Zero-Dose LEARNING HUB

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

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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. with two consortium partners, The Geneva Learning Foundation and the International Institute of Health Management Research. Together, the consortium enables sharing and learning across four Country Learning Hubs 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 and under-immunized children globally by facilitating high-quality evidence generation and uptake.

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ACRONYMS

BCU	Big Catch-Up
CHEW	community health extension worker
DQA	data quality assurance
DQI	data quality improvement
DTP	diphtheria, tetanus, pertussis [-containing vaccine]
EAF	Equity Accelerator Fund
eCHIS	electronic community health information system
EPI	Expanded Program on Immunization
HEPS	Coalition for Health Promotion and Social Development
HFA	health facility assessment
HTH	house-to-house
ICHD	Integrated Child Health Day
IDRC	Infectious Diseases Research Collaboration
IR	implementation research
IRMMA	Identify, Reach, Monitor and Measure, Advocate
JSI	JSI Research & Training Institute, Inc.
KT	knowledge translation
MOH	Ministry of Health
PHC	primary health care
PNFP	private not-for-profit
RE-AIM	reach, effectiveness, adoption, implementation, and maintenance
TBA	traditional birth attendant
UI	under-immunized
UNEPI	Uganda National Expanded Programme on Immunisation
VHT	village health team
WHO	World Health Organization
ZD	zero-dose
ZDLH	Zero-Dose Learning Hub

EXECUTIVE SUMMARY

This semiannual update presents key findings and recommendations from the Uganda Country Learning Hub for the period January–June 2025. Led by the Infectious Diseases Research Collaboration (IDRC) in partnership with PATH and Makerere University School of Public Health, the Learning Hub continues to generate and translate evidence to inform strategies for identifying and reaching zero-dose (ZD) and under-immunized (UI) children, and missed communities. Guided by Gavi's Identify-Reach-Monitor and Measure-Advocate (IRMMA) framework, the Learning Hub's implementation research (IR) and knowledge translation (KT) activities are strengthening national and district-level immunization programming in Uganda.

The Learning Hub's research portfolio included evaluations of UNICEF-supported house-to-house (HTH) registration, Uganda's Big Catch-Up (BCU) campaign, a costing study of identification and reach approaches, follow-up of 99 ZD children identified in Mubende district, a health facility assessment (HFA), and mapping of interventions. Findings underscored that identification is not neutral: both HTH registration and baseline surveys prompted some caregivers to seek vaccination, while also raising risks of stigma, confidentiality breaches, and added burden on village health teams (VHTs). Across studies, the Learning Hub documented the persistent influence of socio-cultural, financial, and structural barriers, including home births, male-dominated decision-making, and poverty, that delay immunization, as well as systemic constraints such as poor microplanning, weak data quality, and irregular outreach services.

The BCU evaluation highlighted discrepancies between children identified and vaccinated, operational challenges among VHTs, and substantial cost variation (from US$8.30 to US$68.70 per ZD child vaccinated). National scale-up using campaign-style approaches would require an estimated US$2.32 million, raising concerns about sustainability. The HFA confirmed that human resource shortages, stockouts, and weak coordination undermine service reliability, while follow-up of the 99 ZD children showed that most remained unvaccinated one year later, revealing gaps in continuity of care.

KT efforts are helping to move evidence beyond dissemination toward practical use. UNEPI used Learning Hub findings to refine HTH registration approaches for the BCU, inform outreach planning, and guide microplanning updates. District health teams in Mubende used evidence to adjust outreach strategies, integrate private-not-for-profit facilities, and target underserved communities. Partners such as AMREF and the Coalition for Health Promotion and Social Development (HEPS) allocated funding for data quality activities and ZD interventions based directly on Learning Hub evidence. At the global level, findings were shared through Zero-Dose Learning Hub (ZDLH) webinars and scientific forums, raising Uganda's profile as a contributor to global ZD learning.

Overall, the Uganda Learning Hub continues to demonstrate how timely evidence and sustained stakeholder engagement can inform adaptive strategies to reduce ZD and UI children. Its contributions are shaping more context-sensitive, cost-efficient, and sustainable approaches to immunization in Uganda.

KEY LEARNINGS & RECOMMENDATIONS

IDENTIFY: UNDERSTANDING THE ZERO-DOSE BURDEN

Key Learnings

- **Without a robust and well-defined strategy for addressing inadequate facilitation and support of village health teams (VHTs), the sustainability of community-level registration of childhood immunization status will remain limited.** The community-based ZD tracking and registration program evaluated by the Uganda Learning Hub is heavily reliant on VHTs. VHTs are voluntary community health workers who receive small financial incentives, such as transportation allowances, and some non-monetary support from government and implementing partners to aid their work. Findings from the evaluation showed that VHT-led registration and identification efforts face operational challenges and suboptimal reach due to inadequate training, facilitation, and supervision challenges, and the exclusion of villages that lack VHT representation during planning and implementation.
- **Socio-cultural, economic, and structural factors intensify the ZD burden.** Home births, poverty, limited transportation, and long distances to facilities contribute to high rates of ZD children in the Learning Hub study areas, particularly in remote and hard-to-reach areas. Within households, male-dominated decision-making, grandmothers as primary caregivers with mobility and health limitations, and persistent misinformation delay or prevent vaccination even when services are available and accessible. Competing livelihood demands in high-poverty areas further constrain timely attendance at immunization sessions. Health worker gaps in gender-sensitive approaches and limited male engagement exacerbate these challenges, leaving children from disadvantaged households and communities at heightened risk of remaining ZD.
- **Behavioral barriers outweigh physical access constraints in some cases**. Cultural and gender norms restrict caregivers' ability to present children for vaccination, with patriarchal norms leading to male-dominated decision-making and a lack of spousal support for mothers. Children staying with elderly grandmothers may also be missed due to the caregivers' physical and financial barriers and lack of information about the child's immunization status. Poor risk perception, knowledge gaps, and complex sociocultural dynamics, including myths and misconceptions, further impede vaccine acceptance and uptake.
- **Immigrant and transient populations face multiple barriers.** In areas such as Kitanda village (gold mining site), no immunization outreaches were conducted, leaving transient and high-risk populations unregistered. Language differences, lack of official documentation, cultural beliefs, and mistrust of health services hinder both uptake and accurate tracking. These groups are also more likely to move before follow-up can occur, compounding missed opportunities. Given that these populations are transient, community-based identification efforts are likely not available (there are no VHTs or community leaders who perform this task as in traditional communities).
- **Weak linkages, documentation gaps, and timely information exchange hinder coordinated follow-up**. Poor information flow between health facilities and community structures (VHTs, local council leaders) leads to gaps in identifying and following up on ZD children. In some cases,

facilities are unaware of the high ZD pockets identified by VHTs, while community actors lack up-to-date information about outreach schedules or stock availability to share with community members. Additionally, as a result of health facility staff turnover and lack of formal documentation, facilities did not have staff with comprehensive knowledge of where ZD and UI children and missed communities were located.

