

Implementation Research in Pakistan: Paving the way for a successful transition to multiple micronutrient supplementation

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Key messages:

- Nutrition International, in collaboration with the Government of Pakistan, is undertaking implementation research to support the introduction of multiple micronutrient supplementation (MMS) in antenatal care (ANC) and identify effective program implementation solutions.
- The Advancing Maternal Health through MMS Implementation Research in Pakistan (AMMI) project will not only inform the introduction of MMS but also provide useful insights to tackle broader questions related to improving adherence to maternal supplementation and ultimately advancing maternal and newborn health outcomes.
- The AMMI project comprises several steps: (i) establishing and working with the Pakistan Technical Working Group, (ii) determining the priority research questions using a rigorous methodology, (iii) switching over from IFA to MMS in ANC, (iv) conducting the implementation research using mixed methods, and (v) undertaking knowledge translation to support real-time decision-making.
- Building on the approach in Pakistan, Nutrition International is working in partnership with the Government of Nigeria to conduct a new MMS implementation research project focusing on optimizing adherence to maternal micronutrient supplementation.

Introduction

Nutrition International, in collaboration with the Government of Pakistan (GoP), is undertaking implementation research on prenatal multiple micronutrient supplementation (MMS) to advance maternal and newborn health and nutrition. This work builds upon the findings from the MMS Cost-Benefit Tool¹ – an online tool developed by Nutrition International to assist governments in their

decision-making when it comes to switching from iron and folic acid supplementation (IFAS) to MMS. This tool found that MMS is more cost-effective than IFA for pregnant women in Pakistan.² Implementation research, as recommended by the World Health Organization (WHO),³ is a key step to inform the transition and successful scale-up of MMS within the antenatal care (ANC) platform, and to support a positive pregnancy.

The Government of Pakistan's commitment to maternal nutrition

Maternal and newborn health and nutrition needs in Pakistan are high. The neonatal mortality rate (estimated at 42 per 1,000 live births)⁴ and the prevalence of low birthweight (23% in 2018) are some of the highest in the world. According to the 2018 National Nutrition Survey, an estimated 14.4% of women of reproductive age are underweight, 41.7% suffer from anemia, 22.4% are affected by vitamin A deficiency, and 79.7% from vitamin D deficiency.⁵ An analysis of trends across Demographic Health Surveys shows that government support to ANC services is increasingly reaching more women and there have been some improvements in the uptake and use of these services, such as maternal IFA.⁴ However, there are several bottlenecks that are preventing the program from achieving its desired effectiveness.⁶

The GoP's five-year National Maternal Nutrition Strategy (2022–2027) outlines the government's renewed commitment to addressing the dire maternal nutrition situation in the country.⁷ This comprehensive strategy includes a recommendation to implement MMS as part of ANC services for pregnant women. Understanding the risks of scaling up a new intervention too quickly, particularly given the challenges of the current platform, the Nutrition Wing of the Ministry of National Health Services, Regulations and Coordination approached Nutrition International to undertake implementation research. This research is critical to exploring solutions to long-standing implementation issues and offers an opportunity to guide decision-making and ultimately a path to the scale-up of MMS. This collaboration builds upon Nutrition International's work with the GoP for more than two decades, serving as a technical nutrition ally in the areas of fortification, child survival, and maternal and newborn health.

“Increasing access to MMS will contribute to improving maternal nutrition, birth outcomes and reducing stunting, which are key objectives of Pakistan’s Stunting Reduction Strategy and part of the National Nutrition Program...This MMS implementation research project [...] is an important step towards potentially providing access to MMS to pregnant women across Pakistan, and I’m looking forward to the outcomes.”

Dr Abdul Baseer Khan Achakzai, Director General, Ministry of Health, Pakistan

Nutrition International and the Government of Pakistan collaborate on rigorous implementation research

The implementation research comprises several carefully designed steps, which are described in detail below.

