

Implementation of Multiple Micronutrient Supplementation in Pregnancy

TECHNICAL CONSULTATION

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Reported by Saima Ahmed

Executive Summary

On February 11th, 2019, The New York Academy of Sciences convened a technical consultation to kick start the planning process for the global implementation of maternal multiple micronutrient supplementation (MMS) programs in pregnancy, otherwise known as phase II of the MMS initiative with a Technical Advisory Group (TAG). During phase I, a larger Task Force:

1. Reviewed the evidence base that informed the 2016 World Health Organization (WHO) Antenatal Care Guidelines;
2. Considered the results of a 2017 meta-analysis of individual patient data from multiple micronutrient supplementation trials conducted in low- and middle-income countries (LMIC).
3. Assessed effects of MMS on maternal and perinatal outcomes;
4. Compiled the evidence on the prevalence of micronutrient deficiencies in pregnant women or women of reproductive age (WRA);
5. Compiled the prevalence of adverse birth outcomes in LMIC.

The work of the Task Force led to a series of scientific articles that updated the evidence base and provided a roadmap to help LMIC interpret WHO's statement on the use of maternal MMS in their specific context. This work also informed the development of Phase II of this initiative, during which MMS programs will be implemented in real world settings through a joint collaboration between UNICEF, the Bill & Melinda Gates Foundation (BMGF), Vitamin Angels and the New York Academy of Sciences (NYAS), among others. The TAG convened by NYAS and consisting of global experts in maternal nutrition and antenatal care, will steer the collaboration, focusing on but not restricted to UNICEF's implementation of MMS programs in Bangladesh, Burkina Faso, Madagascar, and Tanzania.

The goal of this meeting was to bring all participating parties together for the first time to kick start the planning process for this four-year initiative. Specific meeting objectives were , to review the mandate and responsibilities of the TAG; provide an opportunity to UNICEF to present its planned demonstration activities; and review both the operational guidance document and technical reference materials (TRMs) created by NYAS, to assist the implementation activities.

The group concluded the following:

TAG Role: a solid relationship needs to be established between UNICEF and the TAG. UNICEF will have a stronger understanding of what its needs are following its inception meeting, to take place in April in Tanzania.

Initiative Goal: the goal is not to simply 'replace' IFA, but also to build on what already exists in-country and address the issues of implementation in order to ensure, in collaboration with each country's healthcare systems, optimal coverage and compliance in these programs.

Advocacy Plan: The group stressed the importance of creating a strong advocacy plan to ensure that the demonstration activities translate into large scale programs, where stakeholders understand the *added* benefit of MMS over IFA.

Relevance: In order to make the TRMs more useful, specifically the 'operational guidance for policy makers', TAG members suggested framing these documents in the current context of the country, including what already exists and what the country's needs are. This will require direct collaboration with each country.

Impact: TAG members suggested compare the *impact* of MMS to other antenatal care interventions, and on the ability of MMS to make nutritionally inadequate diets or women more affordable.

Meeting Objectives

The objective for this one-day consultation are as follows:

1. Review the TAG's mandate and responsibilities
2. Get an overview of UNICEF-led demonstration activities in Bangladesh, Burkina Faso, Madagascar, and Tanzania
3. Identify ways to promote the Special Issue Articles and the work of the TAG
4. Review the Operational Guidance document and the TRMs.

Session 1: Establishing the TAG

Gilles Bergeron, The New York Academy of Sciences

Define the aim of Phase II of the MMS Initiative and TAG's mandate

The aim of Phase II of the MMS initiative is to support the global implementation of MMS programs through the formation of a TAG of international experts; develop generic TRMs to assist the rollout of MMS in pilot countries; and establish a communications and dissemination hub of scientific materials. Over the next four years (between October 2018 to September 2022), UNICEF will be introducing MMS programs by conducting demonstration projects in four countries; Burkina Faso, Madagascar, Tanzania, and Bangladesh. Although these four countries will be receiving MMS and technical assistance, the TAG's mandate also includes providing technical assistance to other interested countries, as requests for support are received.

TAG composition and role

As an advisory committee on MMS implementation, the TAG will consist of 10 experts in maternal health and antenatal care (ANC) along with various additional stakeholders to serve as observers, such as program officers and advisors from the BMGF and UNICEF. Specifically, the role of the TAG will be to:

- provide technical support to countries that aim to implement MMS in their ANC programs;
- respond to information requests from national and global entities that wish to promote MMS adoption;
- continue to advance our understanding of the outcomes of MMS and incorporate new knowledge as it becomes available, both from pilot countries and other locations; and
- promote the dissemination of MMS information worldwide.

