



■ Research Brief

REACHING ZERO-DOSE CHILDREN

Evidence for Engaging the Private Sector

APPROXIMATELY 25 MILLION CHILDREN IN 2021 did not receive basic vaccines within their first year of life, and global immunization coverage decreased from 86% to 81% during the COVID-19 pandemic.¹ New approaches need to be implemented to reach unvaccinated populations and reduce the number of zero-dose children by 50% by 2030.² Partnering with the private sector presents a unique opportunity to reach zero-dose children, while also increasing immunization coverage and equity. This brief summarizes the key findings and recommendations of a longer literature review synthesizing information on the private sector's role in delivering immunization services to zero-dose children.

Key Takeaways

- The private sector is playing a notable role in reaching zero-dose children with immunization services, particularly in the areas where they are most likely to live: conflict-affected settings, remote and rural communities, and poor urban areas.
- The private sector, particularly the non-profit sector, is contributing significantly to immunization programs by carrying out activities that promote vaccine uptake.
- Various existing public-private partnership models were identified across sub-Saharan Africa and Asia. Some of the models used common private sector engagement approaches and often involved multiple levels of stakeholders.
- Government stewardship and coordination, and community engagement are key success factors for immunization programs to reach zero-dose children.
- Future work should explore how interventions and engagement mechanisms can be tailored to specifically address reasons for non-vaccination, apart from under-vaccination.

WHAT DO WE KNOW?

IMMUNIZATION AND ZERO-DOSE CHILDREN

Global immunization coverage rates increased following the implementation of the Expanded Programme on Immunization (EPI) in the 1980s but have since stagnated in some regions and even decreased in certain countries, particularly following the disruptions of the COVID-19 pandemic on the routine delivery of services.³ Global immunization coverage was 81% in 2021 based on rates for a third dose of the diphtheria-tetanus-pertussis (DTP3) vaccine.¹ To increase immunization coverage and equity, the Immunization Agenda 2030 (IA2030) and Gavi's Phase 5 strategy 2021-2025, two global immunization frameworks, have prioritized reaching zero-dose children and their communities.^{4,5}

As of 2021, two-thirds of zero-dose children live in 10 countries (see Figure 1), and half live in conflict-affected settings, remote and rural communities, and poor urban areas.^{3,6} They are less likely to receive other primary health care services and more likely to live in rural areas. Zero-dose children are also more likely to have mothers with low educational attainment, incomplete antenatal care, and who delivered outside a health facility.^{7,8,9,10} Reasons for non-vaccination include lack of access to the health system, parental attitudes and knowledge, family characteristics, and poor immunization-related communication and information.^{11,12}

PRIVATE SECTOR DELIVERY OF IMMUNIZATION SERVICES

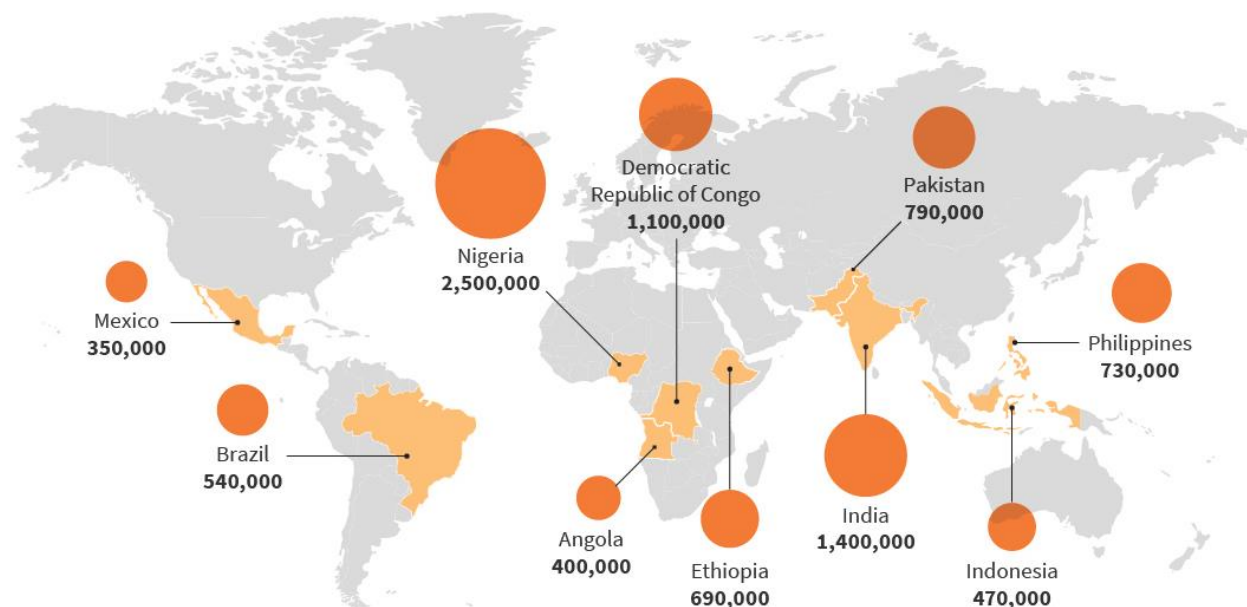
Although IA2030 and Gavi's Phase 5 Strategy both focus on cross-sectorial collaboration and public-private partnerships, there is limited evidence on the private sector's contribution to immunization services.^{4,5} Previous articles have described how the private sector provides a significant portion of immunizations in some countries in Asia and in fragile settings.^{13,14} These articles found that non-governmental organizations (NGOs) play a bigger role than for-profit providers, particularly in Africa and in rural areas, and are also more likely to be engaged by government and international organizations. There is less evidence on the regulation and quality of immunization services in the private sector, although it has been documented that they are often inadequately enforced.^{13,14} Limited monitoring, supervision, and reporting are additional challenges in private sector delivery of immunization services.^{13,14} Successful strategies for engaging the private sector have included contracting, training, financing, and coordinating on service delivery through memorandums of understanding (MOUs). Public-private partnerships have also been found to be effective in increasing immunization coverage. Governments have supported private facilities by providing vaccines, supplies, and equipment, and assisting in logistics, planning, and monitoring.^{13,14}