- **The act of identification itself can influence vaccination uptake, in both unexpected positive and negative ways**. The home visits and immunization history review conducted by VHTs as part of HTH registration increased awareness of children's immunization status among caregivers, VHTs, and health workers, prompting some caregivers to seek immunization on their own without additional follow-up. The effectiveness of HTH registration in identifying ZD children led to adoption by UNEPI of a Big Catch-Up (BCU) campaign in Uganda, the country's national campaign to operationalize the global Big Catch-Up strategy, tailored to local needs and contexts. Introducing the BCU in Uganda with an embedded HTH approach helped to foster collaboration and coordination of UNEPI with district and community levels. However, the HTH approach also increased VHT workload without additional incentives, risking their motivation. The approach also created the potential for fear and stigma in the community about having a ZD child and exposed gaps in vaccination planning and coverage. Preliminary endline data from Mubende as well as discussions with district officials and health workers suggest that the Learning Hub's baseline household survey acted as an intervention in itself as survey teams identified ZD and UI children, which, in some cases, prompted caregivers to seek immunization. However, this situation is not unique to immunization coverage surveys; it is a well-documented phenomenon in public health that caregivers have a tendency to modify their behavior simply because they are aware of being observed and recorded during a household survey. A research ethics dilemma arose when UNEPI requested access to the household coordinates of the identified ZD and UI children for immediate vaccination follow-up. Sharing this information would have breached the confidentiality agreements established during data collection. While the request reflected the urgency to reach children, it underscored the tension between ethical safeguards for participants and the health system's unmet responsibility to ensure timely vaccination. The incident further highlighted that contact with caregivers during surveys or registration exercises often reveals latent demand for immunization that the system has not adequately addressed.

Recommendations

- **Integrate HTH identification activities into routine health system functions to promote long-term sustainability.** Promote sustainability by strengthening HTH registration oversight by community health extension workers (CHEW). This support should include adequate planning to avoid missed areas, such as villages without VHT representation, and building VHT and CHEW capacity through comprehensive training, improved supervision, and provision of operational resources. Embedding the approach within national and district immunization plans, aligning with primary health care (PHC) funding streams, and linking HTH data directly to outreach services reduces duplication of efforts and inefficiencies over time.
- **Map and prioritize missed geographic pockets**. Use geospatial analysis and community insights to identify and allocate resources to underserved areas, such as mining camps and remote settlements, ensuring they are included in outreach microplans. Expand multilingual, culturally sensitive education and, where needed, mobile/pop-up services in immigrant-dense areas.

- **Address caregiver barriers.** Eliminate informal payments for services through strengthened oversight and accountability in health facilities. Promote male engagement in immunization decision-making through targeted communication and gender-sensitive health worker training. Use locally tailored messages to address vaccination myths, misconceptions, and incorrect perceptions of low risk for vaccine-preventable diseases. Provide incentives or targeted support to offset transportation and opportunity costs for caregivers, especially in underserved and hard-to-reach areas, to reduce financial barriers to accessing services.
- **Research on ZD should plan for immediate vaccination or referral of identified ZD children using approved ethical and safeguarding approaches for sharing information**. This aligns with established ethical principles of beneficence and non-maleficence, as well as the research methods concept that measurement itself can influence behavior. Identification exercises, whether through HTH registration or household surveys, can raise awareness and prompt vaccine uptake, but may also lead to stigma, VHT workload burdens, or confidentiality risks. To safeguard participants and maximize positive outcomes, all future ZD research, including observational studies, should plan for immediate action when ZD children are identified. This may include direct vaccination, referral, or structured follow-up in coordination with local health services. Identification activities should be designed with clear safeguards, such as tiered consent processes, secure data-sharing agreements, ethical referral pathways, and community sensitization, to ensure that confidentiality is protected while also enabling timely linkage to immunization services.

REACH: ENSURING ACCESS TO IMMUNIZATION SERVICES

Key Learnings

- **Identification alone is not sufficient to ensure follow-up with vaccination.** While HTH registration successfully identified ZD and UI children in the Learning Hub study areas, only a portion were vaccinated afterward, with barriers such as transport costs, competing priorities, and negative health worker attitudes hindering follow-through.
- **Integration boosts efficiency**. Leveraging other service delivery platforms, such as Integrated Child Health Days (ICHDs) and other health initiatives, can improve cost-efficiency, reduce duplication, and expand reach to underserved communities.
- **Local commitment is undermined by national gaps**. District and sub-county actors demonstrated strong commitment to reaching ZD and UI children, often innovating with limited means. However, chronic underfunding, limited operational budgets, and inflexible national-level planning restricted their ability to conduct regular outreach activities or respond to emerging local needs. These constraints often meant that districts relied on short-term, donor-driven campaigns rather than sustainable outreach mechanisms.
- **Geographic and logistical hurdles persist**. Long distances to health facilities and irregular, improperly located outreach sessions create physical barriers to immunization, particularly in remote and underserved communities. While the BCU campaign established more outreach sites than routine services, some villages, such as Kitanda in Mubende, remained unreached.
- **Irregular service delivery undermines uptake**. Outreach sessions, if properly and consistently implemented, are a critical approach to reach ZD children, especially in underserved areas.

However, persistent health system challenges, especially inadequate funding, limited staff, and weak mobilization, undermine their effectiveness. Most outreach sites are intermittent, funded through campaigns like BCU and ICHDs, rather than being embedded in sustained programming. This inconsistency leads to low caregiver turnout and resistance, and even a single vaccine stockout can negatively impact uptake of other available vaccines.