Communications Hub

As a part of the mandate, the NYAS will serve as the communication and dissemination hub of scientific materials through the following:

Website: Hosted by NYAS, it will consist of a curated database of knowledge & compendium of lessons learned from each demonstration activity. It will serve as an information hub for interested stakeholders, detailing the initiative and the services the TAG can provide. Through the website, interested stakeholders will also be able to request technical assistance. www.nyas.org/MMS

Dissemination: NYAS will promote and support the preparation of scientific publications from early experiences, actively keep other stakeholders informed of the initiative and present results at relevant key scientific conferences.

Coordination: NYAS will identify, establish relations, and coordinate groups willing to promote and fund MMS rollout and serve as a platform for technical consultation to countries seeking technical support.

Group Discussion: TAG Mandate

How will the TAG respond to country needs?

Through the MMS webpage, interested countries/stakeholders can reach the TAG through a monitored listserv from which NYAS staff will route inquiries to the TAG member(s) best able to answer the request. This first response will begin initial conversations and address key concerns. Once a country is ready to make the switch, a workshop with relevant in-country personnel can be organized to facilitate the switch process.

Who will lead the M&E efforts?

A standardized monitoring and evaluation (M&E) approach is needed for all parties (countries, stakeholders, researchers, the global community) to learn about the implications of switching from IFA to MMS and the operational issues that may arise. UNICEF will take the lead on designing M&E systems in its pilot countries; while the TAG will provide input on UNICEF's M&E documents to enrich its reach.

What is the purpose of the pilots?

The UNICEF pilots aim to learn from the implementation—not only to replace IFA but to improve coverage, building on what already exists in-country and working with country healthcare systems; while establishing M&E that can teach for other contexts. By the end of the 4-year period, we should have a strong evidence-base of lessons learned regarding what it takes to implement and scale up MMS.

What is the 4-year goal of the TAG?

Aside from the lessons that will be learned, what can we learn about scaling up? A significant advocacy component is needed to help countries/stakeholders understand the *added* benefit of MMS over IFA. Attention also needs to be given to structural issues, supply issues, marketing models, behavioral change aspect, policy change, stakeholder involvement, funding, etc. Lastly, countries looking to make the switch must establish an enabling environment that will sustain the program and move it forward in the long-term.

Overview of UNICEF-led projects in Bangladesh, Burkina Faso, Madagascar and Tanzania

Nita Dalmiya, UNICEF

UNICEF's strategic approach to Women's Nutrition during pregnancy and beyond



UNICEF will take a *systems approach* towards scaling up maternal nutrition in the

demonstration countries by identifying a package of essential interventions across multiple systems within the country. They have also developed a learning impact module, from their past experiences of providing maternal nutrition-related activities across 20 countries, which will serve as a template for organizing lessons learned to further inform the evidence for MMS.

A systems approach towards scaling up Maternal Nutrition UNICEF's Strategic Approach (2018-2021)



A Systems Approach

-  **Food system**
-  **Health System**
-  **Water and Sanitation System**
-  **Education System**
-  **Child and Social Protection System**

Essential Interventions

- Promote availability of and access to nutritious diets
- Support large-scale food fortification (vitamins and iron+)
- Improve counselling on nutrition during pregnancy
- Scale up multiple nutrient supplementation (vitamins and iron+)
- Promote use of safe drinking water for a healthy diet
- Improve counselling on hygiene and sanitation
- Improve nutrition literacy in adolescent girls and boys
- Deliver nutrition services to prevent anemia and malnutrition
- Support policies and programmes to prevent child marriage
- Protect access to nutritious diets and essential services

BMGF MMS Grant Objectives

Through this joint collaboration, UNICEF expects to reach over 320,000 pregnant women in demonstration countries, with the following outcomes over the next 4 years:

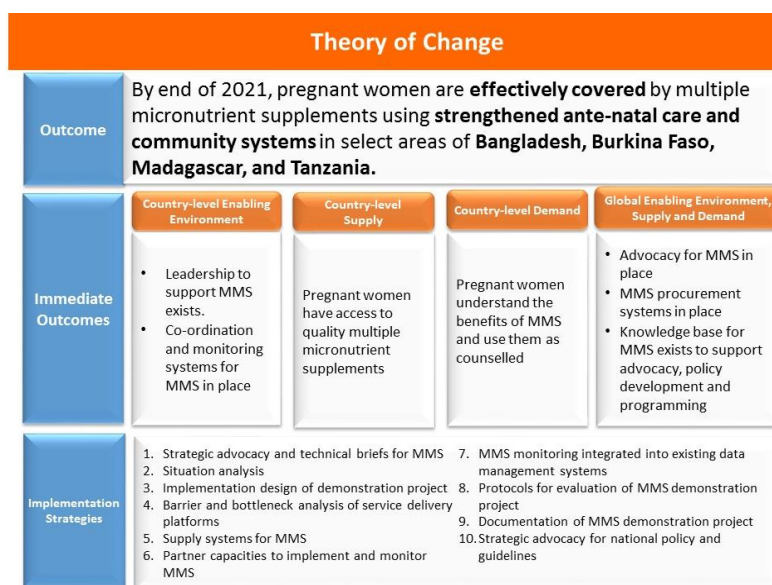
Country Level: How to scale up MMS for pregnant women in high burden settings in Sub-Saharan Africa and Asia by strengthening the underlying delivery systems

Global Level: How to strengthen the enabling environment for MMS scale up, specifically through the health and community systems, to implement the 2016 WHO ANC recommendations.

