



# Introduction of multiple micronutrient supplements (MMS) through antenatal care in Bauchi State, Nigeria: Training for healthcare workers

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Training Manual for Master Trainers  
Two-day training

July 2024

# Acknowledgment

This training manual has been developed as part of an implementation research project focusing on Maternal Multiple Micronutrient Supplementation (MMS) within preventative Antenatal Care (ANC) services in Bauchi State. The content was adapted from Nutrition International's *Advancing Maternal Health through MMS Implementation Research* project to serve as the minimum amount of training that healthcare workers should receive before providing MMS to pregnant women.

Since December 2023, as part of the implementation research project, three Local Government Areas (LGAs) in Bauchi State have replaced Iron and Folic Acid Supplementation (IFAS) with MMS as the standard of care for the prevention of anaemia among pregnant women. A package of solutions has been designed using human-centered design to drive and sustain adherence. This package is being implemented and evaluated, and its results will be available in June 2025. In scale-up planning, this manual should be considered alongside the new findings and 'adherence solutions'.

This manual was developed by Nutrition International with input and guidance from the Federal Ministry of Health and Social Welfare (FMoHSW), the National Primary Health Care Development Agency (NPHCDA), and the Government of Bauchi State.

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## Abbreviations and Acronyms

**AI:** Adequate Intake

**ANC:** Antenatal Care

**CHEW:** Community Health Extension Worker

**DHIS2:** District Health Information Software 2

**EML:** Essential Medicine List

**FMoH:** Federal Ministry of Health

**FMoHSW:** Federal Ministry of Health and Social Welfare

**IFAS:** Iron and Folic Acid Supplementation

**IPC:** Interpersonal communication

**JCHEW:** Junior Community Health Extension Worker

**LBW:** Low Birth Weight

**LGAs:** Local Government Areas

**LMCU:** Logistics Management Coordination Unit

**M&E:** Monitoring and Evaluation

**MCH:** Maternal and Child Health

**MMR:** Maternal Mortality Ratio

**MMS:** Multiple Micronutrient Supplementation

**MNP:** Multiple Micronutrient Powder

**NDHS:** Nigeria Demographic and Health Survey

**NPHCDA:** National Primary Health Care Development Agency

**RAE:** Retinol Activity Equivalent

**RDA:** Recommended Dietary Allowance

**RIRF:** Requisition, Issue, and Report Form

**SOPs:** Standard Operating Procedures

**ToT:** Training of Trainers

**UL:** Tolerable Upper Intake Level

**UNIMMAP:** United Nations International Multiple Micronutrient Antenatal Preparation

**WHO:** World Health Organization

**WRA:** Women of Reproductive Age



## General Guidelines for Program Planners

Even if supply is available, before embarking on training, program planners are advised to think through the following fundamental components:

- **Logistics and distribution plan of MMS:** Develop a micro plan specifying how the MMS commodities will be managed from the warehouse to the end user with clear timelines. Detail where the MMS will be warehoused (including storage and climate control of commodity and stock control), health system channel(s) that will be used for distribution to facilities as well as the last mile distribution points, frequency of distribution and plans for resupply.
- **Implementation and supporting materials:** Develop a program implementation plan that details the systematic introduction of MMS into the ANC platform. Develop or adapt program guidance, standard operating procedures (SOPs) and tools and job aids (i.e. factsheets) that will support the transition. These should be based on the local context, health system, existing ANC guidelines and resources.
- **Management of anaemia:** Based on local and global guidelines, consider how best to support appropriate diagnosis and clinical care for pregnant women who are anaemic and ensure the program SOPs reflect this. Ensure a treatment dose of iron continues to be available in the supply chain.
- **Monitoring plan:** Develop a monitoring plan for ongoing program monitoring, course correction and learning. The supporting tools and methods should feed into existing routine monitoring systems where possible. Where District Health Information Software 2 (DHIS2) (which includes new indicators for MMS) is not yet rolled out, short-term systems may be required. Engage in continuous monitoring and course correction through supportive supervision mechanisms.
- **Training plan:** Develop a detailed plan including the identification of the cadres and number of participants who should receive this training and the master trainers who will be responsible for cascading it. The training should be modified to suit the needs of the participants.
- **Sustainability plan:** Consider the long-term aspects of maintaining this program over time such as continuous and timely procurement, sustained financing, and ongoing service delivery including supportive supervision, refresher trainings and reprinting of job aids. Build in ongoing course correction and learning.



# General Guidelines for the Trainers

Trainers are encouraged to follow these key guidelines during the delivery of this training:

- **Pre-training preparation:** Before the training, meticulously organize materials, handouts and stationery. Ensure that all electronic devices and presentations required for the training are functioning properly.
- **Thorough preparation:** Ensure thorough preparation and rehearsal of the training material and activities in advance. Familiarize yourself with the content of the PowerPoint slide deck to avoid reading directly from them during the presentation.
- **Primary references:** Rely on this Trainer's Manual and the PowerPoint slides as your main references.
- **Organization and energy:** Maintain a high level of organization throughout the training.
- **Effective energizers:** Observe the energy and focus levels of participants throughout the session. Integrate brief energizers regularly, especially when participants appear sleepy or fatigued, or to facilitate smooth transitions between training sections. Ensure that the activities are culturally appropriate and engaging.
- **Continuous monitoring:** Engage in continuous monitoring by closely observing trainees' body language to assess their interest and understanding of the content.
- **Active listening:** Actively listen to the trainees, encourage questions, and patiently provide clarifications when needed.
- **Language and tone:** Be mindful of your choice of words and adopting professional and clear tone. Maintain professionalism and refrain from using jargon that may be unfamiliar to some participants
- **Facilitation approach:** During discussions with the trainees, avoid giving the impression of testing their knowledge. Instead, create an environment where participants recognize that their knowledge, experiences, and ideas can benefit others. Encourage voluntary responses instead of singling out individuals with direct questions.
- **Transition between modules:** As you move from one module to the next, summarize key points, seek feedback, and welcome questions. This helps assess the trainees' understanding of the previous module.
- **Appreciation:** Thank the trainees for their participation and keen interest.
- **Post-training documentation and reporting:** After each training module, record or document the feedback gathered from the various discussions and prepare a comprehensive summary report.



