Transitioning from Iron and Folic Acid Supplementation to Multiple Micronutrient Supplementation

Lessons on monitoring systems from countries actively planning the shift

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Executive Summary

Background and Purpose

Maternal undernutrition and severe anemia continue to drive high rates of maternal mortality and low birthweight globally. UNIMAPP Multiple Micronutrient Supplements (MMS)—providing 15 essential vitamins and minerals—have proven more effective than iron and folic acid supplementation alone, reducing low birthweight by up to 12-14 per cent , and by 19 percent among anemic women. As of 2020 World Health Organization recommends MMS in research and emergency settings to strengthen maternal and newborn health outcomes.

As Nepal plans its transition from iron–folic acid supplementation (IFAS) to MMS through routine antenatal care, this review examines how other countries have approached the design, piloting, and scale-up of MMS monitoring systems. The goal is to draw lessons that can support Nepal's effective and data-driven rollout.

Methodology

This qualitative review analyzed experiences from nine countries in South Asia (Indonesia, Sri Lanka, Bangladesh, Bhutan, Pakistan) and Africa (Nigeria, Ethiopia, Kenya, and Zambia). Country selection was guided by the HMHB MMS World Map, UNICEF's Acceleration Plan, and based on the availability of documentation as well as prior professional networks within the region, which supported data access and stakeholder consultations.

Data sources included HMIS guidelines, implementation studies, program reports, peer-reviewed publications, and digital tool specifications. Country consultations helped validate gaps in public information.

The review of country systems focused on three core areas:

- Key monitoring indicators: including coverage, adherence, supply chain metrics, and health outcomes.
- Reporting mechanisms and data platforms: such as paper registers, DHIS-2 systems, mobile applications, and real-time dashboards.
- Tracking approaches during phased rollouts: examining whether countries used combined, parallel, or independent systems to track IFAS and MMS data during transition phases.

Key Findings

Across the nine countries reviewed, MMS programs have largely remained in pilot or demonstration phases, with only Indonesia moving toward national scale-up as of October 2024. This prevailing "pilot-phase persistence" means that monitoring systems are still primarily designed for subnational or research settings, influencing both the choice of indicators and the data platforms used. It also highlights the urgent need for guidance around IFA/MMS monitoring frameworks that can transition from pilots to routine national programs at scale.

Monitoring Systems Not Fully Conceptualized

Across countries, there is little evidence that comprehensive monitoring frameworks have been developed to guide the IFAS-to-MMS transition. Strategic plans and implementation guidelines rarely define end-to-end data flows (i.e., how data move from point-of-care collection through aggregation, transmission, analysis, and reporting) Neither do they specify which indicators should be tracked at each phase, or outline how paper-based and digital tools will be integrated. As a result, critical decisions—such as when to update recording forms, how to train health workers on new data elements, and what governance structures will oversee data quality—remain unresolved.

Hybrid Monitoring Models

Although national HMIS infrastructures already operate in a hybrid fashion—with paper registers at peripheral sites feeding into DHIS-2 at higher levels—formal changes to recording tools and data elements for MMS have been limited to pilot areas. In most of these pilot contexts health workers either record MMS in IFAS fields on existing forms or use dedicated vertical MMS reporting forms. In some contexts they have been formally instructed to adapt the forms (e.g. via Ministry letters) but often it is an informal workaround. In a few of these countries, standard ANC registers and monthly reporting forms have been updated to include MMS variables. However, outside these pilot areas, neither the paper-based forms nor the DHIS-2 modules have been officially revised for MMS, underscoring the need for systematic updates before national scale-up.

Indicator Priorities

Crude coverage (i.e. percentage of pregnant women receiving MMS) and user-adjusted coverage (adherence) (i.e. proportion consuming at least 90- or 180-tablets) are the most commonly tracked indicators in pilot settings. However, the specific definitions vary by country and are often poorly documented. Routine monitoring is typically conducted through HMIS/DHIS-2 modules—capturing distribution and consumption data—while national population-based coverage estimates rely on periodic surveys. As MMS has yet to reach national scale in most contexts, standard surveys such as the Demographic and Health Survey currently do not include MMS-specific indicators.

Parallel Tracking Challenges

A consistent gap across countries is the lack of clear plans for managing IFAS and MMS data streams during the transition. In most cases, neither paper registers nor DHIS-2 modules have been updated with distinct fields to separate IFAS from MMS. Policy documents and implementation guidelines rarely clarify whether IFAS should continue to be tracked in parallel until MMS reaches universal coverage, or if IFAS will be phased out once MMS is fully scaled. As a result, frontline health workers often rely on informal workarounds for documenting MMS—such as ticking existing IFAS columns and adding free-text notes—leading to risks of misclassification and inconsistent reporting. Without clear criteria, timelines, or phased rollout protocols, facility- and district-level staff lack the guidance needed to transition tools and data systems effectively.

Digital Fragmentation

In countries like Indonesia and Pakistan, the proliferation of siloed digital tools— i.e., standalone applications developed for specific interventions rather than integrated multi-service platforms—has

undermined data coherence. In contrast, integrated systems such as Sri Lanka's eRHMIS and Bhutan's DrukHMIS demonstrate stronger performance, with reporting completeness exceeding 95 percent.

Stakeholder Engagement

Based on informal and formal discussions with countries and lessons from previous supplementation transitions, programs that engaged data managers, frontline providers, district staff, and technical working groups early in tool adaptation and training are likely to experience smoother rollouts and improved data quality—a pattern that should similarly benefit MMS implementation.

A brief summary of the findings are provided below:

Country	Roll-out Phase	Platform(s)	Key Indicators	Tracking Approach	Main Challenges/Notes
Indonesia	Pilot → National scale-up (Oct 2024)	▪ SIGIZI Terpadu (e-PPGBM) ▪ SMILE e-LMIS ▪ Health survey/DHS, Basic health research survey national status study	Coverage, adherence (≥90/180 tablets), supply metrics, anemia prevalence, low birthweight, counseling rates	▪ ANC registers, Buku KIA handbooks, compliance cards, SIP logs → e-PPGBM ▪ supply chain: planning, ordering and distribution→ e-LMIS	Highly fragmented digital ecosystem (>400 apps); private-sector data gaps
Sri Lanka	Pilot (~21% pregnancies)	▪ eRHMIS (DHIS-2) ▪ MSMIS ▪ Srilanka DHS, Nutrition and Micronutrient survey	Coverage, adherence, stock-outs, Hb levels, birthweights, visit quality	▪ Manually updated H512A/B forms, cohort studies → eRHMIS dashboards ▪ Stock movement, quarterly RMSDs reports→ MSMIS,	Unclear parallel IFAS/MMS coding; private facilities largely outside DHIS-2
Bangladesh	District pilot + private sector	▪ DHIS-2 ▪ LMIS, DGDA pharmacy system ▪ Bangladesh DHS, National Nutrition surveillance	Coverage, adherence, supply sufficiency, ANC visit quality, health outcomes	▪ Updated ANC registers, client cards in pilot areas→ DHIS-2; ▪ Pharmacy sales uploads→DGDA's system, facility stock registers →LMIS	Blind spots in private-sector reporting until interoperability is built
Bhutan	National rollout	▪ Druk HMIS (DHIS-2) ▪ LMIS, e-BMSIS ▪ National nutrition survey, Service delivery health indicator survey	ANC coverage, nutrition counseling, MMS distribution/adherenc e, anemia, growth monitoring	▪ MCH handbook entries, web-based MCH system → DHIS-2 ▪ Annually collected Requisitions forms →LMIS	Printing updated forms delayed; dual IFAS/MMS for severe anaemia requires clear guidance
Pakistan	Phased pilot	▪ DHIS-2 ▪ paper-based LMIS ▪ Pakistan DHS, National Nutrition survey	Coverage, adherence, stock availability, anemia, birth outcomes (e.g. LBW, preterm birth), implementation fidelity	▪ ANC registers by LHWs/LHVs → DHIS-2; Nutrition Intl supervision visits ▪ Stock movement managed through LMIS	Private-sector integration unclear; parallel IFAS/MMS rollout needs formalization
Nigeria	Pilot (Bauchi State)	▪ DHIS-2 ▪ NHLMIS ▪ Nigeria DHS, NHFS	Coverage, Adherence, supply indicators, ANC coverage, low birthweight, preterm birth	▪ Separate MMS registers + GMP and summary forms → DHIS-2 ▪ Inventory control cards and RIRF →NHLMIS	Private-sector and digital integration pending; IFAS phase-out plan unclear
Ethiopia	Pilot (21 districts)	▪ DHIS-2; mobile platforms ▪ e-LMIS ▪ Ethiopia's Mini DHS, Service Provision Assessment	Coverage, counseling, adherence rates, stock-outs, anemia prevalence, birthweights, quality indicators	▪ Paper ANC registers → DHIS-2; ICCs; mobile data entry in remote areas ▪ inventory control cards, monthly reports →eLMIS	Voluntary private reporting; data quality and timeliness challenges

Country	Roll-out Phase	Platform(s)	Key Indicators	Tracking Approach	Main Challenges/Notes
Kenya	Pilot (Bungoma County)	▪ KHIS (DHIS-2) ▪ LMIS, KHIS ▪ Kenya DHS	Coverage, adherence, stock availability, anemia, LBW rates	▪ Revised ANC registers, monthly summary forms → KHIS ▪ Requisitions and consumption forms →LMIS	Private-sector MMS use invisible; integration guidelines still in development
Tanzania	Pilot, IMAN project (Mbeya region)	▪ DHIS-2, mobile platforms ▪ e-LMIS, MSD ▪ TDHS-MIS, Service provision assessment (SPA) survey	Coverage, Distribution metrics, Adherence, stock availability, anemia rates	▪ ANC registers, stock cards → DHIS-2(monthly entry), phone-based collection ▪ stock tracking and movement by MSD through e-LMIS	MMS variables absent and dual IFAS/MMS tracking requires clear guidance
Zambia	Pilot	▪ DHIS-2; ZEPRS; mobile apps ▪ e-LMIS ▪ Zambia DHS, SPA survey	Coverage, adherence, maternal health indicators, low birthweight, preterm birth, cost-effectiveness	▪ ANC registers, ZEPRS EHR, CHW mobile apps → DHIS-2 ▪ Stock levels, requisitions and replenishments forms →LMIS	Varied digital adoption by facility size; need for training and support

