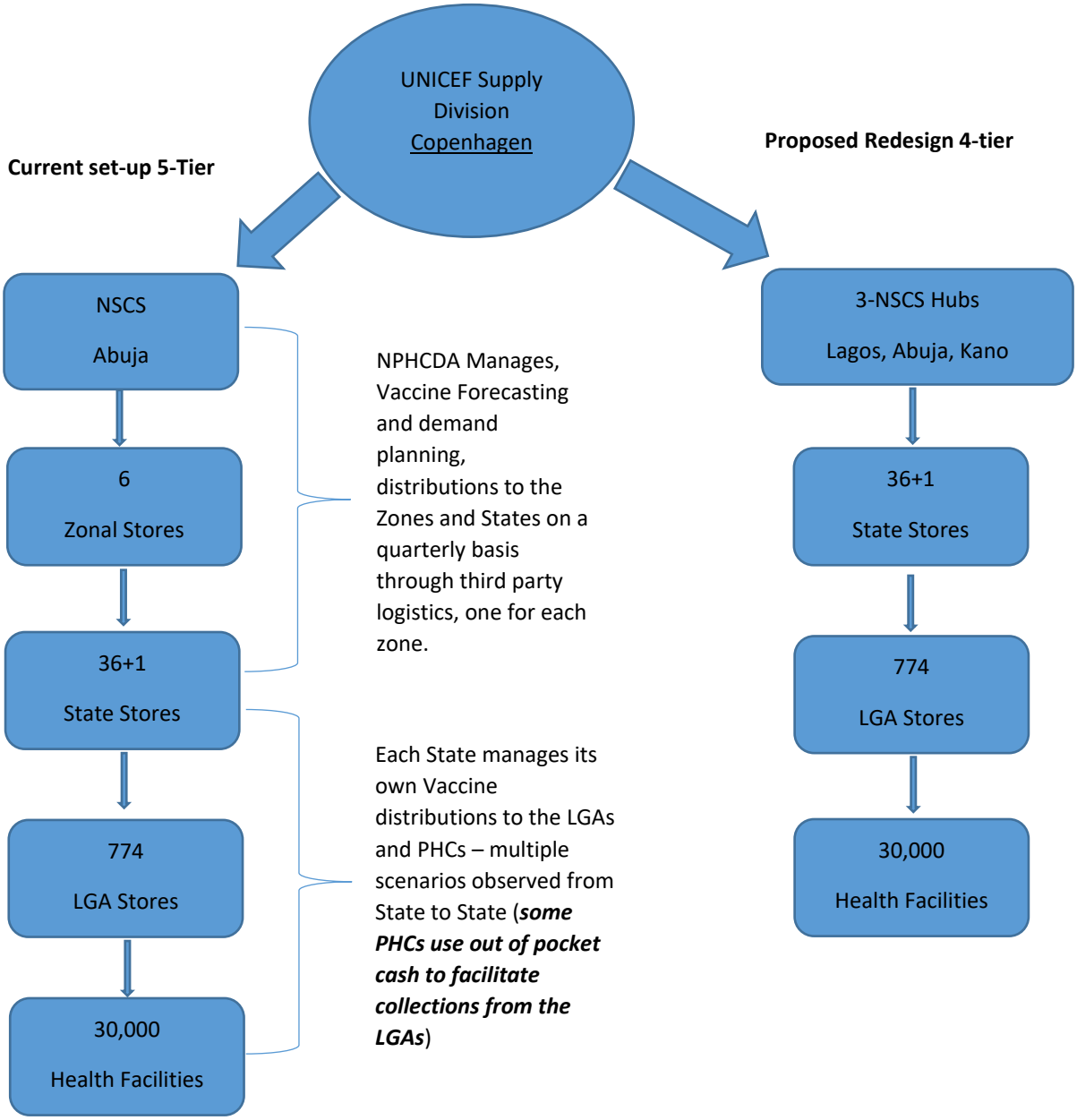
For ease of follow up and to enable management to focus effectively in addressing the issues in our report, we have classified the issues arising from our review in order of significance: High, Medium and Low. In ranking the issues between 'High,' 'Medium' and 'Low,' we have considered the relative importance of each matter, taken in the context of both quantitative and qualitative factors, such as the relative magnitude and the nature and effect on the subject matter. This is in accordance with the Committee of Sponsoring Organisations of the Treadway Committee (COSO) guidance and the Institute of Internal Auditors standards.

Rating	Implication
High	At least one instance of the criteria described below is applicable to the finding raised: • Controls mitigating high inherent risks or strategic business risks are either inadequate or ineffective. • The issues identified may result in a risk materialising that could either have: a major impact on delivery of organisational objectives; major reputation damage; or major financial consequences. • The risk has either materialised or the probability of it occurring is very likely and the mitigations put in place do not mitigate the risk. • Management attention is required as a matter of priority. • Fraud and unethical behaviour including management override of key controls.
Medium	At least one instance of the criteria described below is applicable to the finding raised: • Controls mitigating medium inherent risks are either inadequate or ineffective. • The issues identified may result in a risk materialising that could either have: a moderate impact on delivery of organisational objectives; moderate reputation damage; or moderate financial consequences • The probability of the risk occurring is possible and the mitigations put in place moderately reduce the risk. • Management action is required within a reasonable time period.
Low	At least one instance of the criteria described below is applicable to the finding raised: • Controls mitigating low inherent risks are either inadequate or ineffective. • The Issues identified could have a minor negative impact on the risk and control environment. • The probability of the risk occurring is unlikely to happen. • Corrective action is required as appropriate.

Annex 4 : List of Facilities Visited

State	LGA	PHC
FCT	GWAGWALADA	OLD KUTUNKU
	KUJE	KUJE
		KUCHIYAKO
	BWARI	DUTSE MAKARANTA
		GWAKO
		OLD DEI
BAUCHI	BAUCHI	BAYAVA
		STATE LOW COST
		KANDAHA
	DASS	DOTT
		GARAM
		SABON GARIN
ENUGU	NSUKKA	NSUKA
		OPI
		ODUR
	ENUGU SOUTH	AMECHI
		ACHARA
		AKWUKE
KANO	GWALE	FUSKAYAMMA
		GORON DUTSE
		MANGWARONI
	MADOBI	BURJI
		GORA
		KAFIR AGUR
SOKOTO	SOKOTO SOUTH	ALIYU JODI
		SOKOT SPECIALIST HOSPITAL
		YA AKIJA
	BODINGA	BAGARAWA
		SIJAWA
		TUCHUWA
LAGOS	IKEJA	BOLA AHMED TINUBU
		OJODU
		OREGWA
	MUSHIN	AYANTUNGA
		COKER
		PALM AVENUE
EDO	ORDEO	CENTRAL
		OREDO
		NEW BENIN
	EGOR	EGUAR EDAIKEN
		EVBO GIDA
		STAFF CLINIC

Annex 5 : Vaccine flow structure in current (5 tier) and proposed 4 -tier system redesign



Annex 6 : Zonal Review Summary

ZONE	1. Does the zonal store track and record temperature on receipt of vaccines from NSCS?	2. Does the zonal store check the VVM status of vaccines on receipt and document the process.	3. Does the zonal store receive pre-shipment alerts from the NSCS to prepare for space before delivery?	4.Has there been an incident when no adequate space is available to store the consignment?	5. Have you ever received damaged or vaccines with changed VVM status from NSCS?	2. Were there any variances noted?	4. Does the store perform any variance investigations? If yes, document the process	1. Have you ever experienced any expiry of vaccines and related commodities (Provided by NSCS from January 2019 to date	Has the store ever experienced any stock outs of any vaccines from Jan 2019 to date?	1. Does the facility undertake stock counts/reconciliation for vaccines in its stores?
NORTHEAST	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES
SOUTHEAST	YES	YES	YES	NO	NO	YES	NO	NO	NO	YES
NORTHWEST	NO	YES	NO	NO	YES	YES	NO	NO	NO	YES
SOUTH-SOUTH	YES	YES	YES	NO	NO	YES	YES	NO	YES	YES
SOUTH-WEST	YES	YES	YES	NO	NO	YES	NO	NO	YES	YES
N1	5	5	5	5	5	5	5	5	5	5
N2	5	5	5	5	5	5	5	5	5	5
n1	0	0	0	0	0	0	0	0	0	0
n2	4	5	4	0	2	5	2	1	3	5
%	**80%**	**100%**	**80%**	**0%**	**40%**	**100%**	**40%**	**20%**	**60%**	**100%**

ZONE	4. Are there any variances between the physical stock and the stock records?	Are the vaccines entries done by batch no's to allow for batch tracing?	Are all the columns of the register filled correctly as required?	Is there sufficient cold chain space for the zonal store needs?	Are there established min-max stock levels for the vaccines?	Is there a clear sign that shows that the vaccine store is a restricted area?	Is the State store normally locked?	Are Vaccines stored in clean and well-kept areas?	Are there thermometers and temperature loggers in the cold rooms?	Are the thermometers functional?
NORTHEAST	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES
SOUTHEAST	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
NORTHWEST	NO	YES	YES	NO	NO	YES	YES	YES	YES	YES
SOUTH-SOUTH	NO	YES	YES	YES	YES	YES	YES	YES	YES	NO
SOUTH-WEST	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
N1	5	5	5	5	5	5	5	5	5	5
N2	5	5	5	5	5	5	5	5	5	5
n1	0	0	0	0	0	0	0	0	0	0
n2	0	4	4	4	4	5	5	5	5	4
%	**0%**	**80%**	**80%**	**80%**	**80%**	**100%**	**100%**	**100%**	**100%**	**80%**

ZONE	Are there written records of temperature monitoring?	If written records of temperature monitoring exist, check to see if there have excursions	Has a temperature data logger or monitor been installed in the zonal store?	Are there remote temperature control systems with Alerts	Is there power back up (e.g., generators, Invertors; others) to sustain the operation of these temperature control systems?	Are all vaccines stored on shelves or pallets (No vaccines stored directly on the floor)?	Is the distance between stored vaccines to walls at least 30 cm? and between secondary packages for air circulation?	Are the labels of vaccines visible with Batch No on locations?	Are there guidelines or job aids (should be on the wall) to ensure good storage conditions?	1. Has the stores team received any training in vaccines / stock management?
NORTHEAST	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
SOUTHEAST	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
NORTHWEST	YES	NO	YES	NO	YES	NO	NO	YES	YES	YES
SOUTH-SOUTH	YES	YES	NO	NO	YES	YES	YES	YES	YES	YES
SOUTH-WEST	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
N1	5	5	5	5	5	5	5	5	5	5
N2	5	5	5	5	5	5	5	5	5	5
n1	0	0	0	0	0	0	0	0	0	0
n2	5	4	4	3	5	4	4	5	5	5
%	**100%**	**80%**	**80%**	**60%**	**100%**	**80%**	**80%**	**100%**	**100%**	**100%**

ZONE	2. Has the stores team received any support supervision from the State in the last 12 months?	1. Did the Zonal Store receive any equipment under the CCEOP?	2. Is the equipment installed in a safe and secure place?	3. Was the equipment functional on the day of the visit?	4a. Has the equipment ever broken down since the day of installation?	5. Are there equipment maintain ace logs? When was the last time the equipment was serviced?	6. Is the facility aware of the warrantee conditions for the equipment's and actions required?
NORTHEAST	NO	NO	YES	YES	YES	YES	YES
SOUTHEAST	NO	NO	YES	YES	YES	YES	NO
NORTHWEST	NO	NO	YES	NO	YES	YES	YES
SOUTH-SOUTH	YES	NO	YES	YES	YES	YES	YES
SOUTH-WEST	YES	NO	YES	YES	YES	YES	YES
N1	5	5	5	5	5	5	5
N2	5	5	5	5	5	5	5
n1	0	0	0	0	0	0	0
n2	2	0	5	4	5	5	4
%	**40%**	**0%**	**100%**	**80%**	**100%**	**100%**	**80%**

Annex 7 : State Review Summary

STATE	1. Does the State store track and record temperature on receipt of vaccines from Zonal?	2. Does the State store check the VVM status of vaccines on receipt and document the process?	3. Does the State store receive pre-shipment alerts from the Zonal store to prepare for space before delivery?	4.Has there been an incident when no adequate space is available to store the consignment?	5. Have you ever received damaged or vaccines with changed VVM status from the Zonal store?	2. Were there any variances noted?	4. Does the store perform any variance investigations?	1. Have you ever experienced any expiry of vaccines and related commodities (Provided by Zonal store from Jan 2019 to date	Has the store ever experienced any stock outs of any vaccines from Jan 2019 to date?	1. Does the facility undertake stock counts/reconciliation for vaccines in its stores?
Bauchi	NO	YES	YES	NO	NO	NO	NO	NO	NO	YES
Enugu	NO	YES	YES	YES	NO	NO	YES	NO	NO	YES
Kano	NO	YES	NO	NO	NO	YES	NO	NO	NO	YES
Edo	YES	YES	YES	NO	NO	YES	NO	YES	YES	NO
Lagos	YES	YES	YES	NO	NO	YES	NO	YES	NO	NO
Sokoto	NO	YES	NO	NO	NO	YES	NO	NO	YES	YES
N	6	6	6	6	6	6	6	6	6	6
N1	6	6	6	6	6	6	6	6	6	6
n1 = (N/A)	0	0	0	0	0	0	0	0	0	0
n2 = YES	2	5	3	1	0	4	1	2	2	3
%	**33%**	**83%**	**50%**	**17%**	**0%**	**67%**	**17%**	**33%**	**33%**	**50%**

STATE	4. Are there any variances between the physical stock and the stock records?	Are the vaccines entries done by batch # to allow for batch tracing?	Are all the columns of the register filled correctly as required?	Is there sufficient cold chain space for the State needs?	Are there established min-max stock levels for the vaccines?	Is there a clear sign that shows that the vaccine store is a restricted area?	Is the State store normally locked?	Are Vaccines stored in clean and well-kept areas?	Are there thermometers and temperature loggers in the cold rooms?	Are the thermometers functional?
Bauchi	YES	NO	YES	YES	YES	YES	YES	YES	YES	NO
Enugu	NO	YES	YES	NO	YES	NO	YES	NO	YES	YES
Kano	NO	YES	YES	YES	NO	YES	YES	YES	YES	YES
Edo	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
Lagos	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Sokoto	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
N	6	6	6	6	6	6	6	6	6	6
N1	6	6	6	6	6	6	6	6	6	6
n1 = (N/A)	0	0	0	0	0	0	0	0	0	0
n2 = YES	1	5	5	4	4	4	5	4	5	5
%	**17%**	**83%**	**83%**	**67%**	**67%**	**67%**	**83%**	**67%**	**83%**	**83%**