1. Defining what implementation research means in the Pakistan context

To formally initiate the *Advancing Maternal Health through MMS Implementation Research in Pakistan* (AMMI) project (Figure 1), an evidence translation workshop was held with key stakeholders representing federal and provincial government and non-government organizations. During the workshop, the findings from Pakistan’s cost-effectiveness analysis were shared alongside the latest global effectiveness evidence and the 2020 WHO update.² The workshop provided a platform to discuss implementation research, explore its value for Pakistan, and galvanize commitment for MMS. It ultimately resulted in the creation of a Technical Working Group (TWG) to advise and oversee the research project.

2. Determining the implementation research questions

Recognizing there are many important implementation research questions related to the introduction of MMS in Pakistan, the GoP and the TWG, with the support of Nutrition International, employed the Child Health and Nutrition Research Institute (CHNRI) method to identify and prioritize research questions for this study. Working from an existing national IFA bottleneck analysis, TWG members participated in a workshop to identify MMS program challenges and opportunities that informed a consolidated list of 28 implementation research questions under seven thematic areas. Through an online survey, the broader TWG then scored these questions based on set cri-

FIGURE 1: Front cover of the technical brief for the *Advancing Maternal Health through MMS Implementation Research in Pakistan* (AMMI) project



More information about the AMMI project can be found in this technical brief: <https://www.nutritionintl.org/learning-resource/technical-brief-mms-implementation-research-pakistan/>

teria. Prioritization scores were calculated for each of the implementation research questions and then used to rank the questions. The primary research questions selected for this study focus on identifying approaches to improve the delivery of ANC nutrition services and introduce MMS, with a specific focus on nutrition counselling, the engagement of family, and healthcare provider capacity-strengthening (see Box 1). The secondary implementation research questions focus on the fidelity, acceptability, feasibility and cost-effectiveness of the enhanced implementation approaches, quality of care, enablers, and barriers to successful implementation.

BOX 1: Questions selected for the study

Primary questions:

1. What implementation approach(es)* could be used to enhance the delivery of ANC nutrition services and introduce antenatal MMS to replace IFA for pregnant women in Pakistan?
2. Does implementation of the enhanced approaches increase pregnant women’s adherence to MMS? If so, how?

*Focused on:

- Capacity-building and supportive supervision of healthcare providers, with emphasis on MMS and nutrition counselling
- Improved nutrition content and nutrition counselling tools and techniques integrated into ANC delivery
- Engagement of pregnant women’s family members in ANC