The **Theory of Change** will have UNICEF by the end of 2021 effectively cover pregnant women with MMS in select areas of the four demonstration countries, thanks to strengthened ANC care and community systems.

Proposed Advocacy

Building on the re-analysis of the evidence, UNICEF's global advocacy plan will use global and country leadership and alliances to facilitate the IFA/MMS transition; and leverage national resources from stakeholder organizations to create a plan around MMS; while developing a knowledge and evidence base to promote policies, programs and financing for MMS.



Supplies

Using the UNIMAPP formulation, UNICEF will support the global in-kind MMS donation program and work with interested donors to ensure that the stability, labeling, and packaging of MMS is up to the highest standards. UNICEF will also explore ways to reduce the cost of MMS. In terms of providing support to country procurement and supply chain, UNICEF hopes to better understand the national regulations around MMS; e.g. is it considered a pharmaceutical, food, or nutrition supplement, and how does that impact its importation? To better understand this, situation analyses will be conducted across all four countries, building on currently available regional maternal nutrition analyses. They will explore what the opportunities are in terms of local production and procurement (since many of these countries may prefer to locally procure MMS).

Packaging and Distribution

While UNICEF's supplements come in a 100-count bottle, other donors such as Kirk Humanitarian, package the supplements in a 180-count bottle. However, some countries such as Burkina Faso, have switched to blister packs and smaller packaging in order to facilitate MMS distribution on a monthly basis. So, how can MMS be re-packaged in a way that doesn't diminish its value while still remaining useful to countries who intend to distribute it monthly or on longer time scales? UNICEF will take a closer look at the current systems in place, in each demonstration country, and look for ways to improve them.

Program Tools

UNICEF is currently undertaking a 'mapping' of what exists in terms of knowledge and material, such as global, regional, and country guidelines around ANC and micronutrients, to understand what exists for IFA and

maternal nutrition interventions, and develop standard MMS indicators for monitoring across all countries. The goal is to have one place where all the information can be readily available for countries who are interested in making the switch.

Measurement and Evaluation Systems

UNICEF is working on the following to ensure a purposeful approach to M&E systems:

1. Key implementation questions will be identified for each of the four countries
2. Baseline and end line targets will be established
3. MMS monitoring plan will be created that builds on existing monitoring systems
4. An evaluation protocol will be developed that links to the implementation questions
5. End line report to detail results and lessons learned

Inception Phase

An upcoming April 2019 workshop in Dar-es-Salaam, Tanzania will bring together the government counterparts from all four countries to share advocacy plans, develop an M&E framework, and identify the necessary implementation questions and work plans. UNICEF will review the intended plans and provide feedback to the TAG on ways to better support the demonstration projects, along with a stronger understanding of what is needed from all involved parties to ensure a dynamic and successful collaboration.

[UNICEF Support Needs: Group Discussion](#)

What should be the interaction between UNICEF and the TAG?

Expected inputs of the TAG to UNICEF's work in demonstration countries will be clearer after the internal inception workshop that UNICEF expects to hold in Tanzania in April 2019.

What are the prospects for introducing MMS in Indonesia?

Although not one of the 4 countries participating in the demonstration activity, there is flexibility in terms of introducing MMS in Indonesia for a variety of reasons. First, the mandate of this initiative includes providing support to other countries who are interested in MMS implementation. In Indonesia, the introduction would be advantageous given previously existing data, which presents a good opportunity to build on what already exists in-country. Second, there's a strong delivery platform, where MMS is also available in the private sector. Third, the World Bank is already on the ground working to target stunting and the first 1000 days. This presents a good opportunity to learn about implementation efforts on the ground and can serve as an example of how this can work for MMS (possibly arrange a learning workshop?). Lastly, Indonesia's de-centralized health system provides a unique learning opportunity to the TAG.

How can we resolve the issue of compliance?

Compliance with MMS daily regimen is a concern in most countries. Alive and Thrive is working on behavior change communication strategy to encourage compliance. TAG members will establish contact in order to benefit from this knowledge.

Will MMS work equally well in reducing anemia?

There were concerns of administering high iron doses to individuals who are anemic due to *other* underlying causes besides iron deficiency. All participants agreed that a recommendation for the screening and treatment of anemia, including agreement on dosage amounts (30mg/60mg) needs to be put forth and ensure this recommendation is bundled in the switch from IFA to MMS. However, it's important to also understand the

limitations in terms of the setting and context of the care that can be provided. For example, a clinic may only contain certain forms of iron, such as 60mg iron, and although it is a high dose, it's the only iron form available to use.