STATE	Are there written records of temperature monitoring?	If written records of temperature monitoring exist, were there excursions	Has a temperature data logger or monitor been installed in the State store?	Are there remote temperature control systems with Alerts	Is there power back up (e.g., generators, Invertors; others) to sustain the operation of these temperature control systems?	Are all vaccines stored on shelves or pallets (No vaccines stored directly on the floor)?	Is the distance between stored vaccines to walls at least 30 cm? and between secondary packages for air circulation?	Are the labels of vaccines visible with Batch No on locations?	Are there guidelines or job aids (should be on the wall) to ensure good storage conditions?	1. Has the stores team received any training in vaccines / stock management?
Bauchi	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Enugu	YES	YES	YES	YES	YES	YES	NO	YES	NO	YES
Kano	YES	NO	YES	NO	YES	NO	YES	YES	YES	YES
Edo	YES	NO	YES	NO	YES	YES	YES	YES	YES	YES
Lagos	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES
Sokoto	YES	NO	NO	NO	YES	YES	YES	YES	YES	YES
N	6	6	6	6	6	6	6	6	6	6
N1	6	6	6	6	6	6	6	6	6	6
n1 = (N/A)	0	0	0	0	0	0	0	0	0	0
n2 = YES	5	1	4	2	5	4	4	5	4	5
%	**83%**	**17%**	**67%**	**33%**	**83%**	**67%**	**67%**	**83%**	**67%**	**83%**

STATE	2. Has the stores team received any support supervision from the State in the last 12 months?	1. Do you have access to DHIS2? Obtain evidence	Is there a data team / officer at this level? If yes, document their role and obtain evidence of their work	Has there been a training for teams on data management activities at this level? If yes, obtain evidence	Has there been any support supervision on data aspects?	1. Did the State Store receive any equipment under the CCEOP?	2. Is the equipment installed in a safe and secure place?	3. Was the equipment functional on the day of the visit?	4a. Has the equipment ever broken down since the day of installation?	5. Are there equipment51 maintenance logs? When was the last time the equipment was serviced?
Bauchi	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES
Enugu	NO	YES	NO	NO	NO	NO	YES	YES	YES	NO
Kano	YES	YES	YES	YES	NO	NO	YES		YES	YES
Edo	YES	YES	YES	YES	NO	NO	YES	YES	YES	YES
Lagos	YES	YES	YES	YES	NO	NO	YES	YES	YES	YES
Sokoto	YES	YES	YES	YES	NO	NO	YES	YES	YES	YES
N	6	6	6	6	6	6	6	5	6	6
N1	6	6	6	6	6	6	6	5	6	6
n1 = (N/A)	0	0	0	0	0	0	0	0	0	0
n2 = YES	4	5	4	4	0	0	5	4	5	4
%	**67%**	**83%**	**67%**	**67%**	**0%**	**0%**	**83%**	**80%**	**83%**	**67%**

Annex 8 : LGA Review Summary

LGA	1. Does the LGA store track and record temperature on receipt of vaccines from State?	2. Does the LGA store check the VVM status of vaccines on receipt and document the process?	3. Does the LGA store receive pre-shipment alerts from the State to prepare for space before delivery?	4.Has there been an incident when no adequate space is available to store the consignment?	5. Have you ever received damaged or vaccines with changed VVM status from State?	2. Were there any variances noted? From Physical Count	4. Does the store perform any variance investigations?	1. Have you ever experienced any expiry of vaccines and related commodities (Provided by state from January 2019 to date	Has the store ever experienced any stock outs of any vaccines from Jan 2019 to date?	1. Does the facility undertake stock counts/reconciliation for vaccines in its stores?
Bauchi	NO	YES	NO	NO	NO	YES	NO	NO	NO	NO
Dass	NO	YES	NO	NO	NO	YES	NO	NO	NO	NO
Enugu South	NO	YES	NO	NO	NO	YES	NO	NO	NO	NO
Nsukka	NO	YES	NO	NO	NO	YES	NO	NO	YES	NO
Gwale LGA	NO	YES	NO	NO	NO	N/A	N/A	NO	NO	YES
Madobi LGA	NO	YES	NO	NO	NO	N/A	N/A	NO	NO	YES
Oredo	NO	YES	NO	NO	YES	YES	YES	NO	NO	YES
Egor LGA	NO	YES	N/A	NO	NO	NO	N/A	NO	YES	YES
Ikeja	NO	YES	YES	NO	YES	YES	YES	NO	NO	YES
Mushin	YES	YES	YES	NO	NO	YES	NO	NO	NO	YES
Bodinga LGA	NO	YES	YES	NO	NO	YES	NO	NO	NO	YES
Southern State LGA	NO	YES	YES	NO	NO	YES	NO	NO	NO	YES
Bwari	NO	YES	YES	NO	NO	YES	YES	NO	YES	NO
Gwagwalada	NO	YES	NO	NO	NO	YES	NO	NO	NO	NO
Kuje LGA	NO	YES	YES	NO	NO	YES	NO	NO	NO	YES
N1	15	15	15	15	15	15	15	15	15	15
Nz	15	15	14	15	15	13	12	15	15	15
n1 (N/A)	0	0	1	0	0	2	3	0	0	0
n2 = (YES)	1	15	6	0	2	12	3	0	3	9
%	**7%**	**100%**	**43%**	**0%**	**13%**	**92%**	**25%**	**0%**	**20%**	**60%**

LGA	4. Are there any variances between the physical stock and the stock records?	Are the vaccines entries done by batch no's to allow for batch tracing?	Are all the columns of the register filled correctly as required?	Is there sufficient cold chain space for the LGA needs?	Are there established min-max stock position for the vaccines?	Is there a clear sign that shows that the vaccine store is a restricted area?	Is the LGA store normally locked?	Are Vaccines stored in clean and well-kept areas?	Are there thermometers and temperature loggers in the cold rooms?	Are there written records of temperature monitoring?
Bauchi	NO	NO	NO	YES	YES	YES	NO	YES	YES	YES
Dass	NO	NO	YES	YES	YES	YES	NO	YES	YES	YES
Enugu South	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES
Nsukka	YES	NO	NO	NO	YES	NO	YES	YES	YES	NO
Gwale LGA	NO	YES	YES	YES	N/A	YES	YES	YES	YES	YES
Madobi LGA	NO	YES	NO	YES	YES	YES	YES	YES	YES	YES
Oredo	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
Egor LGA	NO	YES	NO	YES	YES	NO	YES	YES	YES	YES
Ikeja	NO	YES	NO	YES	YES	NO	YES	YES	YES	YES
Mushin	YES	NO	NO	YES	YES	NO	YES	YES	YES	YES
Bodinga LGA	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
Southern State LGA	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bwari	YES	YES	NO	YES	YES	NO	YES	YES	YES	YES
Gwagwalada	YES	NO	NO	YES	YES	NO	NO	YES	YES	YES
Kuje LGA	YES	YES	NO	YES	YES	NO	YES	YES	YES	YES
N1	15	15	15	15	15	15	15	15	15	15
Nz	15	15	15	15	14	15	15	15	15	15
n1 (N/A)	0	0	0	0	1	0	0	0	0	0
n2 = (YES)	6	9	5	14	14	8	12	15	15	14
%	**40%**	**60%**	**33%**	**93%**	**100%**	**53%**	**80%**	**100%**	**100%**	**93%**

LGA	If written records of temperature monitoring exist, check to see if there are temperature excursions	Has a temperature data logger or monitor been installed in the LGA store	Are there remote temperature control systems with Alerts?	Is there power back up?	Are the labels of vaccines visible with batch No on locations?	Are guidelines or job aids (should be on the wall) to ensure good storage conditions available?	1. Has the stores team received any training in vaccines / stock management?	2. Has the stores team received any support supervision from the State in the last 12 months?	1. Do you have access to DHIS2 for reporting vaccination status? Obtain evidence	Do you use SMT for reporting on vaccine stock status? Obtain evidence
Bauchi	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES
Dass	YES	YES	NO	YES	YES	NO	YES	NO	YES	YES
Enugu South	YES	YES	NO	YES	YES	NO	YES	YES	YES	YES
Nsukka	NO	YES	NO	YES	YES	NO	YES	YES	YES	YES

Gwale LGA	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES
Madobi LGA	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES
Oredo	NO	YES	NO	YES	YES	YES	YES	YES	YES	NO
Egor LGA	NO	YES	YES	YES	YES	YES	YES	YES	YES	NO
Ikeja	NO	YES	NO	YES	YES	YES	YES	YES	YES	NO
Mushin	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bodinga LGA	NO	NO	NO	YES	YES	NO	YES	YES	YES	YES
Southern State LGA	YES	NO	NO	YES	YES	NO	YES	YES	YES	YES
Bwari	YES	YES	YES	YES	YES	NO	YES	YES	YES	
Gwagwalada	YES	YES	NO	NO	YES	YES	NO	YES	YES	YES
Kuje LGA	NO	YES	NO	N/A	YES	NO	YES	YES	YES	
N1	15	15	15	15	15	15	15	15	15	13
Nz	15	15	15	14	15	15	15	15	15	13
n1 (N/A)	0	0	0	1	0	0	0	0	0	0
n2 = (YES)	6	11	3	13	15	8	14	14	15	10
%	**40%**	**73%**	**20%**	**93%**	**100%**	**53%**	**93%**	**93%**	**100%**	**77%**

LGA	**Is there a data team / officer at this level? If yes, document their role and obtain evidence of their work**	**Are there SOPs or guidelines for data activities at LGA level?**	**Has there been a training for teams on data management activities at LGA level?**	**Has there been any support supervision on data aspects?**	**1. Did the Facility receive any equipment under the CCEOP?**	**2. Is the equipment installed in a safe and secure place?**	**3. Was the equipment functional on the day of the visit?**	**4a. Has the equipment ever broken down since the day of installation?**	**5. Are there equipment54 maintenance logs? When was the last time the equipment was serviced?**	**6. Is the facility aware of the warrantee conditions for the equipment and actions required?**
Bauchi	YES	NO	NO	NO	YES	YES	NO	NO	YES	YES
Dass	YES	NO	NO	Yes	YES	YES	NO	NO	YES	YES
Enugu South	YES	NO	NO	NO	YES	YES	NO	NO	NO	NO
Nsukka	YES	NO	NO	NO	YES	YES	YES	NO	NO	NO
Gwale LGA	YES	NO	YES	NO	YES	YES	YES	NO	N/A	YES
Madobi LGA	YES	NO	YES	NO	NO	YES	YES	NO	YES	YES
Oredo	Yes	YES	YES	NO	NO	YES	YES	YES	NO	NO
Egor LGA	YES	NO	YES	YES	YES	NO	YES	NO	YES	YES
Ikeja	Yes	YES	YES	NO	YES	YES	YES	NO	NO	YES
Mushin	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES
Bodinga LGA	YES	YES	YES	YES	YES	NO	NO	YES	YES	NO
Southern State LGA	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES
Bwari	Yes									
Gwagwalada	YES	NO	NO	NO	YES	YES	NO	NO	NO	YES
Kuje LGA	Yes	NO	NO							

N1	15	14	14	13	13	13	13	13	13	13
Nz	15	14	14	13	13	13	13	13	12	13
n1 (N/A)	0	0	0	0	0	0	0	0	1	0
n2 = (YES)	15	5	8	5	10	11	8	4	6	9
%	**100%**	**36%**	**57%**	**38%**	**77%**	**85%**	**62%**	**31%**	**50%**	**69%**

Annex 9 : PHC Review Summary

Facility Name	1. Does the Health Facility track and record temperature on receipt of vaccines from LGA?	2. Does the Health Facility check the VVM status of vaccines on receipt and document the process?	3. Does the health facility have a working CCE equipment with adequate room for all the vaccines?	4. Have you ever received damaged or vaccines with changed VVM status from LGA?	2. From the stock reconciliation, were there any variances noted?	4. Does the facility perform any variance investigations? If yes, document the process	1. Have you ever experienced any expiry of vaccines and related commodities (Provided by LGA from January 2019 to date	Has the facility ever experienced any stock outs of any vaccines from Jan 2019 to date?	1. Does the facility undertake stock counts/reconciliation for vaccines in its stores?	4. Are there any variances between the physical stock and the stock records?
GENERAL HOSPITAL BAYARA	NO	NO	YES	NO	N/A	N/A	NO	N/A	NO	N/A
KANDAHAR PHC	NO	NO	NO	NO	N/A	N/A	NO	N/A	N/A	N/A
STATE LOW COST	NO	YES	YES	NO	YES	NO	NO	YES	NO	NO
DOTT PHC	NO	YES	YES	NO	YES	NO	NO	NO	NO	YES
GARAM PHC	NO	N/A	N/A	NO	N/A	N/A	NO	N/A	NO	N/A
SABON GARIN BURGEL PHCC	NO	YES	YES	NO	YES	NO	NO	NO	NO	YES
ACHARA HEALTH POST	NO	NO	YES	NO	N/A	N/A	NO	N/A	N/A	N/A
AKWUKE PHC	NO	NO	YES	NO	N/A	NO	N/A	YES	NO	N/A
AMECHI PHC	NO	NO	YES	NO	N/A	N/A	N/A	NO	NO	N/A
NSUKKA PHC	NO	NO	N/A	NO	NO	NO	NO	NO	NO	N/A
ODUR HEALTH POST	NO	NO	YES	NO	N/A	N/A	NO	N/A	N/A	N/A
OPI PHC	NO	NO	YES	NO	NO	NO	NO	NO	NO	N/A
Burji PHC	NO	YES	YES	NO	YES	NO	NO	N/A	YES	YES
Fuskaryamma PHC	NO	YES	YES	NO	YES	NO	NO	NO	YES	NO
Gora PHC	NO	YES	YES	NO	YES	NO	NO	NO	YES	NO
Goron Dutse PHC	NO	YES	YES	NO	YES	NO	NO	NO	YES	YES
Kafir Agur	NO	YES	YES	NO	YES	NO	NO	NO	YES	YES
Mangwarori PHC	NO	YES	YES	NO	YES	NO	NO	N/A	YES	NO
CENTRAL HOSPITAL PHC	NO	YES	YES	NO	YES	NO	NO	NO	YES	YES
OREDO PHC	NO	YES	YES	NO	YES	NO	NO	NO	YES	YES
NEW BENIN PHC	NO	YES	YES	NO	YES	NO	NO	NO	YES	YES
Egua Edaiken PHC	NO	NO	YES	NO	N/A	N/A	NO	N/A	NO	N/A
Evbo Gida PHC	NO	NO	YES	NO	NO	N/A	NO	NO	NO	YES
Staff Clinic PHC	NO	YES	YES	NO	NO	N/A	NO	NO	YES	NO
BOLA AHMED T. PHC (BAT PHC)	NO	YES	YES	NO	NO	YES	NO	NO	YES	NO
OJODU PHC	NO	YES	YES	NO	YES	YES	NO	NO	YES	YES
OREGUN PHC	NO	YES	YES	NO	YES	YES	NO	NO	YES	YES
Ayantunga PHC	NO	YES	YES	NO	NO	N/A	NO	NO	YES	NO
Coker PHC	NO	YES	YES	NO	NO	N/A	NO	NO	YES	NO

