Some infectious diseases can disproportionately increase the risks of severe illness and death for pregnant women and/or young infants, especially in low- and middle-income areas where diseases often hit the hardest. Maternal immunization (MI), or vaccinating a woman during pregnancy, can stimulate maternal antibodies that enhance her immunity and pass through the placenta to the fetus—conferring protection to the baby in early life.

New maternal vaccines are licensed or in development that could not only reduce infant morbidity and mortality from high-risk pathogens (e.g., respiratory syncytial virus [RSV] and Group B Streptococcus [GBS]), but also pave the way for MI as a broader, more integrated platform for new vaccines to come.

Getting there, however, will require coordination across immunization and antenatal care (ANC) programs in new ways. As such, a better understanding of MI systems readiness, new maternal vaccine implementation feasibility, and intervention acceptability is needed to inform the evidence base for new maternal vaccine delivery in low- and middle-income settings.

**What are we trying to learn?**

In response, PATH is conducting formative research in Ghana, Senegal, Tanzania, and Zambia to generate country-specific data on decision-making drivers, feasibility, and health system/service needs for delivering maternal vaccines routinely, efficiently, and equitably by:

- assessing the suitability of the ANC platform for integrated MI delivery, including 1) immunization and/or ANC programmatic adaptations that are needed; 2) MI’s potential impact on ANC services; and 3) alignment of ANC visit timing and distribution with maternal gestational age vaccination windows.
- identifying knowledge, attitudes, perceptions, and practices around care in pregnancy and MI.
- evaluating RSV and GBS awareness and their perceived priority among key stakeholders.

**Whose perspectives are needed?**

This research engages key stakeholders across the health care hierarchy in each country to obtain a robust understanding of diverse decision-making drivers and programmatic needs affecting MI delivery.

**National level**: policy makers and program managers across immunization and maternal, newborn, and child health (MNCH) programs.

**Subnational level**: district level program managers; providers (e.g., OB/GYNs, midwives, pediatricians, nurses) at referral/secondary/primary care facilities.

**Community level**: pregnant and recently pregnant women, family members, community health workers, and community and religious leaders.

**ANC situation analysis and socio-behavioral research**

Since routine MI delivery is likely to require coordination between Expanded Program on Immunization (EPI) and ANC programs, we are conducting an ANC situation analysis and socio-behavioral research to better understand the status of EPI/ANC coordination. We are also identifying strengths and areas needing to be addressed to optimize new MI interventions. In doing so, we are using the following data collection methods.
Key stakeholder interviews
Via semi-structured interviews, we will learn about decision-making drivers at national and subnational levels, as well as relevant service delivery policies, processes, and workflows. Areas of inquiry include:

- How would EPI and MNCH program roles and responsibilities need to work to optimize MI?
- How would MI-relevant disease prevention (e.g., RSV and GBS) be prioritized?
- What are perceptions around MI and adding new MI services to ANC?

Health facility assessments
Via readiness checklists and semi-structured interviews with health care providers, we will gather information from a diverse sample of facilities at different tiers of the health system (e.g., tertiary care hospitals, regional or district hospitals, and primary care centers) to better understand:

- service delivery processes, patient-provider interactions, and perceived needs/limitations of MI.
- existing systems for immunizing pregnant women and newborns and how these systems coordinate.
- provider perceptions around unmet needs, barriers and facilitators for MI, and feasibility and acceptability of new maternal vaccine introductions.

Community assessments
Via focus group discussions, we are inquiring about knowledge, awareness, perceptions, and decision-making drivers among community health care providers, pregnant or recently pregnant women, family members, and community influencers. We seek to understand:

- community health worker views on MI and its potential impact on current services.
- care-seeking drivers and motivations relevant to MI among potential MI recipients and their influencers.
- current knowledge of MI and relevant diseases; preferences for receiving information about MI.

Assessing ANC visit timing and vaccination window alignment
New maternal vaccines that are licensed and in development against RSV and GBS will require administration within a certain gestational age window during pregnancy to optimize protection for the infant after birth. Data on the timing of follow-up ANC visits and patient loads at ANC clinics are critical in determining delivery feasibility and strategies for synchronizing ANC and vaccination timing; however, such data are limited in Africa and other low- and middle-income areas of the world. To help fill this gap, we are conducting operational research in the four study countries to determine the distribution of gestational age at ANC visits in relation to vaccination windows and ANC session sizes across different levels of the health system. Data collection includes reviewing handwritten health facility records and electronic databases.

Our team
This project leverages PATH’s global expertise in partnering with countries to introduce and scale up new vaccines, strengthening maternal health services, and working with community- and facility-based providers and pregnant populations. PATH teams in Ghana, Senegal, Tanzania, and Zambia are conducting the research in their respective countries in collaboration with a PATH team based in the United States. Contract research organizations are also supporting study operations in Ghana and Senegal. The research is designed to comply with applicable standards and requirements to protect the rights and welfare of the participants involved.