How can the administration of high iron dosage be prevented?

As a standard recommendation, healthcare workers may be told to provide high dosage levels (e.g., 100mg) of iron if a person's iron status is under a certain level. Although there are limitations of existing solutions, certain measures can be taken in hopes to avoid the administration of high iron dosage. For one, it's pertinent that women start receiving supplements as early as possible in order to bump their hemoglobin levels to an adequate status. To do so, WHO's 8 ANC service appointments should be adhered to, where they will benefit from routine supplementation. Unfortunately, many women come to health clinics very late in pregnancy and less skilled frontline workers charged to promote MMS will not be directly engaged in the treatment of anemia and will administer the standard dose. In efforts to come up with a feasible solution, it was recommended that the TAG should take a closer look at what the recommendations are in-country and review this when it comes to scaling up these programs in-country. A possible implementation question to consider is: *How will we get women to ANC care in a timely way to ensure they receive 90+ multiple micronutrient supplements without receiving a high dosage of iron, especially in cases of anemia that are not attributable to iron deficiency?*

Session 2: Operational Guidance Document and Dissemination

Megan Bourassa, The New York Academy of Sciences



The NYAS team prepared an array of documents to serve as technical support for countries aiming to roll out a MMS program, including UNICEF's demonstration activities. For each of the documents listed below, NYAS developed a generic template that lays out the key lines of action. UNICEF country offices can adapt them to the local context. The documents that have been drafted fall into the two following categories:

1. **Advocacy**, to build interest for countries who are considering the switch from IFA to MMS

Operational Guidance: Consists of generic information on who should consider the switch (e.g. countries with a high prevalence of micronutrient deficiencies and/or a high prevalence of adverse birth outcomes).

Technical Brief for Policy Makers (TRM I): Explains in simple terms the potential benefits of MMS compared to IFA and provides country-specific information based on available data, cost-effectiveness analysis and includes FAQ's from Vitamin Angels

2. **Technical Assistance and Education**, for countries who have already decided the switch and need additional information and support.

Generic Training Materials (TRM II): Consists of generic education materials to train healthcare workers and medical staff on the scientific rationale for switching from IFA to MMS and pregnant women on the benefits of MMS and how to take them.

Logistics of implementation (TRM III): Provides guidance for supply chain and delivery considerations

Meeting participants were asked to consider the following questions while viewing the documents:

- Is the information accurate and framed correctly?
- Is content appropriate for the intended target audience?
- Is the content complete or missing any relevant information?

Group Discussion: Operational Guidance Document

Alternate title suggestions

TAG members did not view the document as ‘operational’ but more as a ‘topline’ piece. It was suggested to rename the document to ‘Decision Making Guidance Brief’.

Expand sections

Participants suggested the need to expand certain sections, specifically:

- **Nutrient Deficiencies** - expand on this section and how to make the judgement on micronutrient deficiency. List biomarkers that are potentially available, what should be measured, and how they can be interpreted.
- **Anemia** - expand this section to include the non-nutritional causes of sub-optimal anemia status.
- **Dietary intake data** - include frequently problematic nutrients and a table with specific indicators for each category.

Will we be able to create country-specific policy briefs for interested countries?

There will be two versions of this document; one genericized version to be used by countries to provide a high level overview (direct them on where they can find more information through referencing the other TRMS), and one country-specific version to be formatted upon request, where the document can be reformatted to the specific context of a country, given availability of data.

Cost of MMS

Participants urged to accurately reflect the (lower) cost of MMS on the cost effectiveness analysis. The price of MMS, when compared to IFA, is much lower (about a penny per dose) than what WHO previously reported (i.e. three times more costly). Using the old cost can be misleading, while using the actual cost strengthens the argument and cost effectiveness of MMS implementation.

Focus on impact of MMS

TAG members suggested to focus on the *impact* per cost in comparison to IFA and other interventions. For example, it was proposed to find a place in the document to highlight the ability of MMS to make nutritionally adequate diets for women more affordable. Certain nutrition modeling tools, such as the Cost of the Diet/Fill the Nutrient Gap, have found that introducing MMS to the diet significantly reduces the cost of a nutritionally adequate diet, where the effects are beyond antenatal outcomes. Saskia de Pee has done plenty of work in this area. Perhaps asking her for feedback on where this might be incorporated would be helpful.

Ownership of document

Meeting participants agreed it would be advantageous to advocate and disseminate the MMS work through a consortium based approach, hence an official logo will be created to represent the TAG members and supporting organizations.

Policy Brief Language

Once the policy brief is revised, it was suggested to work with a communications specialist and graphic designer in order to capture the audience through a visually appealing document with impactful language. It

was also suggested to use declarative statements, expressing findings and highlighting them through the document. Specifically, TAG members urged the use of language that explicitly states the *additional* benefits of MMS over IFA and other interventions. For example, phrase language as ‘*added* benefit of MMS over IFA’.