Conclusions

A successful transition from IFAS to MMS depends on the early and deliberate integration of monitoring systems into national HMIS frameworks. Without clear adaptations to recording tools—both paper-based and digital—programs risk inconsistencies, misclassification, and data loss, particularly when MMS is introduced alongside ongoing IFAS services. Embedding MMS indicators within existing DHIS-2 platforms and other routine systems, rather than building parallel systems, offers a faster path to scale-up, streamlines reporting processes, and reduces duplication, but fully integrating MMS into HMIS often requires substantial time and coordination. Real-time data platforms also allow for quicker identification of stock-outs and coverage gaps, supporting more responsive program management. However, important gaps remain. Clear guidance is still needed on whether and how to phase out IFAS tracking, harmonize parallel data streams, and leverage advanced analytics to better measure program impact and cost-effectiveness. Addressing these gaps will be critical to ensuring a smooth and sustainable transition to MMS on a national scale.

Introduction

Maternal undernutrition and severe anemia remain critical public health concerns, as women suffering from severe anemia are nearly twice as likely to die during or shortly after pregnancy than their non-anemic counterparts, and their babies face an elevated risk of low birthweight and subsequent growth deficits (1,2). Multiple Micronutrient Supplements (MMS), comprising 15 essential vitamins and minerals, offer a proven, safe, and effective intervention to mitigate these risks by improving maternal nutritional status and reducing low birthweight by approximately 12-14 per cent compared with iron and folic acid (IFA) supplementation alone, and by up to 19 per cent among anemic women (3). Endorsed by the World Health Organization (WHO) for emergency contexts and research settings, MMS can be strategically scaled to drive progress toward global nutrition and health targets (4). In emergency contexts, MMS is crucial for meeting nutritional needs when access to diverse diets is compromised. WHO recommends its use in these situations, highlighting the importance of monitoring to ensure both effectiveness and safety. For routine antenatal care, WHO suggests MMS only within rigorous research frameworks to assess its impact on maternal and perinatal outcomes, as well as its cost-effectiveness and feasibility, especially in low-resource environments.

While many countries are in early phases of implementation of MMS programs and have largely focused on addressing programmatic and operational challenges, the critical aspect of monitoring systems often receives insufficient attention. A robust monitoring system that includes administrative data and population-based surveys is essential for tracking key indicators such as coverage, and adherence to supplementation protocols and supply chain functionality. For administrative data these systems typically leverage existing Health Management Information Systems or other digital platforms and logistics management information systems (LMIS) to collect data on supplement distribution, stock levels, and intake adherence. Most discussions and efforts related to MMS monitoring center on either simply repurposing the existing IFAS monitoring framework or adding partial enhancements, rather than establishing a comprehensive plan for effective MMS oversight (5).

The scale-up framework for MMS emphasizes the importance of monitoring, evaluation, and learning (MEL) activities across all phases—building an enabling environment, designing and testing implementation strategies, and scaling and maintenance (6). While significant attention is given to policy, financing, product quality, and delivery channels, the monitoring system remains a critical yet often underprioritized component. A robust monitoring system should routinely track program indicators such as coverage, adherence, supply chain functionality, and outcomes. By integrating MEL into existing household surveys and health information systems and leveraging implementation science approaches, countries can ensure data-driven decision-making, identify bottlenecks early, and adapt strategies to optimize MMS delivery and impact at scale.

In Nepal, the distribution and reporting of Iron and Folic Acid Supplements are managed through the Health Management Information System (HMIS) integrated with the District Health Information System version 2 (DHIS-2) platform. In addition to routine reporting, coverage and adherence are monitored through national surveys such as the Demographic and Health Survey (DHS), which consistently includes questions on Iron and Folic Acid supplementation. While the 2014 round of the Multiple Indicator Cluster Survey (MICS) included IFAS-related questions—specifically MN16A and MN16B—subsequent rounds have not retained these items. Key recording tools such as the HMIS 3.5 Maternal and Newborn Health Card, HMIS 3.6 Maternal & Newborn Health Register, and HMIS 4.2 FCHV Service Register are utilized to capture detailed information on supplement distribution and maternal health services. Additionally, reporting tools like the HMIS 9.1 FCHV Report Collection Form, HMIS 9.2 Outreach Clinic Report, HMIS 9.3 Basic Health Facility Reporting Form, and HMIS 9.4 Public Hospital Reporting Form facilitate the collection and submission of data to DHIS-2. This system enables the

aggregation and analysis of data, providing insights into coverage, adherence, and outcomes of IFAS programs across different health facilities and regions.

As Nepal transitions from Iron and Folic Acid Supplementation (IFAS) to MMS, it is essential to learn from the preparations, practices, and experiences of other regions to inform this scale-up. This desk review aims to take stock of existing knowledge and practices globally, focusing on how these insights can guide Nepal's transition. The lessons learned will help identify effective strategies for implementation and monitoring systems critical to ensuring program success. Learning from global practices while building on Nepal's existing systems will be crucial for a successful transition.

Objective

Primary Objective

- To examine how various countries are planning for—or have begun implementing—monitoring systems in the context of transitioning from IFAS to MMS.

Specific Objectives

- To identify key indicators (e.g., coverage, adherence, stock management) proposed or currently in use for monitoring MMS, and to assess how these data are collected, reported, and integrated into existing health information systems.
- To examine the tools and processes that support—or have the potential to support—a phased transition from IFAS to MMS, with a particular focus on how monitoring systems are designed and implemented. This includes understanding approaches such as combined tracking (monitoring IFAS and MMS simultaneously), parallel tracking (monitoring each intervention separately), and independent tracking mechanisms for IFAS and MMS.

Key research questions

1. **What indicators and reporting mechanisms are used or proposed to monitor MMS during pilot phases and early implementation?**
    - How are key metrics such as stock availability, distribution, adherence, and maternal health outcomes tracked?
    - To what extent are these indicators disaggregated (e.g., by geography, age, socioeconomic status) and aligned with existing health information systems?

2. **How are data on IFAS and MMS captured during phased rollouts, especially in contexts where both supplements are used concurrently?**
    - What tracking approaches are used—combined, parallel, or independent—and how are they operationalized in facility-level and national systems?
    - How is dual supplementation recorded and distinguished in digital platforms (e.g., DHIS-2, LMIS)?

3. **To what extent are digital and paper-based systems integrated to support accurate and timely monitoring of MMS scale-up?**
    - How are frontline data collection tools designed and validated to minimize errors during manual-to-digital transfer or offline data entry?
    - Are there challenges or innovations in transitioning from pilot-specific tools to national HMIS platforms?

Methodology

This desk review employed a qualitative synthesis approach to examine how countries are designing and implementing monitoring systems in the context of transitioning from IFAS to MMS. The review focused on documents and data sources from countries where MMS is being piloted, considered for scale-up, or partially implemented. Key areas of inquiry were guided by the research questions related to indicators, reporting mechanisms, data platforms, and tracking modalities. Sources included national health information system guidelines, implementation research studies, program monitoring reports, digital tool specifications, and relevant grey literature. Emphasis was placed on understanding how monitoring systems are structured during phased rollouts, including strategies for parallel or combined tracking of IFAS and MMS, and the integration of pilot experiences into national data platforms.

Country selection

Country selection followed a purposeful sampling approach guided by the Healthy Mother, Healthy Baby (HMHB) MMS World Map, which categorizes countries by their stage in MMS implementation—ranging from exploratory phases to pilot programs supported by implementation research, and eventually to national or subnational scale-up. In addition, 16 priority countries identified under UNICEF's Acceleration Plan were considered, owing to the alignment between this plan and the HMHB World Map. Beyond these two reference points, selection also factored in the availability of relevant program documentation and the strength of existing professional networks, which supported both data access and stakeholder engagement. Together, these criteria allowed for a balanced selection process—grounded in both conceptual relevance and practical feasibility.

Based on these criteria, the following countries were selected for final review:

- **South Asia**
    - Indonesia
    - Sri Lanka
    - Bangladesh
    - Bhutan
    - Pakistan
- **Africa**
    - Nigeria
    - Ethiopia
    - Kenya
    - Tanzania
    - Zambia

A detailed guiding questionnaire was employed to examine key components of each country's monitoring system during the IFAS-to-MMS transition. Where publicly available information was lacking, country-level contacts from government or partner agencies were consulted to obtain or verify documentation, drawing on both formal literature and practical insights. A list of major questions was also shared with the HMHB consortium, and while formal feedback is still awaited, preliminary discussions have already enriched the evidence base.

Desk review procedures

The literature search for this review was conducted between February and May 2025.

1. **Official organizational sites and grey literature**
    - Nutrition International, HMHB, and UNICEF websites were searched for policy briefs, guidance documents, and program reports related to MMS.
    - Grey literature (e.g., unpublished evaluations, technical guidelines, conference proceedings) was obtained through informal networks and professional meetings with country-level stakeholders, who often held materials not publicly accessible online.

2. **Peer-reviewed publications**
    - Due to limited direct results on IFAS-to-MMS transitions, initial searches pivoted toward monitoring systems in maternal health.
    - Databases such as PubMed, WHO repositories, and Google Scholar were scanned for studies on HMIS strengthening, maternal supplementation monitoring, and digital health interventions.
    - Keyword combinations included "IFAS to MMS transition," "parallel supplementation," "HMIS strengthening," "DHIS2 implementation," "mHealth," "pilot program," "scaling up MMS," and synonyms like "digital health," "supply chain management," and "implementation research." Searches were refined using Boolean operators and contextual filters (e.g., "low-resource settings").

