Strengthening timely hepatitis B birth dose vaccination in The Gambia

Hepatitis B birth dose learning agenda

Country context

The Gambia, one of the earliest adopters of the hepatitis B birth-dose vaccine in sub-Saharan Africa with its introduction in 1990, continues to demonstrate strong commitment through robust policies and monitoring systems and offers important lessons and considerations for reaching the last mile. Recent improvements have included expanded cold chain capacity and strong community engagement through community birth companions.

However, while overall coverage is high at 99%, timely administration of the vaccine within 24 hours remains low (37% to 41%). Gaps persist in policy awareness and operationalization at subnational levels. Additional challenges include health worker shortages, knowledge gaps among providers, early discharge of mothers post-delivery, cold chain limitations in some settings, and providers' concerns about opening multidose vials when few newborns are present.

Considering the government's ongoing commitment to improving timely hepatitis B birth-dose delivery, PATH collaborated with the Ministry of Health (MOH) to assess learning questions on the feasibility, acceptability, cost, and market access of innovative strategies to improve coverage for babies born at home or in health facilities.

Study design

This study assessed existing hepatitis B birth dose delivery models in The Gambia and identified strategies to improve timely coverage across both facility and community settings, beginning with a literature review followed by phased qualitative data collection in urban and rural regions. UNICEF's Journey to Health and Immunization framework covering the caregiver and provider journey informed thematic analysis of barriers, facilitators, and implementation processes.

Data were collected in the Western Region (urban) and Lower River Region (rural) to compare contexts and implementation experiences. Phase 1 included national-level interviews with policymakers, the EPI Manager and team, and technical experts (n=18) to examine strategies, policy alignment, and operational challenges. Phase 2 consisted of interviews with regional officials (n=9) and health providers (n=10), exploring local implementation practices, challenges, and opportunities for improving timely birth-dose uptake.

Findings

Current implementation strategies

The Gambia delivers the hepatitis B birth dose primarily through facility-based births attended by nurses and public health officers (typically responsible for administering vaccines in public health facilities), while private sector engagement remains inconsistent. Despite high overall coverage in earlier years, recent declines in both coverage and timeliness have been driven by early maternal discharge, limited vaccinator availability during off-hours, cold chain gaps, and unclear policies for home births. To address these challenges, the MOH issued a 2025 policy memo authorizing any competent health worker to administer the vaccine within 24 hours of birth, aiming to improve timeliness and address delays caused by reliance on public health officers who are sometimes not available during nights and weekends when deliveries may occur.

Barriers and facilitators

The literature review and stakeholder interviews revealed both barriers and facilitators to birth dose uptake within facility and out-of-facility settings. Barriers included limited public health officer availability to provide the birth dose vaccine after hours or on weekends, weak coordination between midwives and public health officers, unclear guidance, early discharge of mothers, and logistical challenges for home and private-facility births. Providers emphasized that authorizing and training nurses to vaccinate immediately after delivery could improve

About the hepatitis B birth dose learning agenda

With funding from Gavi, the Vaccine Alliance, PATH has employed a mixed methods approach to assess learning questions on the feasibility, acceptability, cost, market access, and impact of innovative strategies to improve timely hepatitis B birth-dose coverage for babies, whether born at home or in health facilities. By exploring innovative delivery strategies, assessing the role of community health systems, and understanding stakeholder perspectives, the project aims to identify scalable solutions. Evidence and insights from this initiative will help inform countries introducing the birth dose as well as those seeking new strategies to increase both coverage rates and timely administration.

This brief is a summary of the full case study available at www.path.org/who-we-are/programs/primary-health-care/hepb-birthdose.

timeliness, but many were unaware of the existing policy allowing this. Facilitators included high acceptance among caregivers, community engagement via birth companions and traditional communicators, and strong policy commitment to timely vaccination.

Operational feasibility considerations

Supply chain

The Gambia's vaccine delivery combines push and pull systems, cold chain infrastructure, and mobile outreach to reach remote communities, and this structure is expected to remain largely unchanged for the hepatitis B birth dose. However, respondents highlighted bottlenecks such as heat exposure during outreach, fuel shortages, equipment maintenance needs, staff turnover, and limited funding and procurement delays that can trigger stockouts. Strengthening last-mile delivery, expanding innovative transport solutions, and improving system reliability will be essential to ensure timely birth-dose availability nationwide.

Controlled temperature chain

Respondents overwhelmingly supported qualifying hepatitis B birth dose for controlled temperature chain (CTC), noting its strong potential to improve timely vaccination for newborns delivered outside facility settings. They emphasized that successful adoption would require policy updates, workforce training, and procurement and monitoring system integration. To achieve the maximum benefit of CTC, an 8- to 14-day stability window was viewed as most practical. While private providers saw limited benefit since they do not conduct outreach, more than half of national stakeholders expressed willingness to pay a slightly higher price for a CTC-qualified product.

