Zero-Dose LEARNING HUB

Gavi's Zero-Dose Learning Hub IRMMA Aligned Interventions: Semiannual Update — Nigeria

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Gavi The Vaccine Alliance

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THE GENEVA LEARNING FOUNDATION

Gavi Zero-Dose Learning Hub (ZDLH)

Funded by Gavi, the Zero-Dose Learning Hub (ZDLH) serves as the global learning partner and is led by JSI Research & Training Institute, Inc. (JSI) with two consortium partners, The Geneva Learning Foundation (TGLF) and the International Institute of Health Management Research (IIHMR). Together, the consortium enables sharing and learning across four Country Learning Hubs (CLHs) in Bangladesh, Mali, Nigeria, and Uganda to advance the uptake of evidence by synthesizing and disseminating key learnings. The ZDLH also focuses on improving immunization equity and reducing the number of zero-dose (ZD) and under-immunized (UI) children globally by facilitating high-quality evidence generation and uptake.

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ACRONYMS

AFENET	Africa Field Epidemiology Network
AHBN	Africa Health Budget Network
ANC	antenatal care
BeSD	behavioral and social drivers (of vaccination)
BHCPF	Basic Health Care Provision Fund
CHAI	Clinton Health Access Initiative
COP	community of practice
DFF	direct facility funding
DIM	decentralized immunization monitoring
DTP	diphtheria-tetanus-pertussis-containing vaccine
DQA	data quality assessment
GEMEL	Growing Expertise in Monitoring, Evaluation, and Learning
IEV	Identify, Enumerate, and Vaccinate
IPV	inactivated poliovirus vaccine
IR	implementation research
IRMMA	Identify, Research, Monitor, Measure, and Advocate
JSI	JSI Research & Training Institute, Inc.
LGA	local government area
LQAS	lot quality assurance sampling
MOH	ministry of health
MoU	memorandum of understanding
NPHCDA	National Primary Health Care Development Agency
PHC	primary health care
REW	Reaching Every Ward
RI	routine immunization
SERICC	State Emergency Routine Immunization Coordination Centre
SPHCDA	State Primary Health Care Development Agency
SWAp	Sector-Wide Approach
UI	under-immunized
ZD	zero-dose
Z-DROP	Zero-Dose Reduction Operational Plan

EXECUTIVE SUMMARY

From July to December 2024, the Gavi-funded Nigeria Learning Hub, led by the Africa Field Epidemiology Network (AFENET) and Africa Health Budget Network (AHBN) with technical assistance from global learning partner JSI, continued to generate and apply evidence to strengthen the identification and reach of zero-dose (ZD) and under-immunized (UI) children. Through a combination of decentralized monitoring, implementation research (IR), budget analyses, and stakeholder engagement, the Learning Hub is supporting sub-national governments in addressing persistent barriers to routine immunization (RI) and improving local immunization system performance.

The decentralized immunization monitoring (DIM) approach, initially piloted in Kumbotso local government area (LGA) in Kano state, was scaled to the remaining seven LGAs in the Learning Hub study areas in Bauchi, Borno, Kano, and Sokoto states during the reporting period. DIM findings confirmed wide variation in immunization coverage within and between LGAs and highlighted wards with consistently lower coverage for immunizations scheduled later in infancy, such as measles. These localized data enabled stakeholders to identify underserved settlements, adjust microplans, and mobilize resources—for example, expanding RI posts and training new volunteer teams in Sokoto state. In parallel, the Learning Hub supported the training of the first cohort of Growing Expertise in Monitoring, Evaluation, and Learning (GEMEL) fellows, who are embedded within state and LGA teams to improve data quality and strengthen local immunization monitoring capacity.

The Learning Hub's ongoing IR explores how the Zero-Dose Reduction Operational Plan (Z-DROP) and the Identify, Enumerate, and Vaccinate (IEV) strategy perform in challenging contexts. Baseline data from Sokoto and Bauchi confirmed that children living in poorer households, those with caregivers lacking formal education, and those born at home remain at higher risk of never being vaccinated. A data quality assessment (DQA) highlighted disparities between data sources—especially in Bauchi—and underscored the need to improve data completeness, consistency, and tool availability. These insights have helped inform local service delivery adjustments and are guiding ongoing cost-effectiveness analyses undertaken by the Learning Hub.

To strengthen immunization financing, the Learning Hub supported state-level Communities of Practice (CoP) to operationalize the *Immunization Accountability Framework*. This work contributed to increased transparency and improved resource mobilization, including the release of new or previously delayed funds in Kano, Sokoto, Bauchi, and Borno states. With the exit of key donor funding, efforts to institutionalize domestic resource tracking and accountability mechanisms have become essential. Moving forward, the Learning Hub will continue to support Nigeria in translating evidence into action, advancing the country's equity goals in RI.

KEY LEARNINGS & RECOMMENDATIONS

IDENTIFY: UNDERSTANDING THE ZERO-DOSE BURDEN

Key Learnings

- The DIM approach uses lot quality assurance sampling (LQAS)—a small-sample, probability-based household survey method—that has proven effective and feasible for generating localized, actionable data to the ward level that can inform context-specific interventions or adaptations to existing programming. These data not only support advocacy with decision makers and communities but also helps identify missed settlements with high concentrations of ZD children, as demonstrated in Sumaila LGA, Borno, where DIM data collection in two hard-to-reach wards led to the identification of two suspected measles cases.
- While the DIM has been carried out in all eight LGAs to date, the Learning Hub team has only completed the full data analysis for Kumbotso LGA and the descriptive data analysis for the remaining seven LGAs. In Kumbotso LGA, DIM findings revealed several sociodemographic factors that were strongly associated with vaccination delays among children aged 4.5–11 months and ZD status among those aged 12–23 months. Children from poorer households—classified in the lowest two wealth quintiles—were nearly eight times more likely to experience delayed vaccination and four times more likely to be ZD compared to those from wealthier households. Similarly, children of caregivers with no formal education and those born at home were significantly more likely to have delayed vaccinations or be ZD. Rural residence was also a significant predictor of ZD status in the older age group, with children in rural areas approximately five times more likely to be ZD compared to those in urban settings.