- **Implementation is hindered by systemic deficiencies**. Health workers face excessive workloads due to understaffing and lack of knowledge on microplanning, the standard approach for estimating vaccine needs. Facilities suffer from resource limitations, including lack of computers or outdated software, impeding effective planning and service delivery. Inaccurate and inconsistent documentation of outreach sites across district, facility, and community levels leads to loss of institutional memory, especially after staff transfers. Community-level confusion is common, with VHTs and local councils often unaware of designated immunization points. Government community-engagement structures (health inspectors/assistants) remain under-used for sustained ZD response.
- **Informal payments create financial barriers**. While services are technically free, caregivers report costs for transportation, expedited services, or "unofficial" facility charges. In districts like Mubende, these costs disproportionately affect economically disadvantaged households, reinforcing low service uptake.
- **Cost-effectiveness and scale-up implications are critical.** Wide variation in unit costs across districts highlighted the need for context-sensitive interventions and budgeting, while national estimates underscored the importance of sustainability and value-for-money assessments before adopting large-scale strategies**.** Results of the Learning Hub's cost analysis revealed large variations in the diphtheria, tetanus, pertussis-containing vaccine (DTP)1 cost per ZD child vaccinated, ranging from US$8.30 in Mubende to US$68.70 in Kasese. These disparities reflect differences in geography, infrastructure, and service delivery approaches, underscoring the importance of context-sensitive planning and budgeting.

Recommendations

- **Strengthen outreach by using service delivery models that are tailored to the specific challenges in each district.** Expand community-based immunization teams to reach remote locations and areas with difficult terrain, supported by investments in infrastructure, transport, and digital scheduling tools for improved planning and logistics.
- **Consider the cost-effectiveness of tailored service delivery models to inform resource allocation.** For example, in Mubende, where low coverage is driven by scattered populations and geographic barriers, intensifying routine immunization through Periodic Intensification of Routine Immunization (PIRI) activities may be the most cost-effective approach for reaching ZD children. In contrast, in Kasese, where barriers are primarily related to community demand and transportation, the most cost-effective models may involve community engagement campaigns to build trust or providing subsidized transport vouchers for caregivers to travel to health facilities. These different approaches should be compared to determine the optimal investment for each district.
- **Standardize and digitize outreach site records in eCHIS/DHIS2.** Conduct regular joint verification between facility and community teams. Form joint community-facility immunization

task forces and hold periodic feedback sessions with local councils/VHTs to reconcile site lists and schedules.

- **Invest in human resources and capacity building.** Address understaffing and provide essential resources such as computers, software, and digital skills training for health workers. Strengthen VHT capacity and coordination through regular orientation, improved training, supervision by health facility staff, and resource allocation to support community-based immunization activities.
- **Ensure equitable and flexible resource allocation.** Implement zero-tolerance policies for informal payments and design budgeting approaches that are context-sensitive, accounting for district-specific challenges such as geography, seasonal accessibility, and population mobility, rather than applying uniform rates.
- **Integrate and sustain ZD efforts within the health system.** Strategically integrate ZD identification and outreach into existing health interventions such as ICHDs, routine immunization, and broader health campaigns. This approach can improve efficiency, reduce costs, and enhance sustainability by aligning with services that caregivers already access.
- **Implement tailored community engagement and communication strategies.** Integrate immunization awareness into antenatal care visits and postnatal outreach. Establish CHEW follow-up protocols for newborns from home births. Engage trusted community figures, including traditional birth attendants (TBAs), to refer newborns for immunization and broaden the reach of registration efforts. Promote male caregiver involvement in immunization decisions, and train health workers on gender sensitivity to make services more welcoming for women and grandmothers. Use mass communication campaigns and door-to-door education to address knowledge gaps, myths, and misconceptions. Create joint community-facility immunization task forces; hold periodic feedback sessions with local leaders. Structured joint platforms with representation from health workers, VHTs, local council leaders, and local influencers can improve planning, problem-solving, and accountability.

MONITOR AND MEASURE: IMPROVING DATA SYSTEMS AND TRACKING IMMUNIZATION COVERAGE

Key Learnings

- **Data systems are overshadowed by service delivery**. The focus on immediate vaccination of ZD and UI children during the BCU and other campaigns has overshadowed sustained investment in monitoring and measurement. Chronic stockouts of immunization registers, limited human resources, and delays in data entry undermine the ability to track children over time and follow up after initial identification.
- **Poor data quality weakens strategic planning**. Systemic weaknesses in documentation and reporting—including incomplete, inaccurate, or inconsistent data across HTH registration, DHIS2, and facility records—compromise the accuracy of ZD estimates, hinder targeting, and limit the ability to measure impact. Without robust tracking mechanisms, it remains unclear whether all children identified through registration are actually vaccinated.

- **Context matters in resource allocation**. Uniform budgeting risks overlooking district-specific operational challenges such as difficult terrain, dispersed populations, and higher transport costs. This can lead to underfunding in hard-to-reach areas and inefficient use of funds in others.
- **Sustainability is at risk.** Heavy reliance on donor funding for ZD identification and outreach threatens long-term continuity. Without domestic financing commitments, gains made during campaigns risk being lost once external support ends.
- **Documentation is fragmented and follow-up weak.** Outreach site lists are inconsistently maintained across district, facility, and community levels, with poor handovers after staff transfers. Weak home-based record systems further hinder verification: many caregivers lack cards or present incomplete, blank, or damaged cards.
- **Perceptions among VHTs can influence data quality**. In some cases, VHTs view HTH registration as a performance monitoring tool, which can lead to avoidance of difficult households or selective reporting to protect their standing.

Recommendations

- **Use digital platforms for integrated data capture.** Scale up the use of the eCHIS to record immunization and registration data at both facility and community levels, with integration into DHIS2. Triangulate multiple data sources, including HTH registration, census figures, and Institute for Health Metrics and Evaluation (IHME) projections, to improve ZD identification and tracking accuracy.
- **Strengthen community-based registration systems.** Improve planning, training, and resource allocation for VHTs and community structures to enhance the completeness, timeliness, and accuracy of registration. Standardize and digitize outreach site lists, with periodic joint field verification to reconcile records with ground realities.
- **Ensure efficient, adequate, and context-sensitive budgeting.** Allocate resources based on district-specific challenges such as geographic barriers, transport needs, and population density. Avoid uniform budgeting that overlooks cost variations; prioritize investments in low-coverage and high-cost-per-child areas.
- **Integrate ZD identification into existing health platforms.** Build ZD tracking and outreach into ICHDs, disease-specific campaigns (malaria, HIV, TB, nutrition), and routine PHC services to maximize efficiency, reduce costs, and sustain reach.
- **Include caregiver perspectives in program evaluation.** Incorporate both direct and indirect caregiver costs into research to better understand financial and opportunity cost barriers to vaccination, and use this evidence to inform planning and advocacy.
- **Evaluate cost-effectiveness before scale-up.** Conduct rigorous cost-effectiveness studies before institutionalizing HTH registration or other large-scale identification strategies. Compare alternative approaches for reach, sustainability, and value for money.
- **Strengthen human resource capacity and support for data management and use.** Invest in sustained training for health workers and VHTs in data accuracy, analytics, and digital literacy, covering both paper-based and emerging systems like eCHIS, to improve real-time monitoring, decision-making, and accountability. Address systemic barriers by mitigating excessive workloads and ensuring adequate staffing, facilitation, and incentives to maintain VHT

motivation and enable consistent, high-quality data capture. Prevent stockouts of essential data collection tools and strategically invest in digital infrastructure, including mobile devices, to support the scale-up of eCHIS, standardize and digitize outreach site records, and enable routine data validation exercises to address documentation gaps.