Group Discussion: Promote and Disseminate the Special Issue Articles and Guidance Document


With the Special Issue in *Annals of the New York Academy of Sciences* soon to be released, the group discussed how to disseminate the information in order to increase its reach:

1. The group decided it would be advantageous to host a webinar to reach a global audience rather than an in-person launch with a limited audience in NYC. If possible, it was suggested to have two types of webinars; a scientific webinar that details the technical aspects and a policy-focused webinar that provides a high level overview for policy makers.
2. Presentation opportunities at the following conferences:
 - [Women Deliver 2019 Conference](#), Vancouver, Canada (June 3-6)
 - [ASEAN Summit](#), every 4 years, Asian context
 - [ASN 2019](#) (abstract has been approved)
 - [Every Women Every Child Campaign](#)
3. Issue a press release with a press conference in multiple key countries for both a local & international reach.
4. Develop a press package by TAG member affiliated-organizations, where the communication teams for each organization can post a blog, commentary, etc., in order to supplement the launch of the special issues.
5. Consider an additional press release from relevant organizations (Devex, LinkedIn, etc.)

Session 3: Review of Technical Reference Material drafts

Filomena Gomes, The New York Academy of Sciences



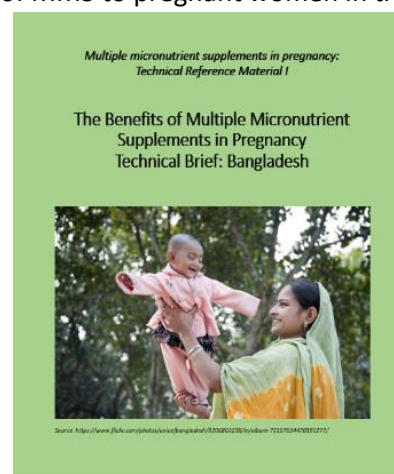
 This session was dedicated to the review of the TRM created by the NYAS team. Both TAG members and UNICEF program officers offered valuable feedback and input for each document. With the feedback from the discussion, the NYAS team will revise the documents, which will then be available for consultation on the MMS webpage: www.nyas.org/MMS

What are these TRMs?

Three sets of technical documents were created to support the distribution of MMS to pregnant women in the context of ANC programs. The aim of these documents is to provide technical support to UNICEF over the next four years during the demonstration activities in the four countries, as well as to other countries that are either interested or ready to make the switch from IFA to MMS. Since most of these documents are generic, each adopting country would have to adapt the TRM to their specific context.

TRM I: The benefits of multiple micronutrient supplements in pregnancy (Bangladesh): Technical Brief for Policy Makers

This document summarizes what is known in a given country about micronutrient deficiencies among WRA and pregnant women along with indicators of birth outcomes, based on available data. It also compares the effects of MMS vs IFA on birth outcomes and provides a rationale for the



transition from IFA to MMS in that country. This document can be adapted to any country, on the basis of available data. The full document can be found [here](#).

Discussion on TRM I:

Issue of providing MMS to individuals with severe anemia

TAG members suggested to include guidance for severe anemia in the technical brief, using the current WHO ANC guidelines and to frame the rollout of MMS in the context of a *preventative maternal nutrition* program.

A few TAG members voiced concern about the inclusion of FAQ #8, 'Can MMS and IFA be taken simultaneously? What side-effects can be expected with simultaneous use of MMS & IFA?'

The question raised here was whether these women should continue taking MMS alongside the high dose (120mg) iron simply because they're anemic. As a possible solution, it could be acknowledged that a very large percentage of anemia is *not* due to iron deficiency and best practices require further testing and assessment according to current recommendations from local health authorities of each country.

Post-meeting discussions about the existing guidance of the WHO guidelines on how to manage anemia during pregnancy (e.g. recommendation to increase iron supplementation to 120mg/day until Hb is 110g/L or higher) led us to the conclusion that this is such a complex issue that makes it very difficult for us to provide guidance on how to identify and manage anemia or determine whether it is caused by iron deficiency. Thus, we have decided to reformulate some of the FAQ to acknowledge the multifactorial nature of anemia in pregnancy and state that it should be managed by the treating healthcare professional, while continuing the MMS as a preventative measure.

How can this brief be more useful?

In order to have this document utilized by countries, it was suggested to frame it in the current context of the country government and what the needs are (according to their vision around micronutrient deficiencies, anemia, maternal health and nutrition, etc.). This will require a certain level of collaboration working directly with the intended countries to understand their needs, what exists, and how to build it on top of the current ANC program. It may also provide a gateway to accessible country-level data.