Palm Avenue	NO	YES	YES	NO	NO	N/A	NO	NO	YES	NO
Aliyu Jodi	NO	YES	YES	NO	YES	NO	NO	NO	YES	NO
Bagarawa PHC	NO	YES	YES	NO	N/A	N/A	NO	NO	YES	NO
Sifawa PHC	NO	YES	YES	NO	YES	NO	NO	NO	YES	YES
Sokoto Specialist Hospital	NO	YES	YES	NO	YES	NO	NO	NO	YES	NO
Tulluwa PHC	NO	YES	YES	NO	NO	NO	NO	NO	YES	NO
Ya Akija PHC	NO	YES	YES	NO	YES	NO	NO	NO	YES	NO
Dutse Makaranta	NO	NO	NO	NO	NO	YES	NO	NO	NO	YES
GWAKO	NO	NO	YES	NO	N/A	NO	NO	NO	NO	N/A
Kuchiyako Primary Health Center	NO	YES	NO	NO	N/A	N/A	NO	NO	N/A	N/A
Kuje Primary Health Center	NO	YES	YES	NO	N/A	N/A	NO	NO	NO	N/A
Old Dei	NO	NO	NO	YES	YES	YES	NO	NO	NO	YES
OLD KUTUNKU	NO	NO	YES	NO	N/A	NO	NO	NO	NO	N/A
N1	42	42	42	42	42	42	42	42	42	42
N2	42	41	40	42	30	27	40	34	38	29
n1=(N/A)	0	1	2	0	12	15	2	8	4	13
n 2(YES)	0	27	36	1	19	5	0	2	22	14
%	**0%**	**66%**	**90%**	**2%**	**63%**	**19%**	**0%**	**6%**	**58%**	**48%**

Facility Name	**Are the vaccines entries done by batch # to allow for batch tracing?**	**Are all the columns of the register filled correctly as required?**	**Is there sufficient CCE space PHC needs?**	**Are there established min-max stock position for the vaccines?**	**Is there evidence that the CCE is in a restricted area?**	**Are vaccines stored in clean and well-kept areas?**	**Are there thermometers and temperature loggers in the CCE?**	**Are there written records of temperature monitoring?**	**If written records of temperature monitoring exist, check to see if there were excursions**	**Has a temperature data logger or monitor been installed in the Health Facility Store**
GENERAL HOSPITAL BAYARA	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES
KANDAHAR PHC	NO	NO	N/A	YES	N/A	N/A	N/A	N/A	N/A	N/A
STATE LOW COST	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES
DOTT PHC	NO	NO	YES	YES	YES	YES	NO	YES	NO	NO
GARAM PHC	YES	NO	N/A	YES	N/A	N/A	N/A	N/A	N/A	N/A
SABON GARIN BURGEL PHCC	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
ACHARA HEALTH POST	NO	N/A	N/A	NO	N/A	N/A	N/A	N/A	N/A	N/A
AKWUKE PHC	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES
AMECHI PHC	YES	YES	NO	NO	NO	YES	NO	NO	NO	NO
NSUKKA PHC	NO	NO	YES	YES	NO	YES	YES	NO	NO	YES
ODUR HEALTH POST	NO	N/A	N/A	NO	N/A	N/A	N/A	N/A	N/A	N/A
OPI PHC	NO	NO	YES	NO	NO	YES	NO	NO	NO	YES
Burji PHC	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
Fuskaryamma PHC	NO	NO	YES	YES	YES	YES	YES	YES	NO	NO
Gora PHC	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO

Goron Dutse PHC	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
Kafir Agur	NO	NO	YES	NO	NO	YES	YES	YES	NO	NO
Mangwarori PHC	YES	YES	NO	YES	NO	YES	YES	YES	YES	NO
CENTRAL HOSPITAL PHC	NO	NO	YES	NO	YES	YES	YES	YES	NO	YES
OREDO PHC	NO	NO	YES	NO	YES	YES	YES	YES	NO	YES
NEW BENIN PHC	NO	NO	YES	NO	YES	YES	YES	YES	NO	YES
Egua Edaiken PHC	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES
Evbo Gida PHC	YES	NO	YES	NO	YES	YES	YES	YES	NO	YES
Staff Clinic PHC	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES
BOLA AHMED T. PHC (BAT PHC)	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES
OJODU PHC	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES
OREGUN PHC	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES
Ayantunga PHC	YES	YES	YES	YES	NO	YES	YES	YES	NO	YES
Coker PHC	YES	YES	YES	YES	NO	YES	YES	YES	NO	YES
Palm Avenue	YES	YES	YES	YES	NO	YES	YES	YES	NO	YES
Aliyu Jodi	YES	NO	YES	YES	YES	YES	YES	YES	NO	NO
Bagarawa PHC	YES	NO	YES	YES	YES	YES	YES	YES	NO	NO
Sifawa PHC	No	NO	YES	NO	YES	YES	YES	YES	NO	NO
Sokoto Specialist Hospital	YES	NO	YES	YES	YES	YES	YES	YES	NO	NO
Tulluwa PHC	YES	NO	YES	YES	YES	YES	YES	YES	NO	NO
Ya Akija PHC	YES	NO	YES	YES	YES	YES	YES	YES	NO	NO
Dutse Makaranta	NO	NO	N/A	YES	NO	YES	YES	YES	YES	YES
GWAKO	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES
Kuchiyako Primary Health Center	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Kuje Primary Health Center	NO	NO	YES	NO	YES	N/A	N/A	N/A	N/A	N/A
Old Dei	NO	NO	YES	YES	NO	YES	YES	YES	YES	YES
OLD KUTUNKU	NO	NO	YES	YES	NO	NO	YES	YES	YES	YES
N1	42	42	42	42	42	42	42	42	42	42
N2	41	39	36	41	37	36	36	36	36	36
n1=(N/A)	1	3	6	1	5	6	6	6	6	6
n 2(YES)	22	14	34	27	25	35	33	33	11	22
%	**54%**	**36%**	**94%**	**66%**	**68%**	**97%**	**92%**	**92%**	**31%**	**61%**

Facility Name	Are guidelines or job aids (should be on the wall) to ensure good storage conditions available?	1. Has the facility team received any training in vaccines / stock management?	2. Has the facility team received any support supervision from the LGA in the last 12 months?	1. Does the HF use SMS or ODK for reporting?	6. Does the facility have data storage cabins to store and secure the primary data source documents?	7. Does the facility monitor and report on Adverse Events Following Immunization (AEFI)?	8. Has a data quality assessment been conducted at this PHC?	1. Did the Facility receive any equipment under the CCEOP?	2. Is the equipment installed in a safe and secure place?	3. Was the equipment functional on the day of the visit?
GENERAL HOSPITAL BAYARA	NO	YES	YES	NO	NO	YES	NO	YES	YES	YES
KANDAHAR PHC	N/A	YES	YES	NO	NO	NO	NO	N/A	N/A	N/A
STATE LOW COST	YES	YES	YES	NO	YES	YES	NO	YES	YES	YES
DOTT PHC	YES	YES	YES	NO	NO	YES	NO	YES	YES	YES
GARAM PHC	N/A	YES	YES	NO	NO	NO	NO	NO	N/A	N/A
SABON GARIN BURGEL PHCC	YES	YES	YES	NO	NO	YES	NO	YES	YES	YES
ACHARA HEALTH POST	N/A	YES	YES	NO	YES	YES	NO	N/A	N/A	N/A
AKWUKE PHC	YES	YES	YES	NO	YES	YES	NO	YES	YES	YES
AMECHI PHC	YES	YES	YES	NO	YES	YES	NO	YES	YES	YES
NSUKKA PHC	NO	YES	YES	NO	YES	YES	NO	YES	YES	YES
ODUR HEALTH POST	N/A	YES	YES	NO	YES	YES	NO	N/A	N/A	N/A
OPI PHC	NO	YES	YES	NO	YES	YES	NO	YES	YES	YES
Burji PHC	YES	YES	YES	YES	YES	NO	NO	NO	YES	YES
Fuskaryamma PHC	N/A	YES	YES	YES	YES	NO	NO	NO	YES	YES
Gora PHC	YES	YES	YES	YES	NO	NO	NO	NO	YES	YES
Goron Dutse PHC	NO	YES	YES	YES	NO	NO	NO	NO	YES	YES
Kafir Agur	YES	YES	YES	YES	YES	NO	NO	NO	YES	YES
Mangwarori PHC	YES	YES	YES	YES	NO	NO	NO	NO	YES	YES
CENTRAL HOSPITAL PHC	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES
OREDO PHC	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES
NEW BENIN PHC	YES	YES	YES	YES	YES	YES	NO	YES	NO	YES
Egua Edaiken PHC	NO	YES	YES	NO	NO	YES	NO	YES	YES	YES
Evbo Gida PHC	YES	YES	NO	NO	YES	NO	NO	YES	YES	YES
Staff Clinic PHC	YES	YES	YES	NO	YES	YES	YES	NO	YES	YES
BOLA AHMED T. PHC (BAT PHC)	NO	YES	YES	YES	YES	YES	NO	YES	YES	YES
OJODU PHC	NO	YES	YES	YES	YES	YES	NO	YES	YES	YES
OREGUN PHC	NO	YES	YES	YES	NO	YES	NO	YES	YES	YES
Ayantunga PHC	NO	YES	YES	NO	YES	YES	YES	YES	NO	YES
Coker PHC	NO	YES	YES	NO	YES	YES	YES	YES	NO	YES
Palm Avenue	NO	YES	YES	NO	YES	YES	YES	NO	NO	YES
Aliyu Jodi	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES
Bagarawa PHC	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES
Sifawa PHC	NO	YES	YES	YES	NO	NO	NO	YES	YES	YES

Sokoto Specialist Hospital	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES
Tulluwa PHC	NO	YES	YES	YES	NO	NO	NO	YES	YES	YES
Ya Akija PHC	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES
Dutse Makaranta	NO	YES	YES	NO	YES	YES	YES	NO	NO	YES
GWAKO	NO	NO	YES	NO	NO	YES	NO	YES	YES	YES
Kuchiyako Primary Health Center	N/A	YES	YES	YES	NO	YES	NO	NO	N/A	N/A
Kuje Primary Health Center	N/A	YES	NO	N/A	YES	YES	NO	NO	YES	YES
Old Dei	NO	YES	YES	NO	YES	YES	YES	NO	NO	NO
OLD KUTUNKU	NO	NO	YES	NO	NO	YES	NO	YES	YES	YES
N1	42	42	42	42	42	42	42	42	42	42
N2	35	42	42	41	42	42	42	39	37	37
n1=(N/A)	7	0	0	1	0	0	0	3	5	5
n 2(YES)	18	40	40	19	27	31	6	26	31	36
%	**51%**	**95%**	**95%**	**46%**	**64%**	**74%**	**14%**	**67%**	**84%**	**97%**

Annex 10 : Detailed findings - data discrepancies at PHC level

Name of PHC: Nsukka PHC		Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
Tally sheets	Total No. of immunisations (a)	418	333	361	397	339	401	397
Monthly report	Total No. of immunisations (b)	418	333	361	397	339	401	397
Consumption / Tally Sheet	Total No. of doses dispensed (c)	390	390	460	450	340	330	430
	Var 1 (b-c)	0	0	0	0	0	0	0
	Var 2 (c-b)	-28	57	99	53	1	-71	33
Amechi PHC		Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
Tally sheets	Total No. of immunisations (a)	221	249	199	240	214	233	180
Monthly report	Total No. of immunisations (b)	221	249	199	240	214	239	187
Consumption / Tally Sheet	Total No. of doses dispensed (c)	230	280	200	250	220	270	210
	Var 1 (b-c)	0	0	0	0	0	6	7
	Var 2 (c-b)	9	31	1	10	6	31	23
Akwuke PHC		Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
Tally sheets	Total No. of immunisations (a)	82	63	54	56	69	54	59
Monthly report	Total No. of immunisations (b)	89	63	54	56	60	54	59
Consumption / Tally Sheet	Total No. of doses dispensed (c)	90	90	60	60	70	60	70
	Var 1 (b-c)	7	0	0	0	-9	0	0
	Var 2 (c-b)	1	27	6	4	10	6	11
Achara 1 Health Post		Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
Tally sheets	Total No. of immunisations (a)	17	16	15	11	11	13	19
Monthly report	Total No. of immunisations (b)	14	16	15	11	11	13	19
Consumption / Tally Sheet	Total No. of doses dispensed (c)							
	Var 1 (b-c)	-3	0	0	0	0	0	0
	Var 2 (c-b)	-14	-16	-15	-11	-11	-13	-19
OPI PHC		Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
Tally sheets	Total No. of immunisations (a)	112	99	119	157	192	90	162
Monthly report	Total No. of immunisations (b)	112	0	0	159	250	90	147
Consumption / Tally Sheet	Total No. of doses dispensed (c)	138	120	120	180	240	100	140
	Var 1 (b-c)	0	-99	-119	2	58	0	-15
	Var 2 (c-b)	26	120	120	21	-10	10	-7
Odoru PHC		Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20

	Tally sheets	Total No. of immunisations (a)	46	46	44	38	39	42	43
	Monthly report	Total No. of immunisations (b)	46	46	44	38	44	42	43
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	40	40	40	40	60	20	60
		Var 1 (b-c)	0	0	0	0	5	0	0
		Var 2 (c-b)	-6	-6	-4	2	16	-22	17
General Hospital Bayara			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	190	190	221	183	184	219	187
	Monthly report	Total No. of immunisations (b)	190	194	221	187	184	219	187
	Consumption / Tally Sheet	Total No of doses dispensed (c)	192	194	221	187	150	340	260
		Var 1 (b-c)	0	4	0	4	0	0	0
		Var 2 (c-b)	2	0	0	0	-34	121	73
Kandahar PHC			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	18	23	29	33	26	36	42
	Monthly report	Total No. of immunisations (b)	14	23	29	33	26	36	42
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	30	30	30	40	30	40	50
		Var 1 (b-c)	-4	0	0	0	0	0	0
		Var 2 (c-b)	16	7	1	7	4	4	8
State Low Cost PHC			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	59	64	54	70	73	72	90
	Monthly report	Total No. of immunisations (b)	59	64	54	70	73	72	90
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	60	70	50	70	70	70	100
		Var 1 (b-c)	0	0	0	0	0	0	0
		Var 2 (c-b)	1	6	-4	0	-3	-2	10
Dott PHC			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	40	35	38	41	32	33	48
	Monthly report	Total No. of immunisations (b)	40	35	38	41	32	33	48
	Consumption / Tally Sheet total No. of doses dispensed (c)		40	35	35	41	32	33	48
		Var 1 (b-c)	0	0	0	0	0	0	0
		Var 2 (c-b)	0	0	-3	0	0	0	0
Garam PHC			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	34	37	35	35	31	26	45
	Monthly report	Total No. of immunisations (b)	34	35	37	35	32	26	45
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	40	40	40	40	40	40	50