Definitions

Zero-dose: Describes children who are unvaccinated or those who have not received any routine vaccine. It is most commonly measured as those who have not received their first dose of a DTP-containing vaccine.

Private sector: Consists of any formal entity outside of the government, including full- or part-time private providers (doctors, nurses, community health workers, etc.); non-profit organizations; for-profit entities; civil society, non-governmental organizations, and faith-based institutions; and humanitarian agencies

FIGURE 1: THE 10 COUNTRIES WITH THE HIGHEST NUMBER OF ZERO-DOSE CHILDREN



Source: [WHO/UNICEF 2021 Estimates](#)

METHODOLOGY

MOMENTUM Knowledge Accelerator, in coordination with immunization teams across the MOMENTUM suite of awards, conducted a literature review to document and understand the role of the private sector in reaching zero-dose children, as well as barriers, enablers, and motivators to engagement. The review also identified existing public-private partnership models and promising practices for private sector engagement in delivering immunization services to zero-dose children and their communities. The literature review sourced peer-reviewed and grey literature published after 2000 from electronic databases, websites, technical experts, and article reference lists that addressed private sector engagement in reaching zero-dose children in low- and middle-income countries. An initial 481 articles were identified through the search, of which 133 were duplicates. The titles and abstracts of 348 articles were screened, 70 underwent full text review, and 22 were included in the literature review.

KEY INSIGHTS

PRIVATE SECTOR ROLES IN DELIVERING IMMUNIZATION SERVICES

There is demonstrated evidence that the private sector is contributing to reaching zero-dose children with immunization services either by directly administering vaccines to communities or by supporting activities to increase vaccine uptake, such as through social mobilization.¹⁵⁻³⁶ NGOs and civil society organizations (CSOs), including faith-based ones, are particularly important in community engagement efforts. While there is limited evidence on how for-profit providers are engaged in reaching zero-dose children, they do participate in immunization service delivery, particularly in countries with existing private health sector engagement.^{15,21,34} The private sector plays a significant role in the three contexts where zero-dose children are most commonly found (conflict-affected settings, remote and rural communities, and poor urban areas); this includes both the non-profit and for-profit sectors, although the role of for-profit providers is less understood. Evaluations have found that private sector efforts have helped to increase immunization coverage.¹⁵⁻³³

Promising Practices for Private Sector Roles

- Conducting outreach sessions, particularly in hard-to-reach areas, in addition to clinic-based services.
- Screening for vaccination status, such as by enforcing the use of checklists.
- Utilizing information systems and data tools to find and track zero-dose children, and to report on the doses of vaccines they administer.
- Involving the private sector in micro-planning and other decision-making activities.

EXAMPLES OF PRIVATE SECTOR ROLES

- For-profit and NGO providers in Sudan have established immunization services in their facilities or set up outreach sites at the request of the government, particularly in hard-to-reach areas, such as the conflict-affected regions of Darfur. NGOs conduct immunization campaigns and community engagement activities, while all private providers regularly take part in planning, trainings, reviews, and decision-making processes.¹⁵
- The CORE Group Polio Project used CSOs to train and mobilize thousands of community members across 11 countries who identified and tracked missed children, motivated caregivers to vaccinate their children, and conducted educational and behavior change activities in communities unreached by polio campaigns.²⁶⁻³¹

PARTNERSHIP MODELS FOR PRIVATE SECTOR ENGAGEMENT TO REACH ZERO-DOSE CHILDREN

Several existing public-private engagement models that aim to reach zero-dose children with immunization services were identified and are described in Table 1 below. A variety of mechanisms were used for engagement, such as contracting and MOUs; however, the partnership mechanisms were not always specified in the literature review. Many of the models involved multiple stakeholders, including international, national, and local actors; some of them focused on partnerships between two private entities that then collaborated with the public sector. However, the government, whether at the sub-national or national level, always had a role in the partnership. This role varied from being engaged through stakeholder meetings to providing vaccines and supplies to actively participating in the design and implementation of the partnerships and programs aiming to provide immunizations to zero-dose children.