# Training Overview (for the Master Trainers)

## Context Overview of the Training

This training manual has been developed as part of an implementation research project focusing on MMS within preventative ANC services in selected LGAs in Bauchi State. This project is being conducted by Nutrition International in partnership with the Governments of Nigeria and Bauchi State. The overarching project also includes implementation research to identify effective implementation approaches, to explore how to increase pregnant women's adherence to MMS, to inform sustainable scale-up, and to ensure maximum impact of MMS in the target areas of Nigeria. It also provides an opportunity to increase attention to maternal nutrition, strengthen the ANC platform, and improve gender-based outcomes such as women's decision-making ability.

Provision of MMS is intended to be integrated into the existing ANC services. During the project's implementation period (November 2023 – March 2025), all newly enrolled eligible pregnant women accessing public ANC services in selected LGAs will be provided with MMS instead of IFAS. To support this, a 'standard introduction package' will be provided, including this training for healthcare workers, behaviour change intervention strategy and materials, and program monitoring and reporting. Existing protocols for anaemia screening, testing and management will continue to be followed.

## Purpose, Intended Audience and Organization of the Training

The purpose of this training is to prepare healthcare workers with the skills, knowledge and tools to effectively provide MMS instead of IFAS to eligible pregnant women during their ANC visits in public healthcare facilities. More specifically, this training is designed to enhance the healthcare workers' comprehension of MMS, explore the considerations of MMS inclusion in routine ANC, and provide guidance on the utilization of the tools and processes developed for MMS implementation.

This specific manual serves as a comprehensive guidebook to support master trainers who will be carrying out the MMS Standard Introduction Package training. This training will be followed by a step-down (cascade) training process using the Training of Trainers (ToT) approach, specifically aimed at healthcare workers. This manual covers all essential steps and information required to efficiently deliver each module, ensuring that trainers are well-equipped to convey the material, engage participants, and meet the training's objectives.

The master trainers include:

- State MCH Coordinator
- State M&E Officer
- State Nutrition Officer
- LGA MCH Coordinators
- LGA Nutrition Focal Persons
- LGA M&E Officers
- Essential Drug Focal Persons/LMCU Coordinator

The step-down trainings will include the following categories of healthcare workers:

- Maternity-in-Charge
- Facility-in-Charge
- Pharmacy-in-Charge
- CHEWs and JCHEWs



This training is composed of eight modules, distributed over two consecutive days. It is designed to encompass various interactive training techniques, including energizers, group work, role plays, demonstrations, and hands-on learning activities. Each module includes a plan describing the learning objectives, total duration, supporting materials and tools, key discussion points, and any relevant learning activities. Additionally, a set of PowerPoint slides is provided alongside this manual to offer a concise summary of its content for effective presentation.





# MODULES





DURATION  
95 MINUTES

# Module 1: Setting the Tone

This module serves as an introduction that sets the tone for the training workshop. Within this module, participants will be provided with an overview of what to expect throughout the workshop, with emphasis on the importance of creating a positive learning environment.

## 1.1. Learning Objectives

By the end of this introductory module, participants will:

- Know the learning objectives
- Get familiarized with the training team
- Know the training flow and scheduled activities

## 1.2. Materials and Handouts/Forms Needed:

- PowerPoint presentation
- Training manual
- Flipcharts and permanent markers
- Registration form
- Board
- Sticky notes (*one for each participant*)
- Pens (*one for each participant*)
- Notepads (*one for each participant*)
- Training schedule (*one for each participant*)
- Pre-test assessment (*one for each participant*)

## 1.3. Process

### a. Registration and Opening Remarks

- Welcome participants upon arrival and facilitate their registration using the training registration form.
- Begin with an opening moment of reflection, either through participants reciting a relevant stanza of the national anthem or a prayer led by a volunteer.
- Invite representatives from the relevant national or local authorities to deliver opening remarks.
- Ask the relevant local health leader or representative to speak on how the participants can bring about positive change, especially when they are being given the opportunity through this training to develop their own capacities and skills.
- Conclude the talk and appreciate their arrival and contribution.

### b. Pre-Test Assessment

- Distribute the pre-test assessment (available upon request) then allocate 15 minutes for participants to complete it.
- Collect the participants' responses.
- Kindly refrain from reviewing or making corrections of the pre-test assessment at this point since the same test will serve as the post-test assessment at the end of the training.

### c. Establishment of Training Rules

- Ask the participants about the kind of rules they would like to set in place for the training.
- Invite someone from the participants to write the training rules on a flipchart.
- Place the flipchart somewhere in the training hall which is visible to everyone.
- Conclude by saying that since these rules have been established through consensus, it is the responsibility of participants to follow them.