Recommendations

- **Expand fixed immunization posts:** Use the Z-DROP initiative and the Big Catch-Up campaign to increase fixed immunization posts in low-performing wards identified through the DIM to improve accessibility to vaccination services.
- **Enhance outreach services:** Strengthen outreach frequency and quality, including improved logistics support, to ensure wider immunization coverage, particularly in underserved areas.
- **Explore ways to institutionalize rapid and reliable local data collection approaches**—such as DIM—as a routine, sustainable activity across LGAs in Nigeria as a way to identify ZD and missed communities, establish clear referral pathways linking identified children to primary health care services, and strengthen follow-up mechanisms to ensure continuity of care and improved immunization coverage.

REACH: ENSURING ACCESS TO IMMUNIZATION SERVICES

Key Learnings

- Immunization coverage and barriers to vaccination vary considerably between wards within a single LGA and across the eight LGAs where DIM was implemented, underscoring the need for tailored strategies to effectively address ZD in different contexts. This variation is evident in Penta 1 coverage,[1] which ranges widely—from a high of 87.0% in Bauchi LGA to 41.6% in Wamako LGA—highlighting significant disparities in routine immunization (RI) performance. Unlike the DIM approach, other surveys used in Nigeria are not powered to provide immunization coverage data at the LGA level.
- Declines in coverage for vaccines administered later in the immunization schedule are evident across all LGAs, though the extent of this drop varies by location. This pattern points to a significant dropout issue—particularly pronounced in the two LGAs in Sokoto, where measles coverage among children aged 12–23 months falls to just over 30%.
- Findings from the DIM show that only 45% of caregivers of ZD children had contact with a health facility for antenatal care (ANC) and just 40% delivered in a health facility. These gaps represent missed opportunities to educate caregivers about immunization and initiate vaccination early, highlighting the importance of strengthening maternal health service use to improve RI coverage.
- Implementation research (IR) in Sokoto and Bauchi states found that 93% of caregivers needed spousal permission to vaccinate their children, and only 14% controlled household resources for vaccination. In Sokoto, 64% of unvaccinated children had caregivers excluded from joint decision-making. These findings underscore the need to engage male caregivers through household- and community-level dialogue to increase demand for immunization and reduce ZD prevalence.

Recommendations

- **Integrate immunization messaging into ANC counseling.** Institutionalize immunization awareness during ANC sessions, potentially with support from the Clinton Health Access Initiative (CHAI), to promote early and complete vaccination.
- **Improve institutional delivery rates.** Leverage community engagement and social mobilization to encourage more women to give birth in health care facilities, ensuring better maternal and newborn care and providing important access to vaccination services. This is especially critical given the persistently low rates of facility-based deliveries in northern Nigeria, as highlighted in the 2023 Nigeria Demographic and Health Survey (NDHS). Facility delivery rates remain as low as 12% in Sokoto, 31% in Bauchi, 33% in Kano, and 46% in Borno. These figures underscore the urgent need for targeted interventions to address barriers to institutional delivery and promote the benefits of skilled birth attendants, including infant vaccination.

[1] In Nigeria, the pentavalent vaccine (Penta)—which includes protection against diphtheria, tetanus, and pertussis (DTP) and hepatitis B and Haemophilus influenzae type b (Hib)—is commonly used in place of the standalone DTP vaccine and is the standard reference in national immunization data.

- **Increase male engagement in vaccination efforts.** Encourage greater male involvement through immunization advocacy by religious and community leaders, with support from the Chigari Foundation and others, to address cultural barriers and improve vaccine acceptance. Chigari Foundation is an implementing partner in Borno state known for locally-led initiatives that often integrate traditional and religious leaders into their outreach strategies.

MONITOR & MEASURE: IMPROVING DATA SYSTEMS AND TRACKING IMMUNIZATION COVERAGE

Key Learnings

- The Learning Hub carried out a data quality assessment (DQA) in 23 health facilities across Bauchi (7), Borno (8), and Kano (8) states. By comparing tally sheets, facility monthly summary forms, and DHIS2 entries, the DQA revealed inconsistencies in reported vaccination data for diphtheria-tetanus-pertussis-containing vaccine (DTP), inactivated poliovirus vaccine (IPV), and measles-containing vaccine between July and September 2024. Discrepancies between tally sheets and DHIS2 were lowest in Borno, ranging from 4.2% to 8.7%, and highest in Bauchi, where differences reached between 31.2% and 56.7%, indicating substantial gaps in data accuracy and reporting practices.
- The DQA also found that, at the time of the assessment, approximately one-quarter of the health facilities visited had reported stockouts of essential data tools, including vaccine ledgers, monthly summary forms, and child health cards.
- The availability of updated microplans varied significantly, from available in one of eight facilities in Borno to seven of eight facilities in Kano. Updated microplans are essential for effective immunization service delivery and are expected to be revised quarterly at the health facility level and validated at the LGA level. These microplans include critical information such as the number of settlements to be covered through fixed and outreach sessions, estimated vaccine requirements, and the financial implications of conducting outreach activities. The variation in the availability of updated microplans highlights gaps in planning processes that could impact service readiness and coverage.
- Notable discrepancies were observed between child health cards and immunization registers, particularly regarding key details such as the child's date of birth and last antigen received. These comparisons were carried out using one of two approaches. In facilities where RI sessions were actively ongoing, data collectors retrieved child health cards directly from caregivers attending the session. In facilities where sessions were not occurring at the time of the visit, data collectors accessed child health cards from the health facility's *tickler box*, which stores facility copies of vaccination cards organized by the child's next scheduled visit date. Borno demonstrated the highest level of data consistency, with congruence rates between card and register data in the 70–80% range for Penta, IPV, and measles, while Bauchi had the lowest, indicating more substantial challenges in data accuracy.
- The first cohort of 23 fellows enrolled in the Growing Expertise in Monitoring, Evaluation, and Learning (GEMEL) program successfully completed their didactic training in November 2024. This initiative is part of the Learning Hub's broader effort to build the capacity of program managers and monitoring and evaluation (M&E)/data officers to effectively capture, analyze,

and monitor immunization data—including related to ZD children—across the states and LGAs where the Learning Hub implements activities. As part of their engagement, GEMEL fellows supported the supervisory teams during the rollout of the DIM, and they will continue to contribute to key aspects of its implementation, including planning, training, supervising, and applying recommendations emerging from field activities.