3. **In-person and network engagement**
    - Informal meetings were held with officials from Sri Lanka, Bhutan, Bangladesh, and Nigeria, including representatives from MIS divisions, nutrition divisions, UNICEF, and WHO between May to July 2025.
    - These discussions yielded first-hand insights, clarified operational procedures, and addressed data gaps flagged in formal sources and grey literature.

The complete set of guiding questions used for this desk review can be found in Annex 1. By drawing on multiple data sources —ranging from technical documents to expert networks and field-level perspectives, this methodology offers both breadth and depth in capturing how monitoring systems function across diverse contexts and stages of MMS implementation.

Findings

A cross-country review of MMS initiatives shows that most country programs remain at the pilot or demonstration phase, with few advancing to large-scale implementation. In nearly all cases, MMS delivery is integrated into existing health systems, which typically rely on hybrid monitoring approaches—paper-based registers at the facility or community level supplemented by digital platforms such as DHIS-2. We did not find any documentation or evidence that MMS indicators have been integrated into household surveys or other periodic national surveys, likely because most countries are still in pilot or subnational phases of implementation rather than full national scale-up.

Coverage and adherence are the most commonly used indicators to assess program performance. In a few settings, more advanced systems incorporate real-time dashboards, mobile applications, and digital supply chain tools to improve stock tracking and data quality.

The following sections examine country-level routine monitoring systems, including antenatal and postnatal indicators, as well as other maternal and child health indicators related to MMS and IFAS reporting. They also explore current practices and potential plans for monitoring during national scale-up.

South Asia

Indonesia

Key Findings	
Key indicators:	Coverage (% pregnant women receiving MMS), adherence (≥90/180 tablets), supply metrics (stock levels/distribution), health outcomes (anaemia prevalence, low birthweight) and process measures (counseling rates).
Administrative system:	Fully integrated into existing ANC reporting via SIGIZI Terpadu (e-PPGBM), with paper registers at Puskesmas, posyandu logs and compliance cards feeding into the digital platform (offline-capable).
Admin Recording tools:	Maternal Health (ANC) Register, MCH Handbook (Buku KIA), Compliance Card (Kartu Kepatuhan) and Posyandu Information System, aggregated via monthly SP2TP forms updated to include MMS.
Supply Chain:	Stock availability is recorded through LPLPO forms at facilities and consolidated in Indonesia's SMILE-eLMIS, which manages both IFAS and MMS commodities.
Periodic surveys:	National Status Study (annual), Riset Kesehatan Dasar (every 5 years) and IDHS (2023–24) currently track IFAS; MMS variables are not yet incorporated.
Gaps:	Over 400 siloed health apps create data silos; MMS added as a new DHIS-2 variable but with no clear guidance on phasing out IFAS or managing concurrent tracking, and private-sector reporting remains limited.

Indonesia is among the few countries to have officially transitioned from IFAS to MMS, initiating a gradual national scale-up in October 2024. The country uses the Sistem Informasi Gizi Terpadu (SIGIZI Terpadu), a national nutrition information platform that includes the e-PPGBM module (Electronic Community-Based Nutrition Reporting System), to capture community-level data on both IFAS and MMS. As of now, MMS-specific variables within SIGIZI have only been activated in pilot and phased-

rollout districts where MMS distribution is occurring, while IFAS continues to be tracked nationally. This means the digital system is in place nationally, but its use for MMS indicators is currently limited to implementation areas.

Key Indicators Tracked:

Administrative

- **Coverage:** Percentage of pregnant women receiving MMS supplements***(the coverage is also given by periodic surveys)*** (7).
- **Adherence:** Proportion of pregnant women consuming ≥90 and ≥180 tablets, directly addressing historically low IFAS compliance (7,8).
- **Supply Metrics:** Stock availability and distribution data to identify and address potential stock-outs swiftly (9).

Periodic surveys and other studies

- **Health Outcomes:** Tracking anemia prevalence and low birthweight rates, primarily through periodic national surveys (e.g., Riskesdas), complemented by facility-based hemoglobin testing (7).
- **Quality and Behavioral Indicators:** Process indicators such as the percentage of ANC visits with MMS counseling provided, assessed through supervision and special studies (10)

Monitoring of MMS distribution and adherence in Indonesia is fully integrated within the existing ANC reporting mechanisms at primary service delivery points—including Puskesmas (community health centres), village midwives, and posyandu (integrated health posts) (11,12). Thus, the existing ANC monitoring framework is used directly to report MMS-related indicators, without establishing any additional or parallel MMS-specific monitoring structures.

Currently, MMS implementation in the 15 districts is exclusively through government health facilities, with logistical support from Vitamin Angels and UNICEF. Despite low adherence, IFAS remains the main supplementation strategy through 2026, with MMS being introduced in selected districts. The dual approach allows for real-world comparisons in selected districts. To support this, SIGIZI has been updated with a separate variable to capture individual-level MMS data in real time. In pilot areas, only MMS is distributed through Ministry of Health (MOH) channels, with data entry occurring at the Puskesmas. District (DHO), provincial (PHO), and national MOH staff have access to these records to support data review and decision-making. Although some literature highlights policy intentions for integrating private sector reporting into government monitoring systems, practical implementation remains limited and not yet well-documented (13).

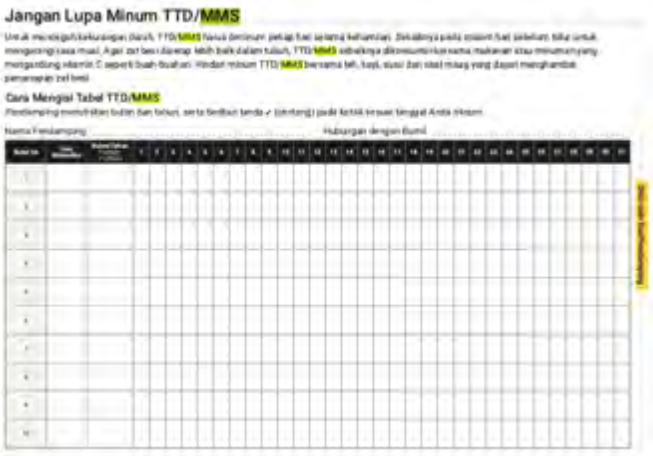
Recording Tools and Forms

At the point of service delivery, several recording tools are used:

1. **Maternal Health (ANC) Register**: Facilities maintain an ANC cohort register listing all pregnant women, with columns for micronutrient supplements provided (12).

2. **MCH Handbook (Buku KIA)**: Each pregnant woman carries this handbook where providers note services received, including MMS supplementation(9).

3. **Compliance Card (Kartu Kepatuhan)**: Women receive a simple card on which they tick off each day they take their tablet. Health workers review this card during ANC visits to record actual consumption. Women are asked to bring empty blister packs or bottles and their compliance cards to each visit for verification of consumption (9).



4. **Posyandu Information System (SIP)**: For community-level distribution, posyandu (village health posts) record MMS distribution in the SIP or on reporting forms that feed into the Puskesmas' records (14).

Aggregation and Reporting Forms

Data from individual records are aggregated periodically using several forms:

1. **Monthly ANC/Nutrition Report Forms (LM or SP2TP forms)**: Standardized forms capture ANC coverage and nutrition interventions. These have been updated to list "Tablet Tambah Darah (TTD) or MMS" to record whether a woman received IFA or MMS. Fields include "Number of pregnant women who received MMS this month" and "Cumulative number of pregnant women who have received 90/180 tablets" (14) .

Tracking Methodology and Forms:

- **Facility-level Monitoring:** MMS distribution is recorded by midwives and nurses during ANC visits using standard ANC registers and the Maternal and Child Health Handbook (Buku KIA) (In the form, instructions are provided stating that the mother should write the month and year, and place a ✓ (tick) mark in the box corresponding to each date the MMS supplement was taken) carried by each pregnant woman (12).
- Pregnant women are provided with a compliance card (Kartu Kepatuhan) to mark daily MMS intake, reviewed by health workers during subsequent ANC visits to assess adherence (9).

Data Aggregation and Reporting:

- Community-level monitoring at posyandu sessions, managed by volunteer cadres, involves recording data primarily in paper-based logs or through the Posyandu Information System (SIP), which is later digitally entered into e-PPGBM by Puskesmas nutritionists (15) .
- Data entered into e-PPGBM by Puskesmas nutritionists include nutritional status indicators, supplementation coverage, and adherence data, compiled monthly and forwarded to District Health Offices, then Provincial Health Offices, before national aggregation (15).
- Reporting utilizes a combination of traditional paper-based recording at posyandu and electronic entry at the Puskesmas level into the e-PPGBM platform, which supports offline data entry to accommodate areas with poor internet connectivity (15).

Supply Chain and Logistics:

Supply chain monitoring for MMS is managed through the LPLPO form at facility level, which records tablets requested, received, distributed, and remaining. At higher levels, the SMILE-eLMIS (Indonesia's upgraded electronic health logistics system launched in October 2024) is used for consolidated stock tracking and management. This system covers both IFAS and MMS commodities, enabling real-time visibility across the supply chain.

- MMS stock management at Puskesmas utilizes the LPLPO (Laporan Pemakaian dan Permintaan Obat) (Drug Usage and Request Report) form, which records the number of tablets requested, received, distributed, and remaining stock. This form ensures continuous monitoring of stock availability and helps prevent disruptions (9) .
- The supply chain and the stock availability of IFA is managed under the Electronic health logistics inventory monitoring system (system monitoring inventoris logistic Kesehatan secara elektronik-SMILE-eLMIS). The Indonesia's SMILE eLMIS launched in October 2024, is an upgraded version of the health logistics management model, which now manages the health supply chain starting from planning, ordering, distribution, use as well as control of the health commodities(16,17).