Issue of unknowns pertaining to cost effectiveness

A few concerns were raised regarding the cost effectiveness analyses for Bangladesh. For one, there is no information on how many days the supplement was taken. Rather, it was assumed that all 180 supplements were consumed, which could be incorrect. Second, the minimal effective dose to get the same effect of the numbers shown in the trials is unknown and raised the following questions:

What dosage would provide the minimum effectiveness? 90 days? 120 days? 180 days?

How do we convey this in country?

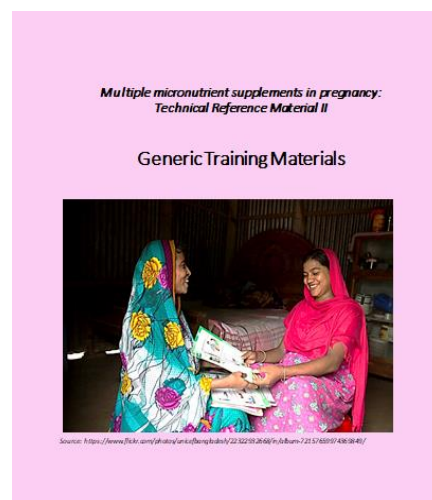
How do we convey this in a country where there isn't an analysis to see how many additional lives would be saved?

TRM II: Generic Training Materials

The second TRM includes a series of training modules for healthcare professionals and frontline health workers. The full document can be found [here](#).

1. Pre-service training module for healthcare professionals:

The training module is a 45 minute PowerPoint presentation for the purpose of in-service training (i.e., medical school or higher education institutions) of qualified healthcare professionals. The training document contains information regarding the scientific rationale for using MMS vs. IFA in ANC programs. As a next step, it was suggested that a guidance document for the instructor be developed.



2. In-service training module for frontline health workers:

This training module is a 20 minute PowerPoint presentation (a shortened version of the pre-service module) developed for in-service training courses and refresher training sessions for frontline health workers on the use and benefits of MMS. The purpose of this training module is to educate staff about the rationale for using MMS in ANC programs and their role in the education of pregnant women toward improving compliance to the regimen and in expanding program coverage.



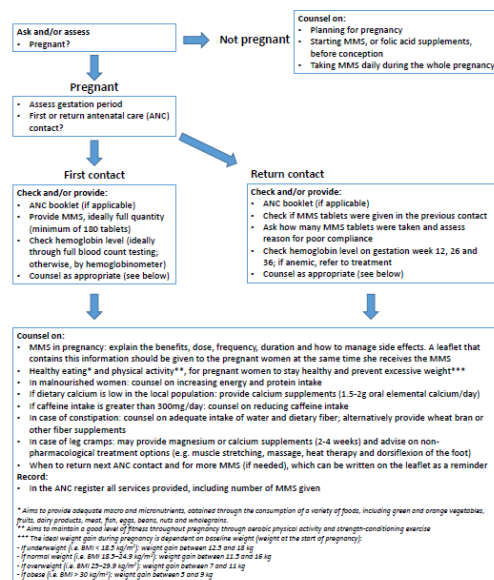
Job Aids

A series of job aids were designed to be utilized by frontline health workers as educational aids when explaining the benefits of MMS. They consist of the following documents: decision algorithm, informational leaflets for pregnant women, counseling cards flip chart, and informational posters for healthcare professionals and consumers.

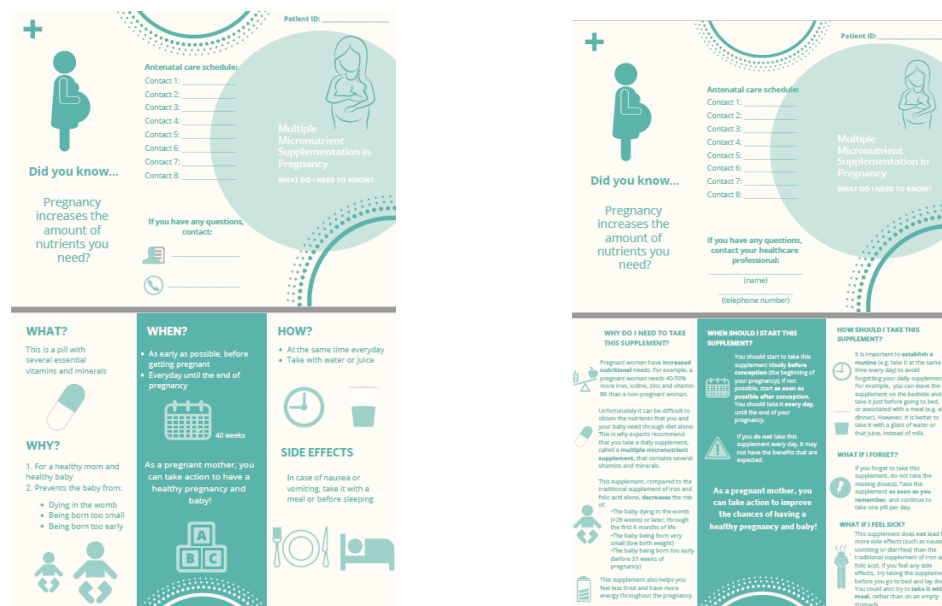


- Decision Algorithm** integrates MMS and other nutrition actions recommended by the WHO guideline in ANC contacts. It may be relevant for all healthcare workers who conduct ANC or family planning consultations.