- DIM is a rapid measurement tool that provides reliable information for tracking immunization performance over time and uncovering gaps in coverage and barriers to vaccination at the local level. Scale up of the approach from the pilot LGA (Kumbotso) to the remaining seven LGAs was feasible with the Learning Hub's timeframe and resources. Findings underscore the importance of localized, data-driven decision-making to enable timely and context-specific adjustments to programming.

Recommendations

- **Ensure the consistent availability and use of essential data tools**—such as vaccine ledgers, child health cards, and monthly summary forms—across all health facilities. While these tools are often printed and distributed through the Federal and State Ministries of Health, partners frequently step in to support printing and distribution in the event of budgetary delays or national stock-outs. However, availability alone is not sufficient; in some facilities, tools may be present but are not consistently used. Additionally, the National Primary Health Care Development Agency (NPHCDA) and implementing partners should take proactive steps to streamline and integrate parallel or duplicative data collection systems to reduce redundancy and ease the documentation burden on frontline health workers.
- **Leverage the growing network of GEMEL scholars as local champions to strengthen immunization data systems:** These trained professionals are well-positioned to lead efforts to improve the accuracy, completeness, and timeliness of immunization data at the facility and LGA levels. In addition to supporting day-to-day data quality improvements, GEMEL scholars can play a pivotal role in the effective implementation, expansion, and institutionalization of the DIM approach across Learning Hub LGAs. Their technical expertise and embedded presence within local systems make them valuable resources for supporting the technical rigor needed for continued implementation of the DIM. They can also serve as advocates for data-driven decision-making and continuous performance monitoring in immunization programs.
- **Continue using the DIM as a key measurement tool for tracking immunization performance over time:** Institutionalize the DIM within the routine health information and monitoring systems, embedding it as a standard practice for data-driven immunization planning and decision-making at sub-national levels. While this remains a critical goal, recent funding cuts—particularly from the United States Agency for International Development (USAID)—and the diversion of attention and resources to other competing priorities pose challenges to the DIM's immediate institutionalization. Nevertheless, the Learning Hub will continue to advocate for the integration of DIM into national systems and explore alternative avenues for sustaining its use over the long term.

ADVOCATE: STRENGTHENING POLICIES, STAKEHOLDER ENGAGEMENT, AND FINANCING

Key Learnings

- Regular stakeholder engagement through budget review meetings—particularly via state-level CoPs in Borno, Bauchi, Kano, and Sokoto—has strengthened government oversight of immunization spending. These forums enable timely dialogue on resource allocation, helping to ensure that funds are both available and used efficiently for planned immunization activities.
- The Immunization Accountability Framework (summarized in Table 1) is a valuable tool for stakeholder meetings, offering a structured platform to collaboratively assess challenges, track progress, and plan targeted interventions. Broad-based stakeholder involvement—including political leaders, health officials, and community representatives—has been instrumental in mobilizing and securing long-term financial and political commitments to support immunization efforts across the four Learning Hub states. These efforts were operationalized through the CoP established by the ZDLH on immunization budget accountability, transparency, and sustainability, which facilitated quarterly review meetings, targeted advocacy visits, and budget tracking engagements.

Table 1. ZDLH Accountability Framework

Framework Thematic Area	Key Indicators	Coordination Platforms	Scorecard Contribution
Health financing	• BHCPF allocations and releases • Basket fund contributions • State and partner co-financing	• SERICC • State Oversight Committee (SOC) • MoU Performance Reviews • CoP	Each thematic area contributes data to a unified *Immunization Budget Scorecard*, compiled quarterly and bi-annually to support evidence-based advocacy and accountability.
Vaccine uptake and service use	• Immunization coverage • Service use data • Exit interviews/client satisfaction		
Fund release and budget timeliness	• Timeliness of fund release • Use of scorecard for advocacy and monitoring • Transparency and use validation		

Recommendations

- **Enhance transparency and accountability:** Promote the continued use and institutionalization of the Immunization Accountability Framework and Scorecards by State Ministry of Health (MOH) and State Primary Health Care Development Agencies (SPHCDAs) with the support of the Sector-Wide Approach (SWAp) desk officers, Basic Health Care Provision Fund (BHCPF) state ministerial oversight committees, state RI financing technical working groups, and the State Immunization Taskforce to track budget use and ensure equitable distribution of resources.
- **Foster multi-sectoral collaboration:** Encourage sustained financial contributions from government, donor partners, and civil society organizations to maintain and expand

immunization programs. With the withdrawal of USAID funding, it is especially critical to diversify partnerships and funding sources by engaging a broader range of stakeholders across sectors to ensure continuity, resilience, and long-term sustainability of immunization efforts.

- **Scale up BHCPF use:** Support the NPHCDA, SPHCDAs, and state-level accountability committees—including budget officers, BHCPF desk officers, and civil society representatives—to fully leverage the BHCPF and direct facility funding (DFF) mechanisms. Strengthen financial autonomy and operational capacity of primary health care (PHC) facilities to improve immunization service delivery and ensure equitable access for vulnerable populations. Both AFENET and AHBN will play a strategic advocacy role at the NPHCDA and SPHCDAs to drive the scale-up and effective use of the BHCPF and to ensure that DFF is implemented in an accountable and transparent manner that empowers PHCs to take ownership of their finances and advance efforts to reach ZD children.

NIGERIA COUNTRY LEARNING HUB

The Zero-Dose Learning Hub (ZDLH), established by Gavi, addresses immunization equity by generating data, evidence, new insights, and learning to better understand the factors influencing implementation and performance of approaches to identify and reach zero-dose (ZD) and under-immunized (UI) children and missed communities. The ZDLH consortium is led by JSI Research & Training Institute, Inc. (JSI), in collaboration with The Geneva Learning Foundation and the International Institute of Health Management Research. ZDLH works to address immunization equity through the generation of evidence and learning around effective methods and approaches for identifying and reaching ZD and UI children. Four Country Learning Hubs (CLHs) in Bangladesh, Mali, Nigeria, and Uganda advance the uptake of research and evidence to improve immunization policy and programming, especially at sub-national levels. In 2023, Gavi selected the African Field Epidemiology Network (AFENET) and Africa Health Budget Network (AHBN) as the learning partners for Nigeria. The AFENET–AHBN consortium works across four states in Nigeria: Kano and Sokoto in the North West and Borno and Bauchi in the North East. These states contain 49 of the 100 LGAs identified as priority areas for interventions targeting ZD and UI children in the Zero-Dose Reduction Operational Plan (Z-DROP). The consortium is supporting Nigeria on interventions across Gavi's Identify, Research, Monitor, Measure, and Advocate (IRMMA) framework. The ongoing support from AFENET and AHBN will allow Nigeria to continue to focus on attainable and measurable advancements in identifying and advocating for ZD children across the course of its grants.

