



17th TechNet Conference

Panama City, Panama | October 16-19, 2023

Immunization Programmes That Leave No One Behind

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Innovative approaches to improve birth dose coverage

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Strengthening birth dose vaccination platforms and improving the quality of services that mothers and children receive in Madagascar: A mixed-methods study

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Background

Vaccination at birth is the first opportunity for a child to interact with the immunization system – and more broadly, the health system

Coverage of birth dose vaccination is extremely low in Madagascar:

In 2022, nearly **1 in 3 children** in Madagascar missed out the BCG vaccine, which is recommended at birth



Goals of this work

Linkages of birth dose vaccination and other health services

Understand the future connection a child not vaccinated at birth has with the immunization system

Challenges and opportunities to strong birth dose vaccination

Identify the challenges to equitable access to birth dose immunization and opportunities to integrate maternal, neonatal, and immunization services to improve the quality of care

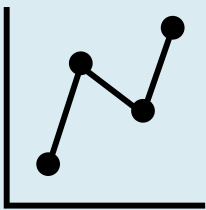
Solutions to strengthening birth dose platforms

Co-create context-appropriate solutions to closing equity gaps in birth dose vaccination.

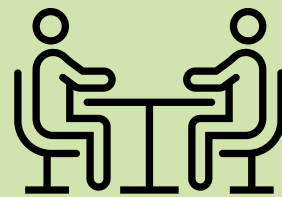
Methods

Descriptive statistical analyses

using 2021 Madagascar Demographic and Health Survey (DHS) data



Key informant interviews with managers, providers, community leaders, and caregivers in five districts with a high number of zero dose children in Madagascar



Human centered design workshop to identify facility and community-level solutions



Results



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Results: Children not vaccinated at birth

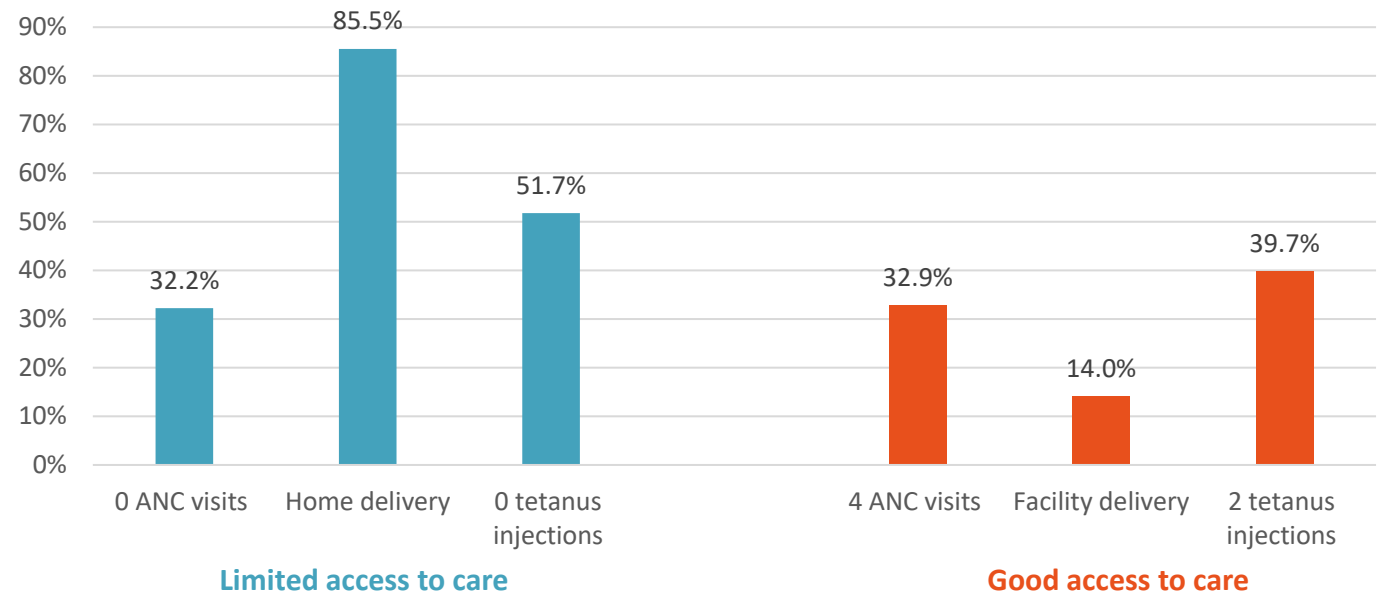
Children not vaccinated at birth come from families with limited sociodemographic resources

Many children not vaccinated at birth have mothers with limited access to services. Yet, there are many missed opportunities for vaccination in maternal care

Almost half (44.8%) of children not vaccinated at birth are in the **poorest wealth quintile**.

Children unvaccinated at birth are twice as likely to have **mothers without education** than children vaccinated at birth.