	Var 1 (b-c)		0	-2	2	0	1	0	0
	Var 2 (c-b)		6	5	3	5	8	14	5
Sabon Garin Burgel PHC			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	15	19	24	26	24	20	14
	Monthly report	Total No. of immunisations (b)		19	24	26	24	20	14
	Consumption / Tally Sheet	Total No. of doses dispensed (c)			30	23	30		
		Var 1 (b-c)	-15	0	0	0	0	0	0
		Var 2 (c-b)	0	-19	6	-3	6	-20	-14
Old Kutunku PHC			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	153	161	157	163	123	147	166
	Monthly report	Total No. of immunisations (b)	156	161	157	163	123	147	166
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	160	160	160	170	120	140	150
		Var 1 (b-c)	3	0	0	0	0	0	0
		Var 2 (c-b)	4	-1	3	7	-3	-7	-16
Gwako PHC			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	76	66	58	79	45	62	71
	Monthly report	Total No. of immunisations (b)	76	66	58	79	45	62	71
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	90	90	70	130	80	70	110
		Var 1 (b-c)	0	0	0	0	0	0	0
		Var 2 (c-b)	14	24	12	51	35	8	39
Aliyu Jodi			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	40	33	29	41	47	42	60
	Monthly report	Total No. of immunisations (b)	40	33	29	41	47	42	60
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	50	40	40	50	50	50	70
		Var 1 (b-c)	0	0	0	0	0	0	0
		Var 2 (c-b)	10	7	11	9	3	8	10
Bagaraw			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	0	72	42	69	66		38
	Monthly report	Total No. of immunisations (b)							
	Consumption / Tally Sheet	Total No. of doses dispensed (c)				80	70	50	50
		Var 1 (b-c)	0	-72	-42	-69	-66	0	-38
		Var 2 (c-b)	0	0	0	80	70	50	50
Burji			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20

	Tally sheets	Total No. of immunisations (a)	63	76	69	74	65	53	78
	Monthly report	Total No. of immunisations (b)	63	86	69	74	65	53	78
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	100	90	80	80	80	60	90
		Var 1 (b-c)	0	10	0	0	0	0	0
		Var 2 (c-b)	37	4	11	6	15	7	12
Dutse Makarante			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	313	333	311	296	354	388	382
	Monthly report	Total No. of immunisations (b)	313	333	311	296	354	388	382
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	340	370	380	360	380	430	420
		Var 1 (b-c)	0	0	0	0	0	0	0
		Var 2 (c-b)	27	37	69	64	26	42	38
Fuskar Yamma			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	90	81	78	75	89	83	97
	Monthly report	Total No. of immunisations (b)	90	81	78	75	89	83	97
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	80	90	80	80	100	90	100
		Var 1 (b-c)	0	0	0	0	0	0	0
		Var 2 (c-b)	-10	9	2	5	11	7	3
Gora			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	187	149	138	178	166	184	181
	Monthly report	Total No. of immunisations (b)	187	149	138	167	166	184	181
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	200	160	150	190	170	220	190
		Var 1 (b-c)	0	0	0	-11	0	0	0
		Var 2 (c-b)	13	11	12	23	4	36	9
Goron Dutse			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	120	114	91	103	94	91	101
	Monthly report	Total No. of immunisations (b)	120	114	91	103	94	91	101
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	130	120	100	110	100	90	110
		Var 1 (b-c)	0	0	0	0	0	0	0
		Var 2 (c-b)	10	6	9	7	6	-1	9
Kafir Agur			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	101	91	90	102	103	104	128
	Monthly report	Total No. of immunisations (b)	101	91	90	102	103	104	128
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	110	100	90	110	130	110	140
		Var 1 (b-c)	0	0	0	0	0	0	0

		Var 2 (c-b)	9	9	0	8	27	6	12
Kuchiyako			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)							
	Monthly report	Total No. of immunisations (b)							
	Consumption / Tally Sheet	Total No. of doses dispensed (c)							
		Var 1 (b-c)	0	0	0	0	0	0	0
		Var 2 (c-b)	0	0	0	0	0	0	0
Kuje			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	358	207	296		379	382	351
	Monthly report	Total No. of immunisations (b)	385	303	166	354	373	393	354
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	290	0	0	330	340	390	370
		Var 1 (b-c)	27	96	-130	0	-6	11	3
		Var 2 (c-b)	-95	-303	-166	-24	-33	-3	16
Mwangarori			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	19	67	87	78	138	72	66
	Monthly report	Total No. of immunisations (b)	19	67	87	78	138	72	66
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	20	70	100	100	160	100	70
		Var 1 (b-c)	0	0	0	0	0	0	0
		Var 2 (c-b)	1	3	13	22	22	28	4
Old Dei			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	393	293	343	408	321	262	320
	Monthly report	Total No. of immunisations (b)	393	293	343	408	321	262	320
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	410	330	370	440	320	310	340
		Var 1 (b-c)	0	0	0	0	0	0	0
		Var 2 (c-b)	17	37	27	32	-1	48	20
Sifawa			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	56	42	45	56	67	49	65
	Monthly report	Total No. of immunisations (b)	56	42	45	56	67	49	65
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	60	50	50	60	70	50	70
		Var 1 (b-c)	0	0	0	0	0	0	0
		Var 2 (c-b)	4	8	5	4	3	1	5
Sokoto Specialist Hospital			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	403	382	351	456	571	440	485

	Monthly report	Total No. of immunisations (b)	403		351	456	571	440	485
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	430		330	480	590	480	490
		Var 1 (b-c)	0	-382	0	0	0	0	0
		Var 2 (c-b)	27	0	-21	24	19	40	5
Tulluwa			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	54	40	64	48	29		54
	Monthly report	Total No. of immunisations (b)							
	Consumption / Tally Sheet	Total No. of doses dispensed (c)				30	30	40	60
		Var 1 (b-c)	-54	-40	-64	-48	-29	0	-54
		Var 2 (c-b)	0	0	0	30	30	40	60
Ya Akija			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	137	103	148	136	122	144	120
	Monthly report	Total No. of immunisations (b)	137	103	148	136	122	144	120
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	170	100	150	150	130	140	130
		Var 1 (b-c)	0	0	0	0	0	0	0
		Var 2 (c-b)	33	-3	2	14	8	-4	10
Bola Ahmed			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	63	29	31	37	70	65	72
	Monthly report	Total No. of immunisations (b)	59	27	30	51	62	62	71
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	70	40	30	50	70	70	80
		Var 1 (b-c)	-4	-2	-1	14	-8	-3	-1
		Var 2 (c-b)	11	13	0	-1	8	8	9
Ojodu			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	457	395	375	293	265	294	293
	Monthly report	Total No. of immunisations (b)	482	456	330	352	273	313	306
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	490	460	390	350	350	370	330
		Var 1 (b-c)	25	61	-45	59	8	19	13
		Var 2 (c-b)	8	4	60	-2	77	57	24
Oregun			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	145	102	97	94	110	71	176
	Monthly report	Total No. of immunisations (b)	175	136	128	125	162	85	205
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	180	160	130	130	170	90	220
		Var 1 (b-c)	30	34	31	31	52	14	29
		Var 2 (c-b)	5	24	2	5	8	5	15

Ayantunga			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	514	636	512	593	353	520	1003
	Monthly report	Total No. of immunisations (b)	514	552	549	598	346	491	1034
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	560	560	610	590	440	530	1000
		Var 1 (b-c)	0	-84	37	5	-7	-29	31
		Var 2 (c-b)	46	8	61	-8	94	39	-34
Coker PHC			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	1603	999	1117	1431	938	976	0
	Monthly report	Total No. of immunisations (b)	1578	960	1209	1218	1054	998	1160
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	1680	1040	1290	1360	1170	1150	1230
		Var 1 (b-c)	-25	-39	92	-213	116	22	1160
		Var 2 (c-b)	102	80	81	142	116	152	70
Palm Avenue			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	607	644	617	414	520	490	431
	Monthly report	Total No. of immunisations (b)	606	624	604	568	644	507	569
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	700	540	570	610	670	530	530
		Var 1 (b-c)	-1	-20	-13	154	124	17	138
		Var 2 (c-b)	94	-84	-34	42	26	23	-39
Central Hospital			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	1196	872	1190	788	912	790	1081
	Monthly report	Total No. of immunisations (b)	1216	872	1190	802	919	790	1081
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	1260	940	1230	800	910	800	1080
		Var 1 (b-c)	20	0	0	14	7	0	0
		Var 2 (c-b)	44	68	40	-2	-9	10	-1
Oredo			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	206	136	134	114	129	135	298
	Monthly report	Total No. of immunisations (b)	206	139	137	114	129	135	309
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	220	140	140	120	140	130	330
		Var 1 (b-c)	0	3	3	0	0	0	11
		Var 2 (c-b)	14	1	3	6	11	-5	21
New Benin			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	293	250	261	227	201	143	236
	Monthly report	Total No. of immunisations (b)	293	250	269	221	201	141	236

	Consumption / Tally Sheet	Total No. of doses dispensed (c)	310	280	280	230	230	150	230
		Var 1 (b-c)	0	0	8	-6	0	-2	0
		Var 2 (c-b)	17	30	11	9	29	9	-6
Staff clinic			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	210	156	163	164	156	164	164
	Monthly report	Total No. of immunisations (b)	204	156	161	160	147	169	162
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	210	160	200	170	160	180	170
		Var 1 (b-c)	-6	0	-2	-4	-9	5	-2
		Var 2 (c-b)	6	4	39	10	13	11	8
Evbo Gida			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	126	92	117	135	109	73	101
	Monthly report	Total No. of immunisations (b)	126	92	117	134	108	73	85
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	150	110	120	130	120	80	110
		Var 1 (b-c)	0	0	0	-1	-1	0	-16
		Var 2 (c-b)	24	18	3	-4	12	7	25
Egua Edaiken Gida			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
	Tally sheets	Total No. of immunisations (a)	50	44	33	31	27	18	19
	Monthly report	Total No. of immunisations (b)	50	44	33	31	27	18	19
	Consumption / Tally Sheet	Total No. of doses dispensed (c)	60	50	40	30	20	20	20
		Var 1 (b-c)	0	0	0	0	0	0	0
		Var 2 (c-b)	10	6	7	-1	-7	2	1

Annex 11 : Detailed findings – data discrepancies at LGA level

ENUGU SOUTH

	PHC 1 Amechi PHC			PHC - Obeagu			PHC 3 Ibezim Medical Centre			PHC 4 - Eke		
Period	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance
Jul-19		194	194	6	6	0	76	75	-1		76	76
Aug-19	249	249	0	2	2	0		0	0	93	93	0
Sep-19	199	199	0	4	4	0	52	52	0	87	84	-3
Oct-19		240	240	9	5	-4		44	44	127	131	4
Nov-19		214	214		5	5		61	61	109	146	37
Dec-19		239	239		4	4		69	69		124	124
Jan-20		187	187		17	17		0	0		98	98

NSUKKA

	PHC 1 Bishop Shanahan Hospital			PHC -Opi			PHC 3 University Medical Centre			PHC 4 - Ogbaogu		
Period	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance
Jul-19	284	284	0	112	110	-2	202	202	0	32	0	-32
Aug-19	225	225	0	0	97	97	73	72	-1	34	34	0
Sep-19	223	223	0	0	99	99	143	143	0	29	29	0
Oct-19	204	130	-74	159	88	-71	180	180	0	35	35	0
Nov-19	183	183	0	250	250	0	138	138	0	27	27	0
Dec-19	240	240	0	90	90	0	89	88	-1	38	38	0
Jan-20	245	245	0	147	147	0	155	155	0	38	38	0

BAUCHI

	PHC–1- State Low Cost			PHC2-DUMI			PHC SHAFA			PHC 4 - KWAGAL		
Period	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance
Jul-19	59	59	0	53	10	-43	42	42	0	40	0	-40
Aug-19	64	64	0	61	40	-21	38	38	0	31	31	0

Sep-19	54	54	0	67	35	-32		0	0	35	35	0
Oct-19	70	70	0	57	25	-32	33	33	0	31	31	0
Nov-19	73	73	0	38	28	-10	Reports not seen	17		35	35	0
Dec-19	72	72	0	44	26	-18	44	44	0	26	26	0
Jan-20	90	90	0	50	21	-29	Reports not seen	30		23	23	0

DASS

	PHC 1 - Bandas			PHC2 - Butur			PHC 3 - Pegin Doka			PHC 4 - Gajuwal		
Period	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance
Jul-19	21	21	0	23	26	-3	75	22	53	11	11	0
Aug-19	13	13	0	26	26	0	45	55	-10	12	12	0
Sep-19	9	9	0	26	26	0	44	35	9	11	11	0
Oct-19	14	-	14	24	24	0	37	52	-15	12	-	12
Nov-19	11	11	0	25	25	0	22	56	-34	12	12	0
Dec-19	12	12	0	25	25	0	27	72	-45	13	13	0
Jan-20	12	12	0	25	25	0	98	98	0	12	12	0

GWAGWALADDA

	PHC 1 – OLD KUTUNKU			PHC2 - ZUBA			PHC 3 - UATH			PHC 4 - CHITIMU		
Period	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance
Jul-19	156	156	0	350	350	0	241	158	-83	38	38	0
Aug-19	161	161	0	359	359	0	307	0	-307	32	22	-10
Sep-19	157	157	0	363	363	0	233	0	-233	29	32	3
Oct-19	163	163	0	353	353	0	277	0	-277	22	29	7
Nov-19	123	123	0	190	194	4	327	0	-327	27	27	0
Dec-19	147	149	2	283	303	20	303	303	0	30	30	0
Jan-20	166	147	-19	459	454	-5	337	0	-337	26	26	0

GWALE

	P–C 1 - Fuskam Yamma			PHC2 - Goron Dutse			PHC 3 - Mangarori			PHC 4		
Period	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance
Jul-19	90	90	0	120	118	-2	19	20	1			
Aug-19	81	81	0	114	114	0	67	67	0			
Sep-19	78	78	0	91	91	0	87	0	-87			
Oct-19	75	75	0	103	103	0	78	72	-6			
Nov-19	89	89	0	94	94	0	138	133	-5			
Dec-19	83	83	0	91	86	-5	72	72	0			
Jan-20	97	97	0	101	101	0	66	66	0			

