Maternal Multiple Micronutrient Supplementation (MMS): There is no turning back

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Key messages

- Multiple micronutrient supplementation (MMS) has the potential to save the lives of women and children, in particular, and strengthen antenatal care (ANC) and health systems around the world.
- Over the past two decades, evidence has been generated showing the efficacy and cost-effectiveness of MMS; there has also been a coomitting increase in the number of low- and middle-income countries (LMICs) seeking guidance on how to safely and affordably provide MMS during pregnancy.
- However, the lack of information due to data gaps and clear global and national guidance on micronutrient deficiencies is holding LMICs back.
- To address these issues and harness the potential of MMS, Sight and Life and other organizations are working across several fronts – from research to project implementation to joint advocacy – to ensure that MMS is available to the most vulnerable.
- The current COVID-19 pandemic will disrupt food systems in many parts of the world, reducing the general availability of nutritious, micronutrient-rich foods. Communicating the proven benefits of MMS for pregnant women is therefore more important than ever during this challenging time.

Improving maternal nutrition

Nutrition is fundamental to human health and development. Addressing malnutrition saves lives, reduces inequalities, and builds strong and resilient individuals, families, communities and populations.

Women are particularly vulnerable to malnutrition in all its forms and, during pregnancy, their children can be negatively impacted. Any form of malnutrition during a woman’s pregnancy can have lasting repercussions on fetal and child development, as growth failure can be transmitted from mother to child. It is therefore vital to ensure adolescent and maternal nutrition to protect the health and wellbeing of women and their children, boosting gender equality and breaking the vicious cycle of poverty.

A component of poor nutrition is micronutrient deficiency, which can have devastating impacts on maternal health and pregnancy outcomes. Over half of adolescent girls and young women in low- and middle-income countries (LMICs) have inadequate micronutrient intake. Rates of anemia in women of reproductive age increased between 2000 and 2016 – from 31.6 percent to 32.8 percent globally – and little progress has been made in recent years. Because of this and other factors, more than 300,000 women currently die from pregnancy or childbirth-related complications. And each year, ~20.5 million babies are born with low birth weight (LBW), accounting for 14.6 percent of all births worldwide, with the majority in sub-Saharan Africa and South Asia.

“Micronutrient deficiencies are still poorly understood in most countries”

The burden of micronutrient deficiencies is still poorly understood in most countries because of vast data gaps and a lack of clear global and national guidance. This applies equally to potential solutions. The good news is that the tide is turning. Catalytic commitments have been made to make multiple micronutrient supplementation (MMS) available to those who need it the most, and research from the past two decades has demonstrated a solid evidence base and...
documented the widespread need for new approaches to combat deficiencies in key vitamins and minerals. New evidence and specific requests from individual countries have also inspired a sea change in the international community. There is no turning back.

**MMS retrospective**

My personal appreciation of vitamins and minerals dates back to my training as a nutrition scientist, during which I learned about the role these micronutrients play in metabolism and health. Throughout my early career, I admired *Sight and Life* for supporting vitamin A supplementation programs around the world in the 1980s and 1990s, and then expanding its focus to cover the full range of micronutrients towards the end of the 20th century. When, in 2005, I became the Director of *Sight and Life*, I found myself in the privileged position of being able to push these initiatives further.

For example, in early 2006, I had the opportunity to gain deep insights into JiVitA, a high-quality, community-based research program run by Johns Hopkins Bloomberg School of Public Health (JHBSPH). Operational since 2001 in northwest rural Bangladesh, JiVitA has examined—and continues to examine—the critical role of micronutrient deficiency prevention in reducing mortality and morbidity and improving child development during the first 1,000 days and beyond. Its goal is to inform and guide policies and programs through the conduct of large-scale, community-based nutrition studies.

In 2008, *Sight and Life* facilitated local MMS production in Bangladesh of 16 million tablets for a JiVitA study (JiVitA-3) of 45,000 pregnant women. The trial showed that daily MMS throughout pregnancy offered greater health benefits than an iron-folic acid (IFA) supplement alone, reducing the numbers of preterm birth, LBW and stillbirth by 10–15 percent. A subsequent trial (JiVitA-5) is currently being implemented. This trial is focused on prenatal supplementation of adolescent girls and women under 20 years of age, using MMS from the same local producer as in 2008. The dedication of the JHBSPH team over the years, under the leadership initially of Al Sommer and Keith West, has delivered findings that have transformed our understanding of the potential of MMS; however, that important work is not yet finished.

"JiVitA-3 showed that taking a daily MMS throughout pregnancy offered greater health benefits than an IFA supplement alone"

Despite numerous studies confirming the benefits of MMS over IFA, in 2016 the World Health Organization (WHO) released antenatal care (ANC) guidelines that recommend IFA, while simultane-
ously (and somewhat confusingly) stipulating that policymakers in populations with a high prevalence of nutritional deficiencies may, if they so wish, choose to give MMS.