Algorithm for multiple micronutrient supplementation and other nutritional interventions in pregnancy and childbearing age

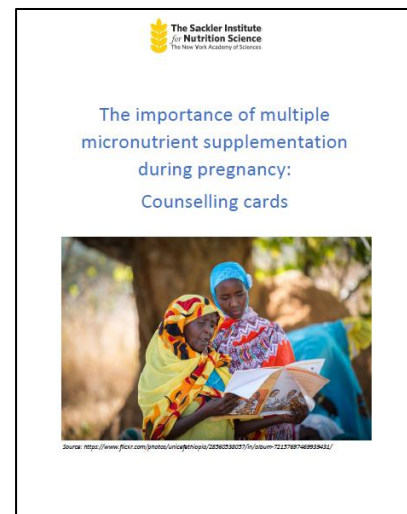


- Leaflets for pregnant women** serve as a simple educational guide to be given to ANC clients at the time MMS is distributed. In lay terms, it explains: why they should take MMS, when and how to take it, what to do if they forget to take it or feel sick, and the importance of compliance to the recommended dosage. There is also a simplified version of the leaflet, with less text and more visual representations of the information for women with lower levels of literacy.

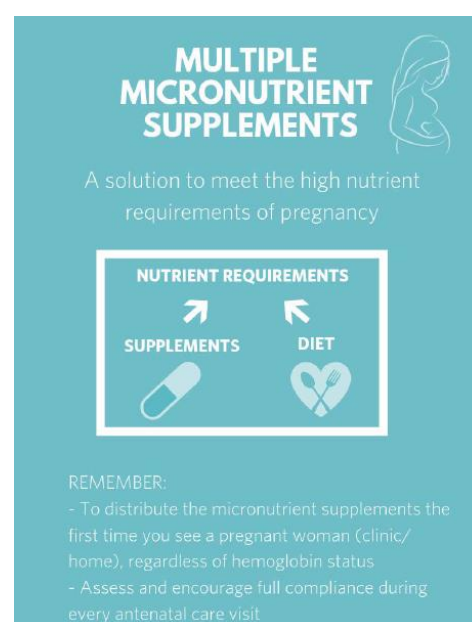


3. **Counseling cards flip chart** is intended to help frontline health workers communicate the importance of MMS to pregnant mothers through relevant illustrations and accompanied text. It contains six counseling cards covering the following:

- the role of micronutrients in pregnancy and the increased micronutrient needs of pregnant women
- the potential consequences of micronutrient deficiencies on pregnancy and birth outcomes
- the benefits of MMS during pregnancy
- dose, frequency, and duration of MMS during pregnancy
- side effects of MMS and their management
- importance of healthy eating in pregnancy



4. **Posters to display at point of care** were designed to remind pregnant women or those planning for pregnancy about the new MMS program. An additional poster was created for healthcare professionals about the need to distribute MMS during the first ANC appointment and the need to assess and encourage full compliance in every ANC visit. These can be displayed in clinics, hospitals, health centers, and other facilities delivering ANC programs.



Discussion on TRM II

Concern about the usefulness of pre-service training

A few points were raised about the usefulness of the pre-service training module. For one, medical school curricula rarely devote time and attention to nutrition, so the feasibility of implementing this in the context of maternal nutrition is quite low. However, it would be valuable to inform those doing curriculum revision to know this information is available. Second, many countries are shifting from instructor-led learning to a digital learning platform, which does not justify the idea of developing a guidance document for the instructor. In addition the group agreed it would be more useful to reach professionals that are already practicing, through

continuing education programs, etc., depending on the country and context. Specifically, it was suggested to link the MMS programs to current initiatives already present in countries, and involving the professional associations of health care professionals (e.g. national obstetricians associations) to understand the best way to reach all those who already practicing .

How can frontline workers help to increase compliance?

Although the TRMs go into great depth and coverage of the benefits of MMS and how to ensure compliance, TAG members emphasized the low literacy rates of many of the frontline health workers and thus, to be cautious of the amount of content being provided. This can be a potential issue in terms of generating behavior change to ensure compliance. Perhaps a video rather than a text-heavy document might be more useful in terms of reminding women when, where and how to take MMS.

Importance of positive messaging when delivering MMS

TAG members suggested re-framing the language used in many of the job aids to reflect a ‘positive pregnancy experience’ as an intrinsic motivator for both the pregnant women taking MMS and the frontline workers who will be delivering the information. Through a positive and motivational message around the benefits of MMS, we may be able to increase adherence and compliance rates.