#### **d. Introduction to the Project and to the Training**

- Give a brief overview of the **background to the introduction of MMS:**

ANC has been recognized as a strategic platform for delivery of services, health promotion, and disease prevention (1). In July 2020, the World Health Organization's (WHO) recommendation about administering MMS - a daily dose of 15 vitamins and minerals including iron and folic acid - during pregnancy was updated in response to new evidence that showed that MMS was more effective than IFAS in improving birth outcomes, had equivalent benefits for preventing maternal anaemia, and was safe for mother and baby. The updated WHO guidelines recommend implementation research where MMS programs are being considered to optimize the impact of transitioning from IFAS to MMS such as an evaluation of acceptability, feasibility, sustainability, equity, and cost-effectiveness. The Government of Nigeria through the Federal Ministry of Health (FMOH) expressed interest in introducing MMS (2) and requested more implementation evidence in the Nigerian context.

Therefore, in July 2022, the Government of Nigeria in collaboration with Nutrition International commenced an implementation research project on MMS. Since December 2023 and for the duration of the project, MMS has been provided to eligible pregnant women (instead of IFAS) as part of routine preventative ANC in 3 selected LGAs in Bauchi State. This project aims to identify effective implementation approaches and to explore how to increase pregnant women's adherence to MMS. It also provides an opportunity to increase attention to maternal nutrition, strengthen the ANC platform, and improve gender-based outcomes such as women's decision-making ability.

To support this, a 'standard introduction package' is provided, which includes this training and project-specific materials and tools.

- Give a brief **overview of the training:**

Therefore, this training is part of a wider project that aims to support the introduction of MMS through ANC. More specifically, it is designed to enhance the healthcare workers' understanding of MMS, explore the considerations of MMS inclusion in routine ANC, and provide instructions on the utilization of the tools and processes developed for MMS implementation.



Ask  
audience

### ***Learning Activity 1.1:***

#### ***Participants' previous knowledge and experience with MMS:***

Ask participants if they have any knowledge or experience with MMS they would like to share.

#### ***Material required:***

*Board, sticky notes, pens, PowerPoint presentation*

Briefly introduce the following key definitions to the participants, mentioning that they will be extensively discussed throughout the training:

- **Iron Folic Acid Supplement (IFAS):** A prenatal supplement that contains 30-60mg of iron and 400mcg of folic acid (1).
- **Multiple Micronutrient Supplementation (MMS):** A prenatal micronutrient supplement that contains 15 vitamins and minerals, including iron and folic acid, designed specifically for pregnant women to prevent anaemia and reduce the risk of their baby being born too small or too early (3).
- **Adherence** (related to MMS): The World Health Organization (WHO) recommends MMS to be taken daily during pregnancy to prevent anaemia. For pregnant women to receive the most health benefits from the MMS tablets, high adherence throughout pregnancy is required (1). Therefore, adherence is the extent to which a pregnant woman takes MMS daily.





DURATION  
60 MINUTES

## Module 2: Nutrition During Pregnancy

This module presents the increased maternal micronutrient needs and the importance of an adequate nutritious diet and supplementation during pregnancy.

### 2.1. Learning Objectives:

To provide a comprehensive understanding of the:

- Increased nutritional needs of pregnant women
- Impact of poor nutritional status and micronutrient deficiencies on pregnancy and birth outcomes
- Importance of consuming an adequate nutritious diet and adequate micronutrient supplementation during pregnancy

### 2.2. Materials and Handouts/Forms Needed:

- PowerPoint presentation
- Training manual
- Flipcharts and permanent markers
- Notepads (*one for each participant*)
- Letter cards for the multiple-choice questions (*one for each participant*)
- Green/Red cards (*one for each participant*)

### 2.3. Key Discussion Points:

#### ***Increased Nutritional Needs of Pregnant Women:***

- During gestation, nutritional needs are increased to meet the physiological requirements, sustain fetal growth and development, and protect the health of the mother during pregnancy and build her capacity to effectively breastfeed.
  - Estimated energy requirements: Women who have a normal pre-pregnancy body weight need +340 calories/day in their second trimester and +452 kcal/day in their third trimester (4).
  - Micronutrient requirements: Compared to non-pregnant women, the majority of micronutrients are increased during pregnancy. Table 1 shows the Recommended Dietary Allowance (RDA) of selected micronutrients (4).



**Table 1. Recommended Dietary Allowance (RDA) of selected micronutrients for non-pregnant vs. pregnant women**

RDA *	Non-pregnant		Pregnant	
	Adolescent girls (14-18 years)	Women (19-50 years)	Adolescent girls (14-18 years)	Women (19-50 years)
Iron (mg/day)	15	18	27	27
Folate (µg/day)	400	400	600	600
Vitamin A (µg RAE/day) **	700	700	750	770
Vitamin D (µg/day)	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>
Vitamin E (mg/day)	15	15	15	15
Vitamin C (mg/day)	65	75	80	85
Vitamin B6 (mg/day)	1.2	1.3	1.9	1.9
Vitamin B12 (µg/day)	2.4	2.4	2.6	2.6
Zinc (mg/day)	9	8	12	11
Vitamin B1 (mg/day)	1.0	1.1	1.4	1.4
Vitamin B2 (mg/day)	1.0	1.1	1.4	1.4
Niacin (mg/day)	14	14	18	18
Copper (µg/day)	890	900	1000	1000
Selenium (µg/day)	55	55	60	60
Iodine (µg/day)	150	150	220	220
Calcium (mg/day)	<b>1300</b>	<b>1000</b>	<b>1300</b>	<b>1000</b>

*Reference: Institute of Medicine 2006 (4)*

Abbreviations: RAE: Retinol Activity Equivalent; RDA: Recommended Dietary Allowance.