ADVOCATE: STRENGTHENING POLICIES, STAKEHOLDER ENGAGEMENT, AND FINANCING

Key Learnings

- **Top-down planning can hinder progress.** Centralized, inflexible planning with limited sub-national input reduces contextual relevance and hinders effective implementation, especially in underserved communities.
- **System-wide synergy is essential.** Coordinated support across all EPI pillars and the broader health system is critical for sustained ZD reduction. Fragmented, partner-specific efforts reduce sustainability and result in households identified in prior years remaining unreached due to unsynchronized follow-up.
- **Funding gaps undermine planning and sustainability**. Chronic underfunding from domestic sources results in ad-hoc, donor-driven activities that are not always aligned with national strategies. This leads to fragmented funding, weak collaboration between research bodies and implementing partners, and missed opportunities to reach ZD children.
- **Collaborative evidence generation builds trust but faces persistent challenges.** Involving UNEPI and partners in Learning Hub activities has strengthened confidence in data quality and encouraged its use in intervention design. However, adoption of research findings is often delayed by bureaucratic processes, weak policy alignment, and reliance on individual "champions" to drive action. Even when evidence is understood, many district and facility teams lack the financial or human resources to act on it.
- **Knowledge translation (KT) requires a sustained and strategic approach.** Effective KT is not a one-time event; it requires continuous engagement with stakeholders at all levels to foster evidence uptake and ownership. The involvement of UNEPI and partners in Learning Hub activities has built trust and increased the use of evidence to inform intervention design.
- **Sustainability remains underemphasized in advocacy for ZD strategies.** Sustainability is emerging as a critical criterion for ZD strategies, yet it is not consistently emphasized in advocacy efforts. Evidence from the Learning Hub highlights that engagement with partners such as AMREF and the Coalition for Health Promotion and Social Development (HEPS) has already informed financing and policy dialogues, demonstrating how partnerships can strengthen advocacy. However, sustainability considerations are less consistently positioned at the center of these conversations.

Recommendations

- **Align ZD strategies with national health priorities**. Integrate ZD reduction into existing health infrastructure and multi-disease platforms (e.g., malaria, HIV, TB, and nutrition programs) to

improve reach and efficiency. Strengthen UNEPI's role in evidence review, learning events, and intervention design to build ownership and promote evidence uptake.

- **Evaluate cost-effectiveness before institutionalizing strategies**. Assess the effectiveness, value for money, and sustainability of large-scale approaches such as HTH registration before scaling.
- **Involve sub-national stakeholders in planning and budgeting for localized, flexible planning for sustained, coordinated financing.** Engage district and sub-county actors in planning processes and allow flexibility to adapt to local contexts, particularly for resource-intensive activities like microplanning. Promote coordinated, sustained financing by advocating for predictable, pooled funding streams that prevent service gaps and ensure that children identified through prior registration efforts are reached.
- **Incorporate caregiver perspectives into program design and expand targeted community sensitization and behavior change communication**. Address behavioral barriers with culturally relevant messaging, trusted local voices, and gender-sensitive approaches. Document both direct and indirect costs to caregivers (e.g., transport, lost income) to ensure strategies are equitable and responsive.
- **Prioritize sustainability and highlight concrete partner contributions in advocacy.** Position sustainability as a core advocacy message in all ZD-related dialogues and financing discussions. Leverage concrete partner engagement examples, such as those with AMREF and HEPS, to illustrate how collaboration can secure not only funding but also the continuity of interventions beyond initial project cycles.

UGANDA COUNTRY LEARNING HUB

The 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 ZD and 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 in Bangladesh, Mali, Nigeria, and Uganda generate and advance the uptake of research and evidence to improve immunization policy and programming, especially at sub-national levels. In 2023, Gavi selected the Infectious Disease Research Collaboration as the country learning partner for Uganda, with partners PATH and Makerere University School of Public Health.

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.

ZERO-DOSE LEARNING HUB TECHNICAL ASSISTANCE

During the period January–June 2025, JSI, as the ZDLH global learning partner, continued to provide technical assistance, collaborate, and co-create with the Uganda Learning Hub. JSI provided demand-driven technical assistance to the Learning Hub, focusing on strengthening its data analysis, tool development, and KT efforts. This support involved assisting with data analysis from the HFA and other sources to refine the qualitative HFA tool for use in Mubende district. JSI also reviewed and revised a range of other instruments, including the ZD follow-up household survey, the endline targeted survey, and an intervention mapping tool for Mubende district. This TA extended to the endline quantitative survey tool, where JSI offered guidance on skip logic and on how to measure exposure to vaccine messaging. JSI's costing consultant provided feedback on the Learning Hub's costing concept paper for Uganda's BCU activities, helping them leverage the draft ZDLH costing toolkit. JSI also supported the Learning Hub's KT and strategic planning efforts. The team held discussions with the Learning Hub on "telling the story" using complexity-aware monitoring approaches, including a workshop providing an overview on outcome harvesting customized to the Uganda context. JSI also reviewed and provided feedback on the Learning Hub's KT plan, encouraging the Learning Hub to expand its focus to sub-national levels. In addition, JSI reviewed a draft article for the UNEPI bulletin and contributed to a journal article for the WHO bulletin on how traditional care systems, such as TBAs, can assist with newborn immunization referrals. JSI worked closely with the Learning Hub to review and revise the existing implementation research (IR) theory of change to better guide program measurement. The team also participated in strategic planning and coordination meetings with Gavi and the Learning Hub to ensure that remaining activities, deliverables, and timelines were aligned and feasible.