Private Sector Roles in Vaccine Uptake



Social mobilization and community engagement



Identifying, registering, tracking, and following up with zero-dose children and their caregivers



Educating caregivers on importance of immunizations



Promoting vaccine-related communication and information



Organizing and supporting immunization campaigns



Refurbishing facilities and providing referrals to vaccination centers

TABLE 1: PRIVATE SECTOR ENGAGEMENT MODELS

| | COUNTRY | PRIVATE SECTOR ENGAGEMENT |
|---------------------------------|--|---|
| Private-to-private Partnerships | Afghanistan ¹⁶ | International NGO trained and equipped private providers to deliver services through capacity development interventions |
| | Angola ¹⁹ | International NGO supported private hospital to implement interventions to improve immunization services |
| | Democratic Republic of Congo ²¹ | Implementing partner worked with the Ministry of Health to integrate private facilities into EPI to offer immunization services |
| | Kenya ²⁴ | International non-profit organization and national chapter of organization worked with local NGO to implement activities |
| | Nigeria ¹⁷ | Corporate social responsibility initiative was completely funded by multinational pharmaceutical company |
| | Papua New Guinea ¹⁸ | NGO contracted private organization to deliver services through existing private and public sector facilities |
| Government-led Partnerships | Multi-Country ²⁶ | NGO network implemented activities at country level using secretariat model with international NGOs contracting national and local NGOs |
| | Bangladesh ²² | NGOs provided almost all immunization services through formal partnerships |
| | Sudan ¹⁶ | Private sector facilities were integrated into national immunization program through MOU and regulatory frameworks |

Promising Practices for Private Sector Engagement

- Encouraging government collaboration and involvement, including aligning objectives and creating a shared mission among stakeholders and working within existing EPI systems, to the extent possible.
- Using community-based approaches and tailoring immunization programs to the specific needs and contexts of communities with zero-dose children.

CASE STUDIES ON PROGRAMS AIMING TO REACH ZERO-DOSE CHILDREN



International NGO Support to a Mission Hospital in Rural Angola¹⁹

- **Context:** In a rural *comuna* in Angola, an international NGO worked with a non-profit mission hospital co-managed by the national government and the local Catholic diocese to strengthen service delivery by implementing a multifaceted intervention to strengthen the routine immunization program of the Public Health section of hospital.
- **Approach:** The main intervention focused on reducing the number of zero-dose children through outreach sessions; other activities included trainings, rotating personnel between the fixed vaccination points and outreach sessions, improving vaccine stockpile monitoring, and strengthening collaboration with community health workers and traditional birth attendants to improve community engagement.
- **Government role:** The district health department provided vaccines, cold chain equipment, and supplies and participated in drafting outreach activity plans, deciding which communities to target, and improving the sharing of immunization data with the hospital.
- **Results:** The number of overall doses administered during the intervention period increased by 26%. This was mainly driven by doses administered during outreach sessions, which were 62% higher than before the intervention was implemented.
- **Success factors:** Tailored activities to address complexities and needs of the communities and strengthened community relationships, while also integrating other health services into the outreach sessions and conducting regular performance reviews.

Photo: Karen Kasmauski



NGOs Provide Immunization Services in Urban Slums in Dhaka²²

- **Context:** National NGOs who have formal partnerships with the national and municipal governments provided more than 95% of immunization in Dhaka.
- **Approach:** NGOs provided vaccines through monthly outreach sessions in the slums, where there was a high concentration of zero-dose children, and through static NGO clinics.
 - The national and municipal governments worked with the NGOs and a health research organization to implement a package of interventions within the existing service delivery system: 1) an extended EPI service schedule, 2) training for service providers on valid doses and management of side-effects, 3) a screening tool to identify immunization needs among clinic attendants, and 4) an EPI support group for social mobilization.
- **Government role:** The national EPI ensured the supply of vaccines and provided logistical support to the municipality and the NGOs. The municipal government helped the NGOs in planning, monitoring, and evaluating the immunization program.
- **Results:** The evaluation found that the percentage of children 12-23 months old who had received all valid doses of recommended antigens by 12 months increased from 43% to 99%.
- **Success factors:** The EPI support group took on the role of visiting houses and disseminating information, which has been shown to be an effective approach to improving EPI coverage; the intervention package was implemented within the existing health system by organizations already providing immunization services, which also means there was accountability of actors.