This semiannual update for the Gavi Board and other stakeholders highlights the ZDLH consortium's efforts to generate and share evidence for a deeper understanding of the factors that affect the implementation and performance of strategies to identify and reach ZD and UI children and missed communities. It synthesizes findings, challenges, and recommendations across Gavi's IRMMA framework emerging from the Learning Hubs.

NIGERIA ZERO-DOSE LEARNING HUB WEBINAR SERIES

During this reporting period, the Nigeria Learning Hub consortium continued its ZD webinar series. The target audience includes frontline health care workers, RI providers, facility in-charges, program managers, M&E officers, state and LGA health management teams, decision-makers within organizations or programs, and individuals involved or interested in immunization-related projects in Nigeria. Three webinars were held during this reporting period:

1. ZDLH Nigeria Webinar Series - 3rd Edition (July 2024): Topics included advocacy for equitable immunization financing, accountability in maternal and neonatal health, and the promotion of community ownership focusing on experiences from Bauchi state.
2. ZDLH Nigeria Webinar Series - 4th Edition (September 2024): Topics included opportunities for and challenges to reducing ZD cases, with a special focus on key lessons learned from implementing the innovative IEV strategy in Zamfara State.
3. ZDLH Nigeria Webinar Series - 5th Edition (November 2024): Topics included lessons from decentralized immunization monitoring, leveraging technology to optimize the uptake of immunization among ZD and UI children in Katsina state, and engaging the private sector to enhance immunization access and coverage among ZD children.

ZDLH TECHNICAL ASSISTANCE

During the period July–December 2024, JSI, as the global learning partner, continued to provide technical assistance, collaborate, and co-create with the Nigeria Learning Hub including reviewing and offering detailed feedback on the DIM manuscript and reports and the LQAS household survey findings in Kumbotso LGA. JSI engaged in discussions with the Nigeria team to guide the analysis of LQAS data, including the use of crude versus weighted coverage estimates and design effects when grouping data from different age cohorts. To further strengthen data interpretation, JSI recommended that vaccine coverage and behavioral and social driver (BeSD) indicators be analyzed separately by age cohort. Additionally, JSI facilitated technical meetings to discuss proposed revisions in depth, ensuring clarity in the approach to combining and analyzing data across different age groups.

RELATED RESOURCES

- Assessment of the Political Economy Context Surrounding Evidence Use for Zero-Dose Programming and Policies in Nigeria (December 2024)
- Exploring the Landscape of Routine Immunization in Nigeria: A Scoping Review of Barriers and Facilitators (October 2024)
- Zero-Dose Learning Hub Nigeria Learning Agenda Workshop Report (September 2024)
- Gavi's Zero-Dose Learning Hub IRMMA Aligned Interventions: Semiannual Update—Nigeria (October 2024)
- Nigeria Data Dashboard (January-June 2024)
- Closing The Immunization Gap: Enhancing Routine Immunization in Nigeria by Reaching Zero-Dose and Under-Immunized Children in Marginalized Communities: Report of a Rapid Assessment (July 2024)
- Sub-National Budget Analysis Focusing on Immunization Under the Nigeria Zero-Dose Learning Hub Consortium in Nigeria (July 2024)
- Gavi's Zero-Dose Learning Hub IRMMA Aligned Interventions: Semiannual Update—Nigeria (May 2024)

KEY ACTIVITIES & IMPLEMENTATION RESEARCH

DECENTRALIZED IMMUNIZATION MONITORING

Following the DIM pilot in Kumbotso LGA in Kano state, the Learning Hub scaled up the approach in seven LGAs across three states between June–August 2024: Bauchi and Ganjuwa LGAs in Bauchi state; Jere and Maiduguri LGAs in Borno state; Tambuwal and Wamako LGAs in Sokoto state; and Sumaila LGA in Kano state. Across all study LGAs, the DIM aims to estimate average coverage for selected immunization indicators at the LGA level, assess immunization performance at the individual ward level, and identify wards that did not reach the LGA's average coverage point estimate for vaccination.

The study involved a household survey using the classic LQAS methodology with a sample of 3,610 caregivers of children aged 0–11 months and 12–23 months (1,805 children per cohort) in 95 wards across the seven LGAs. The survey tool included vaccination coverage indicators, sociodemographic variables, and questions on the BeSD of vaccination related to thinking and feeling, social processes, practical issues, motivation, and vaccination uptake. DIM survey findings provided reliable vaccination coverage estimates at the LGA level for all RI antigens in each of the LGAs in the sample as well as a classification of all wards as high- or low-performing relative to a predetermined vaccination coverage threshold.

Table 2 provides a breakdown of immunization coverage rates among children aged 12–23 months for selected antigens across the study LGAs. These data reveal significant disparities across LGAs and antigens, highlighting variations in both overall vaccine uptake and drop-off rates between doses. For example, coverage of Bacillus Calmette–Guérin (BCG) vaccine given at birth varies across LGAs, with the highest rates in Maiduguri LGA, Borno state (88.0%) and Bauchi LGA, Bauchi state (87.4%). Both LGAs in Sokoto lag behind, with less than 50% BCG coverage. A decline in coverage for subsequent antigens is evident across all LGAs, though the extent of this drop varies considerably. Of the two LGAs that demonstrated the highest coverage of BCG, Bauchi LGA is a clear standout, experiencing relatively smaller declines in coverage for subsequent antigens, with Penta 1 coverage at 87.0%, Penta 3 at 83.1%, and measles 1 at 80.0%. Maiduguri, in contrast, shows a steep drop of 13 to 18 percentage points between each subsequent antigen, with only 42.1% of children 12–23 months receiving the measles 1 vaccine. There is a similar trend in significant drops in coverage for vaccines given later in infancy across the other LGAs. Tambuwal and Wamako LGAs in Sokoto consistently record the lowest coverage rates, which further decline with each subsequent antigen, the lowest being measles 1 coverage at less than 35%.