Product presentation

Respondents emphasized the need for flexible product options, noting that both one-dose and ten-dose vials serve distinct roles depending on delivery context. Single-dose formats were strongly preferred for out-of-facility births due to lower wastage, easier handling, and fewer preparation errors, while ten-dose vials are efficient for high-volume facilities. When considering emerging products, microarray patches ranked highly for out-of-facility use, though they are not yet commercially available. Overall, stakeholders advocated for a mixed-presentation approach to minimize wastage, maximize efficiency, and tailor delivery according to context.

Policy and program recommendations

National and local stakeholders highlighted opportunities to improve hepatitis B birth-dose delivery by leveraging lessons from other health programs, such as providing incentives to community birth companions and mothers and investing in transportation (Box 1). Key strategies include tracking home births, vaccinating newborns before discharge, and widespread communication of the policy authorizing all competent health workers to vaccinate. Stakeholders also

BOX 1

Recommended strategies for increasing timely hepatitis B birth dose coverage in the Gambia

Policy and systems

- ☑ Widely disseminate and reinforce the vaccination authorization policy memo through regular training, refresher courses, and supportive supervision for health workers, empowering nurses to administer hepatitis B birth dose in the labor and delivery ward.
- ☑ Improve coordination between maternal and newborn care and immunization teams at national and regional levels to align priorities on timely birth-dose delivery.
- ☑ Consider expanding CHWs' roles to include birth-dose vaccination during home-based postnatal care.
- ☑ Support private hospitals to obtain cold chain equipment, ensuring procurement and consistent availability of birth-dose vaccines in labor wards and potentially other routine immunizations.

Knowledge and awareness

- ☑ Educate mothers about vaccines and birth doses using civil society organization volunteers and CHWs.
- ☑ Leverage CHWs and civil society organizations to track out-of-facility births and refer and accompany caregivers to vaccination services.
- ☑ Engage traditional village and religious leaders in community sensitization and awareness campaigns.
- ☑ Develop and distribute posters, job aids, and other communication materials at facility and community levels.

Service delivery

- ☑ Plan for local adaptation of hepatitis B birth-dose delivery strategies.
- ☑ Provide refresher courses on birth-dose administration to build nurses' confidence and consistent birth-dose administration in the labor and delivery ward.
- ☑ Raise awareness and reiterate the formal authorization of nurses in public facilities to vaccinate, reducing dependence on public health officers.
- ☑ Conduct supportive supervision of health workers and consider non-financial incentives, such as awards or appreciation from leadership.
- ☑ Strengthen CHW platforms to support linkages between communities and facilities.
- ☑ Allocate transportation and outreach resources enabling CHWs and health workers to promote community awareness about birth-dose vaccination.
- ☑ Consider using multiple vaccine presentations (one-dose and ten-dose vials) to minimize wastage and maximize value for money.
- ☑ Monitor timely hepatitis B birth-dose coverage (within 24 hours) to assess performance, provide targeted support, and learn and improve.

recommended improved coordination between maternal and newborn care and immunization teams, refresher trainings, and updated protocols.

Additional recommendations focused on community engagement, including systems to notify community health workers (CHWs) of home deliveries, regular training on vaccine management, and logistical support such as fuel for outreach and sensitization transportation. Stakeholders agreed that CHWs are critical for mobilizing communities and raising awareness about the vaccine but expressed concerns about expanding their role to include vaccination due to limited training and technical competency. While CHWs are unlikely to take on the responsibility of vaccinating newborns in the near term, engaging them through trainings, supportive supervision, and referrals would help increase timely hepatitis B birth dose uptake.

These lessons from The Gambia offer practical insights for countries introducing or scaling hepatitis B birth dose programs, though further research is needed to tailor strategies to increase timeliness of hepatitis B birth dose administration (Box 2). Opportunities for continued learning include engaging caregivers to inform intervention design, strengthening community-to-facility linkages, partnering with private sector providers to offer the birth dose, and optimizing vaccine product presentation to delivery context.

BOX 2

Opportunities for continued learning through implementation research

- **Explore the perspectives of caregivers** to further inform the design and piloting of implementation strategies to increase timely birth-dose delivery.
- **Examine barriers to tracking home births** and develop systems that improve real-time identification of newborns and strengthen community-to-facility linkages.
- **Engage private providers** to design strategies for ensuring hepatitis B birth-dose access in private sector settings as standard of care.
- **Assess the optimal use of mixed (one- and ten-dose) vaccine presentations** for specific delivery contexts, quantifying settings where CTC adds the most value and evaluating CTC-approved vaccines' impact on timely coverage. Future studies could also explore feasibility and acceptability of microarray patch administration by CHWs.

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March 2026