KUJE

	PHC 1 (Kuje PHC)			PHC2 (Kuchiyarco PHC)			PHC 3 (Kuje General Hospital)			PHC 4		
Period	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance
Jul-19	385	389	4	47	47	0	472	476	4			
Aug-19	303	290	-13	37	37	0	389	389	0			
Sep-19	166	303	137	27	27	0	346	346	0			
Oct-19	354	354	0	28	33	5	Reports not seen	452				
Nov-19	373	373	0	37	37	0	Reports not seen	459				
Dec-19	393	393	0	35	35	0	452	450	-2			
Jan-20	354	355	1	58	58	0	486	482	-4			

MADOBI

	PHC 1 - Burjii PHC			PHC2 - Gora PHC			PHC 3 - Kafir Agur			PHC 4		
Period	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance
Jul-19	63	22	-41	187	187	0	101	101	0			
Aug-19	86	34	-52	149	149	0	91	91	0			
Sep-19	69	28	-41	138	138	0	90	90	0			

Oct-19	74	29	-45	167	178	11	102	102	0			
Nov-19	65	22	-43	166	166	0	103	103	0			
Dec-19	53	19	-34	184	184	0	104	104	0			
Jan-20	78	21	-57	181	181	0	128	128	0			

EGOR

	Staff Clinic PHC			Eubogida PHC			Egua Edaiken PHC			Federal Neuro Psychiatric Hospital PHC		
Period	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance
Jul-19	204	204	0	126	126	0	50	50	0	not provided		
Aug-19	156	156	0	92	92	0	44	44	0	not provided		
Sep-19	161	166	-5	117	117	0	34	34	0	not provided		
Oct-19	160	161	-1	134	134	0	31	31	0	not provided		
Nov-19	147	152	-5	108	108	0	27	27	0	not provided		
Dec-19	169	169	0	73	73	0	18	18	0	not provided		
Jan-20	162	162	0	85	102	-17	19	19	0	not provided	0	

MUSHIN

	MUSHIN / Palm Avenue			MUSHIN / Ayantunga			La Coker			Itire Ijesha		
Period	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance
Jul-19	606	816	210	514	713	199	1578	1782	204	925	1073	148
Aug-19	624	622	-2	552	1040	488	960	1181	221	508	703	195
Sep-19	604	817	213	549	857	308	1209	1360	151	583	758	175
Oct-19	568	794	226	598	912	314	1054	1477	423	770	867	97
Nov-19	644	851	207	346	757	411	998	1323	325	770	755	-15
Dec-19	507	788	281	491	886	395	1218	1296	78	636	698	62
Jan-20	569	671	102	1034	1450	416	1160	1504	344			

OREDO

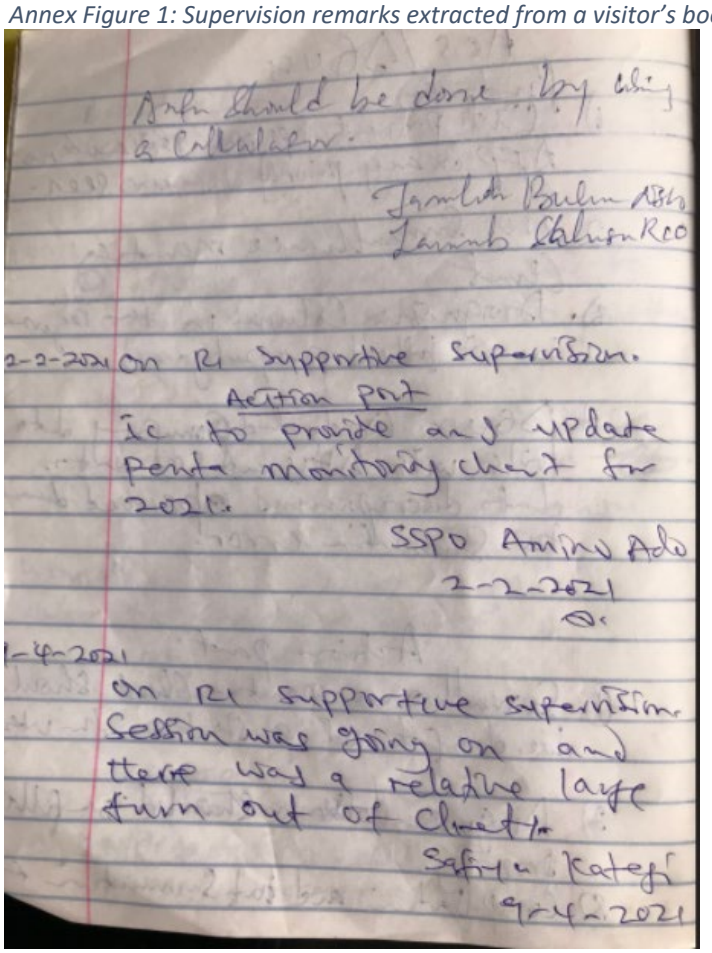
	Central Hospital PHC			Oredo PHC			New Benin PHC			Uniben PHC		
Period	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance
Jul-19	1216	1216	0	206	206	0	293	293	0	102	102	0
Aug-19	872	872	0	139	139	0	292	250	42	87	87	0
Sep-19	1190	1270	-80	137	137	0	270	269	1	97	97	0
Oct-19	802	780	22	114	114	0	226	221	5	112	112	0
Nov-19	919	919	0	129	129	0	206	201	5	109	109	0
Dec-19	790	790	0	0	135	-135	195	141	54	97	97	0
Jan-20	1081	0	1081	179	309	-130	239	236	3	54	54	0

SOKOT SOUTH

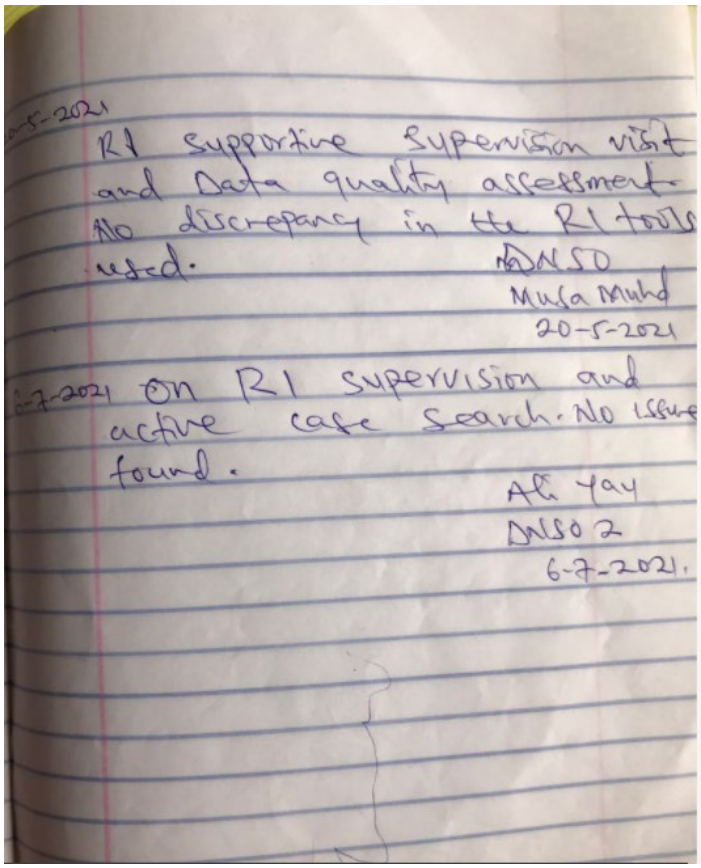
	Specialist Hospital			Aliyu Jodi			Yar Akija PHC			PHC 4		
Period	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance	Monthly report	DHIS 2	Variance
Jul-19	403			40			Not reported at all					
Aug-19	382			33			Not reported at all					
Sep-19	351			29			Not reported at all					
Oct-19	456			41			Not reported at all					
Nov-19	571			47			Not reported at all					
Dec-19	440			42			Not reported at all					
Jan-20	485			60			Not reported at all					

Annex 12 : Supportive supervision notes

Annex Figure 1: Supervision remarks extracted from a visitor's book Page 1



Annex Figure 2: Supervision remarks extracted from a visitor's book page 2



Annex 13 : CCE Pictorial evidence

Annex Figure 3: Cold chain equipment in working order but placed under a leaking roof

Annex Figure 4: Old and unrepairable Cold Chain equipment due for decommissioning at

◄ Sokoto state cold chain store

Bodinga LGA

▼

◄ Kuje LGA in FCT

Annex 14 : Vaccine supply chain - Pictorial evidence

Annex Figure 5: SIA vaccines held in corridors at NSCS - Abuja due to space constraints

Annex Figure 6: Vaccine stored on floor Kano

Annex 14: Vaccine supply chain - Pictorial evidence (continued)

Annex Figure 7: Used vaccine vials at Kuje PHC

Annex Figure 8: Used vaccine vials at Bwari LGA-FCT

Annex Figure 9: Used sharp boxes at Kuje LGA

Annex Figure 10: inadequate inventory record storage at Agur PHC Kano

Annex Figure 11: Poor storage of syringes and COVID-19 vaccination cards

Annex 15: FMOH/ NPHCDA action plan for the audit recommendations

#	Audit Recommendation	Priority	Management Comments	Responsibility	Deadline / Timetable
1	NPHCDA is recommended to develop a suitable implementation framework, including plan and budget, as well as the necessary resources, to operationalise its 2021 immunisation supply chain policy. This framework should indicate key timelines for the activities, as well to articulate appropriate mechanisms for follow-up, support, monitoring and supervision.	M	Agreed	DLHC, NLWG	30-Dec-22
2	NPHCDA is recommended to: (i) review its vaccine consumption data at least twice a year to update its forecasts; and (ii) put in place a process which captures data on actual wastage rates, in order to increase the accuracy of its national and State level forecasts (refer to Recommendation 10).	H	Agreed	NLWG	2i: twice a year 2ii: 31-Dec-22
3	NPHCDA is recommended to ensure that the necessary documentation supporting its forecasting process, key decisions and assumptions, is consistently put on file for future reference.	M	Currently being practised; however, the country will work to strengthen the forecast documentation	NLWG	Ongoing
4	Given the importance and the complexity of successfully re-engineering the supply chain to the proposed "hub model," NPHCDA is recommended to put in place a project management team responsible for overseeing the implementation. Since an increasing volume of vaccines is to be handled by the Abuja, Kano and Lagos hubs, the construction at these sites should be expedited.	H	The NLWG is responsible for overseeing the implementation of the 3-hubs architecture and has focal points that are responsible for regular progress tracking and reporting. The delay is due to an extensive delay in Gavi approval and UNICEF's vendor procurement process. The recommendation should be for Gavi to expedite final approval and release of funds for the Kano and Abuja hubs, and for UNICEF to fast-track vendor procurement for the implementation.	Gavi and UNICEF	28-Feb-22

5	NPHCDA is recommended to secure funding so that it can insure its vaccines and safeguard them against unforeseen damage or loss.	M	Agreed. Given the prevailing tight fiscal space for the FGoN, the NPHCDA will work with Gavi and other donors to explore the possibility of accessing funds to insure the vaccines and devices.	NPHCDA	31-Dec-22
6	NPHCDA should undertake a cost effectiveness analysis to determine if the investment in the refrigerated trucks provide better value for money and operational efficiency. Thereafter, if the analysis supports the investment case, NPHCDA should develop a plan with the alliance partners, in order to mobilise the necessary resources. Until the time the use of refrigerated trucks become financially viable, NPHCDA is recommended to use appropriate temperature monitoring devices (including heat/freeze breach alerts) to ensure the continuous temperature monitoring of vaccines.	H	Use of refrigerated trucks is not currently within NPHCDA's plans in the medium term. Once the time is right, NPHCDA will decide on this. For now, NPHCDA will continue the use of cold boxes and appropriate temperature monitoring devices for vaccines distribution, while strengthening reporting.	NLWG, NPHCDA	Ongoing
7	NPHCDA is recommended to institute and document a mechanism to verify and validate that the 3PL companies strictly deliver vaccine under 72 hours window.	M	Agreed	NLWG, NPHCDA	30-Dec-22
8	NPHCDA and the state level stores are recommended to ensure that the VVM status is always checked and recorded during the hand-over of vaccines deliveries/ receipts between storekeepers working across different tiers and levels of the health system.	H	Although this is already ongoing, NLWG will intensify efforts to ensure 100% implementation of VVM checks	NLWG, NPHCDA	Ongoing
9	NPHCDA is recommended to advocate that the States and LGAs earmark and budget sufficient funds to finance vaccine distribution transit costs at the state and LGA level.	M	NPHCDA has been advocating for this for many years, with no success. The government plans to incorporate the cost of vaccine distribution from national to the last mile into the federal vaccine procurement costs.	NLWG, NPHCDA	31-Dec-22

10	NPHCDA, in coordination with Gavi and its alliance partners, is recommended to finalise the choice of vLMIS and prepare a costed plan for its implementation and rollout. The vLMIS is crucial for the implementation of the new iSC policy. It will provide critical data for several supply chain related decisions such as, forecasting (actual consumption and wastage), vaccine distribution, expiry and VVM monitoring, storage capacity planning for Supplementary Immunisation campaigns etc.	H	Already done	Not applicable	Not applicable
11	NPHCDA and SPHCDA are recommended to train all staff responsible for managing and handling vaccines to comply with the new established SOPs, particularly: 1. Maintaining accurate and real time vaccine registers, including the recording of batch numbers, expiry dates and VVM status. 2. Reviewing the consumption patterns at the corresponding subsidiary level before re-supplying their direct reports with additional vaccines. 3. Documenting, with necessary justifications, the process, results and follow up of each physical stock counts. 4. Promptly escalating and resolving temperature excursions notified by RTMDs. Adequately document all interventions. 5. Providing to all PHCs with the required stock keeping forms/records and job aids. 6. Ensuring compliance with EEFO principles, through proper recording and spot checks.	M	Agreed. Although the country recently concluded a nationwide Vaccine Management Training that addresses these issues, the NLWG will also leverage other trainings and engagement opportunities with national, state, LGA, and PHC teams to ensure adherence	NLWG	31-Dec-22
12	NPHCDA and SPHCDA are recommended to fully cost out waste management plans, to support the implementation and disposal of waste across the supply chain. In addition, appropriate resources need to mobilise so that the States can budget for wastage disposal and reverse logistics management.	M	Agreed	NPHCDA SPHCDAs	31-Dec-22