RELATED RESOURCES

- Gavi's Zero-Dose Learning Hub IRMMA Aligned Interventions: Semiannual Update—Uganda (April 2025) | Uganda Data Dashboard (July–December 2024)
- Cost of Identifying and Reaching Zero-Dose Children in Uganda: A Case Study of House-to-House Registration and Targeted Immunization Outreaches (September 2025)
- Burden of Zero-Dose Children in Pastoralist, Hard-to-Reach and Underserved Communities: A Case Study of Mubende District, Uganda (December 2024)
- Utility of Data Capture Platforms for Identifying Zero-Dose Children in Uganda (December 2024)
- Report on a Rapid Assessment of the Zero-Dose Situation in Uganda (September 2024)
- Uganda Zero-Dose Learning Agenda (September 2024)
- Gavi's Zero-Dose Learning Hub IRMMA Aligned Interventions: Semiannual Update—Uganda (October 2024) | Uganda Data Dashboard (January–June 2024)
- Gavi's Zero-Dose Learning Hub IRMMA Aligned Interventions: Semiannual Update—Uganda (May 2024)

IMPLEMENTATION RESEARCH AND ASSESSMENTS

Through IR, the Uganda Learning Hub is generating timely, context-specific evidence to inform strategies for identifying and reaching ZD/UI children and missed communities. As a result of the delays in Equity Accelerator Fund (EAF) implementation, the Learning Hub pivoted to focus their IR activities on existing EPI programming in their study focus areas, including the BCU campaign and existing routine immunization activities. The IR aims to evaluate the effectiveness, implementation, and cost of interventions to identify and reach ZD children from April 2024 to May 2025 in selected sub-counties in three districts. During this reporting period, the Learning Hub continued to adapt its research approach to reflect operational realities, including delays in the rollout of the EAF. This adaptive approach generated evidence relevant for real-time decision-making and future planning. The IR portfolio includes multiple, interlinked studies that aim to improve understanding of implementation outcomes and guide the design and refinement of equity-focused immunization strategies in Uganda (see Table 1).

Table 1. Uganda Learning Hub Implementation Research and Geographic Focus

Learning Hub Research	Geographic Focus
(i) Rapid Assessment of the ZD Situation in Uganda*	Wakiso, Kasese, Mubende districts
(ii) Immunization Data Ecosystems Assessment*	National (with focused review of Mubende, Lira, and Mukono districts)
1. Evaluation of UNICEF-supported House-to-House Registration	Wakiso and Kamuli districts
2. Evaluation of Uganda's BCU Campaign *(includes Cost of Identifying and Reaching ZD Children in Uganda: A Case Study of House-to-House Registration and Targeted Immunization Outreaches)*	Kasese, Mubende, and Wakiso districts
3. Mapping of Interventions to Reach ZD Children	Mubende district
4. Follow-up of the Vaccination Status of the 99 ZD Children Identified from the Baseline Targeted Community Survey	Mubende district (Kigando, Kiruuma, and Butoloogo sub-counties)
5. Health Facility Assessment	Mubende district (six health facilities across three sub-counties)

** Described in previous semiannual reports, visit https://zdlh.gavi.org/semiannual-update to learn more.*

1. EVALUATION OF UNICEF-SUPPORTED HOUSE-TO-HOUSE REGISTRATION

During the first half of 2025, the Learning Hub finalized its analysis and engaged key stakeholders on the findings from its evaluation of the UNICEF-supported HTH registration initiative, conducted in late 2023 and 2024. This evaluation activity, which used the reach, effectiveness, adoption, implementation, and maintenance (RE-AIM) framework, combined secondary data analysis with qualitative interviews to assess the reach and implementation of VHT-led household registration in Wakiso and Kamuli districts. The Learning Hub presented the evaluation results to national immunization stakeholders, and their feedback was used to refine the interpretation and policy relevance of the findings.

Key Findings

- **HTH registration can identify ZD and UI children at the household level, but operational challenges and reliance on donor funding make the sustainability of HTH registration unclear.** While VHTs demonstrated commitment and the approach is generally well-accepted by district, facility, and community stakeholders, limited training and tools contributed to poor data quality. Additionally, reach was suboptimal as the evaluation showed that not all eligible children were registered. The evaluation also highlighted operational challenges in maintaining updated and accurate lists through HTH registration alone, raising questions about the long-term sustainability of the model without robust data systems. The financial sustainability of the HTH registration activity was found to be unclear. Programmatically, HTH registration was implemented through existing health system structures, which supports sustainability. However, the oversight role was provided by a consultant, a model unlikely to be viable without external funding, highlighting the need to embed this function within the health system for long-term sustainability. While some stakeholders proposed using PHC funds to maintain the intervention, others expressed doubt about its continuation post-UNICEF support.
- **Need for stronger linkage from registration to service uptake**: A key insight was the limited continuity of care between HTH registration identification and the actual reach of vaccination services for the ZD children. While 62 percent of interviewed caregivers reported vaccinating their children after registration, others cited barriers such as competing priorities, rude health workers, and a lack of transport funds. The findings emphasized the need for clearer feedback and accountability mechanisms between VHTs and health facility staff to ensure that children identified during registration are successfully linked to services and follow-up is closely monitored.
- **Evidence uptake and influence on programming:** UNEPI used Learning Hub findings to adopt a HTH registration approach for the BCU campaign with improved real-time data management systems and to inform costing for future ZD interventions. Findings also informed future campaign strategies by emphasizing targeted outreach, stronger data systems, and better linkage between identified and vaccinated children and addressing operational inefficiencies such as low VHT morale and inadequate tools. More broadly, these insights informed the design of a data system for the BCU. The evaluation's detailed evidence on operational bottlenecks, district-specific challenges, and resource needs informed targeted outreach planning, improved linkage between identification and vaccination, and greater use of real-time data for decision-making. By integrating these lessons into both supplemental activities and ongoing

immunization strategies, UNEPI is better equipped to strengthen the foundation for sustainable, efficient, and data-driven programming that can adapt to evolving immunization needs.

- **Growing culture of evidence use in immunization planning:** UNEPI and other stakeholders showed a willingness to engage with findings that challenged assumptions about the HTH model's effectiveness, reflecting an increasing culture of evidence use within Uganda's immunization program.

2. EVALUATION OF UGANDA'S BIG CATCH-UP CAMPAIGN

During this reporting period, the Learning Hub continued to generate evidence on the implementation and performance of Uganda's BCU campaign. Activities included an analysis of administrative data to estimate the number and the proportion of ZD and UI children identified and reached during the BCU campaign in Wakiso, Mubende, and Kasese districts and finalization of the related costing study (final report pending).