Table 2. Immunization coverage rates for select antigens among children 12–23 months across 8 LGAs

Immunization Coverage of Children 12–23 months					
State	**LGA**	**BCG** *n=1,445*	**Penta 1** *n=1,328*	**Penta 3** *n=1,101*	**Measles 1** *n=994*
Bauchi	**Bauchi**	87.4%	87.0%	83.1%	80.3%
	Ganjuwa	72.1%	67.2%	58.3%	53.0%
Borno	**Jere**	74.1%	62.3%	40.0%	34.3%
	Maiduguri	88.0%	74.6%	56.9%	42.1%
Kano	**Kumbotso**	81.5%	75.5%	63.6%	59.7%
	Sumaila	60.0%	51.0%	42.0%	36.0%
Sokoto	**Tambuwal**	46.8%	43.0%	35.0%	34.7%
	Wamako	44.0%	41.6%	35.7%	32.0%

The NDHS was conducted in 2023 and found DTP1 prevalence at the state level in Bauchi at 63%, Borno at 68%, Kano at 57%, and Sokoto at 14%. With the exception of Sokoto, the DIM findings at the LGA level are similar to the NDHS findings at the state level for DTP1 and all other antigens. Results further demonstrate how the DIM approach can identify low performing LGAs (and subsequently ward areas) that can be targeted for interventions. The higher coverage proportions in Sokoto found by DIM as compared to the NDHS means that, despite DIM having purposely selected high ZD areas, the data used to rank high ZD areas may have been flawed or the situation in Sokoto changed in the interim. This finding suggests that further investigation is needed at the LGA level and below to understand what areas and factors are driving low overall state coverage rates. It is also an opportunity to learn and understand what may be working in Tambuwal and Wamako that can be translated to other areas in Sokoto.

The Learning Hub disseminated DIM findings across the targeted states and LGAs through workshop-based sessions that incorporated presentations, interactive discussions, and group work. These workshops engaged state officials, program managers, implementing partners, religious and community leaders, local government representatives, and health supervisors to strategize on improving immunization coverage. Below is a summary of key dissemination efforts by state, followed by targeted recommendations to enhance immunization performance based on DIM findings.

Kano State

The Learning Hub disseminated the DIM findings for Kano in December 2024 at the state level and in Sumaila LGA following an earlier dissemination in Kumbotso LGA in July 2024. At the state level, 43 stakeholders from the Kano SPHCDA, State MOH, World Health Organization (WHO), UNICEF, CHAI, Solina, and religious leaders convened to review the findings. The discussion highlighted the utility of incorporating DIM's geospatial mapping into Reaching Every Ward (REW) microplans and using the information to improve the coverage and precision of health service delivery in hard-to-reach areas. Participants also emphasized the importance of strengthening performance-based reimbursement

systems for state-level supportive supervision as an incentive to maintain high-quality performance and accountability. Additionally, participants identified coordination with AHBN as a necessary step to engaging policymakers with the DIM results, which helped secure timely budget releases for RI activities.

At the LGA level, the director of primary health care in Sumaila LGA formed an ad hoc committee, led by the LGA logistics and immunization officer and implementing partners, to engage all ward focal persons in reviewing the DIM findings specific to the LGA. The committee proposed integrating these insights into a performance scorecard that would complement existing RI performance indicators.

Sokoto State

In Sokoto, the DIM findings were disseminated under the guidance of the State Emergency Routine Immunization Coordination Centre (SERICC) program manager, with participation from 28 representatives of the National and State PHCDA, State MOH, and various implementing partners, including WHO, UNICEF, Gates Foundation, AFENET, CHAI, Acasus, and New Incentives. The results were presented at the State Taskforce meeting and the Health Council meeting, where the deputy governor was briefed on key findings.

A major focus in Sokoto was strengthening local government engagement. Following the state-level dissemination led by the SERICC program manager and the presentation of findings to the deputy governor, the chairman was encouraged to support outreach efforts, health facility functionality, and engagement of RI volunteers. At the community level in Tambuwal LGA, the chairman and his cabinet welcomed the findings and subsequently convened a meeting with traditional and community leaders to reinforce the importance of immunization awareness. As a direct result, the LGA, with UNICEF support, expanded the number of RI facilities from 27 to 32 and trained 74 community volunteers, including eight supervisors across eight wards. The DIM findings also informed revisions to the REW microplans to include newly-identified settlements.

Borno State

The Borno State dissemination workshop gathered 20 participants, including state program managers from the Borno SPHCDA and State MOH, alongside implementing partners such as WHO, Solina, CHAI, Gates Foundation, e-Health, Lafiya, and the Chigari Foundation. The discussions centered on leveraging community engagement and outreach efforts to improve immunization access, with an emphasis on enhancing institutional delivery rates through community-based interventions and integrating immunization messages into ANC counseling to help ensure better continuity of care for infants. To further bolster immunization coverage, participants highlighted the possibility to leverage the Z-DROP initiative and the Big Catch-Up campaign to increase the number of fixed immunization posts in low-performing wards. They also stressed the need to enhance outreach activities by improving logistics and strengthening male involvement in immunization efforts through religious and community leaders, in collaboration with the Chigari Foundation.

At the LGA level, dissemination sessions in Jere and Maiduguri LGAs brought together 17 and 18 stakeholders, respectively, from the LGA health team, WHO, UNICEF, health care facility representatives, and community leaders. The discussions emphasized the importance of building trust with health care workers during health promotion activities, optimizing the use of community-based health structures such as Community Health Influencers, Promoters, and Services (CHIPs) and volunteer community

mobilizers (VCMs) to improve ANC attendance and institutional delivery, and ensuring microplan integration for better service delivery.

Bauchi State

In Bauchi, the executive chairman of the State PHC Board led the dissemination workshop, attended by 34 representatives from the NPHCDA, State Primary Health Care Boards, State MOH, Ministry of Local Government, and implementing partners such as WHO, UNICEF, Gates Foundation, Solina, New Incentives, and e-Health. A key outcome of the meeting was the decision to cascade the findings to LGAs and integrate them into discussions at the Annual PHC Retreat to ensure a broader reach among stakeholders.