Focus on the provision of technical info rather than delivery

Since each country differs in what works best for them in terms of disseminating information (digital learning platforms instead of instructor-led sessions, usefulness vs un-usefulness of posters), it was suggested to solely focus on the development of the technical material and provision of the key messaging pieces, rather than creating separate content for various scenarios. This way, local experts in country can focus on the design and development of the information and message it according to their country context.

Technical Reference Material III: Logistics of Implementation

This document identifies conditions of good performance and provides pointers to analyze barriers to successful implementation, with a focus on supply management and client compliance. The full document can be found [here](#).

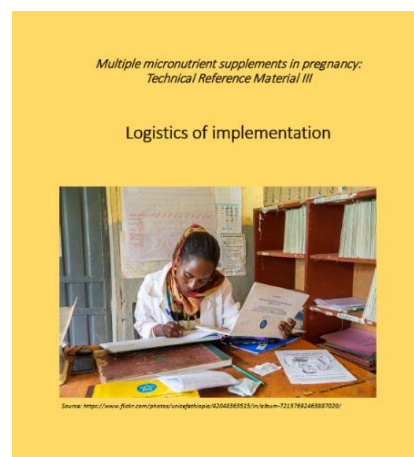
Discussion and Questions on TRM III:

Issues surrounding packaging of MMS

In terms of packaging, it was encouraged to stay away from using blister packs and envelop packages, since they are not cost effective. Blister packs will raise the cost of MMS by four-fold. When it comes to bottle packaging, it is unclear whether a bigger or smaller bottle is advantageous since data has yet to be published. Due to the lack of evidence to understand which is a more advantageous package, TAG members advise considering what type of packaging is currently used in each country.

Manufacturing MMS locally

Since countries will be asking whether they should manufacture MMS locally, the document should include a discussion on the advantages and disadvantages of local manufacturing. Generally, the TAG recommended



against local manufacturing except in certain circumstances, such as Indonesia, which has the capacity to locally produce high quality MMS.

The issue of the number of tablets and duration

What should be the minimum tablets recommended? Should they be taken during the post-partum period? What about during lactation? How many tablets should be included in a bottle (30, 100, or 180)? These were some of the questions that were brought up during this discussion. Overall, the group decided it is best to align the guidance in the TRMs with the WHO ANC guidelines and the current standard care for IFA, which recommends one tablet per day during pregnancy. However, the document should specify that pregnant women should begin taking these supplements as early as possible.

What are the supply regulations across the country?

The number of tablets that should be given to pregnant women at their first ANC visit was also discussed; whether 180 tablets should be given all at once vs. a monthly supply of 30 tablets during every ANC visit. An understanding of the regulations across the countries will give a better sense of which strategy to use, especially since supplementation needs to be registered. For example, Tanzania will not accept 180 bottle tablets, as it is against its national policy. When distributions of the tablets are considered at the community level, TAG members suggested working through logistics around distribution of the supplements since in some countries, community workers are not authorized to distribute supplements.

Session 4: Next Steps and Conclusion

This daylong technical consultation resulted in rich dialogue and discussions ranging from the agreed-upon role of each party to valuable feedback that will improve the content and usefulness the TRMs. The group unanimously agreed on the need for a strong collaborative effort amongst all involved parties, to work together in order to successfully propel this initiative forward. There is a strong understanding among the group that the goal is not to simply 'replace' IFA, but rather, build on what already exists in-country and address the issues of implementation, to ensure a high coverage for these programs through working closely with country healthcare systems.

Where next steps are concerned, apart from assisting in the development of generic documents and serving as an expert hub for questions, the group agreed to identify a more definitive role for the TAG, with respect to UNICEF's needs. UNICEF will have a better sense of what is needed after the April inception workshop in Tanzania. All parties (TAG, NYAS, BMGF and UNICEF) agreed to work towards a mutually beneficial relationship to ensure a real collaboration and to also keep an eye out for potential networking opportunities to promote the MMS implementation effort and show the successes of countries implementing MMS. In terms of the TRMs, TAG members suggested to frame these documents in the current context of the country government, what exists, and what the needs are along with a focus on the beneficial impact of MMS. Lastly, once the papers from the Special Issue are disseminated, TAG members discussed the need to have an advocacy plan in place order to gain traction and have follow-up steps prepared.

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Acronyms

MMS	Multiple Micronutrient Supplementation
TAG	Technical Advisory Group
WHO	World Health Organization
LMIC	Low Middle Income Countries
WRA	Women of Reproductive Age
BMGF	Bill & Melinda Gates Foundation
NYAS	New York Academy of Sciences
IFA	Iron and Folic Acid Supplementation
TRMs	Technical Reference Materials
ANC	Antenatal Care
FAQ	Frequently Asked Questions