\* **Bold font** represents an Adequate Intake (AI)

\*\* Tolerable Upper Intake Level (UL) of Vitamin A: 2800 µg RAE/day for pregnant adolescent girls ages 14-18 years; 3000 µg RAE/day for pregnant women ages 19-50 years (4)

- Globally, through food alone, many pregnant women are unable to meet their dietary needs. This can negatively impact their own health and the health of their baby. For example, a woman's daily iron requirement nearly doubles during pregnancy, increasing from 15 mg/day for non-pregnant females aged 14-18 and 18 mg/day for those aged 19-50, to 27 mg/day for pregnant women aged 14-50 (4). Therefore, to achieve the required nutritional needs, pregnant women are advised to consume an adequate nutritious diet, in addition to daily adequate micronutrient supplementation.

### ***The Impact of Poor Nutrition on Pregnancy and Birth Outcomes:***

- Poor nutrition during pregnancy can lead to micronutrient deficiencies which can negatively impact the health of the mother and her baby. For instance, deficiencies in iron, folate, vitamin A and vitamin B12 can lead to anaemia – which is a serious global public health issue. The causes of anaemia are often complex, but in lower-middle-income countries like Nigeria, iron deficiency is one of the major contributors of anaemia.



**Learning Activity 2.1:****Multiple-choice question:**

Questions about the health consequences of anaemia for pregnant women and birth outcomes and about nutrition during pregnancy

**Material required:**

Letter cards, PowerPoint presentation

- Anaemia during pregnancy puts the mother at increased risk of death and increases the risk of poor pregnancy and birth outcomes, such as preterm birth and low birth weight (LBW) (i.e. babies being born too early or too small). Anaemia can also cause the pregnant woman to feel very tired, weak and/or dizzy.

### **Health and Nutrition Status of Women of Reproductive Age (WRA) and Children in Nigeria and Bauchi State:**

*High burden of pregnancy and birth outcomes:*

- **Neonatal Mortality Rate:**
  - *Definition:* “Probability of dying during the first 28 days of life, expressed per 1,000 live births” (5)
  - *Interpretation:* In 2020, Sub-Saharan Africa reported the highest global neonatal mortality rate with 27 deaths per 1000 live births, followed by central and southern Asia with 23 deaths per 1000 live births (6)
  - *In Nigeria and in Bauchi State:* Higher neonatal mortality rates were reported at 39/1000 and 38/1000 live births, respectively (7)
- **Maternal Mortality Ratio (MMR):**
  - *Definition:* “The number of maternal deaths during a given time period per 100,000 live births during the same time period” (8)
  - *Interpretation:* In 2020, the global MMR was 223 deaths per 100 000 live births (8)
  - *In Nigeria:* Maternal mortality ratio was 512 deaths per 100 000 live births for the 7-year period before the 2018 Nigeria Demographic and Health Survey (NDHS) (7)
- **Low Birth Weight (LBW <2500 g)**
  - *In Nigeria and in Bauchi State:*
    - According to NDHS 2013, LBW was 8.1% in Nigeria and 9% in Bauchi State (9)
    - According to NDHS 2018, LBW was 7.3% in Nigeria and 12.1% in Bauchi State (8)
    - An increasing prevalence of LBW was reported in Bauchi State in 2018 as compared to 2013.
    - According to global nutrition targets 2025-Low birth weight: “The goal is to achieve a 30% reduction in the number of infants born with a weight lower than 2500 g by the year 2025. This would translate into a 3% relative reduction per year between 2012 and 2025 and a reduction from approximately 20 million to about 14 million infants with low weight at birth.” (10)

*Anaemia Among WRA:*

- In Nigeria, anaemia among women of reproductive age (WRA) is a severe public health concern ( $\geq 40\%$  of this population) (data from year 2019) (11).

### **Preventing Anaemia and Other Deficiencies:**

- To help prevent anaemia and decrease the risk of micronutrient deficiencies, pregnant women are recommended to consume:



- (1) An adequate nutritious diet composed of a variety of foods, including vegetables and fruits; proteins (meat, beans, fish, eggs, ...); cereals (rice, wheat, ...); tubers (yam, sweet potato, ...); milk and milk products (cheese, ...), with emphasis on iron-rich foods,  
and
  - (2) Daily micronutrient supplementation, with 30-60 mg of iron and 400 mcg of folic acid (as recommended by the WHO) (3)
- An example of such supplementation is MMS, which will be discussed in more detail later in this training.
  - Micronutrient supplements are intended to supplement the diet and should not replace meals or foods.

Ask  
audience

***Learning Activity 2.2:***

***True or False Question:***

True or false question about micronutrient supplements and an adequate nutritious diet.

***Material required:***

*Green/Red cards, PowerPoint presentation*







DURATION  
45 MINUTES

## Module 3. From IFAS to MMS

This module covers the comparison between IFAS and MMS, highlighting MMS's broader range of nutrients and additional benefits for pregnancy outcomes.