Key Findings

- **Higher burden of UI children**: Analysis of BCU data revealed that the proportion of UI children consistently exceeded that of ZD children identified across all three Learning Hub districts, indicating gaps in use of immunization services for children under one year.
- **Mismatch between registration and vaccination uptake**: Discrepancies were observed between the number of ZD and UI children identified during HTH registration and those actually vaccinated. In Kasese district, the number of children vaccinated with DTP1 and DTP3 was lower than the number of ZD and UI children identified through HTH registration. In contrast, Mubende and Wakiso districts reported lower numbers of children registered compared to the numbers of children vaccinated with DTP1 and DTP3. The lower numbers of children registered were attributed to the sub-optimal registration of eligible children, which was influenced by a combination of operational, motivational, and contextual factors. Key issues reported by interview respondents included low morale among VHTs due to inadequate facilitation, limited availability of appropriate data collection tools, and fear of accountability if ZD children were not successfully linked to care. Additionally, incomplete household coverage was reported due to inaccessibility (e.g., closed or resistant homes), selective registration based on assumptions about child age, and community resistance towards unfamiliar VHTs, especially those not regularly involved in mobilization.
- **No established mechanism to ensure vaccination of identified ZD and UI children:** While children were vaccinated with DTP1 and DTP3, it is unclear whether the identified ZD and UI children from the HTH registration were reached, as there was no follow-up system in place to ensure that the identified children are vaccinated.

2A. COSTING STUDY (EMBEDDED IN THE BCU EVALUATION)

As part of the BCU evaluation, the Learning Hub conducted a retrospective costing study to estimate the cost of identifying and vaccinating ZD and UI children through interventions implemented during the BCU campaign. The study applied a bottom-up, ingredients-based costing approach across the three Learning Hub districts (Kasese, Mubende, and Wakiso) selected for their high ZD burden and relevance

to prior Learning Hub research. Data were collected between February and April 2025 through key informant interviews, document review, register abstraction, and time-and-motion analysis. Both financial and economic costs were calculated from a government perspective, including shadow pricing for unpaid time. The study reported unit costs per ZD child identified and vaccinated with the first dose of DTP1 (see Table 2).

Table 2. Unit Costs (USD) for ZD Identification and Vaccination: BCU in Uganda

Cost Category	Overall Average	Mubende	Kasese	Wakiso
Cost per ZD Child Identified	$3.07	$3.85	$5.75	$1.33
Cost per ZD Child Vaccinated (DTP1)	$12.30	$8.30	$68.70	$9.30
Estimated Cost to Reach All ZD Children in Uganda (2024)	US $2.32 million (based on estimated 188,349 ZD children)	—	—	—

Key Findings

- **Cost and sustainability concerns**: Findings from the costing study showed the overall average cost to identify a ZD child was US$3.07 across the three study districts and the average cost to vaccinate a ZD child was US$12.30, with large inter-district variation. Reaching all ZD children in Uganda through a similar campaign would require an estimated US$2.32 million, raising questions about sustainability in light of declining donor support (Table 2).
- **Cost implications of the scale and reach of BCU campaign**: Among 119,156 children registered during HTH activities, 14,425 (12.1%) were ZD. Mubende had the highest proportion (15%), followed by Wakiso (12.6%) and Kasese (10.1%). A total of 23,716 children received DTP1 through outreach services.
    - **Health facility-level implementation costs**:
        - **Identification**: Registration efforts across all study health facilities totaled US$41,545, with Kasese incurring the highest costs (US$15,132), largely due to personnel time.
        - **Vaccination**: DTP1-related vaccination costs totaled US$24,816 ($8,031 for Mubende, $8,518 for Kasese, and $8,267 for Wakiso).
    - **Unit costs for identification and vaccination**:
        - **Per ZD child identified**: US$3.07 average across districts; highest in Kasese ($5.75), lowest in Wakiso ($1.33).
        - **Per ZD child vaccinated**: US$12.30 average; Mubende ($8.30), Wakiso ($9.30), Kasese ($68.70), the latter driven by lower vaccination coverage.
- **National implications**: If scaled nationally, using a campaign-style approach like BCU to reach all 188,349 ZD children in Uganda would require an estimated $2.32 million, underscoring the

magnitude of investment needed to close coverage gaps through supplemental outreach efforts.

- **Economies of scale observed**: Districts with higher volumes of vaccinated children had lower unit costs, suggesting that efficiency gains are possible when campaign coverage is maximized.

The findings suggest several strategic priorities. Expanding the use of digital platforms such as eCHIS could improve data accuracy and reduce inefficiencies. Strengthening community-based registration calls for improved planning and resourcing as well as cost allocations that reflect local operating conditions, rather than uniform budgeting across districts. Integrating ZD strategies into broader health platforms could improve cost-effectiveness, while sustainability planning at national and sub-national levels is needed to reduce reliance on donor funding. The study also recommends that future evaluations consider patient-side costs and include cost-effectiveness analyses to inform budgeting decisions.

3. MAPPING OF INTERVENTIONS TO REACH ZERO-DOSE CHILDREN

To support their ongoing implementation research, the Learning Hub carried out a mapping of interventions targeting ZD and UI children to understand the scope of existing programming in the study areas. Fieldwork for the mapping exercise began in April 2024 and continued through the first half of 2025, with a primary focus in Mubende district. This activity aimed to systematically document intervention types, target populations, delivery modalities, geographic coverage, and reach. The methodology included 13 key informant interviews with health officials, VHTs, and local leaders; a review of partner documentation; direct observation during national and district level meetings; and mapping of immunization points. The mapping findings revealed specific service gaps and planning challenges related to outreach, which contributed to the Learning Hub's broader understanding of these issues, alongside insights from the ZD follow-up and HFA. The mapping exercise will take place in Wakiso and Kasese in the second half of 2025.

Key Findings

- Several interventions targeting ZD children in Mubende district were identified including: i) the BCU campaign that involved social mobilization, HTH registration, vaccination, and both static and outreach immunization services; ii) Routine Static and Outreach Immunization, a regular activity that combines social mobilization with immunization services; iii) ICHDs, which are conducted twice a year (April and October) and include social mobilization and immunization outreach sessions, offering a broader package of child health services; and iv) microplanning, which involves identifying the target population, analyzing immunization inequities and challenges, co-creating solutions, and costing those solutions.

4. FOLLOW-UP ON VACCINATION STATUS OF 99 ZERO-DOSE CHILDREN

As part of its revised IR, the Learning Hub also initiated a follow-up study to track 99 ZD children originally identified in April 2024 during the baseline survey in Mubende district. The activity aimed to assess the proportion of these children who were subsequently reached and vaccinated, identify how they were reached (delivery mechanism), and understand the barriers and enablers related to their immunization uptake. Between April and June 2025, the Learning Hub conducted pre-visits, finalized

tools, recruited and trained research assistants, and carried out household-level quantitative data collection using GPS coordinates to revisit the 99 original households. Data cleaning and analysis are underway, and qualitative follow-up interviews and final reporting are planned for later in 2025.