Periodic Surveys

Advocacy efforts can target the inclusion of MMS variables in numerous nationally representative surveys. Below are several such surveys, along with the current phrasing of questions related to IFAS supplementation. It is reasonable to anticipate that, following the national rollout of MMS, these surveys will adapt to collect information on MMS in place of, or alongside, IFAS.

1. National Status Study, Indonesia's Nutritional Status Study ("Studi Status Gizi Indonesia")
    - Conducted annually; the most recent was in 2022. The latest available report is from 2022. (18)
2. The Basic Health Research (*Riset Kesehatan Dasar*) Survey:
    - Conducted every five years; the most recent was in 2018 (19).
    - The survey includes data on compliance with iron–folic acid (IFA) tablet consumption and the prevalence of anemia among pregnant women and adolescent girls in Indonesia (20).
3. Indonesia Health Survey/ Indonesia Demographic and Health Survey (IDHS)
    - Conducted every five years; the most recent round is 2023–24 (previous rounds: 2017 and 2012)

Fragmentation and Unclear Monitoring Approaches:

A major limitation of Indonesia's current monitoring system is its fragmented structure. The country's own Blueprint for Digital Health Transformation Strategy 2024 acknowledges this issue, highlighting that, according to recent mapping by the Ministry of Health, there are already over 400 distinct health applications developed independently by central and local governments. Among these applications, several focus specifically on maternal and child health including ANC. This proliferation of separate systems exacerbates fragmentation(13).

Furthermore, current discussions and approaches for transitioning from IFAS to MMS indicate that the existing monitoring strategy might only involve adding MMS-related columns or indicators into the existing IFAS tracking systems rather than developing a dedicated monitoring mechanism. Moreover, there is limited clarity and discussion around whether the intention is to concurrently monitor IFAS and

MMS usage or exclusively track MMS. This represents a significant information gap that needs addressing to ensure effective implementation and monitoring during the transition.

"Since the Digital Transformation Office (the unit that was appointed to develop digital information and data collection) has been inactivated, the digital platform for collecting MCH data (by name by address) is on hold. Last week, MOH decided to merge the MCH record reporting into the Nutrition Digital Platform namely SIGIZI. It is expected next month would be officially launched." (26th March 2025)

Sri Lanka

Key Findings	
Key indicators:	Coverage (% of pregnant women receiving MMS; completion of 180-tablet course), adherence, supply metrics (stock-out frequency), health outcomes (haemoglobin/anemia prevalence, birth weights), and process measures (ANC visit adherence, counseling, weight gain, side-effect reporting).
Administrative system:	Fully integrated into the Electronic Reproductive Health Management Information System (eRHMIS, DHIS2-based), with real-time dashboards and >95 % monthly completeness for ANC supplementation fields.
Recording tools & data flow:	Existing H512A/B pregnancy record forms manually updated to note MMS; monthly clinic aggregates entered into eRHMIS, then reviewed at MOH area, district, provincial, and national levels.
Supply chain:	MMS stock movement tracked weekly through the Medical Supplies Management Information System (MSMIS) and quarterly RMSD reports;
Periodic Surveys:	Sri Lanka DHS 2016; National Nutrition & Micronutrient Survey 2022 currently capture only IFAS, pending MMS variable inclusion.
Gaps:	Both IFAS and MMS are tracked in parallel with no reprinted forms or distinct DHIS2 fields; private-sector reporting (5.4 % of births) remains largely outside eRHMIS, and there is scarce documentation on criteria or timing for phasing out IFAS tracking.

Sri Lanka has initiated the transition from IFAS to MMS within its antenatal care (ANC) program. This pilot, guided by the Ministry of Health and the National Micronutrient Technical Working Group, reached approximately 64,360 pregnant women through government ANC clinics with support from UNICEF and Vitamin Angels (21,22) . These beneficiaries represent roughly 21 % of Sri Lanka's 310 000 annual pregnancies estimated for 2023, giving an early indication of feasibility at meaningful scale (23).

Key Indicators Tracked for MMS

Administrative:

- **Coverage**: Percentage of pregnant women receiving MMS and proportion completing the recommended 180-tablet course. ***(the coverage is also given by periodic surveys)***
- **Supply Metrics**: Availability and frequency of stock-outs at facilities.
- **ANC service Indicators**: ANC visit adherence, counseling provision, maternal weight gain monitoring, and side-effect reporting.

Periodic surveys and other studies:

- **Adherence**: Compliance rates captured through cohort studies and periodic surveys due to difficulty in routinely recording daily tablet intake.
- **Health Outcomes**: Maternal hemoglobin levels/anemia prevalence, birth weights, and incidence of low birth weight, tracked through ANC testing and national surveys (***tracked through administrative system as well).***

Monitoring Framework and Platform

The monitoring of MMS is integrated within Sri Lanka's established Electronic Reproductive Health Management Information System (eRHMIS), a DHIS2-based digital platform introduced in 2016 (24). eRHMIS captures comprehensive maternal and child health intervention data, including antenatal supplementation details from healthcare providers such as Public Health Midwives and clinic nurses (25). eRHMIS currently captures 1 860 data elements across 38 194 organization units, making it one of the largest DHIS2 implementations in South-Asia (26). Nationally, 5.4 % of births occur in private health facilities, rising to 14.9 % in urban areas and 20 % in Colombo district, underscoring the data gap if private providers remain outside eRHMIS (27).

The directive issued by Sri Lanka's Family Health Bureau on 30 April 2024 mandates introducing MMS for non-anemic pregnant women, replacing iron folate and vitamin C supplements from the second trimester onward. Health workers are instructed to manually update existing pregnancy record forms (H512A and H512B) by marking the IFAS fields as MMS, as the government has not reprinted or changed the original forms. However, the directive does not clarify how health workers should differentiate or record instances where severely anemic women receive both MMS and IFAS, particularly when aggregating data into the DHIS2 platform. Additionally, it remains uncertain whether DHIS2 fields have been updated or if MMS and IFAS distributions are combined as a single supplementation indicator during reporting.

Family Health Bureau
Ministry of Health

30/04/2024

Through Provincial Director of Health Services.....

Regional Director of Health Services.....

Distribution of Multiple Micronutrient tablets for pregnant women

At the meeting of National committee on Family Health held on 22/02/2023 and chaired by Secretary, Health, it was decided to introduce Multiple Micronutrient (MMN) supplementation for non-anaemic pregnant women, replacing the existing iron folate and vitamin C supplements for them. MMN tablet contains 15 micronutrients (including iron folate & vitamin C) and offer unique advantages, that include reduction of low birth weight.

The stock of MMN supplement comes in a bottle of 180 tablets. It has to be issued to pregnant women at the beginning of the second trimester and duly noted in both H 512A & H 512B. They should not be issued with iron folate or vitamin C for the rest of the pregnancy.

Pregnant women should be educated that the new tablet contains iron folate & vitamin C, which had been given to pregnant women routinely. They should also be informed that they would not be issued with iron folate & vitamin C again, and to keep the bottle of MMN tablets safely, without exposing the tablets to light and moisture. One MMN tablet should be taken daily, with an adequate gap between calcium carbonate tablets or food.

Please instruct the relevant officials in your area to take necessary action to distribute the above supplement to all non anaemic pregnant mothers by substituting it to 30 mg iron folate & vitamin C tablets.

With regard to the therapeutic iron supplementation of anaemic pregnant women, the previous regime of twice daily dose of iron folate tablet containing elemental iron 60mg should be continued until further notice.

Thank you,

Director Maternal and Child Health
Family Health Bureau
231, de Saram Place,
Colombo - 10.

Director, Maternal and Child Health

Cc: Consultant Community Physicians – Provincial/Regional
MOO.MCH
MOOH

Within this system, data is collected at the clinic level, aggregated at the Medical Officer of Health (MOH) area or district level, and accessible to regional, provincial, and national health authorities in real-time through eRHMIS dashboards, enabling immediate identification and response to coverage gaps. Internal eRHMIS dashboards show >95 % monthly completeness for ANC supplementation fields in 2023, according to routine quality checks reported by HISP Sri Lanka(28).

Recording Tools and Forms

Key tools adapted for MMS tracking include:

- **Pregnancy Records (H512A and H512B)**:

  An "A" form (or slip) is provided to the mother, while midwives retain the "B" version. If the slip is misplaced, requires verification, or if the mother is lost to follow-up, the "B" form is used to locate and track her.

  The existing pregnancy record forms (H512A and H512B) have been manually adapted by health workers to explicitly document MMS distribution, replacing the earlier notation for IFAS without reprinting or changing original form fields. The government directive emphasizes systematic documentation of MMS in these forms, but it remains unclear how distinctions between MMS-only and combined MMS and IFAS supplementation for severely anaemic pregnant women are recorded and subsequently reported within the existing health information systems, including DHIS2.

Aggregation and Reporting Mechanisms

MMS data reporting follows established maternal health reporting procedures:

- Monthly data from clinics are aggregated into routine reports and entered into the eRHMIS via digital aggregate data entry forms specifically configured for maternal nutrition tracking.
- The eRHMIS dashboards allow authorities to track MMS coverage in near real-time and facilitate comparisons against established targets.
- Supervision checklists and quarterly district and national review meetings incorporate MMS monitoring data to ensure accurate recording and consistent coverage. Occasional provincial-level reviews may also include MMS data, but these are not conducted routinely.
- Reports are reviewed and aggregated by Medical Officers of Health and ultimately compiled by the Family Health Bureau (FHB) into periodic monitoring reports for distribution to the National Micronutrient Technical Working Group and senior management within the Ministry of Health.