### 3.1. Learning Objectives:

- Understand the key differences between IFAS and MMS
- Comprehend the components of MMS

### 3.2. Materials and Handout/Forms Needed:

- PowerPoint presentation
- Training manual
- Flipcharts and permanent markers
- Notepads (*one for each participant*)
- Green/Red cards (*one for each participant*)

### 3.3. Key Discussion Points:

*IFAS versus MMS:*

- IFAS is the abbreviation of Iron and Folic Acid Supplementation and is an antenatal supplement which includes 30-60mg of iron and 400mcg of folic acid. IFAS usually comes in two tablets in Nigeria.
- MMS is the abbreviation of Multiple Micronutrient Supplementation. It is an antenatal supplement that provides 13-15 micronutrients (minerals and vitamins), including iron and folic acid. All micronutrients are combined in one tablet. MMS is also different from micronutrient powders (MNP) which are used for children.
- MMS can be found in different formulations. The United Nations International Multiple Micronutrient Antenatal Preparation (UNIMMAP) is the standard formulation that is widely available and is now part of the WHO's Essential Medicine List (EML) (2022) (12). Table 2 shows the micronutrient composition of one MMS tablet. The presence of vitamin C, vitamin A and riboflavin increases the absorption of the available iron in the MMS tablet.

**Table 2. The composition of vitamins and minerals in one MMS tablet – UNIMMAP formulation**

<b>Vitamin B1</b>	1.4 mg
<b>Vitamin B2</b>	1.4 mg
<b>Vitamin B6</b>	1.9 mg
<b>Vitamin B12</b>	2.6 µg
<b>Vitamin A</b>	800 µg
<b>Vitamin D</b>	5 µg
<b>Vitamin E</b>	10 mg
<b>Vitamin C</b>	70 mg
<b>Niacin</b>	18 mg
<b>Folic Acid</b>	400 µg
<b>Zinc</b>	15 mg
<b>Copper</b>	2 mg
<b>Selenium</b>	65 µg
<b>Iodine</b>	150 µg
<b>Iron</b>	30mg

*Reference: MMS-TAG and MNF, 2020 (13), WHO, 2021 (14)*



Abbreviations: UNIMMAP: United Nations International Multiple Micronutrient Antenatal Preparation.

Ask  
audience

### ***Learning Activity 3.1:***

*Group discussion on the participants' previous knowledge and/or experience:*

Instructions:

Ask the participants to share their previous knowledge and/or experience with IFAS and/or MMS.

Material required:

Flipcharts, Permanent markers, PowerPoint presentation

- In terms of health benefits on pregnancy and birth outcomes, although IFAS and MMS have the same effect on reducing the risk of anaemia in pregnancy, MMS has additional benefits as compared to IFAS. Particularly, regular intake of MMS helps reduce the risk of low-birth weight, small for gestational age, pre-term birth and neonatal mortality more than IFAS.

*WHO Guidelines (2020) and the use of MMS for Preventative Care instead of IFAS in Bauchi State:*

- In response to the growing evidence on MMS, the WHO updated its ANC guidelines in 2020, recommending the transition from antenatal IFAS to MMS in the context of rigorous research (3).
- In 2021, the FMoH approved the use of MMS during pregnancy through its updated National Guidelines for the Prevention and Control of Micronutrient Deficiencies in Nigeria (2).
- In July 2022, the Government of Nigeria in collaboration with Nutrition International commenced an implementation research project on MMS. Since December 2023 and for the duration of the project, MMS has been provided to eligible pregnant women (instead of IFAS) as part of routine preventative ANC in 3 selected LGAs in Bauchi State.
- Given the existing extensive body of evidence on the benefits of MMS, the purpose of implementation research is not to establish the efficacy of MMS but rather to identify contextual programmatic adaptations necessary to achieve the desired results.
- It is very important to understand the composition of MMS and IFAS, the reason for using MMS, and that IFAS is still a good product for reducing the risk of anaemia and the management of anaemia.





## Module 4. Key Messages on the Provision of MMS

This module discusses key messages on the provision of MMS to pregnant women as part of preventative ANC, including MMS initiation, dosage, intake, and safety.

### 4.1. Learning Objectives:

To provide a thorough explanation on key messages for the provision of MMS as part of preventative ANC, including:

- When and why women should take MMS during pregnancy
- MMS initiation, dosage, and intake
- MMS adherence
- Possible side effects and their management

### 4.2. Materials and Handouts/Forms Needed:

- PowerPoint presentation
- Training manual
- Flipcharts and permanent markers
- Notepads (*one for each participant*)
- Green/Red cards (*one for each participant*)

### 4.3. Key Discussion Points:

*Who gets MMS in this Implementation Research Project?*

- Since December 2023, as part of the research project, MMS has been provided free of charge to newly enrolled eligible pregnant women accessing ANC services at public health facilities in the selected LGAs of Bauchi State. MMS has been provided as preventative care for non-anaemic pregnant women, instead of IFAS.
- At the first ANC visit at a health facility, if the pregnant woman is not anaemic, the healthcare worker provides her with an unopened bottle of MMS containing 100 tablets, enough for a three-month supply.
- During follow-up ANC visits, in addition to routine care, the healthcare worker assesses the pregnant woman's adherence to MMS and checks her MMS supply. If her supply is running low, a second MMS bottle is provided. The MMS formula is specifically formulated for pregnant women and should not be shared with others, as it is not intended for other age groups or men.
- If anaemia is suspected, MMS is not given. Instead, the current recommended anaemia management protocol needs to be followed (2).
- More information about MMS and the protocol to introduce it to pregnant women will be discussed in subsequent modules of the workshop.

*Initiation, Dosage and Intake of MMS:*

- Once a woman knows she is pregnant, she should visit an ANC clinic and begin taking one MMS tablet daily, starting as early as possible in pregnancy and continuing throughout. If she has leftover tablets after delivery, she can continue taking them daily.
- The MMS tablet should be swallowed with clean water, not chewed or crushed, and should not be taken with tea, coffee, or calcium-rich foods (like milk), as these can reduce iron absorption in the body.
- If a dose is missed, the pregnant woman should simply resume taking one tablet per day, without doubling up on tablets the next day (she should not take more tablets the following day to make up for a missed dose). Similarly, if she stopped for any reason and wishes to restart, she should also continue with just one tablet per day.