13	It is recommended that NPHCDA and SPHCDA: • Routinely perform a triangulation of its immunisation data between doses distributed, vaccine utilisation and administrative coverage; and • Consistently complete data verification and validation exercises at the health facility levels as required by the National Data Management standard operating procedures.	H	Agreed as amended.	NPHCDA SPHCDAs	31-Dec-22
14	It is recommended that NPHCDA, in collaboration with its partners, prioritise and fast track the completion of the MICS/ NICS survey; use the survey result to triangulate data; design appropriate targeted strategies and methodologies to boost the coverage; and address gaps in data quality (refer to recommendations from 15 to 18 below)	H	Agreed	NPHCDA	31-Dec-22
15	NPHCDA is recommended to budget for its outstanding DQIP activities and ensure that funding is allocated to critical areas of the plan. It should also advocate for the States to include these DQIP activities in their state budgets.	M	Agreed. NPHCDA will budget for the outstanding DQIP activities and solicit partner support to implement and sustain the activities to improve data quality	NPHCDA	30-Dec-22
16	NPHCDA is recommended to ensure that all DQIP activities are included in the performance measurement framework and are properly monitored.	M	Agreed		
17	NPHCDA is recommended to design and put in place a consistent, process that systematically identifies and corrects data anomalies at both national and sub-national levels. Additionally, NPHCDA should work with the State-level data teams to ensure that immunisation data is regularly reviewed and compared to underlying records at both the LGA and PHC levels and for the results of this process are recorded and put on file.	H	Agreed	NPHCDA	31-Dec-22

18	NPHCDA is recommended to establish principles for a proper data validation mechanism to be put in place at the subnational level, for e.g., regular reviews of primary data documents at PHC prior to submission the LGA, as well as a consistent process for DHIS2 data to be checked against original, underlying records.	H	Agreed	NPHCDA	31-Dec-22
19	NPHCDA is recommended to effectively advocate and follow up to ensure that sufficient funds for repairs and maintenance are allocated in the States budgets.	H	Agreed	NPHCDA	31-Dec-22
20	NPHCDA is recommended to define (and promulgate) appropriate guidelines consistent with existing sub-national maintenance processes, setting out the frequency that State Maintenance Units should inspect their CCE units, so as to report their condition and status back to NPHCDA. Use of the Inventory Replacement and Rehabilitation Plan could be embedded in this requirement.	M	Agreed	NPHCDA	31-Dec-22
21	NPHCDA, through NLWG, is recommended to engage with the Ministry of Finance's Survey Board to conduct annual audits to identify and record all equipment that are eligible for disposal. The effort should be clearly costed, and the budget sources timely identified. To operationalise the engagement with the MOF's Survey Board, NPHCDA is encouraged to consult UNICEF's guidance material titled 'Decommissioning and safe disposal of cold chain equipment,' issued in April 2018. According to the guidance, there is a possibility of earning money by selling recovered refrigerant to a certified reclaimer. This money could partly contribute to expenses related to decommissioning.	M	Agreed	NPHCDA	31-Dec-22

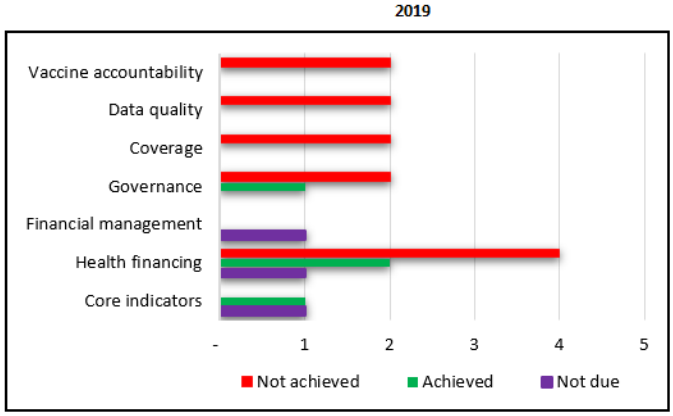
22	NPHCDA through NERICC platform, is recommended to engage in designing the TCA delivery approach to ensure that the designated activities are specific, measurable, accurate, relevant and include defined timelines.	M	Since the TCA plan goes beyond NERICC (includes NPSIAs, COVAX, Surveillance, etc), the TCA delivery and coordination approach will be designed and managed through the office of the Director, Department of Disease Control and Immunization.	NPHCDA (Director, DCI)	30-Dec-22
23	NPHCDA through its NERICC platform, is recommended to mature its role in holding the TCA partners to account given that it is the primary intended beneficiary, so that it can formally confirm and validate on the reported deliverables prior to these being reported by the partners via the Gavi PEF portal.	M	Agreed	NPHCDA (Director, DCI)	30-Dec-22

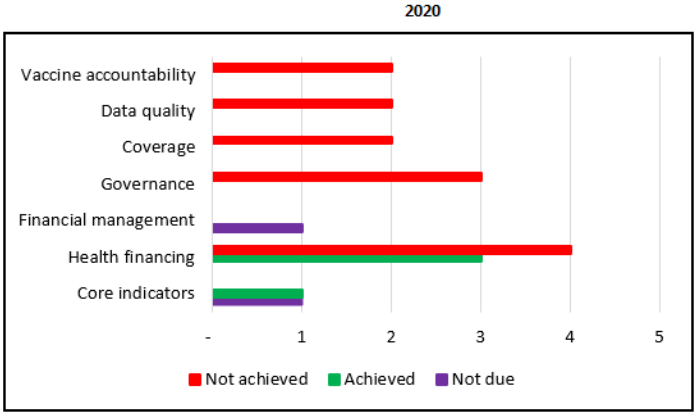
Annex 16 : Accountability Framework – detailed review

Annex Table 1: Indicators categorised by completion status

	2019	2020
Not due	3	2
Not achieved	12	13
Achieved	4	4
Total Indicator	**19**	**19**

Annex Figure 12: Categorisation by thematic area





Background

Accountability Framework

Nigeria was scheduled to transition out of Gavi support at the end of 2021. However, due to consistently low immunisation coverage rates, multiple outbreaks of infectious diseases and poor health outcomes, Gavi Board in 2018 approved an extension of the government's 'accelerate transition' period from 2021 to 2028 to align with Nigeria's National Strategy for Immunisation and PHC System Strengthening 2018 – 2028 (NSIPSS). The strategy outlined a ten-year plan to strengthen immunisation and PHC; and served as Gavi's plan for transitioning Nigeria from support by 2028. At the request of Gavi Board, the Gavi Secretariat and Alliance Partners in consultation with the Government, developed an accountability framework to assess Nigeria's progress against agreed targets and indicators. The framework is a commitment to achieve the goals and objectives of the NSIPSS and provide stewardship for its implementation at all levels.

The accountability framework was signed on 28 May 2019, by the Nigerian Ministry of Finance, Ministry of Budget and National Planning and the Federal Ministry of Health. The principles of engagement required the government to demonstrate commitments in the form of reimbursement of misused funds; increases in year-to-year health budgetary allocations; improved programmatic equity focusing on areas with low coverage; adequate monitoring, evaluation, and implementation research; and demonstrate ability to transition polio eradication resources effectively.

Achievement of the performance indicators contained in the accountability framework is critical for Gavi's decision regarding its continued investment in the implementation of NSIPSS. The Federal Government of Nigeria (FGON) and Gavi has jointly committed approximately USD 3 billion to NSIPSS interventions from 2018-2028, Gavi's share of the commitment was approximately USD 1 billion.

Indicators

The accountability framework consisted of seven areas comprising 19 indicators against which the NPHCDA was obligated to report which allows Gavi alliance to monitor progress. They five areas include: (a) Core indicators (2): Outcome of annual external audit and Gavi country program audit and timeliness of the release of funding for traditional and co-financed vaccines; (b) Health financing indicators (7): Vaccine financing, PHC financing, and overall health sector financing; (c) Financial management and institutional

capacity indicators (1): Financial management capacity building and adequate financial management arrangements; (d) Governance indicators (3): Expansion of Presidential Task Force on Polio Eradication to PHC, expansion of Inter-Agency Coordination Committee (ICC) to NSIPSS oversight, and partner alignment with the national plan; and (e) Programmatic performance indicators (6): Vaccine coverage, vaccine accountability, and data quality.

1. Core indicator - Outcome of annual external audit and/or Gavi country programme audit

Objectives - Use of Gavi support for the intended purpose whilst building capacity of NPHCDA/SPHCDA to ensure compliance to best financial management practices.

Description - The annual audit was to be conducted by independent external auditors with possible outcomes to be either:

A. Satisfactory/unqualified

B. Partially satisfactory/ emphasis of matter

C. Unsatisfactory/ qualified/adverse

Annex Table 2: Performance status

Year	Target	Actual	Status
2019	Unqualified annual audit report	Gavi grants channelled through alliance partners	Not due
2020	Unqualified annual audit report	Gavi grants channelled through alliance partners	Not due

Audit explanation

Since 2016, Gavi has not disbursed directly to the NPHCDA or any of the government entities. The funds were channelled through UNICEF and WHO. The NPHCDA is not subject to annual audits in concerning the management of Gavi funds. Therefore, the performance status for this indicator is rated as 'Not due/ Not applicable.'

However, there were remnants of the previous Gavi fund amounting to USD 27,137 as presented in the FY2018 audit report by Abel Oyenke, FCA audit firm dated 28 October 2019. These funds have been under NPHCDA and are being utilized on NERICC activities.

By 2021, the remnant of the amounts had been materially utilized and were due to be audited in accordance with section 24, External audits, of the PFA agreement between Gavi and FGON. An audit notification letter was shared with Abel Oyenke, FCA audit firm dated 28 May 2021, to cover FY 2019 and 2020 periods. The audits were yet to be conducted.

Given the low materiality of the funds in question, the audit team is of the opinion that the lack of audit report for the balance funds does not have bearing on the NPHCDA's performance against this indicator.

Based on the 2019 Gavi PCA recommendations, Gavi is expected to resume partial disbursement of the HSS grants to the NPHCDA. Upon receipt of such grants, the NPHCDA will be subject to this indicator.

Data source per Accountability Framework: Annual external audit report

Actual data source provided to the audit: Not applicable

Reliability of data source: Not applicable

Reference document: Not applicable

2. Core indicator - Timeliness of release of funding for traditional and co-financed vaccines

Objectives - Continued, timely co-financing of any newly introduced and of already introduced vaccines and monitoring the financial sustainability of transitional vaccines.

Responsible – Ministry of Finance, Budget Office

Description - The indicator measures timeliness in the release of funds for vaccine procurement. The potential ratings were:

A. Timely payment (vaccine financing requirements for the year paid before the end of the same year)

B. Late payment (default) but arrears paid by June of the following year

C. Default not cleared by time of annual in-country high-level review meeting

Group recommendation: {UNICEF SD procurement process requires payment for vaccines to be made 6 months in advance. Ideally release of funds for vaccines for the current year should be made by latest February of the same year. For the following year by latest September of the current year.} Attach exact funding requirements for the succeeding year as an annex

Annex Table 3: Performance status

Year	Target	Actual	Status
2019	Full co-financing disbursed before year end	Timely disbursed	Achieved
2020	Full co-financing disbursed before year end	Timely disbursed	Achieved

As the indicator stresses timeliness as a measure of performance, the audit considers that the indicator was met.

Audit explanation

Co-financing of vaccines is calculated per antigen based on agreed upon percentages for the period 2018 to 2028. The applicable amounts are based on annual vaccines forecast requirements tabulated through UNICEF. The funds are disbursed directly to UNICEF Supply Division.

For FY2019, FGON met its co-financing obligation using the World Bank credit facility and some of its own funds. The FGON did not contribute from the appropriated budget but drew the commitment from the WB credit facility for all procurements.

For 2020, the approximate co-financing requirement for FGON was USD79M which included USD51.5M for co-financing of Gavi supported vaccines. This was met by rollover of USD 47M which was allocated earlier in FY2019. The amount was transferred on 17 January 2020. The remaining balance of USD 31M was disbursed in subsequent tranches as below:

Annex Table 4: Disbursement in instalments for 2020

Description	Amount Transferred (USD)	Date of Transfer
FY2019 rollover to FY2020	47,485,865	16-Jan-20
FGON co-finance - 1st & 2nd Instalment	10,555,402	20-Nov-20
FGON co-finance - 3rd Instalment	21,102,359	18-Dec-20
Total	**79,143,627**	

Data source per Accountability Framework: UNICEF Supply Division report; and Government Integrated Financial Management Information System (GIFMIS) report

Actual data source provided to the audit: NPHCDA, UNICEF SD

Reliability of data source: High

Reference document: Ref A1 & Ref Z

3. Health Financing - Proportion of approved FGON budget allocated to health at the federal level [FMOH+ Service Wide Votes allocated to Health (vaccine financing, BHCPF)]

Objectives – Increased year-on-year health sector and immunisation budgetary commitments, increase in government expenditure on vaccines and immunisation programmes, and a commitment to sustain the enhanced programme once Gavi support ends.

Responsible – MBNP, Budget Office

Description - The sum of the approved budget of the Federal Ministry of Health (FMOH), allocation for vaccine financing (included in service wide votes) and BHCPF allocation will be used as the proxy for computing allocation to health.

Reflects stated prioritization of health, which has historically been low and will need to increase substantially if improvements are to be made in health outcomes and immunisation performance. This indicator does not reflect expenditure of funds but is an important step toward increased investment in health as agreed in the Abuja Declaration.

Implications if set targets/objectives are not met were as follows:

i=on-track

ii=slightly off-track; immediate corrective measures required

iii= severely off-track; immediate drastic interventions required **✓**

The average performance rating for 2019 & 2020 assigned by the audit is (ii) – ***severely off-track***

Annex Table 5: Performance status

Year	Target	Actual	Status
2019	5.50%	5.07%	Not achieved
2020	6.00%	4.14%	Not achieved

Audit explanation

The sum of the approved budget of the FMOH, allocation for vaccine financing (included in service wide votes) and BHCPF allocation has been used as the proxy for computing allocation to health. The indicator was set with a baseline of 4.5% in 2017 with a target of 10% by 2028.

The performance of the target was calculated as follows:

Annex Table 6: Proportion of FOGN budget allocated to health at a federal level

Federal budget	FY 2019 NGN	FY 2020 NGN
Total FGON Appropriation Act (A)	**8,916,964,099,373**	**10,810,800,872,072**
Allocation to federal ministry of health & other depts. & agencies in the health sector		
Recurrent (includes allocation to BHCPF)	315,617,344,056	363,055,206,881
Capital	57,085,655,234	51,402,884,613
Gavi /immunization (SWV)	21,250,424,823	26,834,060,757
BHCPF	51,219,751,964	-
NACA	6,705,107,443	6,214,605,957
Total health sector allocation – (B)	**451,878,283,520**	**447,506,758,208**
% Share of FMOH – B/A	**5.07%**	**4.14%**

Data source per Accountability Framework: Gazette annual Appropriation Act of FGON

Actual data source provided to the audit: Printed national budget, NPHCDA / Sydani (Gavi TCA)

Reliability of data source: High (limited to printed budgets)

Reference document: Ref A2

According to Sydani, the national budget officer and NPHCDA proposed inclusion of allocations such as health insurance scheme of the nationwide government employees and refunds and counterpart funding to organisations such as the Global Fund and Gavi. The national budget office also suggested inclusion of NRN126Billion allocated to COVID-19. The audit team excluded these allocation as they were not supported by detailed analysis, did not represent a true trend in the increase in government allocation, and did not meet the spirit of the indicator. For e.g., the allocation to COVID-19 fund may include elements which are unrelated to health sector.