3. Introducing MMS into the antenatal care platform

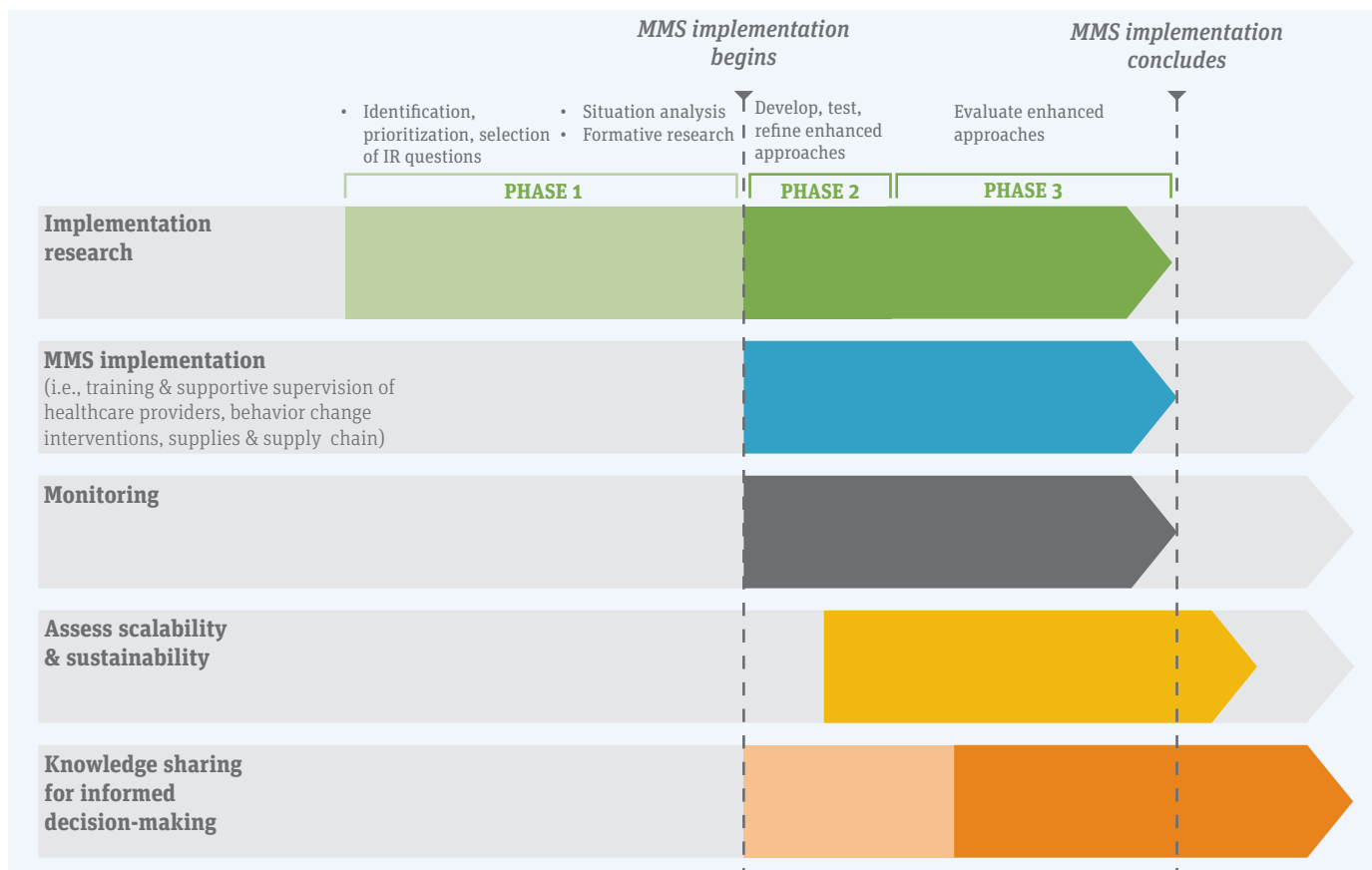
To study the selected research questions, MMS had to first be introduced into the ANC platform in place of IFA. Swabi district, located in Khyber Pakhtunkhwa province, was selected as the pilot area for the project. Beginning in April 2022, with the support of federal, provincial and district health officials and local stakeholders, all newly enrolled pregnant women accessing public ANC services in Swabi were offered two 100-count bottles of MMS over the course of their visits, whether at a government health facility or in the community from a Lady Health Worker or Community Midwife. To further support this transition from IFA to MMS, a ‘standard’ implementation package was developed (Figure 2). This included training for healthcare providers on MMS and the new standard operating procedures, a behavior change strategy and materials, a bolstered program monitoring system, and a strengthened supply chain.

Monitoring data and observations indicated a wide acceptance of the new MMS product among healthcare providers, pregnant women, and their influencers within the first month of the transition. Any programmatic issues that were identified during the initial roll-out were documented and corrected to improve the program and establish MMS as the new standard of care for preventative ANC services. In addition to ongoing course correction, a transition costing study is running parallel to this pilot project to generate a model for better capturing the true costs of moving from IFA to MMS.

FIGURE 2: ‘Standard’ transition package (counselling cards, factsheet, poster, standard operating procedures, Frequently Asked Questions, and modified monitoring forms)



FIGURE 3: Overview of implementation research process



4. Conducting the implementation research

Nutrition International and the GoP are deploying a phased approach using mixed methods to explore and answer the research questions (Figure 3).

Phase one (completed) included a situational analysis of existing ANC service delivery programming, platforms, stakeholders, and the supply of IFA supplements and MMS in Pakistan. Formative research was then conducted to better understand the current perspectives, experiences, and practices of key stakeholders, including pregnant women, their family members and healthcare providers. The insights learned during this phase subsequently informed the design of the pilot, the development of the transition package, and the other implementation research phases.