Administrative Data Quality Assurance:

- Routine supervision visits with standardized checklists ensure accurate MMS data recording in eRHMIS.
- Quarterly district and national review meetings check completeness and consistency of ANC supplementation fields (>95% completeness in 2023).

Supply Chain and Logistics:

Supply management for MMS involves structured procurement and distribution monitoring:

Stock movement is visible through the Medical Supplies Management Information System (MSMIS), which transmits facility-level MMS balances to the central warehouse every week (29).

- Annual procurement estimates based on district birth rates, managed by the Family Health Bureau, guide MMS procurement through the Ministry's Medical Supplies Division.
- MMS distribution from central warehouses to district-level Regional Medical Supplies Divisions (RMSDs) and health institutions is closely monitored through quarterly reports, ensuring continuous stock availability and identifying potential supply disruptions early (30).

The SWASTHA system is intended to replace the existing MSMIS, SWASTHA is a transformative initiative, functioning as an integrated medical supplies information system (31).

Periodic Surveys

The Demographic and Health Survey is five-yearly (last round 2016; next planned 2026), while the National Nutrition & Micronutrient Survey is ad hoc, most recently in 2022 with nationwide coverage of 7 542 households (27,32).

1. DHS, Demographic and Health Survey

- Conducted every five years; the most recent Sri Lanka DHS was in 2016 (33).
- The survey captures the percentage of ever-married women aged 15–49 who took iron pills or capsules during the pregnancy of their most recent birth within the five years preceding the survey.
- It also records the percentage of women who received IFA supplements and their adherence to the recommended dosage.

	QUESTION AND INSTRUCTION	LAST BIRTH	
423A	During this pregnancy did you receive/buy iron pills/ capsules?	YES ... 1 NO ... 2 →	426 A
423B	From where did you get these iron pills/capsules ? CIRCLE ALL MENTIONED.	GOV. HOSPITAL ... A CLINIC (GOV.) ... B PVT HOSPITAL ... C PVT DOCTOR ... D PHARMACY ... E OTHER ... X	
423C	Did you take the iron pills/ capsules as instructed ?	YES ... 1 → NO ... 2	424 A
423D	Why did you not follow the instructions ? CIRCLE ALL MENTIONED.	NO SPECIAL REASON ... A DIARRHOEA ... B CONSTIPATION ... C NAUSEA ... D BAD TASTE/SMELL ... E OTHER ... X	
424A	During this pregnancy did you receive/buy calcium pills/ capsules?	YES ... 1 NO ... 2 →	427 A
424B	From where did you get these calcium pills/ capsules ? CIRCLE ALL MENTIONED.	GOV. HOSPITAL ... A CLINIC (GOV.) ... B PVT HOSPITAL ... C PVT DOCTOR ... D PHARMACY ... E OTHER ... X	
424C	Did you take the calcium pills/ capsules as instructed ?	YES ... 1 → NO ... 2	427 A
424D	Why did you not follow the instructions ? CIRCLE ALL MENTIONED.	NO SPECIAL REASON ... A DIARRHOEA ... B CONSTIPATION ... C NAUSEA ... D BAD TASTE/SMELL ... E OTHER ... X	
425A	During this pregnancy did you receive/buy folic acid pills ?	YES ... 1 NO ... 2 →	426 A
425B	From where did you get these folic acid pills ? CIRCLE ALL MENTIONED.	GOV. HOSPITAL ... A CLINIC (GOV.) ... B PVT HOSPITAL ... C PVT DOCTOR ... D PHARMACY ... E OTHER ... X	

	QUESTION AND INSTRUCTION	LAST BIRTH	
425C	Did you take the folic acid pills as instructed ?	YES ... 1 → NO ... 2	426 A
425D	Why did you not follow the instructions ? CIRCLE ALL MENTIONED.	NO SPECIAL REASON ... A DIARRHOEA ... B CONSTIPATION ... C NAUSEA ... D BAD TASTE/SMELL ... E OTHER ... X	
426A	During this pregnancy did you receive/buy worm treatment ?	YES ... 1 NO ... 2 →	427 A
426B	From where did you get these worm treatment ? CIRCLE ALL MENTIONED.	GOV. HOSPITAL ... A CLINIC (GOV.) ... B PVT HOSPITAL ... C PVT DOCTOR ... D PHARMACY ... E OTHER ... X	
426C	Did you take the worm treatment as instructed ?	YES ... 1 → NO ... 2	427 A
426D	Why did you not follow the instructions ? CIRCLE ALL MENTIONED.	NO SPECIAL REASON ... A DIARRHOEA ... B CONSTIPATION ... C NAUSEA ... D BAD TASTE/SMELL ... E OTHER ... X	
427A	During this pregnancy did you receive/buy other vitamins ?	YES ... 1 NO ... 2 →	429
427B	From where did you get these other vitamins ? CIRCLE ALL MENTIONED.	GOV. HOSPITAL ... A CLINIC (GOV.) ... B PVT HOSPITAL ... C PVT DOCTOR ... D PHARMACY ... E OTHER ... X	
427C	Did you take the other vitamins as instructed ?	YES ... 1 → NO ... 2	429
427D	Why did you not follow the instructions ? CIRCLE ALL MENTIONED.	NO SPECIAL REASON ... A DIARRHOEA ... B CONSTIPATION ... C NAUSEA ... D BAD TASTE/SMELL ... E OTHER ... X	
429	Did you use folic acid pills before you became pregnant with (NAME) ?	YES ... 1 NO ... 2 DON'T KNOW ... 8 →	431
430	When you took them, did you take these pills daily or less often ?	DAILY ... 1 LESS OFTEN ... 2	

2. **National Nutrition and Micronutrient Survey:**

- Conducted periodically (no fixed interval); the latest survey was conducted in 2022 (32).
- The survey includes data on prenatal supplementation coverage, including folic acid, iron, and combined iron-folate.
- It also reports the percentage of pregnant women who received supplements through ANC, categorized by the type of supplement.

Cross-Validation Studies (beyond routine):

- Cohort studies and periodic evaluations are conducted separately to validate adherence and acceptance, providing checks on admin system accuracy.

Parallel Tracking of IFA and MMS

During the transition from IFA to MMS in Sri Lanka, both supplements are expected to be tracked in parallel during the early stages. Continued IFA tracking serves as a safeguard in case of MMS supply disruptions, providing a fallback option during rollout. As MMS becomes fully integrated into national systems and its effectiveness is established, IFA tracking will be gradually phased out, with reporting focused solely on MMS. This phased strategy supports a stable and sustainable transition. However, very little documentation is currently available on how this will be operationalized, and initial discussions with officials suggest that many details are still under consideration.

Bangladesh

Key Findings	
Key indicators:	Coverage (% of pregnant women receiving MMS), adherence (≥180 tablets consumed), supply sufficiency and stock-out prevention, ANC service quality (visit frequency, nutrition counseling), and maternal/birth outcome.
Administrative system:	Pilot integrates MMS into the national DHIS-2(District Health Information Software 2) HMIS, platform managed by the DGHS, capturing real time service data and tracking maternal and health indicators.
Recording tools & data flow:	Updated facility-level ANC registers and client-held antenatal cards capture MMS distribution; monthly reporting forms feed aggregated data into DHIS-2.
Supply Chain:	The LMIS and quarterly DGDA pharmacy uploads and enables real-time tracking at upazila, district, and national levels. eLMIS and DGDA systems monitor the stock and private-sector sales.
Periodic surveys:	BDHS (2022) and National Nutrition Surveillance (2018–19) currently track only IFA coverage and adherence; MMS variables are not yet included, and survey schedules remain unchanged.
Gaps:	"FullCare" pharmacy distribution reaches ~600,000 women, but 29 % of first-trimester ANC visits occur in private facilities not linked to DHIS-2, creating a significant coverage blind spot.

Bangladesh initiated the introduction of MMS for pregnant women through a government-led pilot program supported by UNICEF, starting in 2021-2022. The initial pilot targeted two districts, Bhola and Kurigram, integrating MMS distribution into routine ANC services across 279 health facilities, reaching nearly 65,000 pregnant women (34). Concurrently, a private sector approach marketed MMS (branded "FullCare") through over 40,000 pharmacies, distributing over 50 million tablets and reaching approximately 600,000 women nationwide (35). Bangladesh's routine health data along with the antenatal supplementation are anchored and tracked in a national DHIS-2 platform managed by the Directorate General of Health Services (DGHS) (36). According to the BDHS 2022, 72% of women had their first antenatal care (ANC) contact in the private sector (37). This highlights the importance of capturing data from pharmacies and private clinics. Unlike many other countries, Bangladesh presents a unique context, as most of the countries have not yet considered integrating MMS distribution or its reporting from private sector into the national health information system.

Key Indicators Tracked for MMS

The pilot monitored several critical indicators:

Administrative

1. **Coverage:** Proportion of pregnant women receiving MMS tablets, aiming for universal coverage similar to previous IFAS monitoring ***(the coverage is also given by periodic surveys)***. Newly registered pregnant women receiving MMS during any antenatal care visits at the health facility (38).
2. **Supply and Stock Metrics:** MMS availability at facilities, stock sufficiency, and prevention of stock-outs (39).
3. **ANC Service Indicators:** ANC visit frequency and quality, including nutrition counseling and adherence to recommended ANC visits (35) .

Periodic surveys and other studies

4. **Adherence:** Percentage of women consuming the recommended 180 tablets, tracked through surveys and health worker follow-ups. Pilot results indicated notably higher adherence to MMS compared to IFAS (35).
5. **Health Outcomes:** Maternal anemia prevalence, low birth weight incidence, and other birth outcomes primarily assessed through periodic surveys and facility-based assessments (39).