- MMS should be stored in its original bottle and kept tightly closed to prevent damage to the tablets. The MMS bottle should be stored away from direct sunlight, away from direct heat, in a dry and safe place, and out of reach of children.
- More details on the provision of the bottles of MMS will be presented in the SOPs.

Ask audience

***Learning Activity 4.1:***

*True or False Question:*

True or false question about the initiation of MMS during pregnancy.

*Material required:*

*Green/Red cards, PowerPoint presentation*

Ask audience

***Learning Activity 4.2:***

*True or False Question:*

True or false question about how to consume MMS.

*Material required:*

*Green/Red cards, PowerPoint presentation*

Ask audience

***Learning Activity 4.3:***

*Group discussion:*

Recap of when MMS is recommended vs. is not recommended.

*Material required:*

*Flipcharts, Permanent markers, PowerPoint presentation*



*MMS Adherence:*

- It is important for pregnant women to take MMS daily to receive the most health benefits from the MMS tablets. This is referred to as ‘adherence’.
- Adherence is defined as the extent to which a patient follows the advice prescribed by the healthcare worker/practitioner, and in the case of MMS, we can simply say that adherence means taking one MMS tablet every day throughout the pregnancy.
- As healthcare workers, it is crucial to assess and encourage pregnant women’s adherence to MMS in every ANC visit.

*The Adherence Gap:*

- % of pregnant women attending any ANC visit:
  - NDHS 2013 (9): 61%
  - NDHS 2018 (7): 67%
- % of pregnant women attending 4+ ANC visits:
  - NDHS 2013 (9): 51%
  - NDHS 2018 (7): 57%
- % of pregnant women who received any iron tablets: 69% (7)
- % of pregnant women who took 90+ iron tablets: 31% (7)
  - ➔ The difference between receiving the iron tablet vs. taking the tablet is termed the “adherence gap”. Adherence is essential for the intervention to have an impact on health and pregnancy outcomes.

**Ask audience**

**Learning Activity 4.4:**

Group discussion:

Group discussion on what might be barriers/challenges to MMS adherence among pregnant women in Bauchi State.

Material required:

Flipcharts, Permanent markers, PowerPoint presentation

*Safety and Possible Minor Discomforts and Their Management:*

- A pregnant woman can take MMS if she has diabetes, high blood pressure, heart disease, malaria, or a history of miscarriage.
- MMS is safe and does not have major side effects. Pregnant women may experience some minor discomfort which is usually temporary until their body adjusts to the iron in the tablet. Some of these possible minor discomforts include constipation, upset stomach, mild headaches and/or nausea. This is typically less than what is experienced with IFAS because the iron dosage is lower.





DURATION  
15 MINUTES

## Recap of Day 1

- Anaemia can cause the pregnant woman to feel very tired, weak and/or dizzy. Anaemia during pregnancy puts the mother at increased risk of death and increases the risk of poor pregnancy and birth outcomes, such as preterm birth and low birth weight (i.e. babies being born too early or too small).
- To meet their essential nutritional requirements and decrease the risk of micronutrient deficiencies, in addition to an adequate nutritious diet, pregnant women are recommended to consume adequate daily micronutrient supplementation.
- MMS is the abbreviation of Multiple Micronutrient Supplementation - an antenatal supplement which provides 13-15 minerals and vitamins, including iron and folic acid. All micronutrients are combined in one tablet, which differs from IFAS (composed of two separate tablets). MMS is also different from MNP (micronutrient powders, used for children).
- Although IFAS and MMS have the same effect on reducing the risk of anaemia in pregnancy, MMS has additional benefits as compared to IFAS. Regular intake of MMS helps reduce the risk of low-birth weight, small for gestational age, pre-term birth and neonatal mortality more than IFAS.
- As soon as the woman knows she is pregnant, she should visit ANC where, as part of routine ANC services, she will get a bottle of MMS. She should begin taking one whole MMS tablet as early in pregnancy as possible, every day, throughout her entire pregnancy. If she has leftover MMS tablets, she can continue to consume the remainder on a daily basis after delivery.
- In case anaemia is suspected, the current recommended anaemia management protocol needs to be followed.
- The MMS tablet should be swallowed with a glass of clean water. It should not be chewed nor crushed, should not be taken with tea nor coffee, and should not be taken with calcium (like milk).
- If a pregnant woman forgot to take her MMS tablet or temporarily stopped taking it but wishes to continue, she should resume with one tablet per day. It is important to adhere to the recommended daily dosage and not exceed it, meaning she should not double her intake the following day.
- MMS should be stored in its original bottle and kept tightly closed to prevent damage to the tablets. The MMS bottle should be stored away from direct sunlight, away from direct heat, in a dry and safe place, and out of reach of children.
- Adherence (related to MMS) is the extent to which a pregnant woman takes one MMS tablet daily throughout her pregnancy. For pregnant women to receive the most health benefits from the MMS tablets, high adherence throughout pregnancy is required.





DURATION  
45 MINUTES

## Module 5. MMS Factsheet

This module presents the MMS Take Home Sheet including its content and utilization.