In response to these guidelines, a task force, the Multiple Micronutrient Supplementation Technical Advisory Group (MMS TAG), was convened by the New York Academy of Sciences (with funding from the Bill & Melinda Gates Foundation) to evaluate new evidence not available at the time of the development of the WHO guidelines and help countries interpret the guidelines. The MMS TAG firmly concluded that MMS is safe and cost-effective and that it provides greater benefit than IFA for pregnancy outcomes. Gilles Bergeron and Megan Bourassa of the New York Academy of Sciences anatomize the relevant science in the contribution on page 17 entitled ‘Reviewing the Evidence and Promoting the Adoption of MMS.’

As MMS, foods rich in micronutrients and/or adequate ANC are not readily available to many women in LMICs, women in these countries have a higher risk of poor pregnancy outcomes than women in high-income countries. Consequently, LMICs are eager for guidance on how to safely and affordably provide MMS during pregnancy.

"LMICs are eager for guidance on how to safely and affordably provide MMS during pregnancy"

Because of both the unclear global policies related to MMS and the clear evidence on its safety and impact, *Sight and Life* joined with others in the nutrition community to help ensure that relevant evidence be made available, and that opportunities to implement MMS be created. We came together to frame MMS in new ways, including positioning it as a women’s rights and equity issue. As Spencer Kirk of Kirk Humanitarian said: “In North America and much of Europe, pregnant women get 15 essential micronutrients […] For the rest of the world and in LMICs, women get something less. They get two micronutrients – iron and folic acid. The inequity is unacceptable.”

**Harnessing partnerships for MMS policy change**

In June 2019, *Sight and Life*, along with partners (Vitamin Angels, Kirk Humanitarian, 1,000 Days, CIFF and the MMS TAG), brought together a unique group of like-minded organizations during a ‘Power for Mothers’ event at Women Deliver in 2019, the world’s largest conference on gender equality. This was a tipping point: this group not only elevated the issue of MMS and maternal equity to a new level, but also agreed to build consensus on the need for greater effort, and established a collaborative approach to increase the momentum. This inspired many individual organizations to take action.

Following Women Deliver, at the Bill & Melinda Gates Foundation’s Goalkeepers event in September 2019 during the United Nations General Assembly, the Healthy Mothers, Healthy Babies Accelerator was launched. This new partnership brought together nearly US$50 million in contributions to reach more than 17.5 million pregnant women and their newborns with MMS in countries including Myanmar, Indonesia and Bangladesh over the next three years. Since then, additional commitments to the Accelerator have started taking shape. Turn to page 08 and read ‘Accelerating Maternal Nutrition through Multiple Micronutrient Supplementation in Pregnancy: The Healthy Mothers, Healthy Babies Accelerator’ by Saskia Osendarp, Reed Atkin and Aynsley Morris to learn more about this initiative.

**“The year 2020 is ripe with more opportunities to put MMS on global and national agendas”**

2020 is ripe with opportunities to put MMS on global and national agendas. This effort kicked off with an MMS Stakeholder Consultation in early February in Washington, DC. At the time this *Sight and Life* Special Report is going to press, the COVID-19 pandemic has impacted conference and travel plans worldwide, making it necessary to temporarily replace physical meetings with online ones. The global nutrition community is adapting to the challenges of our current situation, however, and the path for advocacy, outreach and engagement remains clear.

The COVID-19 pandemic will also disrupt food systems in many parts of the world, reducing the general availability of nutritious, micronutrient-rich foods. This will make it harder for many pregnant to achieve a healthy diet containing the micronutrient levels necessary for maintaining general health and supporting the immune system. Communicating the proven benefits of MMS is therefore more important than ever during this challenging time.

**Advancing the goal**

To elevate and maintain the health of women and give more children a healthy start to life, we must ensure that women have access to the nutrients they need, at all stages of life. Now is the time to introduce MMS: countries with widespread micronutrient deficiencies have requested implementation research and donations of MMS to replace IFA in their health sectors. ANC, the main delivery platform for maternal nutrition interventions, covers less than half of pregnant women in LMICs, and only 34 percent of pregnant women are covered with IFA. Introducing MMS is an opportunity to strengthen ANC and the health system as a whole. As countries consider this transition, there are several tools available to support them. One example put forth by Nutrition International is explained in ‘Multiple Micronutrient Supplement (MMS) Cost-

This *Sight and Life* Special Report on MMS compiles and curates the latest evidence base, experience from the field, and resources for scale-up. It aims to serve as an important resource for decision-makers and implementers, thereby driving the introduction and adoption of MMS. We are deeply grateful to all who have contributed to this Special Report. A particular “thank you” goes to Kirk Humanitarian and Spencer Kirk for making this publication possible and to the Family Larsson Rosenquist Foundation and Katharina Lichtner for making copies of this Special Report available in print. We also owe a debt of gratitude to our friends from Vitamin Angels, Quinn Harvey, Kristen Hurley and Clayton Ajello, for their invaluable editorial support and their attentive reviewing of the articles in this Special Report.

“There is no turning back. If the evidence from the past decade has taught us anything, it is that MMS is far superior to IFA, and that the global community is eager to ensure that it is available, affordable, scaled and effective. The time is now to adapt global and national guidelines to reflect the overwhelming evidence. Disparities in ANC, including the provision of MMS, are unacceptable, and it is up to us to work together to make the critical difference to people’s future lives.

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