Monitoring Framework and Platforms

Bangladesh utilizes its established HMIS, specifically the DHIS-2, to monitor MMS distribution. During the pilot phase, existing ANC registers and monthly reporting forms were adapted to record MMS distribution details (40). Facility-level data, including the number of women receiving MMS and tablets dispensed, were reported monthly through DHIS-2, allowing real-time tracking at upazila, district, and national levels (36) .

The pilot also featured enhanced monitoring through implementation research by organizations such as icddr,b, involving dedicated surveys and follow-ups to assess MMS adherence and ANC compliance(41).

Recording Tools and Forms

Frontline health workers utilized the following tools to record MMS distribution:

1. **ANC Register/Logbook:** Updated specifically to note MMS distribution, tablet quantity, side effects, and counseling details.
2. **Client-held Antenatal Cards:** Documented MMS tablets provided during each ANC visit.

Aggregation and Reporting Forms

Monthly reporting forms used by health facilities were adapted to include:

- "Number of pregnant women who received MMS this month"
- "Total MMS tablets distributed"

These aggregated data points were reported through DHIS-2, integrating seamlessly into the established health information workflow (36) .

Supply Chain and Logistics

Stock levels were tracked through the Logistics Management Information System (LMIS) and facility stock registers, with regular reports ensuring continuous MMS availability (35). Facilities reported monthly stock levels, distribution, and requests to central medical stores, ensuring prompt resupply and avoiding stock-outs (39).

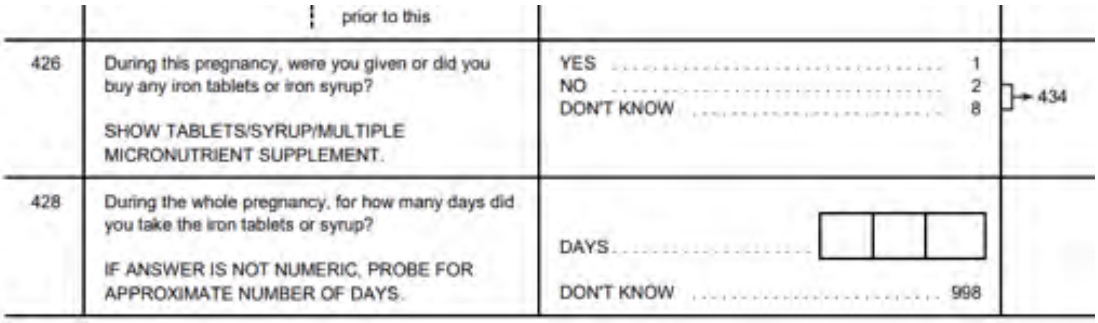
The **DGHS eLMIS** (Directorate General of Health Services electronic Logistics Management Information System) is a sophisticated web-based platform designed to monitor logistics data at national, regional, and facility levels within the DGHS and Bangladesh plans on transitioning the existing DGHS eLMIS into CMSD (Central Medical Stores Depot) eLMIS for the management of health commodities (42).

Pharmacy sales summaries are uploaded quarterly through the DGDA's web-based registration system (launched 2021), which exports an aggregate "Private-MMS" dataset to DHIS-2(43).

Periodic Surveys

1. **Bangladesh Demographic and Health Survey (BDHS):**
   - The BDHS records the consumption of iron-containing supplements (iron tablets or syrup) for at least 90 days during the most recent pregnancy, along with the percentage distribution by the number of days women took these supplements.

     Conducted every five years; the most recent round was in 2022 (37).



	prior to this		
426	During this pregnancy, were you given or did you buy any iron tablets or iron syrup? SHOW TABLETS/SYRUP/MULTIPLE MICRONUTRIENT SUPPLEMENT.	YES ..... 1 NO ..... 2 DON'T KNOW 8	→ 434
428	During the whole pregnancy, for how many days did you take the iron tablets or syrup? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS.	DAYS ..... [ ][ ][ ] DON'T KNOW 998	

2. **National Nutrition Surveillance,** National Nutrition Services (NNS) State of Food Security and Nutrition in Bangladesh:

- This surveillance system captures data on married adolescent girls and pregnant women who received iron–folic acid (IFA) and calcium tablets during their last pregnancy (44).
- Conducted periodically (without a fixed schedule); the most recent round was in 2018–19.

BDHS 2022 shows that 29 % of first-trimester ANC visits take place in private facilities not yet linked to DHIS-2, creating a potential coverage blind spot until interoperability is established(37).

Bhutan

Key Findings	
Key indicators:	ANC coverage, maternal nutrition counseling, MMS distribution and adherence rates, maternal anemia prevalence
Administrative system:	Fully integrated into Druk HMIS (DHIS-2) with real-time MCH tracking; covers >98 % of facility births and supports online/offline data entry through the web-based MCH module.
Recording tools & data flow:	MCH Handbook entries (manual strike-out of IFA to note MMS), supplemented by the web-based MCH tracking system; facility data are aggregated monthly into Druk HMIS and reviewed at national and regional levels.
Supply chain:	Annual requisitions managed by the Department of Medical Products, distributed via the Logistics Management Division (Oct–Dec cycle), with in-kind MMS supplies from Vitamin Angels ensuring equitable reach to remote communities.
Periodic surveys:	Current surveys (National Nutrition Survey 2015; Service Delivery Health Indicators Survey 2022–23) track only IFA; planned Bhutan Multiple Indicator Survey (BMIS) will introduce MMS modules
Gaps:	Though the periodic survey introduce MMS modules, private-sector reporting remains minimal.

Bhutan is actively implementing MMS program aimed at addressing micronutrient deficiencies among pregnant and lactating women. The Ministry of Health (MoH) collaborates closely with Vitamin Angels to distribute MMS through existing healthcare infrastructures, including hospitals, basic health units, and outreach clinics, emphasizing service delivery to underserved and remote communities (45,46). Bhutan registered 10,157 live births in 2022, out of an estimated 12,204 births (registration completeness 83 %), so the current MMS program already reaches roughly four-fifths of an annual birth cohort(47). Annual Health Bulletin tables indicate that 97% of institutional deliveries are reported through public health facilities, while private ANC services account for only 1.2% of visits—suggesting minimal data gaps related to the private sector. Bhutan's health system operates almost exclusively through public facilities, with limited or no use of private providers for services such as antenatal care or institutional deliveries. While private providers do exist, their role in routine maternal health services remains minimal. Moreover, there is no clear evidence from available sources that the private sector is required or actively engaged in reporting ANC, PNC, or other service delivery data through the national health information system (DrukHMIS). The country's health system remains predominantly public-sector driven, particularly in the delivery and reporting of community-based health programs (48).

Key Indicators Tracked:

Bhutan uses a robust set of health indicators within its routine monitoring systems (49).

Administrative:

- **Coverage**: % of pregnant women consuming IFA, proportion of women consuming sufficient no. of IFA tablets during pregnancy
- **ANC and service delivery indicators:** ANC coverage, maternal nutrition counseling coverage, coverage of postnatal Vitamin A supplementation, timing of initiation of IFA
- **Health outcomes:** Maternal anemia prevalence ***(also validated through national surveys)***

Periodic Surveys and Other studies:

- **Adherence:** % of women taking IFA (at least once a week and daily) during pregnancy, MMS distribution and adherence rates
- **Service and Quality Indicators:** Quality of ANC, % of women advised to take IFA

MMS Tracking and Information Systems

Bhutan leverages its established HMIS known as Druk HMIS, built on the DHIS-2 platform, to track health-related interventions including maternal and child health (MCH). Druk HMIS facilitates real-time data reporting and analysis, functioning as a central data warehouse with built-in capabilities for integrating data from multiple sources in both online and offline environments. HMIS figures in the Annual Health Bulletin 2024 show that 98 % of births in 2023 occurred in health facilities and 98.5 % were attended by skilled personnel, demonstrating near-universal facility reporting through Druk HMIS (50). The bulletin notes that all routine data were compiled from health facilities nationwide "utilizing DHIS2, Monthly Activity Reports, [and] Monthly Morbidity Reports," confirming DHIS2 as the core platform for national reporting.

In maternal nutrition programs, the Mother and Child Healthcare (MCH) tracking system within DHIS-2 systematically records data on antenatal and postnatal supplementation, nutrition counseling, weight monitoring, and MMS usage among pregnant women. The Ministry of Health Officials state that the MMS is a national rollout and the digital reporting covers over 90% of the health facilities. The remaining ones utilize the MCH paper-based system. It is in this register that the current MMS is tracked in the field of IFAS.

Data Collection Forms and Tools

Bhutan employs several standardized tools for monitoring MMS:

- **Maternal and Child Health (MCH) Handbook**: This comprehensive handbook assigns a unique identification number to each pregnant woman, tracking her from ANC through postnatal care. It is an exact replica of the MCH tracking tool but includes additional information on MMS usage, safety, and other counseling components. Health workers use the handbook to document and monitor MMS distribution, ANC visits, and other maternal health services within the Druk HMIS (51). While nationwide printing of MMS-updated forms has not yet been completed, officials stated that they strike out the IFA entry, write in

MMS, and then record it in the MCH handbook. Only women diagnosed with severe anaemia are provided with both IFAS and MMS.

- **Web-based Mother and Child Healthcare (MCH) Tracking System**: This system captures data from ANC visits until the postnatal period, providing real-time monitoring of MMS distribution, adherence, and associated health outcomes (52).

Supply Chain and Logistics

In Bhutan, the procurement and distribution of MMS are coordinated by the Department of Medical Products under the Ministry of Health. Requisitions are collected annually from health facilities and consolidated for procurement. The Logistics Management Division, located near the India-Bhutan border in Jayagaun, is responsible for distributing MMS to health facilities across the country. Supplies typically reach facilities between October and December each year. For the 2025 cycle, MMS stocks had already arrived by the October to December period of 2024. The current supply is facilitated through in-kind support from Vitamin Angels, who provide MMS based on quantified requests submitted by the Ministry of Health.