### 5.1. Learning Objectives:

To explain the MMS Factsheet, including:

- Its content and usage
- Its provision to pregnant women

### 5.2. Materials and Handouts/Forms Needed:

- PowerPoint presentation
- Training manual
- Flipcharts and permanent markers
- Notepads (*one for each participant*)
- MMS Factsheet (*one for each participant*)

### 5.3. Key Discussion Points:

*Content Overview*

- Indicate that the MMS Factsheet was designed as a job aid in English and in Hausa for the project.
- Instruct the participants to refer to the MMS Factsheet and provide step by step guidance on its various components.

*Use of MMS Factsheet*

- Explain that healthcare workers at the health facility can use this MMS Factsheet as a reference when explaining to the pregnant woman about MMS.
- Inform the healthcare workers that, when giving the pregnant woman her MMS bottle, they should also provide the pregnant woman with a copy of the MMS Factsheet for her personal reference.
- The MMS Factsheet mainly covers the definition, benefits and safety of MMS. It also outlines proper administration, provides guidance in the event of missed doses or discontinuation, offers advice on managing potential minor side effects and includes instructions for proper storage. A sample of this project's MMS Factsheet is available upon request.

Ask  
audience

#### ***Learning Activity 5.1:***

*Role play:*

Working in pairs, practice explaining the content of the MMS factsheet.

*Material required:*

*MMS Factsheet*





DURATION  
120 MINUTES

## Module 6. Standard Operating Procedures (SOPs)

This module explains the SOPs related to the provision of MMS. The SOPs were developed for healthcare workers as part of this project and may require local adaptation and translation. This module also provides a summary of Interpersonal Communication (IPC) techniques which serve as key components for delivering quality ANC.

### 6.1. Learning Objectives:

To explain the SOPs for providing MMS to pregnant women during their ANC visits, while emphasizing the differences between anaemic and non-anaemic pregnant women as well as incorporating IPC techniques.

### 6.2. Materials and Handouts/Forms Needed:

- PowerPoint presentation
- Training manual
- Flipcharts and permanent markers
- Notepads (*one for each participant*)
- SOPs (*one for each participant*)
- Green/Red cards (*one for each participant*)

### 6.3. Key Discussion Points:

#### ***Standard Operating Procedures (SOPs)***

The following SOPs outline the processes for providing MMS to pregnant women through routine ANC at public health facilities in the selected LGAs in Bauchi State:

- Based on government guidelines, at each ANC visit, a set of recommended services are offered to pregnant women. Healthcare workers are urged to adhere to these recommendations according to government protocols. For guidance on the provision of MMS for preventative care, healthcare workers are asked to follow the SOPs. (Present the SOPs handout, provide an overview of each page's content, and guide participants through the outlined steps in the SOPs).
- In the context of Nigeria, a minimum of 4-8 ANC visits are recommended. Ideally, the first ANC visit should occur as early in pregnancy as possible.
- Screening pregnant women for anaemia is crucial and should be conducted according to local protocols. Anaemia screening results should be documented in the relevant existing records.
- If anaemia is suspected:
  - The recommended anaemia management protocol should be followed depending on severity. MMS should not be started (or continued) at this point.
  - MMS is intended for preventative care and should be started (or continued) if there is no anaemia (or if the anaemia has been managed/resolved).
- If no anaemia is suspected:
  - MMS is provided to pregnant women in unopened bottles containing 100 tablets, which is a three-months supply of MMS. The first bottle of MMS should be provided to her during her first ANC visit, and the second bottle of MMS should be provided approximately three-months later (or once the woman has consumed the first 100 tablets).
  - MMS is intended to be taken as a supplement to an adequate nutritious diet. Therefore, as an integral component of ANC services, it is important to continue providing nutrition counselling to emphasize the consumption of an adequate nutritious diet.
  - At each ANC visit, it is important to address any adherence issues throughout counselling.
  - During each ANC visit, pregnant women should be reminded to take their MMS daily. Pregnant women should also be reminded of when they will need to come back for their next ANC visit and when they will be due for their second bottle of MMS.





A sample of this project's SOPs is available upon request.

### ***Interpersonal communication (IPC)*** <sup>(15,16)</sup>

- Interpersonal communication (IPC) is the exchange of verbal and non-verbal communication between two individuals in a face-to-face setting. IPC serves as a channel for the exchange of information, thoughts and feelings. IPC is an integral component of quality antenatal care.
- In the context of patient-provider relationships, IPC is fundamental in building trust and increasing patients' satisfaction and adherence to their health plan, including taking MMS. Effective utilization of IPC techniques is key during counselling sessions around MMS and can also be applied to ANC sessions in general.
- Pregnant women who perceive that their healthcare worker genuinely cares for them and engages in interactive discussions during ANC sessions are more likely to accept and adhere to MMS.
- IPC techniques aimed at building trust include: greeting the woman, inviting her to share her thoughts, demonstrating empathy, providing encouragement, and actively listening to her.
- IPC techniques aimed at fostering interactive communication include: asking open-ended questions, seeking clarification when necessary, encouraging women to ask their questions and share their concerns, asking women for their ideas and preferences, and assessing their understanding of MMS.
- During ANC sessions, involving influential accompanying family members in the MMS discussion can increase support and adherence to MMS (depending on cultural variations and individual preferences). The same IPC techniques can be used for engaging family members in the discussion.

This intervention is a fundamental element of providing quality antenatal care and should not be viewed as standalone. Additional information will be available as part of the comprehensive package that is being designed to improve adherence based on the findings of this project.

**Ask  
audience**

#### ***Learning Activity 6.1:***

*Role play:*

Role play to practice using the SOPs.