Phase two (completed) focused on the first research question, using a human-centered and participatory design methodology to develop, test, and adapt implementation research approaches that could be used to enhance the introduction of MMS and the delivery of ANC nutrition services. A modified Trials of Improved Practices (TIPs) was conducted with healthcare providers, pregnant women and their key influencers over several months. As a result, 'enhanced' implementation approaches focused on nutrition counselling tools and techniques and engagement of family members with a strong gender component were generated.

Phase three (in progress) focuses on evaluating the above approaches by not only testing the hypothesis that the enhanced implementation approaches will increase pregnant women's adherence to MMS, but also understanding how these approaches function. Outcome, process and cost-effectiveness evaluations are underway and



Lady Health Workers participate in a training on how to support the delivery of MMS to pregnant women in Swabi District, Khyber Pakhtunkhwa

are designed to answer this question in addition to the secondary implementation research questions. Together with the TWG, the results of this evaluation phase will be translated to inform decision-making and practices relating to maternal nutrition services and MMS in Pakistan, within Swabi district and beyond.



Formal launch of the AMMI project was in Islamabad in June 2022, in the presence of representatives from the TWG

The value of the MMS implementation research

This rigorous implementation research systematically explores what it would take to introduce and scale up MMS in Pakistan in a way that considers the realities of the existing ANC platform, the people who work within it, the needs of pregnant women and what influences their decision-making.

Building on its approach in Pakistan, Nutrition International is collaborating with the Government of Nigeria to conduct a new MMS implementation research project with funding from the Bill & Melinda Gates Foundation. Generating context-specific research is critical for country decision-making. Looking across the research also provides useful insights to tackle broader questions related to improving adherence to maternal supplementation and paving the way to better outcomes for women and their families.

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“Implementation research on MMS is shining a much-needed light on maternal nutrition. The global community needs to ensure that past mistakes are not repeated when introducing new nutrition products to the health system. When carried out effectively, implementation research can renew investment, interest and commitment to maternal nutrition and program effectiveness and provide a successful pathway to MMS scale-up.”

Jennifer Busch-Hallen, Practice Area Director for Maternal and Newborn Nutrition and Health, Nutrition International



Lady Health Worker providing MMS alongside antenatal counselling during a home visit in Swabi District, Khyber Pakhtunkhwa

References

- 1 Nutrition International. A tool to aid decision-making transitioning from IFAS to MMS. MMS Cost-Benefit Tool. Internet: <https://www.nutritionintl.org/learning-resources-home/mms-cost-benefit-tool/>. Updated 2022. Accessed 30 November 2022.
- 2 Nutrition International. Cost-Effectiveness of Transitioning from Iron and Folic Acid to Multiple Micronutrient Supplementation for Pregnancy, Policy Brief: Pakistan. Nutrition International: Ottawa, Canada; 2020.
- 3 World Health Organization. WHO antenatal care recommendations for a positive pregnancy experience Nutritional interventions update: Multiple micronutrient supplements during pregnancy. World Health Organization: Geneva, Switzerland; 2020.
- 4 National Institute of Population Studies (NIPS) [Pakistan] and ICF. Pakistan Demographic and Health Survey 2017-18. NIPS and ICF: Islamabad, Pakistan, and Rockville, Maryland, USA; 2019.
- 5 Ministry of National Health Services, Regulations and Coordination, United Nations Children’s Fund (UNICEF), and Aga Khan University. Pakistan National Nutrition Survey 2018. Government of Pakistan: Islamabad, Pakistan; 2018.
- 6 Ministry of National Health Services, Regulations and Coordination, United Nations Children’s Fund (UNICEF), and Nutrition International. Iron Folic Acid (IFA) Bottleneck Analysis Report Pakistan. Government of Pakistan: Islamabad, Pakistan; 2022.
- 7 Ministry of National Health Services, Regulations and Coordination, United Nations Children’s Fund (UNICEF). Pakistan Maternal Nutrition Strategy 2022-2027. Government of Pakistan: Islamabad, Pakistan; 2022.