The MMS supply chain is managed through Bhutan's existing health facility networks, coordinated at the national level by dedicated Program Officers. The Program Officer's responsibilities include overseeing the timely distribution of MMS supplies, managing inventory across regions, and reporting to the national health authorities. Distribution occurs through hospitals, basic health units, and outreach clinics, with particular emphasis on underserved and remote communities, ensuring equitable access (46,53) .

The procurement and supply chain is tracked under **e-BMSIS(electronic Bhutan Medical Supplies Inventory System), launched in** 2017, which is as a transition from a manual medical supplies tracking system to a real-time, digital inventory management system(54).The e-BMSIS mainly takes care of all the medical supplies both Drugs and Non-Drugs procured(55).

Periodic Surveys

1. **National Nutrition Survey:**
    - The survey records IFA coverage among pregnant women, including the percentage who took IFA and the number of times tablets were consumed.
    - Conducted periodically; the most recent survey was in 2015.
    - The Women and Child Questionnaire section of the NNS 2015 includes relevant data on IFA supplementation.

7. Ante-Natal Care and Post Natal care

7.1 FPTP	During your target pregnancy (child name), did you take any iron tablets/ capsules or syrups? (If yes, how often?)	Not taken.....0 Rarely (1-2 times a month).....1 Sometimes (1-2 times a week).....2 Often (3-4 times a week).....3 Mostly (More than 5 or more days/ week).4 Don't know/ can't remember.....9	
7.2a FPANC	Did you receive ANC check up during the target pregnancy	No.....0 Yes.....1	If "No" skip to 7.5
7.2b FPANC	How many times did you receive antenatal checkups during this pregnancy?	Number of times Don't know.....99	Ask the mother if she received any pregnancy related check-ups during the pregnancy. Ask her how many times in total she saw someone for antenatal care during her pregnancy. This refers to care related to her pregnancy and should not include seeing a doctor or nurse for other reasons. Select "Don't know" if she do not remember

2. **Service Delivery Health Indicators Health Survey for Bhutan**:

- This survey captures patient-reported data on the quality of ANC services, including the percentage of women who were advised to take IFA and informed about its possible side effects (56).
- The most recent available report covers the 2022–23 period. The survey is conducted periodically, without a fixed schedule.

IFAS, and now MMS, are planned to be monitored through the National Health Survey, specifically via micronutrient modules. The government also intends to conduct a micronutrient survey among the population cohort receiving MMS, using baseline information obtained from the National Health Survey. In addition, UNICEF is planning to conduct the Bhutan Multiple Indicator Survey (BMIS), either later this year or in the following year.

Pakistan

Key Findings	
Key indicators:	Coverage (% pregnant women receiving MMS; ANC visits with MMS), adherence (self-reported daily intake), supply chain (stock availability/distribution), health outcomes (anaemia prevalence; low birth weight; preterm births), and implementation outcomes (fidelity; acceptability; feasibility).
Administrative system:	Centralized via DHIS-2 with provincial customizations (Punjab's IRMNCH–Nutrition forms; KP's MNCH portal); health facility data aggregated monthly and accessible at federal, provincial, and district levels, supplemented by Nutrition International supervision visits.
Recording tools & data flow:	Standardized paper ANC registers maintained by LHWs/LHVs and DHIS-2 monthly reporting forms (DHIS-13, -14, -21) capture service delivery and supplementation data; facility managers submit electronic reports after data aggregation.
Supply chain:	Coordinated by Chief Medical Technicians at national/provincial levels, ensuring stock consistency, periodic reviews, and flood-response supply adjustments through existing health networks (hospitals, BHUs, outreach clinics).
Periodic surveys:	PDHS (2017–18) and NNS (2018) capture only IFA use and micronutrient status.
Gaps:	Periodic surveys lack MMS-specific variables. Also, Private-sector facility data (46% of births) remain largely unintegrated into routine DHIS-2 reporting.

Pakistan is transitioning from IFA supplementation to MMS to improve maternal and newborn health outcomes, initially through pilot projects and implementation research. The Ministry of National Health Services, Regulations & Coordination (MoNHSR&C), in collaboration with Nutrition International, UNICEF, and other partners, is overseeing this phased transition under the Maternal Nutrition Strategy 2022–2027, targeting 50% national coverage by 2027(57,58). The PDHS 2017–18 shows that while 26% of births take place in public facilities, a significantly larger share—46%—occur in private clinics, highlighting the substantial role of the private sector in service delivery. However, despite this major share, the extent to which private clinics are integrated into the national routine monitoring system remains unclear. This lack of clarity extends to the implementation of MMS as well, where the role of the private sector in distribution and reporting has not been clearly defined.

Pakistan's maternal, newborn, and child health data are captured through a nationwide District Health Information System (DHIS-2), which became the government's primary platform for recording and reporting RMNCH services following a phased digital rollout completed in 2023 (59). At the federal level, the Health Planning, Systems Strengthening & Information Analysis Unit compiles 78 core MNCH indicators through its Public Health Information System dashboard, aggregating monthly data from provincial DHIS nodes (59).

Provincial customizations are common. Punjab, for instance, has integrated Daily RMNCH and IRMNCH–Nutrition forms into DHIS-2 to track antenatal care contacts and supplementation, while Khyber Pakhtunkhwa hosts real-time ANC and skilled birth dashboards on its dedicated MNCH portal. Electronic reporting completeness now exceeds 90% across all provinces (60).

However, a WHO review notes that the system remains largely focused on public-sector facilities and does not fully reflect Pakistan's substantial private-sector service delivery. This continues to pose a significant gap in the country's routine monitoring landscape(59).

Key Indicators tracked:

Pakistan's MMS monitoring framework tracks comprehensive indicators through DHIS-2 and complemented by other studies like:

Administrative:

- **Coverage Indicators**: Percentage of pregnant women receiving MMS, number of ANC visits where MMS is provided.
- **Supply Chain Indicators**: Stock availability and distribution at health facilities.
- **Health Outcomes**: Maternal anemia prevalence, birth outcomes like low birth weight, preterm births ***(also complemented through periodic surveys)***

Periodic Surveys and other studies:

- **Adherence Indicators**: Self-reported MMS intake among recipients and compliance levels with daily and weekly consumption.
- **Implementation Outcomes**: Fidelity, acceptability, feasibility of MMS integration into routine ANC services (61).

MMS Tracking and Information Systems

Pakistan primarily uses the DHIS-2 as its core HMIS to monitor the MMS rollout. This platform captures monthly data from health facilities, integrating MMS data with routine ANC reporting (62). During the pilot in Swabi district, Khyber Pakhtunkhwa, MMS distribution is tracked through:

- **DHIS-2 Platform**: MMS implementation data, including stock management and distribution records, are integrated into DHIS-2. Health facilities submit monthly reports electronically based on data aggregated from standardized ANC registers.
- **Project-specific monitoring**: Nutrition International conducts additional manual monitoring and supportive supervision visits, cross-verifying facility-level reports with DHIS-2 data to ensure accuracy and fidelity of implementation (63) .

Data Collection Forms and Tools

Pakistan employs several standardized tools for MMS monitoring:

- **ANC Registers**: Lady Health Workers (LHWs) and Lady Health Visitors (LHVs) record MMS distribution, counseling sessions, and adherence data on standardized paper registers at both facility and community levels. These serve as primary data sources for DHIS-2 reporting.
- **DHIS-2 Monthly Reporting Forms**: Health facility data managers compile monthly reports detailing MMS distribution, stock availability, and ANC integration, which are then electronically submitted through DHIS-2 (62) .
    - **DHIS – 13 (R) Maternal Health Register:** Records individual patient details related to maternal health services, including antenatal visits and supplementation provided.

- **DHIS – 14 (C) Antenatal Card:** A card issued to pregnant women to track their antenatal care progress, including IFAS/MMS intake.
- **DHIS – 21 (MR) PHC Facility Monthly Report Form:** Compiles aggregated data from the facility's registers, summarizing the number of women who received IFAS during the reporting period.

- **Training and Job Aids**: Healthcare workers utilize job aids and training manuals provided by Nutrition International to maintain consistency and accuracy in MMS delivery and documentation (63).

Supply Chain and Logistics

The MMS supply chain involves coordination at national and provincial levels, primarily managed by dedicated personnel like Chief Medical Technicians. Responsibilities include:

- Ensuring consistent MMS stock availability.
- Coordinating distribution through existing healthcare networks (hospitals, basic health units, and outreach clinics).
- Conducting periodic stock reviews and avoiding stockouts, particularly highlighted during humanitarian contexts such as floods (62,64) .

Pakistan's supply chain for such supplements is managed through a combination of digital systems like the Logistics Management Information System (LMIS) and paper-based elements, coordinated by the trained personnels. Different ongoing studies and bottleneck analyses has highlighted supply chain challenges and the need for digitized health systems to improve forecasting, procurement, and distribution of IFA and potentially MMS in the future(40,65).

Periodic Surveys

1. **Pakistan Demographic and Health Survey (PDHS):**
    - The survey records the percentage of women who took iron tablets or syrup during the pregnancy of their most recent live birth, including those who consumed iron for at least 90 days (66).
    - Conducted approximately every five years; the most recent round was in 2017–18.

420	During this pregnancy, were you given or did you buy any iron tablets or iron syrup? SHOW TABLETS/SYRUP.	YES ..... 1 NO ..... 2 → (SKIP TO 422) DON'T KNOW 8
421	During the whole pregnancy, for how many days did you take the tablets or syrup? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS.	DAYS ..... [ ][ ][ ] DON'T KNOW 998

(66)

2. **National Nutritional Survey (NNS):**
    - The NNS captures data on micronutrient deficiencies and the coverage of IFA and MMS.
    - Married Women of Reproductive Age (MWRAs) are asked whether they have ever taken IFA during pregnancy. If yes, follow-up questions explore the source (given or purchased),

frequency, and duration of intake. The survey also inquiries about MNP use during pregnancy, including how often it was taken (67).