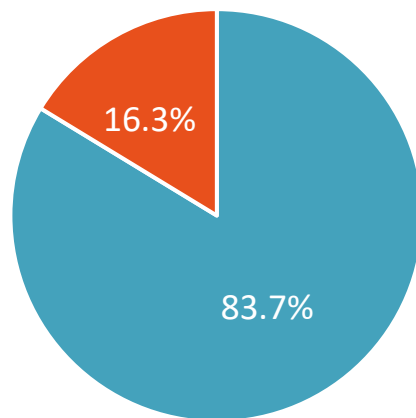
Access to care among mothers of children not vaccinated at birth



Linking birth dose vaccination to future vaccination

Children who are not vaccinated at birth are likely to become zero dose

Percentage of children 12 to 23 months in Madagascar unvaccinated at birth, who later become zero dose or vaccinated



■ Become zero dose ■ Get vaccinated

But, we're not yet doing a good job of translating birth dose vaccination into a strong connection with the EPI system

In looking at the subset of children in Madagascar **who receive only 1 vaccine**, 66.0% received only BCG.

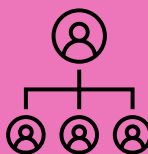


This means that their connection with birth dose vaccination did *not* lead to a lasting connection with the EPI system.

Results: Main challenges, by respondent type

We conducted 87 interviews in September 2022.

Managers



Health worker capacity

- Insufficient number of health workers
- Insufficient training
- Workload for health workers

- ★ Community agent motivation

Logistical challenges

- Stockouts
- Insufficient financial resources
- Insufficient logistical resources
- Cold chain

Demand issues

- Rumors/disinformation
- Lack of awareness or ignorance

Access issues

- ★ Distance or challenges with travel to health facility
- Preference for giving birth at home

Providers



Health systems challenges

- Stockouts
- Lack of health care personnel
- Vial wastage
- Supplies
- ★ Long waits/lines at health facilities

Access issues

- ★ Community agent motivation
- ★ Distance to facilities

- Insecurity

Demand issues

- Lack of community awareness
- Religious, traditional beliefs
- Rumors

Community leaders



Community norms

- Preference to give birth at home

Access

- ★ Cost to travel to facilities
- ★ Too few community agents
- ★ Lines/waits at health facilities

Caregivers



Experience at health facility

- ★ Line/wait at health facility
- Impolite health workers
- Inexperienced health staff
- Not enough health workers
- Stockouts

Demand issues

- Vaccine rumors/fears
- Religious/tradition beliefs
- Lack of awareness on vaccine timing and benefits