The deputy governor, who chaired the retreat, engaged heads of health-related government ministries, departments, and agencies, the chairman of the State House Committee on Health, the commissioner for health, LGA chairmen, and implementing partners in discussions on sustainable PHC financing. As an immediate outcome, LGA chairmen pledged to support free ANC services and approved an increase in outreach service stipends from ₦1,500 to ₦4,000 to account for the increased costs.

At the LGA level, dissemination workshops in Bauchi and Ganjuwa LGAs engaged partners, including WHO, UNICEF, New Incentives, Solina, and religious leaders. Participants raised concerns regarding vaccine logistics for health facilities without solar direct-drive refrigerators, frequency and quality of outreach activities, health care worker transport stipends, and staffing shortages. These issues were presented to the chairman's representative to help ensure their integration into broader state-level immunization improvement plans.

IMPLEMENTATION RESEARCH

The Nigeria Learning Hub's IR employs a mixed-methods approach to assess the facilitators and barriers, as well as the effectiveness, efficiency, and cost-effectiveness of two ongoing national strategies described in the previous semiannual report: (1) Z-DROP, a Gavi-funded initiative to enhance RI across 100 prioritized LGAs in Nigeria through community mobilization, targeted outreach activities, and improved vaccine logistics; and (2) the IEV approach, a national strategy piloted in select LGAs to map and vaccinate ZD children using geographic information system (GIS) and comprehensive community and household enumeration to support integrated planning and vaccine management, particularly in insecure areas.

The IR baseline focused on Bauchi and Sokoto, the two Learning Hub states with the highest burden of ZD children in Nigeria. These two states—one from each geopolitical zone where the Learning Hub is active (Bauchi from the North East and Sokoto from the North West)—were randomly selected from the four Learning Hub states for implementation research. Within each selected state, four LGAs previously identified by the Learning Hub for focused interventions due to their high ZD burden were included in the study. Settlement selection was based on prioritized wards and settlements identified in the Z-DROP developed at the LGA level, with deliberate consideration to include a mix of rural and urban settings. These classifications were based on state health facility databases. Following state and LGA selection, all prioritized wards within each LGA were included (based on the Z-DROP implementation plan), and within each ward, one "apex" health facility was selected. Household-level sampling was conducted to determine the number of eligible children to be selected from each settlement. To ensure

representative coverage, the selected health facilities spanned both accessible and remote locations, accounting for variations in service delivery and contextual challenges.

Baseline data collection took place in August 2024 and involved the following:

- A household survey with a sample of 1,316 caregivers of children aged 0–11 months and 12–23 months across 36 prioritized wards in Bauchi and Sokoto. The survey tool was administered electronically and included questions to inform sociodemographic variables as well as questions on BeSD of vaccination related to thinking and feeling, social processes, practical issues, motivation, and vaccination uptake. In addition, data related to gender, gender norms, and inequality was collected to support analysis of how caregivers' status varies based on key gender variables examined, and how these variations impact child vaccination rates. A gender analysis approach was applied to measure levels of gender inequality between husbands and wives within households.
- Key informant interviews with 36 health facility staff and immunization program managers, four community gate keepers, four partner organization staff, and three state- or federal-level Routine Immunization Working Group members to identify barriers and facilitators to accessing RI, understand gender and equity issues, and assess the effectiveness of immunization strategies.

The IR also includes a costing exercise on the cost and cost-effectiveness of the Z-DROP and IEV interventions.

DATA QUALITY ASSURANCE

The Learning Hub evaluated the quality and reliability of immunization data across Kano, Bauchi, and Borno states. Sokoto was not included due to a gap in project staffing. The assessment included a review of data from 23 selected health facilities across the three states, emphasizing the use and accuracy of information captured in health management information system tools, immunization monitoring charts, and REW microplans. All 23 health facilities were located within the Learning Hub LGAs. Facility selection was informed by the Learning Hub's routine monthly intra-consistency checks, which focus on vaccine use reports by comparing doses opened against the number of children immunized across antigens. Health facilities that consistently exhibited data quality issues were prioritized for supervision at the state and LGA levels. From this prioritized list, poorly performing facilities were further stratified into urban and rural categories to inform the selection for the DQA pilot. Specifically, the evaluation process entailed:

- Cross-checking 100 child immunization cards with registers to verify the congruence of variables such as birth date and antigens received
- Analyzing discrepancies between tally sheets, monthly summary forms, and DHIS2 for data reliability and validity
- Conducting community surveys involving 208 children aged 0–11 months within facility catchment areas to identify delays in vaccination and compare urban versus rural settings

The DQA revealed significant inconsistencies in reported immunization data for DTP, IPV, and measles across the six Learning Hub LGAs in Kano, Bauchi, and Borno when comparing tally sheets, facility monthly summary forms, and DHIS2 entries for July to September 2024. Discrepancies were particularly

noteworthy in the Bauchi health facilities, where differences between tally sheets and DHIS2 entries ranged from 31.2% for DTP to 56.7% for measles. In contrast, the health facilities visited in Borno demonstrated the highest level of data alignment, with discrepancies ranging from 4.2% to 8.7%. The health facilities in Kano showed underreporting trends, with negative variance in all antigens, including an 11.9% underreporting of DTP data. These inconsistencies highlight persistent challenges in data validation and reporting accuracy, especially in facilities where capacity for data review and reconciliation may be limited.

The DQA also found that approximately one-quarter of the 23 health facilities visited reported stockouts of critical data tools, such as vaccine ledgers, monthly summary forms, and child health cards—most notably in Kano (five facilities), followed by Borno (two) and Bauchi (one). Only 11 of the 23 facilities had a copy of the updated REW microplan, with state-level variation ranging from one of eight facilities in Borno to seven of eight in Kano. Immunization monitoring charts were absent in all visited facilities in Bauchi but present and updated in all facilities visited in Borno, underscoring differences in documentation practices.

Data congruence between child health cards and immunization registers was also assessed by reviewing 100 sampled cards. The health facilities in Borno again demonstrated the highest overall consistency—85% or more across most variables—while Bauchi health facilities lagged behind significantly, with congruence in some variables (e.g., last antigen received) as low as 21.8%. These findings suggest that the health facilities visited in Borno maintain relatively strong documentation systems, while those visited in Bauchi face notable challenges in both data completeness and accuracy.