4.a Health Financing - Proportion of the approved health sector capital budget allocated to PHC at the Federal level (NPHCDA capital budget)

Objectives – Increased year-on-year health sector and immunisation budgetary commitments, increase in government expenditure on vaccines and immunisation programmes, and a commitment to sustain the enhanced programme once Gavi support ends.

Responsible – Federal Ministry of Health

Description - There is a clear understanding that this indicator does not comprehensively capture the PHC and immunisation budget, as some PHC activities are not currently being implemented/overseen by the NPHCDA. However, it is a proxy indicator that can be objectively measured on an annual basis using readily available data.

The performance could be assessed as:

A. Proportion of approved health sector budget allocated to PHC increases

B. Proportion of approved health sector budget allocated to PHC remains the same ***√***

C. Proportion of approved health sector budget allocated to PHC decreases

The Government did not meet the performance target for 2019 but exceeded in 2020. The average yearly performance was 31.6 % and therefore, the audit assigned the rating **B**.

Annex Table 7: Performance status

Year	Target	Actual	Status
2019	30%	28%	Achieved
2020	30%	35.2%	Achieved

Implications if set targets/objectives are not met were as follows:

i=on-track ***√***

ii=slightly off-track; immediate corrective measures required

iii= severely off-track; immediate drastic interventions required

The performance rating assigned by the audit is **on-track**

Audit explanation

The baseline for this indicator was established at 27% and a performance target of 30% per year. The performance was calculated as follows:

Annex Table 8: Proportion of overall health budget allocated to NPHCDA

Year	Allocation to FMOH NGN	Allocation to NPHCDA NGN	NPHCDA share of capital budget
2019	57,085,655,234	16,006,999,994	28.0%
2020	51,402,884,613	18,104,144,119	35.2%

Despite the shortfall of 2% for the year 2019, the audit team considers that this indicator was achieved for 2019 & 2020 due to the fact that the 2019 allocation represents an increasing trend which was sustained, and the target was surpassed in 2020.

Data source per Accountability Framework: Gazette annual Appropriation Act of FGON

Actual data source provided to the audit: National Appropriation Act & Budget for year 2019 and 2020.

Reliability of data source: High

Reference document:

4.b Health Financing - Proportion of the Consolidated Revenue Fund allocated to BHCPF

Objectives – Increased year-on-year health sector and immunisation budgetary commitments, increase in government expenditure on vaccines and immunisation programmes, and a commitment to sustain the enhanced programme once Gavi support ends.

Responsible – MoF, MBNP

Description - This sub-indicator, in addition to the 4a measures government's commitment to funding for Primary Health Care

The performance could be assessed as:

A. Proportion of approved health sector budget allocated to PHC increases

B. Proportion of approved health sector budget allocated to PHC remains the same

C. Proportion of approved health sector budget allocated to PHC decreases

NPHCDA was unable to provide data for verification and therefore the audit team considered that the indicator was not achieved.

Annex Table 9: Performance status

Year	Target	Actual	Status
2019	>=1%	1%	Achieved
2020	>=1%	1%	Achieved

Implications if set targets/objectives are not met were as follows:

i=on-track

ii=slightly off-track; immediate corrective measures required

iii= severely off-track; immediate drastic interventions required ***√***

The performance rating assigned by the audit is severely ***off-track***

Audit explanation

Based on the additional information provided by NPHCDA, the audit team considers this indicator as achieved.

For 2019 BHCPF, Medium Term Fiscal Framework document accessed 28 April 2022, states that 1% of CRF is allocated to BHCPF, see Tab 'MTFF (Exp) Row#18.
For 2020, allocation is included in 2020-2022-Medium Term Fiscal Framework proposal, page# 4, line 288.

Data source per Accountability Framework: Gazette annual Appropriation Act of FGON

Actual data source provided to the audit: see above

Reliability of data source: High

5.a Health Financing - Proportion of appropriated NPHCDA capital budget+ BHCPF funds + vaccines financing from service-wide votes released

5.b … and expended

Objective – Increased year-on-year health sector and immunisation budgetary commitments, increase in government expenditure on vaccines and immunisation programmes, and a commitment to sustain the enhanced programme once Gavi support ends.

Responsible – MoF, Budget office, FMOH, NPHCDA

Description - Release of NPHCDA budget and BHCPF funds is a proxy for measuring availability of funding at the frontlines for implementation of PHC activities across the country.

The performance could be assessed as:

A. Proportion of PHC budget (NPHCDA +BHCPF) released and expended increases

B. Proportion of PHC budget (NPHCDA +BHCPF) released and expended remains the same

C. Proportion of PHC budget (NPHCDA +BHCPF) released and expended decreases

Annex Table 10: Performance status

Year	Target	Actual		Status
2019	(R/A) – 100% (E/R) – 100%	(R/A) – 31% (E/R) – 86%	**A - A**ppropriated **R - R**eleased **E - E**xpended	Not achieved
2020	(R/A) – 100% (E/R) – 100%	(R/A) – 43% (E/R) – 94%		Not achieved

Proportion of PHC budget (NPHCDA+BHCPF) released and expended decreases for both periods the indicator was way below both the target and baseline.

Implications if set targets/objectives are not met were as follows:

i=on-track

ii=slightly off-track; immediate corrective measures required

iii= severely off-track; immediate drastic interventions required **✓**

The performance rating assigned by the audit is ***severely off-track***

The audit analysis is based on unverified data and therefore it is less meaningful.

Audit explanation

The indicator commenced with a baseline of 81% (R/A) and 100% (E/R) in 2017. The performance for 2019 and 2020 was calculated as follows:

Annex Table 11: Proportion of budgets released and expended

Year	Appropriated NGN	Released NGN	Expended NGN	Performance %	
	-(A)-	-(R)-	-(E)-	R/A	E/R
Baseline				81%	100%
FY 2019	88,477,176,781	27,188,844,897	23,473,696,568	31%	86%
FY 2020	71,395,947,876	30,404,433,661	28,455,471,273	43%	94%

Data source per Accountability Framework: Government Integrated Financial Management Information System (GIFMIS) report

Actual data source provided to the audit: NPHCDA / Sydani (Gavi TCA)

Reliability of data source: Low. The above analysis is based on unverified information. The information was provided to Sydani by a focal point from NPHCDA. The data was neither verified by an independent party not supported by back up calculation.

Reference document: Ref X

6. Health Financing - Proportion of annual vaccine procurement expenditure released from government budgetary resources

Objectives – Increased year-on-year health sector and immunisation budgetary commitments, increase in government expenditure on vaccines and immunisation programmes, and a commitment to sustain the enhanced programme once Gavi support ends.

Responsible – MoF

Description - This holds government accountable for increasing the budget and reducing reliance on loans for vaccines which are currently off-budget. Failure to increase financing from budgetary resources as Gavi transitions will indicate that the trajectory of vaccine expenditure cannot be sustained by the government.

The performance could be assessed as:

A. Proportion of annual vaccine expenditure sourced from government budgetary resources increases

B. Proportion of annual vaccine expenditure sourced from government budgetary resources remains the same

C. Proportion of annual vaccine expenditure sourced from government budgetary resources decreases ***✓***

The audit assessed the performance as **C**

Annex Table 12: Performance status

Year	Target	Actual	Status
2019	28%	4.51%	Not achieved
2020	33%	38%	Achieved

Implications if set targets/objectives are not met were as follows:

i=on-track

ii=slightly off-track; immediate corrective measures required

iii= severely off-track; immediate drastic interventions required ***✓***

The performance ratings are 'iii' for FY 2019 and 'ii' for FY 2020. For both year 2019 and 2020, the performance rating assigned by the audit was ***severely off-track***

Audit explanation

The allocation for FY 2019 was supplemented through using the World Bank credit facility amounting to USD 54,789,988.86. This implies that the FGON did not meet the target as its actual contribution was limited to USD5,555,864, representing 4.51% of the total vaccine procured for the year. In 2020, the total funds released by FGON was USD79,143,627 of which USD47,485,865 was meant for year 2019. This amount was transferred to UNICEF on 17 January 2021. Further, the 2020 NPHCDA contribution included a late transfer in December 2020 of USD $21,102,359 which was rolled over for 2021 procurement. Despite meeting the 2020 target, the year-on-year late release of funds from NPHCDA and dependency on WB credit line and UNICEF prefinancing is concerning from the planning and sustainability perspective.

Annex Table 13: Proportion of government budgetary resources allocated to vaccine procurement

Source	2017 (USD)	2018 (USD)	2019 (USD)	2020 (USD)
GON	3,887,557	10,400,371	5,555,864	79,143,627
WB	97,221,626	11,062,619	54,789,989	40,961,379
JICA	307,737	-	-	-
GAVI	111,200,000	60,600,000	62,761,848	90,877,410
Total	**212,616,920**	**82,062,990**	**123,107,701**	**210,982,416**
GoN %	**2%**	**13%**	**4.51%**	**38%**

Data source per Accountability Framework: GIFMIS report / UNICEF records

Actual data source provided to the audit: UNICEF, Procurement Services Manager

Reliability of data source: Medium, details behind the figures were not provided.

Reference document: A3

For this analysis to be more meaningful the calculations behind the numbers must be verified. For e.g., the significant increase in the govt contribution for 2020 could be linked to procurement of COVID-19 vaccines. If so, the this still can be included in the analysis, but it must be clarified so that the expectation regarding future performance is better understood.

7. Health Financing - Vaccine financing plan for the next year developed and updated by end of June of the current year

Objectives – Increased year-on-year health sector and immunisation budgetary commitments, increase in government expenditure on vaccines and immunisation programmes, and a commitment to sustain the enhanced programme once Gavi support ends.

Responsible – NPHCDA / Budget office

Description - This plan should be used to inform the vaccine budget and to assess any resource gap and make decisions about affordability of new vaccine introductions. It also increases transparency of vaccine planning and financing. The plan will include state-level forecasts, transparent assumptions about coverage, wastage, and new introduction timelines, and expected data sources/resource gap. It will be endorsed by NPHCDA and FMOH before August of the current year.

All stakeholders include: NPHCDA, FMOH, MoF, MNBP, and partners.

The performance could be assessed as:

A. Financing plan for the next year endorsed by government (ICC) and shared with partners by end of August of current year.

B. Financing plan for the next year endorsed by government and shared with partners after August of current year (September - December)

C. Financing plan for the next year either not endorsed or not shared with government and partners.

Due to the lack of information the audit could not assess the performance.

Annex Table 14: Performance status

Year	Target	Actual	Status
2019	June	Timeline impractical	Not due
2020	June	Information unavailable	Not achieved

Implications if set targets/objectives are not met were as follows:

i=on-track [Core Group, ICC to approve the plan, MBNP must endorse the plan].

ii=slightly off-track; immediate corrective measures required; [Core Group holds by August to review the status of plan development and address challenges]

iii= severely off-track; immediate drastic interventions required √

Due to the lack of evidence the audit rating assigned was **severely off-track**

Audit explanation

The indicator aimed to ensure the vaccine budget is endorsed by NPHCDA and FMOH before June of each year.

To assess the timeliness and quality of the indicator, the audit required minutes of the ICC and MB&NP endorsing the vaccine financing plan for both financial periods. The financing plan should include state level data. However, the NPHCDA did not provide ICC minutes and MB&NP endorsement which were the key evidence for this performance indicator.

Given that the Accountability Framework was signed on 28 May 2019, the audit team is of view that it was impractical for NPHCDA to meet the target of June 2019.

Regarding 2020 target, NPHCDA acknowledged that the financing plan that should have been developed in 2019 but was delayed and approved by the ICC only in early 2020**.** NPHCDA did not provide the audit team with the relevant ICC meeting minutes.

NPHCDA provided additional comments of 22 March 2022 – The expected timeline for the finalisation of Vaccine Financing Plan in June is unrealistic due to factors such as state level forecasting by state NLWG, multiple layers and integration of review by internal and external stakeholders, to accommodate all of this, a longer timeframe is more suitable.

Data source per Accountability Framework: Approved vaccine financing plan by ICC and endorsed by MB&NP

Actual data source provided to the audit: Information not available

Reliability of data source:

Reference document:

8. Financial management - Proportion of jointly agreed financial control and management recommendations that have been fully implemented by NPHCDA (KPMG, PCA, NPHCDA)

Objectives – Strengthen financial management capacity of relevant national and sub-national institutions.

Responsible – NPHCDA

Description - Key strategic recommendations drawn from the KPMG financial assessment, Programme Capacity Assessment (PCA) and NPHCDA organizational capacity assessment will be developed and agreed upon by Government, Gavi alliance, partners, and donors. Progress on the implementation of the recommendations will be tracked annually.

Annex Table 15: Performance status

Year	Target	Actual	Status
2019	10%	In preparation/discussion	Not due
2020	20%	In preparation/discussion	Not due

Implications if set targets/objectives are not met were as follows:

i=on-track.

ii=slightly off-track; immediate corrective measures required.

iii= severely off-track; immediate drastic interventions required.

The indicator is rated by the audit as *ii=slightly off-track; immediate corrective measures required.*

Given that the performance of this indicator is dependent on Gavi's action/support of contracting and technical assistance and tasking the contractor to develop a financial management capacity building plan, the audit rated the performance as **Not due/Not applicable**

Audit explanation

The indicator aims to ensure that key strategic recommendations drawn from the KPMG financial assessment, Programme Capacity Assessment (PCA) and NPHCDA organizational capacity assessment are addressed with the progress on the implementation of the recommendations tracked annually.

In July 2019, Gavi conducted a Program Capacity Assessment (PCA) focusing on the proposed funding modality for receipt of Gavi cash support to Nigeria, and the structures to oversee the use of Gavi support provided in the form of cash, vaccines, and vaccine related devices.

In July 2021, the GMRs, emanating from the PCA, were agreed between the Gavi secretariat and the NPHCDA. The GMRs encompassed the financial management reforms considering the past assessments such as, the 2017 KPMG financial assessment recommendations. According to the GMRs, a financial management capacity building plan would be developed by December 2021 through Gavi support.

Data source per Accountability Framework: PCA report, NPHCDA annual report, annual audit report

Actual data source provided to the audit: Gavi PCA report

Reliability of data source: High, given the availability of PCA report and its GMRs

Reference document:

9. Governance - Proportion of states where repositioning of PHC has been fully implemented as stipulated in the PHCUOR policy

Objectives – Ensure sustainable governance and improved coordination for PHC systems at National level.