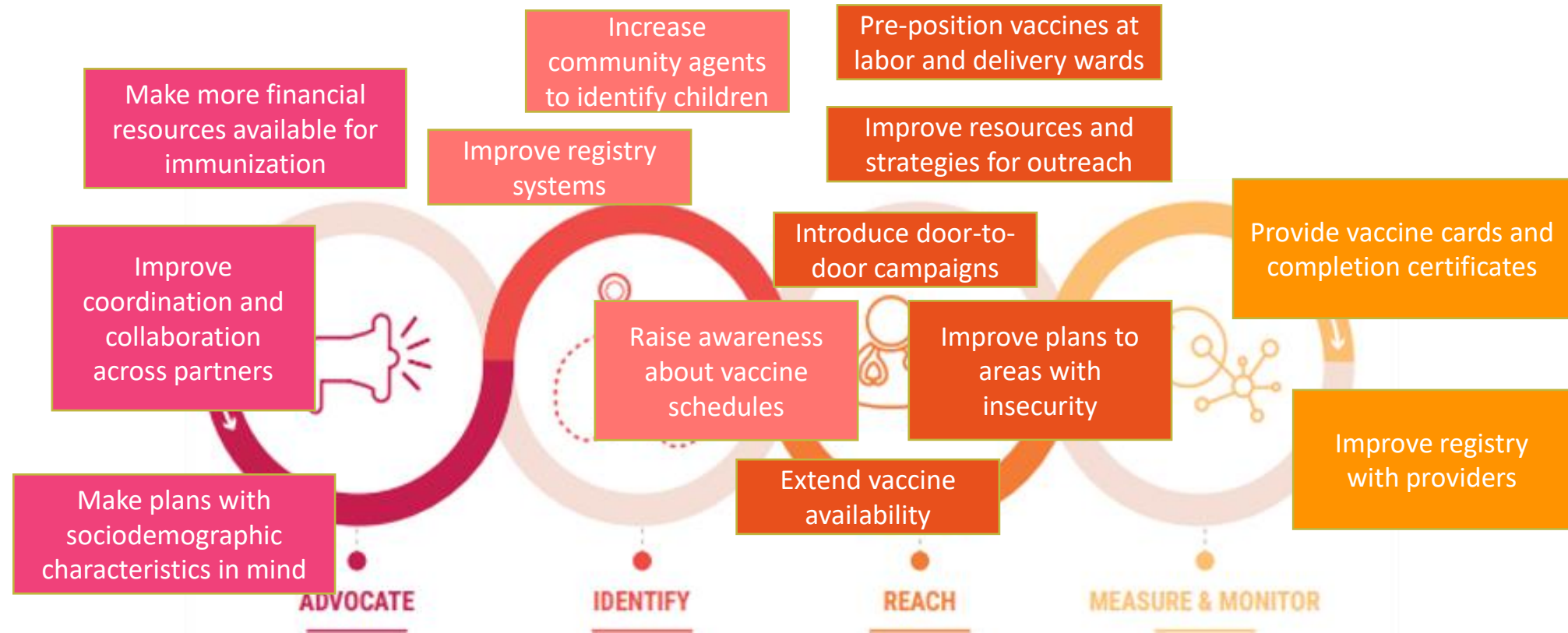
Access challenges

- ★ Distance to facility
- Conflicting commitments

Cost of services

- Cost of giving birth in a facility
- Cost of services at private facilities

Key solutions across the IRMMA Framework



Health systems inputs: Health worker capacity and motivation, stockouts, infrastructure, quality of services

Community knowledge, attitudes, and perceptions: Vaccine confidence, traditional beliefs and norms

Integration with other services, linkages to primary care system

Reliance on community health workers/community agents across all activities

Key constraints

- **Vaccine availability**
 - BCG vial size constraints affect vaccine administration, especially in remote areas
 - Stockouts of BCG for several months
- **Policy:** Limited involvement of health staff at home births, and unclear policy on providing vaccination at home births, since facility births are recommended
- **Financial and human resources:** Community agents, who can identify home births and unvaccinated children, are not compensated
- **Costs to families:** Giving birth in facilities, transport to vaccination centers, competing priorities to go to vaccination centers (i.e., work to provide food), especially given systemic vaccine availability issues
- **Awareness:** Low awareness among caregivers of birth dose vaccination recommendations

Conclusions

- Strategies that **bring services closer to communities** can improve access to essential services.
- **Systems level improvements** like ensuring vaccine and supply availability, strengthening health worker training, addressing vial size and vaccine wastage issues, and improving the role of community agents can be implemented to close equity gaps in the communities.
- Opportunities to **integrate maternal neonatal and immunization services** should be prioritized so, once reached, families are provided high quality, comprehensive services.

Thank You!



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Lessons learned from developing, testing and scaling innovative interventions to strengthen the birth platform in Cameroon and Nigeria

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Background



Photo Credit: Melinda Stanley

HBV remains a major global health problem - gaps towards achieving 2030 goals are enormous

The global target of the Sustainable Development Goals and the global health sector strategy to reduce the incidence of hepatitis B has been met, as measured by the prevalence of hepatitis B surface antigen to less than 1% by 2020 among children younger than five years

Global HBV Burden



296 million people
living with chronic HBV globally (2019)



820K deaths
from HBV (2019)



1.5 million new HBV infections
(2019); 70% through vertical
transmission

Intervention Coverage



30.4 million people (10%)
know their HBV status (2019)



6.6 million people (2.2%)
received treatment for HBV infection (2019)



43% global coverage for timely HBV
birth dose vaccine (2019)

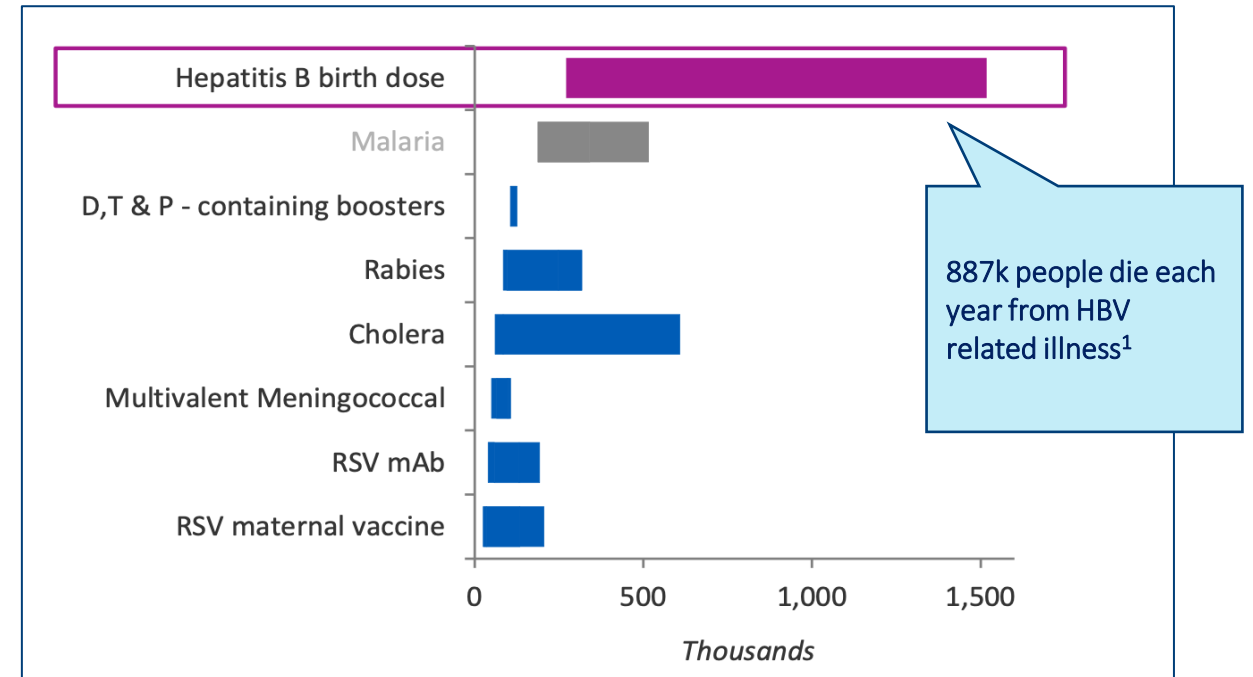
HepB BD is critical to reduce mortality from HBV infection and should be included in routine immunization programs

Global Health Sector Strategy by WHO to eliminate viral hepatitis by 2030

HBV Targets:

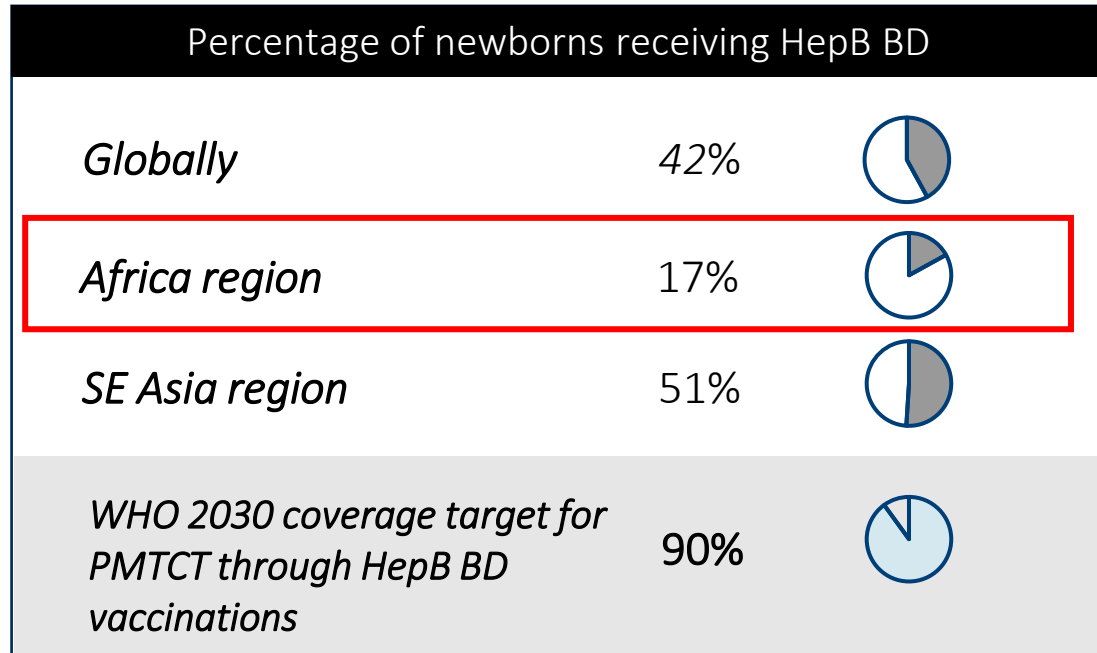
- Reduce new infections by **95%** and mortality by **65%**
- Plus, specific targets around:
 - <0.1% HBsAg prevalence among < 5 y.o.
 - HepB BD coverage >90% for either targeted or universal birth dose programs
 - HepB3 coverage > 90%
 - Plus, PMTCT targets around HBsAg ANC testing coverage and prophylaxis

Total future deaths averted (in thousands), 2021-2035



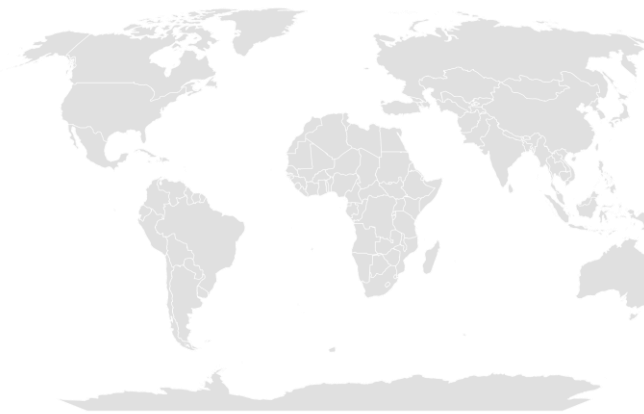
Uptake of HepB BD around the world, especially in the Africa Region, is much lower than what it needs to be to achieve HBV elimination and maximize health impact

HepB BD outlook around the world



Source: WHO-UNICEF Estimates, 2021

Countries in the Africa region yet to introduce HepB BD



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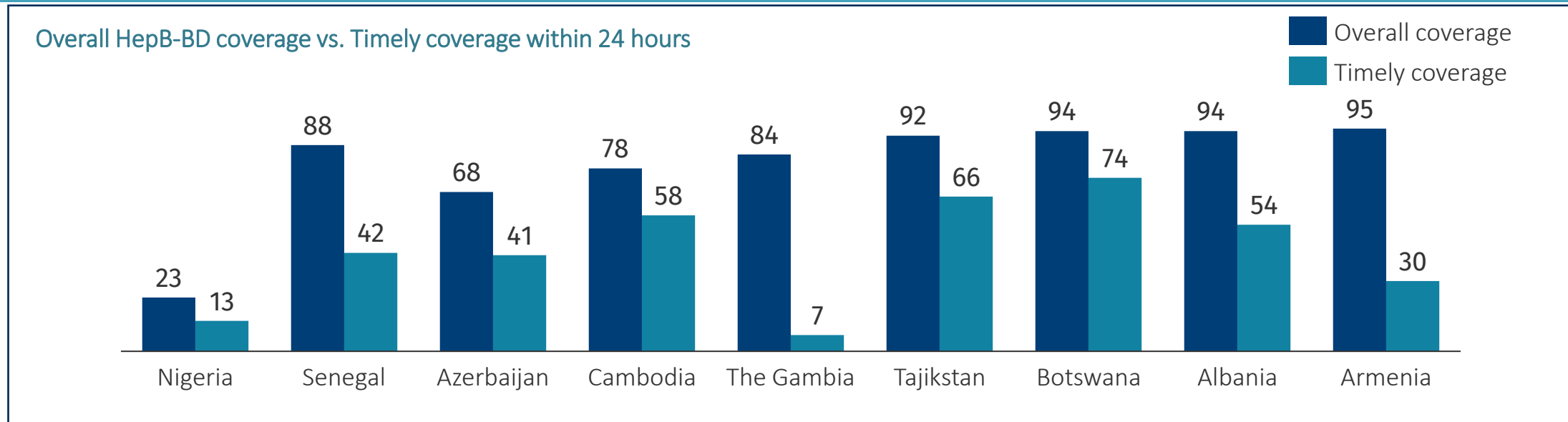
Including those with CHAI programs as follows:

- | | |
|--------------|--------------|
| Burkina Faso | Mali |
| Cameroon | Mozambique |
| DRC | Rwanda |
| Ethiopia | Sierra Leone |
| Eswatini | South Africa |
| Ghana | Tanzania |
| Kenya | Uganda |
| Lesotho | Zambia |
| Liberia | Zimbabwe |
| Malawi | |

Source: Global Hep B BD Introductions, 2019

- As of 2021, the global coverage of HepB BD is 42%. In the African and South East Asian region that shoulder the majority of HBV burden, the coverage remains poor, with **several African countries yet to introduce** the birth dose vaccine
- Though vaccines costs are relatively low (\$0.25 - \$0.60 per dose), there is low political will and prioritization of Hep B BD
- Also, challenges with reaching newborns in countries with **low facility birth rates** remains a main barrier to introduction and coverage

Across several countries that have introduced and report overall high coverage, timeliness of HepB BD administration remains often lower than ideal for efficacy



- Many countries report **total overall HepB BD coverage**; however, the timeliness of administration remains a challenge
- **Key barriers** to timely administration include:
 - Challenges with reaching out of facility births
 - Limited HepB knowledge among mothers and caregivers
 - Lack of coordination & allocated responsibilities between MNCH & EPI programs
 - Inadequate HepB-BD knowledge among health care workers, especially around guidelines and contraindications
 - Unavailability of cold chain storage and fear of vaccine wastage among health care workers
- Across a few CHAI countries, context-specific interventions (few spotlighted in subsequent section) to address some of these challenges have yielded positive results – increased timeliness in administration of Hep B BD vaccine

Overview of Intervention and Learnings

The interventions in Cameroon and Nigeria, where anchored on 4 principles:

- Improving coordination and collaboration between MNCH and RI units
- Removing structural barriers (e.g CCE availability and reporting challenges)
- Capacity building and improving HCW knowledge on birth dose administration
- Improving caregiver awareness of birth dose vaccines



Photo Credit: Eric Gitonga

Given the high prevalence of HBV infection among pregnant women in Cameroon (> 8%) and the elevated risk of MTCT, the introduction of the HepB BD vaccine remains a key priority for the Cameroon government

Background

The HepB BD vaccine is most effective when given within 24 hours of birth. However, in 2019, an initial diagnostic assessment by CHAI found that **less than 10% of children born in Cameroonian health facilities received current birth dose vaccines (OPV0 & BCG) within 24 hours of birth** as will be needed for HepB BD. Consequently, a **12-week pilot was conducted** in 15 health facilities within **3 regions** (Adamawa, Centre and West) and cutting across different settings, facility types and tiers of the Cameroonian health system pyramid.

Objectives

Assess the feasibility of immunizing newborns with BCG and OPV0 (in anticipation for HepB-BD) within 24 hours of birth by integrating routine immunization into maternity and immediate new-born care.