Community-based validation efforts further highlighted gaps in service delivery. Among 208 children aged 0–11 months sampled during the DQA's community survey, the prevalence of delayed vaccination exceeded the 10% threshold in several LGAs—a benchmark derived from the Nigeria Strategy for Immunization and Primary Health Care System Strengthening (NSIPSS) 2021–2024, which set a national goal of achieving 90% coverage across all antigens. Jere and Kumbotso LGAs recorded the highest delay rates at 28% and 29.2%, respectively. These findings underscore the urgent need for improved outreach strategies, especially in areas with high rates of displacement or population mobility, such as Borno State.

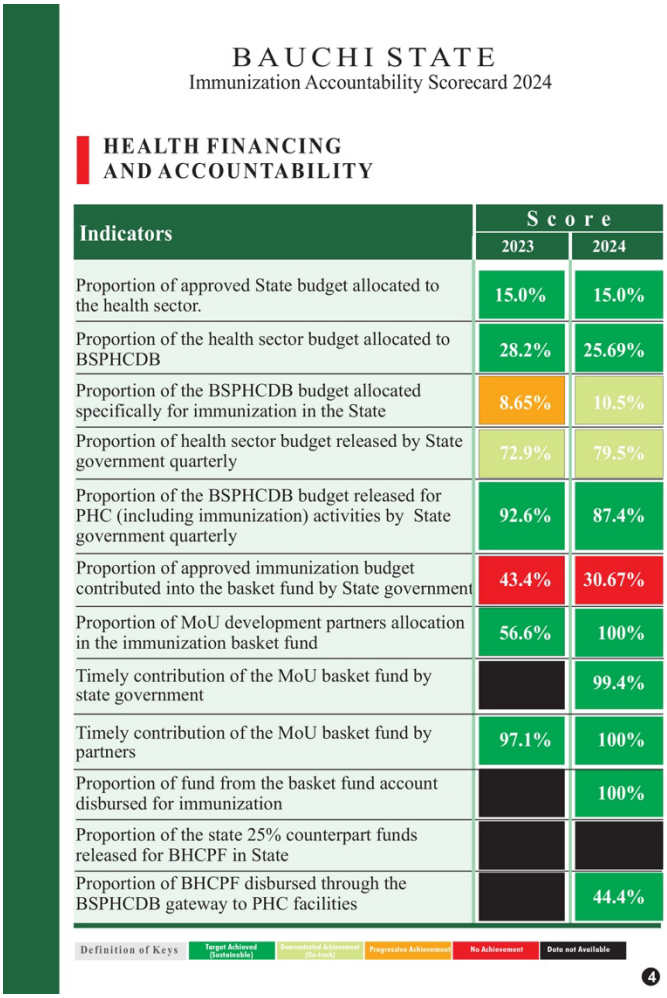
According to national protocols, government actors—particularly the SPHCDAs and LGA M&E officers—are responsible for routinely validating immunization data at the facility level, including through on-site DQAs. However, the DQA revealed several challenges that likely contributed to limited implementation of these duties. These include shortages of trained human resources, particularly M&E officers at the LGA level, and inconsistent availability of key data tools such as summary forms and child health cards. These systemic gaps may have limited the ability of government teams to conduct regular data validation and reconciliation, underscoring the need for capacity-building and stronger accountability mechanisms at sub-national levels.

Overall, the DQA findings reinforce the importance of strengthening data management systems at the facility level—ensuring the availability of tools, improving documentation practices, and investing in capacity-building to enhance the availability, completeness, and timeliness of immunization data for decision-making. The findings have been disseminated across the Learning Hub states through state- and LGA-level coordination platforms, including the technical working group on RI, State Taskforce, and Health Council meetings. They have also been shared in performance-review meetings supported by implementing partners, though these can be irregular and suffer from low attendance due to health

workers' transportation challenges. The DQA results have been used to guide mentoring and on-the-job training for facility staff. These efforts illustrate how data quality evidence is being applied to strengthen immunization systems and improve service delivery in underperforming areas.

SUB-NATIONAL BUDGET TRACKING AND ACCOUNTABILITY

As part of its advocacy work for improved subnational immunization financing, Nigeria Learning Hub partner AHBN, with support from the recently-launched state-level CoP on immunization, budget, tracking, accountability, and sustainability, developed a comprehensive ZDLH Accountability Framework for use at sub-national levels. This framework is designed to monitor and track immunization-related expenditures, ensuring greater transparency and effectiveness in resource allocation. Building on this, the Learning Hub has led quarterly review meetings with state-level CoPs to operationalize the framework and implement sub-national financial tracking using Immunization Accountability Scorecards (See Figure 1).



BAUCHI STATE
Immunization Accountability Scorecard 2024

HEALTH FINANCING AND ACCOUNTABILITY

Indicators	Score 2023	Score 2024
Proportion of approved State budget allocated to the health sector.	15.0%	15.0%
Proportion of the health sector budget allocated to BSPHCDB	28.2%	25.69%
Proportion of the BSPHCDB budget allocated specifically for immunization in the State	8.65%	10.5%
Proportion of health sector budget released by State government quarterly	72.9%	79.5%
Proportion of the BSPHCDB budget released for PHC (including immunization) activities by State government quarterly	92.6%	87.4%
Proportion of approved immunization budget contributed into the basket fund by State government	43.4%	30.67%
Proportion of MoU development partners allocation in the immunization basket fund	56.6%	100%
Timely contribution of the MoU basket fund by state government		99.4%
Timely contribution of the MoU basket fund by partners	97.1%	100%
Proportion of fund from the basket fund account disbursed for immunization		100%
Proportion of the state 25% counterpart funds released for BHCPF in State		
Proportion of BHCPF disbursed through the BSPHCDB gateway to PHC facilities		44.4%

Definition of Keys: Target Achieved (Sustainable) | Demonstrated Achievement (On-track) | Progressive Achievement | No Achievement | Data not Available

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Figure 1. Bauchi State Immunization Accountability Scorecard – Health Financing and Accountability (2024).