Photo: Rabiul Hasan / icddr, b

BARRIERS TO, ENABLERS FOR, AND MOTIVATORS OF PRIVATE SECTOR ENGAGEMENT

BARRIERS

The literature review identified several barriers to reaching zero-dose children with immunization services.^{17,18,23} However, many barriers were in the context of reaching zero-dose children, particularly in hard-to-reach areas, and not exclusive to the private sector. The barriers included:

- Geographic inaccessibility and lack of transportation
- Conflict and communal clashes
- Cultural norms and beliefs
- Misinformation and vaccine hesitancy

There were some barriers directly related to private sector service delivery; however, these are known challenges within the private sector and are not specifically related reaching zero-dose children. They include:^{17,18,34}

- Inadequate or non-existent reporting and recordkeeping.
- Poor quality due to inadequate standards and lack of supervision and training.
- Lack of access to vaccines, supplies, and equipment.

ENABLERS AND MOTIVATORS

Overall, there was limited evidence on what enabled and motivated private providers to engage in efforts to reach zero-dose children. In Sudan, government support and regulation enabled the private sector to deliver immunization services to hard-to-reach and conflict-ridden areas.¹⁵ The government provided free vaccines and cold chain equipment and placed government-supported vaccinators in private facilities. It was also reported that private facilities leveraged their partnership with the EPI program to promote their health services and subsequently increase their client base. Increasing client volume by providing immunizations and other routine health services was also a motivator for private facilities in Kinshasa, Democratic Republic of Congo to integrate into the EPI system.²¹

The literature review identified several success factors to reaching zero-dose children as well. A study on CSO engagement in Nigeria found that CSOs having community advocates and support from leaders, leveraging traditional dissemination channels, and using alternative immunization points helped to reach communities.²³ CSOs also used their existing relationships and experience in community mobilization and communication to build the community's trust in vaccines. Another review of NGO-supported community mobilizers in Nigeria demonstrated how the mobilizers successfully reduced the number of missed children through a polio eradication initiative because they resided in the communities they were serving, spoke the language and understood the culture, established relationships with families, participated in micro-planning, and provided useful information on the communities.²⁸



CONCLUSIONS

The literature has shown that all formal private sector actors (for-profit clinicians, non-profit facilities, NGOs, CSOs, humanitarian organizations, and faith-based institutions) are currently engaged to varying degrees in efforts to reach zero-dose children. The private sector is playing a notable role in either reaching these children through social mobilization and community-based approaches or administering vaccines directly to the communities where they live, particularly in the three settings where they are most concentrated. Overall, there has been very little research or documentation on private sector engagement in reaching zero-dose children; most literature discussed reaching the unvaccinated within the context of increasing immunization coverage overall, without exclusively focusing on zero-dose. The box to the right includes areas for future research.

The concept of zero-dose children has only recently been positioned as a key measure of equity within the global immunization agenda and is still being developed as a central tenet of equitable access to quality immunization service.^{2,37} Donors and governments have the opportunity to move towards a cross-sectoral approach to reach zero-dose children and address declines and inequities in immunization coverage. Donors should support country governments to build and strengthen effective private sector engagement models to help achieve immunization goals. Integrating the private sector into efforts and strategies targeting zero-dose children will expand the reach of routine immunization services overall, while also helping to reach zero-dose children in the settings where they are often found.

RECOMMENDATIONS

- Governments should focus on establishing or strengthening regulatory frameworks and guidelines to integrate the private sector into existing national immunization programs and strategies to reach zero-dose children.
- National immunization programs should tailor their vaccination strategies and approaches to the specific needs of zero-dose children, while also engaging communities and developing mechanisms for private sector engagement to address the barriers to immunization among zero-dose children and increase access to immunization services.
- Donors should support country governments to build and strengthen effective private sector engagement models to help achieve immunization goals, including mapping private sector capacities, competencies, and their potential to provide immunization services.
- Interventions aiming to reach zero-dose children should ensure that local NGOs and CSOs that, ideally, are already working in communities, are included in any efforts to deliver immunization services.
- Programs targeting zero-dose children that include the private sector should improve documentation of the private sector role, including detailing what role they played and partnership mechanisms.

Areas for Future Research

- Qualitative research with private sector providers to understand the barriers, enablers, and motivators of providing immunization services to zero-dose children.
- Research on the specific role of for-profit providers and their potential to offer immunization services in zero-dose communities.
- Evaluations to provide documentation and better understanding of the mechanisms behind successful private sector engagement in a range of contexts.
- Estimation and quantification of the number of zero-dose children being reached through private providers and facilities.

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