*Material required:*

SOPs

**Ask  
audience**

#### ***Learning Activity 6.2:***

*Group discussion:*

Group discussion of different scenarios using the SOPs as a reference guide, where participants are presented with different profile cards, then asked to determine whether the pregnant woman is eligible for MMS (Yes/No), followed by a brief discussion justifying their decision.

*Material required:*

*Green and Red cards, Flipcharts, Permanent markers, PowerPoint presentation*





DURATION  
90 MINUTES

## Module 7. Monitoring and Reporting

This module presents the MMS monitoring forms that were created for this project and shows how these additional forms are integrated within the existing routine monitoring systems and protocols in Bauchi State, Nigeria. This can be adapted, based on the program's monitoring plan, the status of the DHIS2 rollout and the use of new MMS indicators.

### 7.1. Learning Objectives:

To present the:

- Value of monitoring
- Monitoring plan and monitoring forms
- Existing registers, booklets, documents and reporting

### 7.2. Materials and Handouts/Forms Needed:

- PowerPoint presentation
- Training manual
- Flipcharts and permanent markers
- Notepads (*one for each participant*)
- Monitoring plan
- Monitoring Forms (*for each participant*)
- Existing registers, booklets, documents and reporting

### 7.3. Key Discussion Points to be Covered by the Facilitators:

**Please adjust the training content based on the different trainee groups:**

Purpose of monitoring:

- The purpose of monitoring is to collect, review and learn from data on a regular basis to better understand the program, its effectiveness, whether it is achieving the intended targets and identify areas for improvement in real-time.
- During the project design phase, a plan is established to structure the project's monitoring system and define what is collected, how, when and by whom.

How to monitor MMS?

- MMS is a new commodity and has not been included in the government routine monitoring systems. A complementary monitoring system will need to be established to capture its information and help track what commodities pregnant women receive, manage stocks and facilitate project course correction as needed.
- As part of this implementation research project, project-specific monitoring forms (Monitoring Form 1 and Monitoring Form 2) were developed to collect information pertinent to the pregnant woman and to track MMS stock.
- During each ANC visit (even if the pregnant woman is not taking MMS), healthcare workers need to:
  1. Fill out their existing ANC forms/records following their usual reporting protocol, AND
  2. Complete their relevant project-specific forms.
- For State & LGA officers: Direct the participants to record the pregnant women's ANC visits and information in their relevant existing documents (including the Health Facility Daily Register, Integrated Maternal and Child Health Booklet, Health Facility Monthly Summary Form, and ANC Card) as per local existing protocols, with consideration of MMS provision. Then provide a detailed, step-by-step explanation of how to complete and submit the project's Monitoring Form 1.



- For the Facility-in-Charge and Pharmacy-in-Charge: Direct the participants to complete their relevant existing documents and reporting (RIRF), while capturing MMS. Then guide them through a detailed, step-by-step explanation of how to fill out the project's Monitoring Form 2.

Ask  
audience

***Learning Activity 7.1:***

***Role play:***

Role play to practice using the monitoring forms.

***Material required:***

*Monitoring forms*





DURATION  
75 MINUTES

## Module 8. Closing of the Training

This module recaps the key messages and concludes the training.

### 8.1. Learning Objectives:

- To recap key messages
- To plan the next steps of the cascade training
- To conclude the training

### 8.2. Materials and Handouts/Forms Needed:

- PowerPoint presentation
- Training manual
- Flipcharts and permanent markers
- Notepads (*one for each participant*)
- Training plan
- Post-test assessment (*one for each participant*)
- Training evaluation form (*one for each participant*)

### 8.3. Process:

#### a. Cascade Planning

- Explain to the participants that this training needs to be cascaded to public healthcare workers based on the agreed training plan.
- Review the training plan with the participants.
- Introduce the team of trainers, including master trainers and co-trainers and hold a brief planning session.
- Collaborate with co-trainers and master trainers during the planning session to identify suitable venues for the cascade training. Assign trainers to locations based on their convenience and operational area.
- Provide master trainers with the agenda and necessary content for cascade training.
- Explain logistical arrangements and designate a focal point of contact.
- Address any queries from trainers.
- Guide and motivate trainers to conduct effective field training.
- Assign a focal person to supervise and support each training location.

#### b. Post-test Evaluation and Training Evaluation

- Distribute the post-test assessments and training evaluation forms (available upon request).
- Provide a brief overview of the post-test assessment and training evaluation forms.
- Ensure participants have enough time to fill out the forms.
- Offer assistance to participants as they complete the forms.
- Facilitate a group discussion to review participants' responses to the post-test assessment.
- Arrange for collection of completed forms by someone other than the trainer to ensure unbiased evaluation of the training by participants.

#### c. Comments from Facilitators

- Invite key representative(s) to express gratitude to the participants for sharing their valuable recommendations and opinions. Provide contact information for participants to reach out with any questions, concerns, or requests for forms and/or other information.
- Request the representative to address participants' suggestions and assure them that their input will be seriously considered to enhance the training.
- Encourage the representative to commend participants for their involvement and focus throughout the training.
- Recognize and appreciate the role of the Government of Nigeria for support and facilitation.
- Conclude the training by extending best wishes to all participants for their future endeavors.



## Additional Resources

The following additional resources are available upon request:

- Sample Pre-test and Post-test
- Sample Training Evaluation Form
- Sample Registration Form
- Sample Factsheet
- Sample Standard Operating Procedures
- Sample Monitoring Forms

For more information about MMS and maternal nutrition programming, please contact Nutrition International at [maternalnutrition@nutritionintl.org](mailto:maternalnutrition@nutritionintl.org).



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