In Kano state, the Accountability Framework was introduced during a CoP review meeting, followed by a dedicated budget committee session in December 2024. This committee, comprising key stakeholders from the SPHCDA civil society organizations, and donor partners, successfully populated the framework. A major breakthrough was the discovery of an additional ₦210 million released for immunization, bringing the total 2024 release to ₦299 million. This is a significant improvement from 2023 when no funds were allocated.

Kano reported that 484 out of 1,200 PHC facilities are now benefiting from the BHCPF, signaling progress in sustainable health care financing. In 2024, the Nigerian government allocated approximately ₦125 billion for BHCPF, and 45% of that fund was earmarked through the NPHCDA gateway and disbursed to SPHCDAs across the country, including the four targeted states.

This funding is implemented through DFF, which transfers resources directly to PHC facility accounts, enabling timely planning and delivery of immunization services. The BHCPF provides predictable annual

funding that supports RI sessions, outreach programs, cold chain maintenance, human resource support, and demand creation to reach ZD children. The BHCPF is a national financing mechanism that ensures equitable access to primary health care. By using the NPHCDA gateway and DFF, funds reach frontline facilities directly, which promotes financial autonomy, reduces delays, and strengthens sustainable service delivery at the community level

Following the CoP review meeting in Sokoto, a follow-up session brought together key stakeholders, including representatives from SERICC, BHCPF, Budget and Economic Planning, MOH, AFENET, and AHBN, to further populate the framework represented by the draft 2024 immunization budget accountability scorecard. The review revealed that ₦146.7 million had been disbursed to PHC facilities through the SPHCDA gateway under the BHCPF, demonstrating increased funding flow as compared to 2023, when no BHCPF funds were released to facilities according to the ZDLH 2024 immunization accountability budget scorecard. In parallel, the ZDLH CoP successfully advocated for the release of ₦308 million in delayed 2023 RI funds in Q4 2024, marking a significant win for sustained immunization financing as a result of ZDLH CoP advocacy. Notably, 100% of PHC facilities in Sokoto are now receiving DFF through the NPHCDA gateway, ensuring consistent financial support for immunization services.

In Borno, a session in December 2024 revealed significant financial contributions to the immunization basket fund by memorandum of understanding (MoU) partners, including $600,000 from the Gates Foundation, $350,000 from the African Development Fund, $200,000 from UNICEF, and ₦234.7 million from the Borno State Government. These contributions highlight strong multi-stakeholder collaboration to sustain immunization financing in the state.

In Bauchi, a review meeting in December 2024 indicated that 16% of the state budget was allocated to the health sector, with 100% of the approved immunization budget fully released into the basket fund. Contributions from MoU partners included $500,000 from the Gates Foundation, ₦179.1 million from the African Development Fund, and ₦410.9 million from the Bauchi State Government, showcasing strong financial commitments to immunization services. A review of outreach service funding through the basket fund led to an increase in financial allocations per outreach session from ₦1,500 to ₦4,000. Ward-level performance data and LGA-level coverage results from the recent DIM in Bauchi highlighted the critical need to reach remote settlements in difficult terrain, which helped to support this increase. The adjustment is expected to motivate providers and volunteers to extend services to these remote and hard-to-reach settlements, pending final approval of the 2025 work plan.

Through quarterly review meetings with the recently-launched state-level CoPs, the Learning Hub has led efforts to do sub-national financial tracking using the Immunization Accountability Framework and accompanying scorecards to track progress over time. These efforts, along with other high-level advocacy engagements, have enabled national and state-level stakeholders to make significant progress in securing and increasing immunization financing. Notable achievements include the release of previously delayed budgets, improved transparency in fund management, and expanded access to direct facility funding. However, challenges persist in ensuring timely disbursements and advocating for sustained budget increases. In light of the recent withdrawal of USAID funding—a major contributor to immunization programming—this work has become even more urgent. Strengthening sustainable, multi-stakeholder financing mechanisms is critical to safeguarding immunization programs from funding shocks and ensuring continued access to life-saving vaccines. Moving forward, deepened collaboration and robust monitoring systems will be essential to closing the remaining financing gap.

KNOWLEDGE TRANSLATION

The Learning Hub has played a pivotal role in translating research into action to improve immunization financing. Through budget analysis and strategic engagement, the Learning Hub has supported efforts to secure and sustain funding for RI, ensuring that financial commitments lead to tangible improvements in immunization coverage.

Dissemination: Sharing Evidence with Key Stakeholders	The Learning Hub shared key findings on immunization budget allocations, disbursements, and gaps with policymakers, financial planners, and civil society organizations. Quarterly CoP meetings provided a structured platform to engage stakeholders in discussions about immunization financing, accountability, and budget tracking.
Translation: Tailoring Findings for Programmatic Use	To strengthen decision-making, AHBN and the CoP developed an Immunization Accountability Framework, a tool designed to track and measure budget allocations, fund performance, and timely release of government immunization funds. The framework was introduced to policymakers and financial planners, equipping them with data-driven insights to inform resource allocation and ensure financial commitments were met.
Acquisition: Stakeholders Recognizing and Adopting Knowledge	Budget experts, policymakers, and donor partners actively engaged with the Immunization Accountability Framework through CoP-led reviews and financial tracking exercises. In Kano State, the framework helped track the release of an additional ₦210 million for immunization in 2024, after no funds were disbursed in 2023. In Sokoto State, a CoP-led review documented the disbursement of ₦146 million to primary health care facilities to support immunization services.
Application: Integrating Evidence into Policy and Practice	By applying the Immunization Accountability Framework, CoP-led budget tracking revealed significant immunization funding flows across multiple states. In Borno State, CoP efforts tracked immunization funding contributions from the Gates Foundation, UNICEF, and the state government, strengthening multi-stakeholder financial coordination for immunization. In Bauchi State, a CoP review meeting confirmed that 100% of the state's approved immunization budget was released into the basket fund.
Impact: Measuring the Effect of Knowledge Translation	By collecting and disseminating ward-level data on immunization performance in real time, engaging policymakers, and co-developing financial tracking tools, the Learning Hub ensured that evidence translated into concrete budget commitments, increasing accountability for sustainable immunization financing.

While progress has been made in securing budget releases and strengthening transparency, continued multi-stakeholder collaboration and enhanced monitoring mechanisms will be key to closing immunization financing gaps and reaching ZD children across Nigeria.

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