Specifically, the pilot study sought to:

1. Integrate BD immunizations into maternity and immediate newborn care services.
2. Measure the change in proportion of newborn receiving BCG and OPV0 within 24 hours of birth.
3. Assess the operational feasibility and acceptability of interventions and describe any factors (barriers and enablers) that may influence further implementation of birth dose strategies

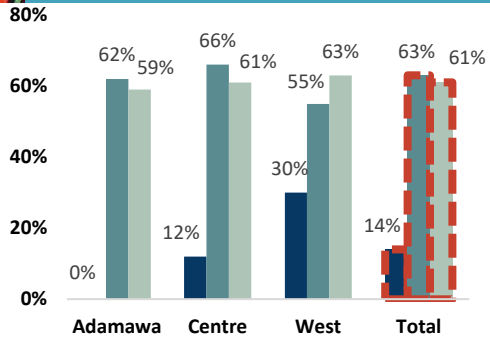
Intervention design

The pilot interventions were designed to address challenges to timely administration of BD vaccines identified in the 2019 diagnostic assessment, and included the following :

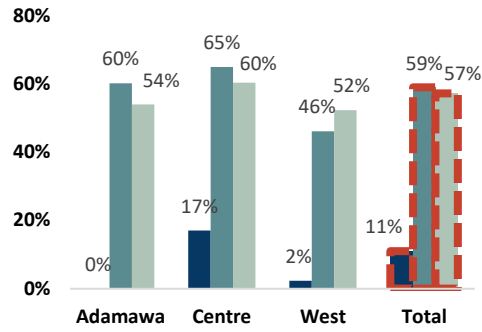
- Delivered knowledge reinforcement on topics relating to BD including Immunization basics (refresher), BD vaccine information for OPV0 and BCG including safety information and contraindications, directly addressing hesitancy surrounding opening a multi-dose vaccine vial and reinforcing incorporation of birth dose conversations into routine antenatal care visits
- Defined a detailed and tailored schedule to ensure 24/7 access to context appropriate vaccine storage options including after hours and during the weekends
- Outlined detailed roles and responsibilities for each HCW involved in birth dose vaccinations
- Developed and trained on facility-specific workflows which orient HCWs to how the birth dose administration fits into maternal and newborn care
- Developed a Newborn data tool to complement existing health facility data tools - birth and immunization registers, and ensured birth doses vaccines are properly recorded in health facility records

Over the pilot, there was an increase in; the proportion of children receiving OPV and BCG within 24 hours of birth, the knowledge of HCWs on BD vaccines and the challenges HCWs experienced with BD vaccines

Proportion of in-facility births who received OPV within 24 hours of birth

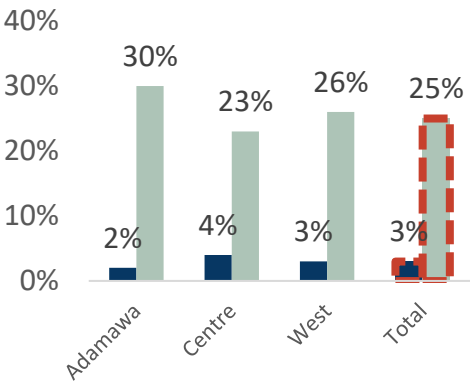


Proportion of in-facility births who received BCG within 24 hours of birth

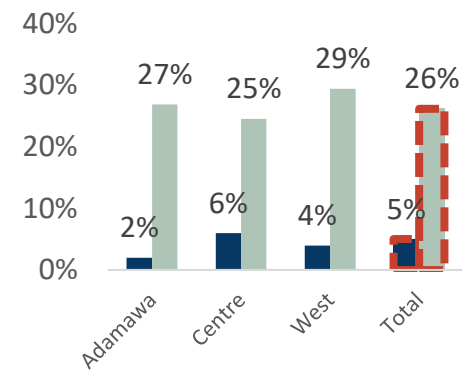


Key finding: The pilot led to an increase in the coverage and timely administration of birth dose vaccines for in-facility births

Proportion of children visiting the EPI unit who received OPV within 24 hours of birth (percent)



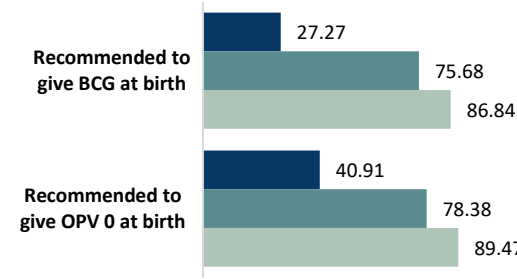
Proportion of children visiting the EPI unit who received BCG within 24 hours of birth (percent)



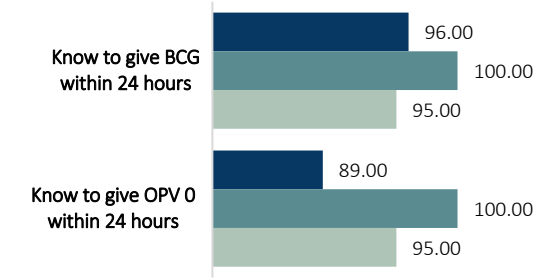
Key finding: There was a significant increase in proportion of out-of-facility born children who received BCG and OPV0 within 24 hours