Table 3. Immunization Status of Children Who Were ZD at the Baseline Survey

Immunization status	Sub-county			Overall
	Butoloogo (Hilly, hard-to- reach)	Kigando (Pastoralist)	Kiruuma (Underserved)	
Original ZD in 2024	13	43	43	99
Still ZD in 2025	9	29	30	68
Received DTP1 after identification	0	5	2	7

Preliminary Findings

- **Insufficient reach of ZD children:** Of the 99 ZD children, 75 were located during the follow-up study, and only seven had received DTP1 vaccination in the 12-month period since they were identified during the baseline study (Table 3).
- **Characteristics of children who were still ZD at follow-up:** 44 percent (30/68) of children who were still ZD children were born at home/with a TBA.
- **Reach of ZD interventions:** Only 21 percent (12/75) of the caregivers located during follow-up reported having been visited by a VHT for HTH registration within the past year, which was a missed opportunity for identification of ZD children and social mobilization during the BCU.
- **Place of vaccination of the reached ZD children:** Of the seven children who were reached with vaccination, five received their vaccinations through outreach sites and routine immunization services. While these numbers are small, they highlight the role of outreaches in improving geographical access and the continued importance of reliable routine immunization services in reaching ZD children.

Insights gathered during the data collection process revealed several critical challenges that may undermine the effectiveness and equity of the immunization program. These included:

- **Limited engagement with community leaders**: Many caregivers reported no contact from VHTs or local leaders since the baseline, pointing to persistent gaps in community-level mobilization, follow-up, and demand generation for immunization.
- **Household-level clustering of missed children**: Several households had more than one ZD or UI child, indicating systemic or household-level vulnerabilities and reinforcing the need for tracking strategies.
- **Widespread documentation challenges**: Many caregivers lacked immunization cards for their children. Among those who had cards, many were incomplete, damaged, or blank, limiting their utility for verification or follow-up and underscoring systemic weaknesses in home-based records.

- **Unintended awareness impact**: A number of caregivers reported seeking vaccination for their children after their interaction with the Learning Hub during the baseline household survey, highlighting how research activities themselves can influence behavior change and prompt care-seeking.

5. HEALTH FACILITY ASSESSMENT

The Learning Hub conducted follow-up interviews building on the October–November 2024 HFA in Mubende District. The follow-up gathered health workers' perspectives and further explored barriers contributing to irregular outreach sessions and the continued presence of ZD children in areas reportedly offering regular immunization services.

A total of 23 key informant interviews were conducted with health workers, facility in-charges, district health officials, and VHTs across six previously assessed health facilities in Butoloogo, Kigando, and Kiruuma sub-counties. Findings were synthesized to provide deeper insight into system-level and context-specific constraints affecting immunization service delivery.

Key Findings

- **Human resource shortages and excessive workloads compromise service delivery:** Health workers consistently reported excessive workloads due to understaffing, which created frustration and poor attitudes and reduced effectiveness in both facility-based and outreach services. At facilities such as Kituule HCII, health workers had multiple responsibilities, leaving them overstretched and unable to sustain consistent outreach. The district has received government funding to upgrade some HCIIs to HCIIIs with increased staffing levels, and recruitment in the next financial year may help improve capacity.
- **Resource and financial constraints disrupt outreach implementation:** Irregular and delayed release of funds, especially for fuel, undermined outreach sessions, particularly in hard-to-reach areas. Health facilities reported significant resource limitations for microplanning, including lack of computers, outdated software, and insufficient digital literacy among health workers. Because microplanning is resource-intensive, gaps in support and planning at national and district levels continue to constrain implementation of tailored outreach strategies.
- **Vaccine stockouts and logistical gaps undermine service reliability:** Stockouts of one vaccine antigen negatively affected the uptake of others, as caregivers frequently postponed visits if not all vaccines were available. Long travel distances further discouraged caregivers, while health workers found outreach to distant sites unsustainable due to resource limitations. Outreaches were reported as irregular and inadequate, and many respondents suggested that ICHDs may be more effective since they provided a broader package of services and reached wider age groups, including ZD children.
- **Microplanning is poorly understood and inconsistently applied:** Most health workers demonstrated limited knowledge of microplanning for estimating vaccine needs, instead relying primarily on basic activity workplans for budgeting. This knowledge gap was compounded by limited training opportunities and insufficient technical support at the facility level. As a result, microplanning was not used to its intended potential to systematically identify and address service delivery gaps.

- **Poor data quality and record management obscure ZD estimates:** Limited availability of data capture tools, incomplete or missing records, and understaffing led to unreliable health facility data on immunization coverage. This poor data quality, compounded by a lack of vaccination cards held by caregivers, leads to misclassification of child vaccination status. Outreach site records were inconsistent across district, facility, and community levels, with field verification revealing major discrepancies. Weak handover practices caused the loss of institutional knowledge, leaving newly transferred staff unaware of some outreach sites. Unreliable Uganda Bureau of Statistics (UBOS) population projections further skewed denominators, reducing accuracy in tracking ZD children.
- **Caregiver and community barriers reduce uptake of services:** Health facility staff and VHT members cited caregivers' insufficient knowledge of vaccination schedules and exposure to myths and misconceptions. Respondents also noted the importance of gender dynamics in the communities they serve, noting that in male-dominated households, mothers often could not decide on child immunization without spousal approval, and men generally viewed childcare as a woman's responsibility. Health workers also noted that home births, common due to long distances to health facilities and reliance on TBAs, were linked to higher likelihood of children being ZD. Finally, respondents suggested that immigrant populations faced additional barriers, including distrust, mobility, and language challenges, making them especially difficult to track.
- **Weak coordination and accountability reduce effectiveness of outreach:** District-level supervisors provided limited follow-up, reducing accountability for implementation. Coordination between health facilities and community structures was weak, leaving facilities unaware of localized barriers. Meanwhile, existing government structures, such as health inspectors and health assistants, were identified as underused resources that could support sustainable community engagement if better leveraged.