Responsible – Executive Governor, SMoH

Description - This indicator tracks PHC repositioning and aims to eliminate verticalization of PHC programmes. The target will be to have 100% of PHC programmes at the state level domiciled within the SPHCDA, in line with the PHCUOR policy. This is a state level indicator.

To measure the performance, the NPHCDA requires to conduct a National Score Card. The purpose of this scorecard to assess the adherence of States to the national guidelines on establishment of governance structures for implementing PHCUOR as well as identify areas in which States need further support. The scorecard further provides a platform for peer review on PHC reforms in Nigeria.

Annex Table 16: Performance status

Year	Target	Actual	Status
2019	60%	73%	Achieved
2020	70%	Not conducted	Not achieved

Implications if set targets/objectives are not met were as follows:

i=on-track.

ii=slightly off-track; immediate corrective measures required.

iii= severely off-track; immediate drastic interventions required.

The audit could not assess performance as the scorecard had not been conducted. However, conduct of an annual scorecard was underlying requirement for this indicator, the audit rates this indicator as **Not achieved.**

Audit explanation

The PHCUOR initiative was initiated in 2005 with support from DFID funded project, Partnership for Transformation of Health Systems. This was consolidated into another DFID funded program, the Partnership for Reviving Routine Immunization in Northern Nigeria: Maternal Newborn and Child Health Initiative. It became a national policy agenda following its endorsement by the 56th National Council on Health in May 2011. The Council in its 58th Session in 2013 further approved the national guidelines for implementation as well as the policy document through its Resolution 29. The last scorecard available was for FY 2019 but no scorecard was conducted for FY 2020. According to the NPHCDA, the conduct of score card was hindered by COVID-19.

The audit team is concerned about the lack of evidence of independent verification and discussion of the PHUCOR results in any oversight bodies such as ICC and NERICC. There was no mechanism to monitor the progress against the recommendations between the scorecards. It should also be recognised that the PHCUOR score keeping is limited to assessing high level institutional arrangements only. The process does not measure effectiveness of health systems nor its outcomes.

Data source per Accountability Framework: PHCUOR scorecard (National score for repositioning)

Actual data source provided to the audit: NPHCDA and online sources (source1, source2).

Reliability of data source: Official data unavailable

Reference document:

10. Governance - Proportion of meetings of the Presidential Task Force on Polio Eradication (PToPE) where RI and PHC are agenda items

Objectives – Leverage polio eradication resources to improve immunisation and broader PHC

Responsible – FMOH / NPHCDA

Description - The indicator aims to ensure the RI and PHC issues get consideration from the highest level by including relevant agenda in the meetings of Presidential Task Force on Polio Eradication.

Annex Table 17: Performance status

Year	Target	Actual	Status
2019	100%	Information unavailable	Not achieved
2020	100%	Information unavailable	Not achieved

Implications if set targets/objectives are not met were as follows:

i=on-track.

ii=slightly off-track - if a quarter is missed. immediate corrective measures required; - Core group convened to take corrective actions.

iii= severely off-track (not held in 2 quarters) immediate drastic interventions required (ICC convened to take corrective actions). ***✓***

The audit cannot assess the performance as the minutes of the meeting were not made available to the audit team even after repeated request. The audit rated this indicator as ***severely off-track***

Audit explanation

The audit could not ascertain whether the RI and PHC agenda items were included in the meeting as the occurrence, agenda and minutes of the meetings was not availed for review.

According to NPHCDA, the PTF meeting was subsumed into the National Economic Council (NEC) where NPHCDA makes regular briefing on Immunization and PHC. NEC is headed by the Vice President and the minute of the NEC meeting is classified.

On 15 May 2022, NPHCDA provided two separates NEC meetings agendas dated 18 November 2021 and 17 February 2022, both outside the timeline for this indicator.

Data source per Accountability Framework: Agenda & Minutes of PToPE meetings

Actual data source provided to the audit: Information unavailable

Reliability of data source: Information unavailable

Reference document:

11. Governance - Proportion of partners and donors working on immunisation and PHC that align their activities with NSIPSS/NPHCDA & SPHCDA strategic and annual operational plans

Objectives – Improve accountability and coordination of PHC programs at National and state levels

Responsible – NPHCDA / SPHCDA

Description - The NSIPSS annual/biennial operational plan will be reviewed once every six months.

The alignment would apply mainly to new interventions. When all partners and donors align their plans with NPHCDA, duplication of efforts would be minimized.

Annex Table 18: Performance status

Year	Target	Actual	Status
2019	40%	Information unavailable	Not achieved
2020	80%	Information unavailable	Not achieved

Implications if set targets/objectives are not met were as follows:

i=on-track.

ii=slightly off-track; immediate corrective measures required.

iii= severely off-track; immediate drastic interventions required. ***√***

Given the absence of prerequisites such as stakeholder mapping and a performance framework, the audit rated the performance as ***severely off-track***

Audit explanation

To improve accountability and coordination of PHC programs at National and state levels, the indicator seeks to determine the proportion of partners and donors working on immunisation and PHC that align their activities with NSIPSS/NPHCDA & SPHCDA strategic and annual operational plan.

As at the audit date, NPHCDA had not developed a framework to measure the performance of the indicator. Additionally, the NPHCDA had not conducted a stakeholder mapping against the NSIPSS by area of intervention and financial contribution. During the visits to PHCs, the audit noted supervision visits by different donors and partners assessing the similar areas on effective vaccines storage. This was an indication of duplication and non-coordination as other areas such as data quality seldom got attention.

According to NPHCDA, it is working to refine the measurement for this indicator for the ease of computation. NPHCDA asserted that significant progress had been made in harmonizing donor and partner plans with government plans at both national and state levels.

Data source per Accountability Framework: Annual operational plan for National and states

Actual data source provided to the audit: Information not available

Reliability of data source: Information not available

Reference document:

12. Coverage - Increased coverage for immunisation and PHC services. National average and States' performance

Objectives – Increased coverage for immunisation and PHC services

Responsible – NPHCDA / SPHCDA

Description – This assessment uses data from surveys such as, NICS/MICS/SMART/NDHS, for measuring the achievement of the indicators. For immunisation survey data to be timely, will use "vaccinated for age". Based on NSIPSS projections and availability of data, the milestones will be reviewed annually. This indicator is applicable both at national and state level (proportion of states that achieved projected coverage rates).

Annex Table 19: Performance status

Year	Target	Actual	Status
2019	**Vaccine** / **National average** / **States** Penta 3 / 48 / 50 IPV / 48 / 50 MCV1 / 63 / 50 ANC4 / 62 / 20 SBA / 50 / 20	Result of 2021 MICS/NICS survey result was yet to be published as of 30 April 2022.	Not achieved
2020	**Vaccine** / **National average** / **States** Penta 3 / 55 / 55 IPV / 55 / 55 MCV1 / 69 / 55 ANC4 / 66 / 30 SBA / 52.3 / 30	Result of 2021 MICS/NICS survey result was yet to be published as of 30 April 2022.	Not achieved

Implications if set targets/objectives are not met were as follows:

i=on-track.

ii=slightly off-track; immediate corrective measures required.

iii= severely off-track; immediate drastic interventions required. ***√***

The audit assesses the indicator as ***severely off-track***

Audit explanation

The indicator was developed to measure percentage increase in coverage for immunisation and PHC services. The indicator was to be measured using results from surveys such as, NICS/MICS, SMART, NDHS and/or DHIS2.

Audit observations regarding the surveys were as follows:

a. SMART survey - National Nutrition and Health Survey conducted by UNICEF. It's a quick survey, sample size very small, which is relatively cheaper than the other surveys – but expand its scope to meet the annual immunisation information needs or create a new survey that can be conducted annually. However, the last one was done in early 2019 and the report has never been disseminated due to non-concurrence on findings. This report was not shared with the audit team.

b. The Multiple Indicator Cluster Survey/National Immunization Coverage Survey (MICS/NICS) surveys are conducted by UNICEF every three years. The studies have high-quality microdata on a range of indicators not included in other reproductive and health surveys. The last MICS survey (MICS5) was conducted in 2016-17, having previously conducted the survey in 1995 (MICS1), 1999 (MICS2), 2007 (MICS3) and 2011 (MICS4). In 2020, the country was due to perform the MICS4, but this did not happen due to the COVID-19 pandemic.

   Post audit fieldwork update – As of April 2022, the Gavi audit team was informed that the survey data collection was completed, and preliminary estimates were produced. However, the survey report was not yet finalised as the validation of survey findings and production of final estimates of immunisation indicators were pending.

c. Nigeria Demographic and Health Survey (NDHS)was conducted in 2018 with the primary objective being to provide up-to-date estimates of basic demographic and health indicators. Section 10.2 outlines the Vaccination of Children data. The data was acceptable as a denominator and was used to update the accountability framework. This data was however not relevant for the status coverage for FY 2019 and 2020 audit scope years.

d. The District Health Information System 2 (DHIS2) RI module data was noted as unreliable through failed audit tests and observations at sub-national levels.

e. WHO/UNICEF Estimates of National Immunization Coverage (WUENIC) – Currently adopted due to lack of survey data.

The delays in conducting the surveys compromised monitoring of the coverage which is critical for key aspects of the national immunisation programme such as, identifying unvaccinated population, vaccine forecasting, delivery strategy etc.

	Data source per Accountability Framework: Immunization coverage survey (NICS, SMART, NDHS, MICS, DHIS2) **Actual data source provided to the audit:** Preliminary update from NPHCDA & UNICEF **Reliability of data source:** High when the information is finalised/published. **Reference document:** Information not finalised/published.

13. Data quality - Improved RI data quality at National and sub-national levels

- National - Variance between DHIS2 and survey Penta 3 coverage
- States' performance - Proportion of states with variance between DHIS2 and survey coverages within recommended values

Objectives – Improved RI data quality at National and sub-national levels

Responsible – NPHCDA / SPHCDA

Description – This indicator is applicable both at national (Variance between DHIS2 and survey Penta 3 coverage) and state level (proportion of states with variance between DHIS2 and survey coverages within recommended values).

National - The milestones were determined by evenly distributing the difference between the baseline and target over 10 years

Baseline: 105% (admin - DVD-MT 2016) - 33% (2016 MICS/NICS survey)

States - Projected target values for variance will be graduated over the period of 10 years

Annex Table 20: Performance status

Year	Target		Actual	Status
2019	**National**	**States**	Result of 2021 MICS/NICS survey result was yet to be published as of April 2022.	Not achieved
	63.1	10		
2020	**National**	**States**	Result of 2021 MICS/NICS survey result was yet to be published as of April 2022.	Not achieved
	54.3	20		

Implications if set targets/objectives are not met were as follows:

i=on-track.

ii=slightly off-track; immediate corrective measures required.

iii= severely off-track; immediate drastic interventions required. ***v***

The audit assesses the indicator as ***severely off-track***

Audit explanation

The indicator was meant to measure the variance between the DHIS2 RI module data and the survey data. However, as outlined in section 12 above, the surveys were yet to be conducted to provide data for comparison with the DHSI2 RI module. In addition, the audit test confirmed that the DHIS2 data was unreliable, inferring that the data quality has not improved.

Post audit fieldwork update – As of April 2022, the Gavi audit team was informed that the survey data collection was completed, and preliminary estimates were produced. However, the survey report was not yet finalised as the validation of survey findings and production of final estimates of immunisation indicators were pending.

According to NPHCDA comment of 15 March 2022, preliminary survey values indicate that the country surpassed the targets for this indicator as the variance between the Penta 3 coverage and admin was much lower than the target. Also, the proportion of states where the variance was less than 10% was higher than the targets.

Data source per Accountability Framework: DHIS2 and immunisation coverage surveys (NICS, SMART, NDHS, MICS)

Actual data source provided to the audit: Preliminary update from NPHCDA / UNICEF

Reliability of data source: High when the information is finalised/published.

Reference document: Survey not finalised/published.

14. Vaccine accountability

- National – Triangulated (unjustifiable) wastage rate of Penta, IPV, MCV1, PCV
- States - Proportion of states with triangulated (unjustifiable) wastage rate within recommended values for Penta, IPV, MCV1, PCV

Objectives – Improved vaccine accountability by ensuring that unjustifiable vaccine wastage rates are within recommended values.

Responsible – NPHCDA / SPHCDA

Description - Improved vaccine accountability by ensuring that unjustifiable vaccine wastage rates are within recommended values. This indicator is applicable to both national and state level.

National - triangulated, unjustifiable, wastage rate

States - proportion of states with triangulated, unjustifiable, wastage rate within recommended values

Annex Table 21: Performance status

Year	Target	Actual	Status
2019		Information unavailable	Not achieved

	Penta	IPV	MCV1	PCV
National	37.5	28.5	38.5	18.5
States	Not established	50	50	20

Year	Target	Actual	Status
2020		Information unavailable	Not achieved

	Penta	IPV	MCV1	PCV
National	35	27	37	17
States	55	55	55	30

Implications if set targets/objectives are not met were as follows:

i=on-track.

ii=slightly off-track; immediate corrective measures required.

iii= severely off-track; immediate drastic interventions required.

The audit assesses the indicator as ***severely off-track*** as critical data required to estimate the wastage rate was unavailable.

Audit explanation

The indicator was meant to measure the percentage of triangulated (unjustifiable) wastage rate of the vaccines per antigen to enhance improved vaccine accountability by ensuring that unjustifiable vaccine wastage rates are within recommended values.

The Nigeria Strategy for Immunization and PHC System Strengthening (NSIPSS) identifies the risk of vaccine stock-outs due to inability to close the wastage and efficiency gap. The strategy has developed a mitigation action to conduct wastage study in first year and incorporate wastage reporting into routine M&E system subsequently. Under the supply chain intervention to 'Enhance forecasting based on NPHCDA's state-specific target coverage' the strategy identifies an activity to carry out wastage rate study. The target study year was 2019.

In 2019, the Clinton Health Access Initiative (CHAI) conducted a wastage study whose findings were disputed by the NPHCDA citing errors in parameters used, sampling frame and assumptions made. NPHCDA did not formally accept the findings as it disputed parameters used, sampling frame and assumptions made in the report. As of August 2021, there was no data reported for the indicator for 2019 and 2020.

The Audit Team is of the opinion that given that NPHCDA disputed the 2019 CHAI study and failed to conduct a new study, the responsibility for the wastage study continues to lie with NPHCDA and therefore contributing to non-achievement of this indicator.

According to NPHCDA, this indicator could not be measured due to the absence of vaccine wastage study result. The NPHCDA uses WHO's regional average rate as a reference.

Data source per Accountability Framework: Wastage rate study, DHIS2, immunisation coverage surveys, report of physical vaccine stock count

Actual data source provided to the audit: Information not available, limited information received from NPHCDA / UNICEF

Reliability of data source: Information not available

Reference document: