Reaching Zero-Dose Children: Learning From Local Barriers to Immunization

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Photo Credit: Infectious Diseases Research Collaborative

There isn't one solution for identifying and reaching zero-dose (ZD) children. Geography, mobility, language, social norms, and political context can often determine who gets vaccinated and who's left behind. Understanding these local nuances is the essential first step. This was the focus of Gavi's Zero-Dose Learning Hub (ZDLH) webinar, "Unlocking Tailored Solutions: Understanding Root Causes and Barriers to Reaching Zero-Dose Children and Missed Communities," which brought together the Bangladesh and Uganda Learning Hubs and the Clinton Health Access Initiative (CHAI), part of the Gates Foundation Zero-Dose Learning Agenda (ZDLA).

Hosted by JSI, the global learning partner and lead of the ZDLH, experts shared what they're learning about critical barriers to closing the immunization gap for ZD children and missed communities. Their experiences revealed recurrent challenges: caregivers who lack the autonomy or support to access services, policies and practices that fail to adapt to real-world constraints, and fragmented data systems that leave too many children invisible. These insights illustrate what it will take to close the ZD gap within country systems and across Gavi's Identify, Reach, Monitor and Measure, and Advocate (IRMMA) framework, which focuses on identifying ZD children, reaching them with services, monitoring progress, and advocating for long-term system change.

Who are ZD children?

Gavi operationally defines ZD children as those aged 12–23 months who have not received the first dose of the diphtheria-tetanus-pertussis (DTP)-containing vaccine—although the practical meaning is to find and reach children and communities that have been systematically missed by immunization services. In Bangladesh, they live in the wetlands, hills, coastal zones, and rapidly growing urban slum areas, regions served by health systems that struggle with workforce shortages, vaccine supply gaps, and inconsistent budget allocation. In Uganda, they include those born at home or cared for by mothers or grandmothers who must walk long distances to health centers and navigate informal payment expectations. In Cambodia, they include migrants without documentation, farmers in remote provinces, and members of ethnic minority communities who speak different languages and face both logistical and cultural barriers to accessing care. These examples challenge any notion of a universal solution.

Daily realities become barriers to care

For many caregivers, the biggest barriers to immunization aren't lack of awareness or unwillingness; they're the demands of daily life. Across all three countries, immunization experts emphasized how caregiving responsibilities, mobility patterns, and economic pressures shape access to services. In Uganda and Bangladesh, decisions about children's health often rest with women who may not have the autonomy, time, or support to act. Caregivers are sometimes grandmothers managing multiple responsibilities with limited resources.

"We've learned that children under the care of grandparents were twice as likely to be ZD compared to those under the care of the biological mother," explained Susan Nayiga from the Uganda Learning Hub. **"Children usually are taken to their grandparents without their vaccination cards, so it's difficult to track their immunization status. Grandparents also find it challenging to walk long distances to access health facilities or even walk to outreach points."**

In Cambodia, caregivers in border regions frequently migrate for work, while those in rural or minority-language communities face logistical and linguistic hurdles that leave them disconnected from health systems. In all three countries, immunization is often deprioritized, not because it's unvalued, but because it's difficult to access within the constraints of caregivers' lives. Unless we design interventions around these caregivers' real-world experiences, our services risk never fully reaching the families who need them most.

Behavioral and structural barriers compound one another

It's tempting to treat demand and supply as separate challenges. But in reality, they are inseparable. A caregiver may be willing to vaccinate her child, but if the clinic is far, the hours are inconvenient, and she fears being scolded or charged unofficial fees, that willingness quickly fades. Distance, misinformation, and mistrust don't operate in isolation; they reinforce one another in ways that undermine even well-designed programs.

Policy and planning gaps undermine delivery

Rigid planning cycles and siloed budgeting emerged as obstacles. In Bangladesh, frequent changes in national and subnational leadership—coupled with insufficient budget allocations for hard-to-reach areas—hampered efforts. Similar issues emerged in Cambodia, where delays in inter-ministerial approvals and donor-driven timelines affected service delivery.

"Delays in planning and budget disbursement led to some of the districts actually missing the key holiday season for implementation of border immunization sessions to reach the children of migrant workers," explained Sarah Bryer, Senior Program Manager for Sexual, Reproductive, Maternal and Newborn Health with CHAI Cambodia.

Operational challenges can hold back good ideas: delays in budget disbursement, underfunded outreach, lack of transportation and funding for community health workers, and the absence of feedback loops between facilities and communities. These aren't new problems, but they often remain unresolved. Without addressing them, we won't move from promising pilots to meaningful scale.

Missing data leads to missed opportunities

Digital tools hold promise, but on the ground, many interventions still rely on caregiver recall and paper registers. Uganda flagged frequent stock-outs of data collection tools, including tally sheets, child registers, immunization cards, and inconsistent outreach data capture, limiting targeted follow-up. In Bangladesh, DHIS2 analyses revealed a sharp rise in ZD prevalence across sub-districts in 2024. The threshold for the top 10 high-ZD sub-districts increased, signaling worsening coverage gaps. But without stronger links between these findings and operational plans, insights can't translate into action, and interventions remain undermined by data quality and consistency gaps.

Moving from innovation to integration

Innovative approaches are emerging, but many struggle to become embedded within routine health systems. Many of the interventions shared, like Cambodia's extended health center hours or Bangladesh's digital e-screening checklist, show promise. But too many interventions remain limited in scope, time-bound, or donor-funded. Without political will, domestic financing, and institutional support, many of these promising models risk remaining standalone projects rather than evolving into scalable, lasting solutions. Encouragingly, momentum is building in some settings.

"The EPI managers in the implementation research areas proposed to scale up the promising interventions—like the e-screening checklist, crash programs, and evening sessions—to other sub-districts and zones," explained Dr. Jasim Uddin of the Bangladesh Learning Hub. **"They're also using findings in developing policy documents, and ZD and UI children have been included as a standing agenda item in division, district, and sub-district level meetings."**

These are the kinds of steps needed to ensure that innovation moves from isolated pilots to system-wide integration. Integration into national planning and funding cycles remains a critical next step.

Pathways forward: flexibility, data, and partnerships

These country spotlights reinforce a clear message: identifying ZD children demands adaptive planning, robust logistics, genuine community engagement, and rigorous data use, all tailored to local circumstances. As the webinar underscored, overcoming these barriers will require sustained political commitment, flexible support for district teams, and programs designed around the lived realities of caregivers and health workers alike. Across Bangladesh, Cambodia, and Uganda, teams are already experimenting, adapting, and capturing lessons on what really moves the needle.

"Understanding the context and nuances—not just at the national level, but also at a granular, hyperlocal level—is critical to identifying and tailoring approaches effectively," emphasized webinar facilitator Dr. Folake Olayinka.

These experiences are vital to shaping smarter, more sustainable strategies to identify and reach ZD children and missed communities. To dive deeper, access the full webinar recording and additional resources on the ZDLH website.

About the ZDLH

Led by JSI with partners the International Institute of Health Management Research (IIHMR) and The Geneva Learning Foundation (TGLF), Gavi's Zero-Dose Learning Hub is a global learning initiative to generate evidence and engage stakeholders to identify and reach zero-dose and under-immunized children. As the global learning partner, JSI supports Country Learning Hubs in Bangladesh, Mali, Nigeria, and Uganda to advance evidence-based strategies aligned with Gavi's Identify-Reach-Monitor and Measure-Advocate (IRMMA) framework. Key ZDLH achievements include demand-driven technical assistance and the development of tools and resources, all aimed at identifying and reaching zero-dose children and integrating evidence into policy and practice.