■ Baseline ■ Midline ■ Endline

HCW improved awareness of vaccinating clinical stable, low birth weight children

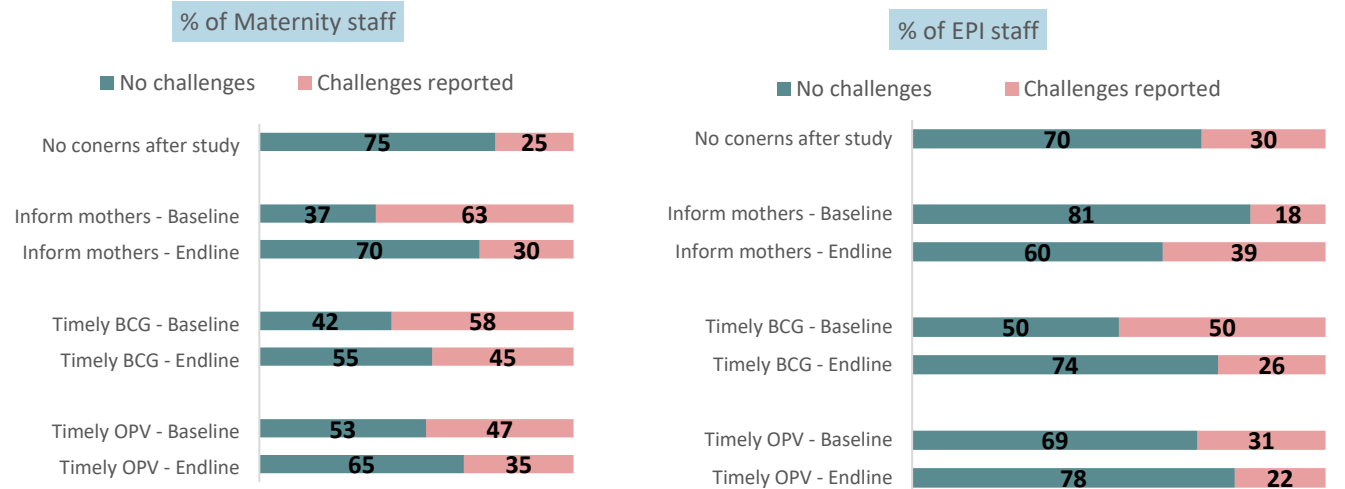


Trends in healthcare workers' knowledge on birth dose guidance



Key finding: The pilot resulted in a significant improvement in the awareness to vaccinate clinically stable, LBW children.

Trends in challenges experienced by HCWs regarding birth dose vaccines



Key finding: Overall, both EPI and Maternity staff reported less challenges regarding birth dose vaccines at end line compared to baseline

CHAI, working with Nasarawa and Kano State MOHs deployed a myriad of strategic interventions to improve HBV-BD Coverage

