

The Advancing Maternal Immunization collaboration

Forging a way forward to save infant lives from infectious diseases by vaccinating mothers

Despite advances in child survival, infant deaths remain unacceptably high, particularly in low- and middle-income countries (LMICs). More than 4.5 million children die before their first birthday each year.¹ Many of these deaths are due to infectious diseases that could be prevented by vaccinating mothers during pregnancy (maternal immunization)—an intervention not used to its full potential in many places, especially in LMICs where it is not widely available. Accelerating access to maternal immunization is key for protecting infants when direct vaccination is not an effective option for them. To drive uptake of maternal immunization, viable pathways to enable informed decision-making and achieve rapid launch must be determined, particularly in resource-limited settings.

ADVANCING MATERNAL IMMUNIZATION (AMI)

The Advancing Maternal Immunization (AMI) collaboration is bringing together diverse stakeholders from around the world and across immunization and maternal, newborn, and child health programs to identify such a pathway and provide tools to help decision-makers, implementers, researchers, and others navigate that pathway successfully. With a goal of helping infants survive and thrive, AMI's current focus is on advancing maternal immunization against an important cause of infant deaths and illness—respiratory syncytial virus (RSV). Maternal vaccines are currently being developed for RSV and could be available in a few years, underscoring a need to establish an environment poised for vaccine decision-making and introduction now. AMI is working toward this end by developing a roadmap to facilitate informed global, regional, and country decisions around RSV maternal vaccines, and to identify a strategy for meeting introduction and uptake requirements in LMICs.

ABOUT MATERNAL IMMUNIZATION AND RSV

When a mother is vaccinated during pregnancy, her protective antibodies can pass to her child. This protects the baby from certain diseases for the first few months after birth by bridging the gap when infants' immune systems are immature and need time or multiple doses to respond to direct vaccination. For



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several infectious agents or pathogens, maternal immunization is currently being used safely and effectively to protect mothers and infants. For example, it has helped more than 40 countries around the world eliminate maternal and neonatal tetanus.²

A promising target for maternal immunization is RSV—a common cause of acute lower respiratory infections estimated to sicken more than 30 million children each year worldwide.³ Though symptoms are often mild like a cold, RSV can be severe for infants, especially in resource-limited settings where it can be deadly. While the full burden picture is incomplete, global estimates indicate that RSV causes more than a quarter of respiratory deaths before five years of age—up to 120,000 deaths each year.³ Nearly all of these deaths are estimated to occur in LMICs, usually in the first five months of age.

Controlling RSV is challenging because no licensed RSV vaccine yet exists. Current prevention tools called monoclonal antibodies (mAbs) can be given directly to high-risk infants to prevent severe RSV, but require up to five doses, making them impractical and too expensive for LMICs. With no efficient way to prevent RSV in these settings, tens of thousands of infants die—many of whom lack access to health care. Luckily, RSV vaccine candidates and single-dose mAbs are advancing, including a maternal vaccine in late-stage development. Widespread coordination is urgently needed, however, to ensure that a RSV maternal vaccine can meet its full potential in LMICs,

when available, through effective integration into programs serving mothers and infants.

A SHARED PATHWAY FORWARD

Recognizing that successfully introducing, delivering, and scaling up routine maternal immunization in LMICs requires broad collaboration, AMI is uniting thought leaders and technical experts from across the globe to assess the full spectrum of needs that must be met for a RSV maternal vaccine to be successful. Their expertise ranges from understanding the disease and calculating the economic impacts of maternal immunization to administering the vaccine in the hardest to reach corners of the planet. Participants hail from more than 20 public and not-for-profit organizations, as well as government and academic institutions.

AMI's first steps are to conduct a gap analysis of information required for efficient decision-making and successful introduction in LMICs, and to develop a consensus RSV maternal immunization roadmap for meeting priority needs for evidence generation and effective delivery. The end result will be a comprehensive framework that will inform, coordinate, track, and contribute to global efforts advancing RSV maternal immunization from development through delivery. To further bolster coordination, AMI is also ensuring that relevant information is accessible to stakeholders when needed. Aside from the focus on reducing RSV deaths and illness, AMI's work will be useful for informing maternal immunization efforts more broadly against other pathogens as well.

HOW AMI WORKS

A **strategic leadership team** of World Health Organization (WHO) and PATH leaders, and a secretariat housed at PATH support the AMI collaboration through technical oversight and administrative coordination. A **technical expert panel** defines key questions, advises on priorities, and reviews and endorses the gap analysis and roadmap. Panel expertise spans vaccine licensure and WHO prequalification; global policy and financing; LMIC public health decision-making; and program implementation. **Working groups** of technical experts and practitioners conduct the background reviews, document evidence, identify gaps, and summarize all needs on the road to impact. These working groups



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span disease; product; health economics and financing; and delivery topics.

Overall, AMI is designed to meet the urgent need for a comprehensive strategy to speed maternal immunization availability and accessibility—especially for RSV. The focus for 2017 and 2018 will be on producing the gap analysis and roadmap, which will help guide future planning and efforts. Given that every mother deserves to see her child survive and thrive no matter where she lives, AMI is an important step toward ensuring that mothers and infants benefit without delay once RSV maternal vaccines and other tools become available.

REFERENCES

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- ³ Shi T, McAllister DA, O'Brien KL, et al. Global, Regional, and National Disease Burden of Acute Lower Respiratory Infections Due to Respiratory Syncytial Virus in Young Children in 2015: A Systematic Review and Modelling Study. *Lancet*. 2017: pii: S0140-6736(17)30938-8. doi: 10.1016/S0140-6736(17)30938-8. [Epub ahead of print].

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