The HFA findings raised awareness of barriers to reaching ZD and UI children in the study districts and shaped decision-making across policy, program, operational, and community levels. Evidence from the HFA, often combined with other Learning Hub studies, informed national EPI guidelines for ICHDs and microplanning trainings to better identify and reach ZD/UI children and missed communities. Findings guided resource allocation, with UNEPI assigning AMREF to support Mubende and fund additional outreaches, data quality assurance (DQA)/data quality improvement (DQI) activities, while HEPS designed and financed a ZD intervention with extended supervision. Operational planning improved through technical support to ICHDs and campaigns, practical adjustments in microplanning, and inclusion of private not-for-profit (PNFP) facilities. At the community level, findings highlighted the need to leverage underused government structures, leading to strengthened VHT roles in mapping and linking ZD children to services. Finally, the HFA underscored the complexity of barriers, such as informal payments, home births, long distances, poor data, and gender dynamics, that require continued investment in context-specific, multifaceted strategies and further study of social and cultural determinants.

KNOWLEDGE TRANSLATION

The Learning Hub continued to strengthen its KT efforts, expanding the reach of its evidence across national, sub-national, and global levels. The Learning Hub has focused not only on expanding dissemination channels but also driving tangible uptake and application of evidence at national, sub-national, and global levels. The Learning Hub deepened its role as a trusted source of evidence for immunization programming, ensuring that findings were shared widely as well as actively absorbed and acted upon by stakeholders. Beyond dissemination, the period was marked by a clear shift from awareness to use: national actors such as UNEPI and the Ministry of Health (MOH) increasingly sought out Learning Hub evidence to shape equity-focused planning, district health teams integrated findings into operational decisions, and global platforms amplified Uganda's experience for broader learning. Together, these efforts underscore the Learning Hub's growing impact in embedding a culture of evidence-informed decision-making across Uganda's immunization system, even amid resource constraints and competing priorities.

DISSEMINATION: SHARING EVIDENCE WITH KEY STAKEHOLDERS

The Learning Hub shared findings on identifying and reaching ZD children and missed communities at multiple levels:

- **Global:** Presented emerging evidence during a ZDLH global webinar and the ZD Learning Half-Day Meeting organized by the Gates Foundation.
- **National:** Presented findings from the evaluation of the UNICEF-supported HTH registration approach during a UNEPI service delivery meeting; engaged with the MOH's Advocacy, Communication, and Social Mobilization pillar, sharing reports and resources and receiving invitations to present further learnings.
- **Scientific and professional forums:** Submitted abstracts to the Uganda National Conference on Health, Human Rights and Development (UCHD 2025) on the role of VHTs in improving immunization coverage and to the Immunization Economics pre-congress at the International Health Economics Association conference on the costs of reaching ZD children.
- **Awareness-raising events:** Presented a poster at the national malaria vaccine launch, further raising the profile of ZD-related evidence.

TRANSMISSION: TAILORING FINDINGS FOR DECISION MAKERS

Through targeted engagement, stakeholders at national and district levels were exposed to information tailored for their specific contexts, making the evidence more relevant to their priorities. The MOH and UNEPI increasingly recognized the importance of evidence on immunization access challenges faced by ZD children and missed communities and engaged the Learning Hub to inform planning for equity-focused strategies. The presentation of findings from the HTH registration evaluation during the UNEPI

service delivery meeting catalyzed active discussions on how best to design and implement future HTH registration under the EAF.

ACQUISITION: STAKEHOLDERS RECOGNIZING AND ADOPTING KNOWLEDGE

Stakeholders demonstrated clear comprehension of the evidence and recognition of its strategic value. At the sub-national level, the Mubende district health team credited the Learning Hub with enhancing their understanding of immunization barriers in underserved communities and reported using this evidence to inform their planning. At both national and district levels, the MOH and UNEPI consistently recognized the value of the findings, particularly in identifying and addressing barriers faced by ZD/UI children and missed communities. Key examples of acquisition include:

- **Resource allocation and partner engagement:** UNEPI assigned AMREF to support EPI activities in Mubende district based on Learning Hub findings. AMREF committed to using evidence from the data ecosystem evaluation to fund district-wide DQA and DQI activities.
- **Guideline and orientation development:** Stakeholders began designing national technical guidelines and orientation materials for ICHDs, ensuring a focus on ZD/UI children and missed communities.
- **Intervention design:** HEPS used Learning Hub findings as a foundation for designing their ZD intervention in Mubende.

APPLICATION: INTEGRATING EVIDENCE INTO POLICY AND PRACTICE

Learning Hub evidence moved beyond recognition into direct programmatic use, shaping both strategic planning and operations. UNEPI and partners embedded the findings into microplanning, outreach prioritization, technical guidance, and partner coordination. Key examples of application include:

Planning and Prioritization Updates

- Integrated evidence into microplanning training and guidance, leading to the inclusion of PNFP facilities, use of village-level population data for target setting and budgeting, harmonization of health facility catchment areas, and provision of operational and logistical support to VHTs.
- UNEPI requested that the Learning Hub's repeat survey be postponed so interventions targeting ZD/UI children identified during the baseline could be implemented first.

Targeted Service Expansion

- Increased the number of outreach sites in hard-to-reach or large villages, guided by Learning Hub mapping and population data.
- Integrated PNFP health facilities into outreach planning to broaden service reach.

Operational Workforce Optimization

- Reassigned health workers from neighboring sub-counties to underserved parishes in Kiruuma sub-county to improve ICHD and measles-rubella campaign coverage, reduce workloads, and expand outreach capacity.

Evidence-based Campaign Support

- Provided targeted technical assistance to the Mubende district health team for the April 2025 ICHDs and measles-rubella campaign, advocating for evidence-driven prioritization given resource constraints.

These applications show that stakeholders were not only acknowledging the Learning Hub's evidence but embedding it directly into operational processes, budgets, and outreach strategies, translating data into concrete action on the ground.

IMPACT: INSTITUTIONALIZING EVIDENCE-BASED PRACTICES AND STRENGTHENING IMMUNIZATION

The application of Learning Hub evidence has led to measurable improvements in service delivery and resource allocation. In response to findings emphasizing stronger implementation quality, HEPS funded an additional three days of supportive supervision across Mubende district to ensure effective ICHD and measles-rubella campaign delivery, while AMREF funded district-wide DQA and DQI activities. Redeployment of health workers to the Kituule HCII catchment area expanded outreach in one of the most underserved areas identified. At the community level, some caregivers sought vaccination for their children after being interviewed during the baseline community survey, an unplanned yet valuable outcome of community engagement. More broadly, the integration of Learning Hub evidence into partner engagement, resource allocation, and technical guidance indicates a systemic shift toward evidence-informed programming in Uganda. Even amid competing EPI priorities and constrained resources, stakeholders adopted recommendations, resulting in improved outreach capacity, stronger coordination across national, district, and partner levels, and increased confidence in the credibility of collaboratively generated data.

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