1 / RI Integration to MNCH Services e.g RI stand in maternity unit, referrals

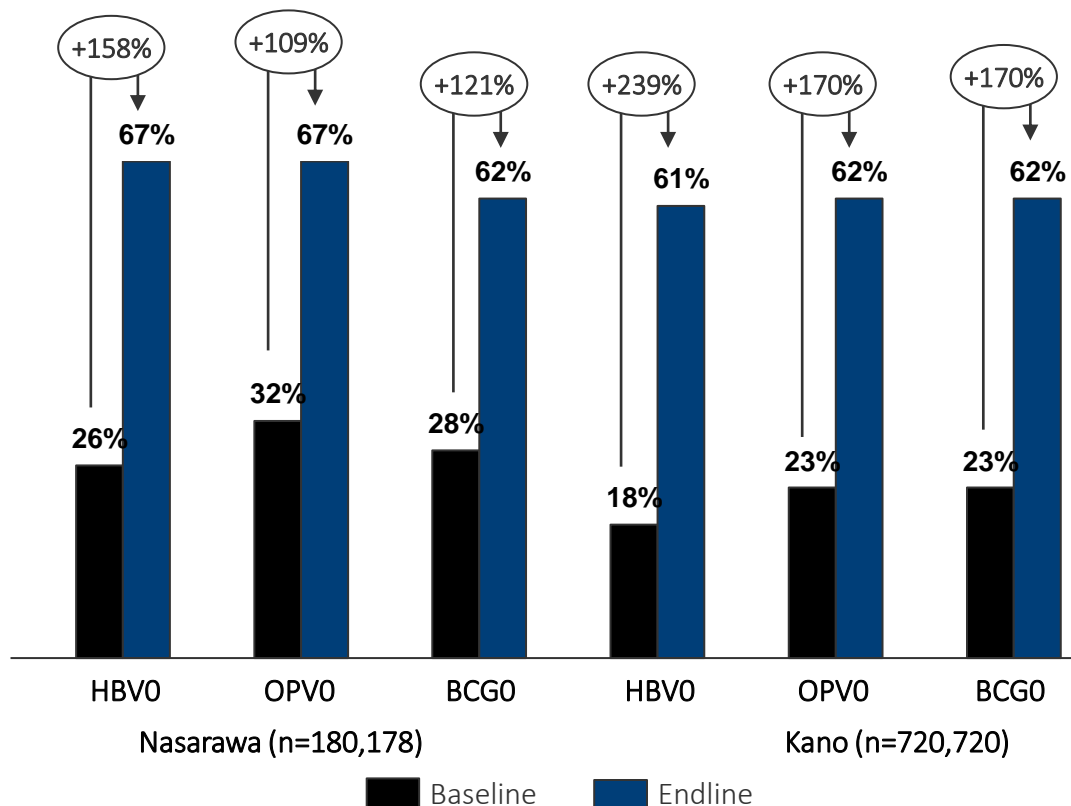
2 / Deploying CCE/Geostyles

3 / Delayed discharge post delivery

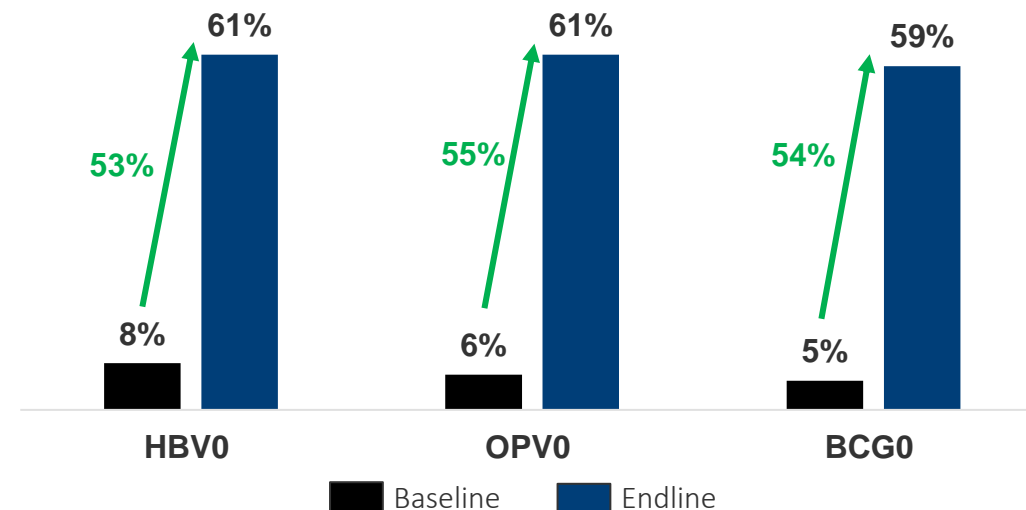
4 / Improving caregiver awareness in facilities and community

Over 100% increase in timely administration (24hrs) of the BD vaccines was recorded with a significant increase in HBV0

Proportion of children that received birth doses within 24hrs of birth



BD Vaccine Weekend Coverage: n=65 (Baseline), n=51 (End-line)



Integrating RI services as part of maternal and newborn package of care was key to improving timely BD administration



Weekend deliveries contribute 36% and 27% of total facility deliveries at baseline and end-line respectively



Remarkable improvement in timely birth-dose coverage from baseline to end-line due to task shifting approach



Functional cold-chain and availability of vaccines during weekends were integral to improved coverage

Key lessons for improving timely administration of birth dose vaccines

1. **Facility workflow redesign** reinforced by change management practices (e.g. instituting peer-mentoring and peer problem solving on WhatsApp groups, LMC training for key sub-national players) can have significant effects on coverage and timely administration of birth dose vaccines for in-facility births and possibly out-of facility births
2. In Cameroon, **HCW awareness of timeliness of birth doses did not appear to be a main barrier in the administration of BD vaccines**; however, HCW and caregiver perspectives on adverse events, multiple administrations, and administering BDs to clinically stable Low Birth Weight (LBW) children need to be continually addressed in a culturally and contextually appropriate manner
3. **Addressing structural barriers** (e.g., access to CCE in maternity units, monitoring/reporting challenges) in a context specific manner is critical for sustainability
4. Finally, it is pivotal to address additional elements that could impede the timely and sustained coverage of birth dose vaccines, such as **increased workload/joint accountability, stockouts/wastage rates, LBW children, HCW concerns around adverse events and multiple administrations, caregiver hesitancy etc.**

Key success enablers and limitations



Enablers

1. Jointly designing & implementing interventions in collaboration with govt; starting with a detailed diagnostic in Cameroon promoted visibility and ownership by the government.
2. Facilitating multisectoral collaboration by creating a multi-stakeholder task team with participation from EPI and MNCH stakeholders enabled sustainability and joint accountability at national & subnational levels.
3. Leveraging HCD principles to co-design facility-specific workflows with HCWs improved their capacity, willingness to implement and ownership.
4. Building on existing processes and leveraging existing data and tools, familiar to HCWs enabled smooth implementation of the interventions.



Challenges/Limitations

1. The pandemic resulted in an abrupt pause in the building momentum on operationalizing the 2018 VIS window; which has since then been overshadowed by other priorities at GAVI e.g., COVAX and RTSS introduction.
2. In Cameroon specifically, pandemic related disruptions led to delays in implementing the pilot and gleaning lessons required for finalizing the introduction plan.



Thank You!

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