- Conducted roughly every 10 years; the most recent survey was in 2018.

	انجکشن لگوایا تھا؟	*Don't know* معلوم نہیں 98	
W309	Have you ever taken any iron folic acid (IFA) while you were pregnant? کیا آپ نے کبھی حمل کے دوران فولاٹ کی گولیاں استعمال کیں؟	Yes ہاں ..... 1 No نہیں 2	2→Q13
W310	if yes, given or purchased? اگر ہاں ہے تو کسی نے دی یا خریدی	*1. Given at clinic* کلینک پر ملی ..... Y/N *2. Purchased* خریدی ..... Y/N *3. No, never given or purchased* نہ ملی نہ خریدی ..... Y/N *Don't know* معلوم نہیں ..... 98 *No response* جواب نہیں دیا 99	
W311	How often did you take IFA during pregnancy? آپ حمل کے دوران کتنی مرتبہ فولاٹ کی گولیاں استعمال کرتی تھیں؟	Daily روزانہ ..... 1 Once a week ہفتے میں ایک مرتبہ ..... 2 Biweekly ہفتے میں دو مرتبہ ..... 3 Monthly ہر مہینے ..... 4 Rarely کبھی کبھار 5	
W312	How many months or days did you take IFA? کتنے مہینے یا کتنے دنوں تک آپ (الرن فولک)گولیوں کا استعمال کرتی رہی تھیں؟	Months ..... [_][_] Days ..... [_][_]	
W313	Have you ever taken multi-micronutrient tables (MNP) during pregnancy? کیا آپ نے کبھی دوران حمل اضافی طاقت کی گولیاں استعمال کیا تھا؟	Yes ہاں ..... 1 No نہیں 2	2→Q16
W314	How often did you take MNP during pregnancy? عموماً کتنی دفعہ حمل کے دوران اضافی طاقت کی گولیوں کا استعمال کیا؟	Daily روزانہ ..... 1 Once a week ہفتے میں ایک مرتبہ ..... 2 Biweekly ہفتے میں دو مرتبہ ..... 3 Monthly ہر مہینے ..... 4 Rarely کبھی کبھار 5	
W315	How many months or days did you take MNP? آپ کتنے مہینوں یا دنوں تک اضافی طاقت کی گولیاں کھاتی رہی تھیں؟	Months مہینے ..... [_][_] Days دنوں ..... [_][_]	
W316	Have you ever taken calcium tablets while you were	Yes 1	

(67).

Africa

Nigeria

Key Findings	
Key indicators:	Number of pregnant women receiving MMS, number counselled on MMS use, number tested for anaemia, and identification of supply-chain bottlenecks to prevent stock-outs.
Administrative system:	Pilot in Bauchi State employs a parallel monitoring approach with dedicated maternal supplementation registers and bimonthly requisition/reporting forms, all feeding into the national DHIS-2 HMIS (post-2023 digital rollout). Planned NHLMIS Nutrition Dashboard onboarding in July 2025 will further standardize data.
Recording tools & data flow:	Data captured via ANC Registers and Maternal Health Booklets (by LHWs/LHVs), Growth Monitoring and Promotion Registers, Monthly Summary Forms, Inventory Control Cards, Requisition & Issuing Forms, and General Attendance Registers—then aggregated monthly/quarterly and submitted electronically through DHIS-2.
Supply chain & logistics:	MMS stocks tracked using ICCs and RIRF at facility and state levels; NHLMIS Nutrition Dashboard prototype demonstrated in Feb 2024, with nationwide rollout scheduled for July 2025 to monitor opening balances, receipts, distributions, closing balances, and expiry dates.
Periodic surveys:	Nigeria DHS 2023–24 and National Health Facility Survey 2023 continue to document IFA use and facility readiness.
Gaps:	Periodic surveys still but lack MMS-specific modules and do not disaggregate data by public vs. private sector, leaving private-sector MMS delivery untracked.

Nigeria has initiated the transition from IFAS to MMS for pregnant women, initially piloted in Bauchi State with support from Nutrition International. The pilot specifically targets pregnant women without anemia, who receive MMS tablets during ANC visits (68,69).

In the country, during the pilot phase of MMS implementation, dedicated tools—such as the maternal supplementation register and the bimonthly requisition and reporting forms—were developed to track MMS separately from IFAS. This approach reflects a parallel monitoring system that allows clear differentiation between the two supplementation programs. Discussions with country stakeholders indicate that this separate documentation is expected to continue during the phased rollout and eventual national scale-up, maintaining distinct reporting structures for MMS and IFAS to support data clarity throughout implementation. However, there is less clarity on whether dual monitoring of supplementation will continue, or if IFAS will be phased out once MMS reaches universal coverage and consistent availability in the country.

The Nigeria DHS 2023-24 Key Indicators Report shows that 63 % of women received ANC from a skilled provider and only 45 % of births occurred in a health facility, yet it does not disaggregate those contacts by managing authority (public vs private)—leaving no clarity on where MMS is actually delivered or how private-sector provision might be tracked (70).

Key Indicators Tracked:

New MMS indicators complement the IFAS indicators.

Administrative:

- **Coverage:** Number of pregnant women who received MMS.
- **Supply metrics:** Stock availability and distribution of supplements at health facilities.
- **ANC service indicators**: Number of pregnant women counselled on MMS during ANC visits, No. of iron tablets distributed to pregnant women during ANC visits.

Periodic Surveys and other studies:

- **Adherence**: Self-reported consumption and compliance rates adherence to IFA like no. of tablets taken.
- **Service and Quality Indicators**: Facility readiness to provide ANC services, Availability of Iron tablets

MMS Tracking and Information Systems

The monitoring of MMS supplementation is designed as an integral part of ANC and involves data collection at multiple levels. Data is captured using established tools such as the ANC Register, Growth Monitoring and Promotion (GMP) Register, and Monthly Summary Forms. The national monitoring system primarily relies on the DHIS-2 platform, which aggregates health data collected through traditional paper-based Nigeria Health Management Information System data tools deployed to health facilities. The government plans to update the NHMIS data collection forms and print and distribute to states as seed-stock for subsequent reproduction by individual states. Digitization efforts and training have also begun in select states, though nationwide digital integration remains pending.

Data Collection Forms and Tools

Monitoring involves the following forms and tools:


Form 1: Maternal Supplementation Register

- **ANC Register and Maternal Health Booklets:** Document ANC visits, MMS distribution, and counseling provided.
- **Growth Monitoring and Promotion (GMP) Register:** Used at the facility level primarily for child nutrition monitoring; its relevance to MMS tracking is indirect and depends on integration of maternal nutrition services within routine ANC and nutrition platforms.
- **Monthly Summary Forms:** Aggregate MMS distribution and counseling data monthly or quarterly.
- **Inventory Control Cards (ICC):** Track inventory, including opening balances, monthly quantities received and distributed, and end-of-month balances with expiry dates.
- **Requisition and Issuing Forms:** Manage supply requisition at health facilities and stores.
- **General Attendance Register:** Additional facility-level monitoring tool.

Recording and reporting specifically includes:

- Number of pregnant women receiving MMS.
- Number of pregnant women counselled on MMS usage.
- Number of pregnant women tested for anemia.
- Identification and remediation of supply chain bottlenecks to prevent stock-outs.

Supply Chain and Logistics

MMS supply chain management incorporates:

- **Nigeria Health Logistics Management Information System (NHLMIS):** Planned onboarding of MMS onto a proposed Nutrition Dashboard to track nationwide MMS supply and distribution. The NHLMIS Nutrition Dashboard prototype was demonstrated to state logisticians in February 2024; national onboarding is scheduled for July 2025(71).
- **Inventory Control Cards and Requisition & Issuing Forms (RIRF):** Facility and state-level management of MMS stocks.


NUTRITION PROGRAM

Key inventory management indicators:

- Opening balance at the beginning of the month.
- Quantity of MMS received during the month.
- Quantity of MMS distributed during the month.
- Closing balance and expiry date of commodities at month's end.

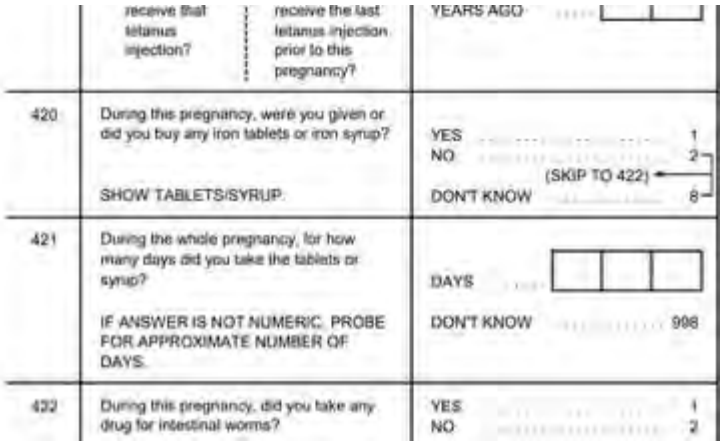
Parallel Tracking of IFA and MMS

During the scale-up of MMS, Nigeria is using a phased reporting approach. New indicators—such as the number of pregnant women receiving MMS and those counselled on its use—have been introduced to complement, not replace, existing IFAS indicators. In areas where MMS is being rolled out, both supplements are tracked in parallel, with separate reporting systems maintained during the transition. This dual tracking allows for clear differentiation between MMS and IFAS data and supports accurate reporting throughout the phased rollout, until MMS is expanded nationally and fully integrated into the health information system.

Periodic Surveys

1. **Nigeria Demographic Health Survey**:
    - The Nigeria DHS records the percentage of women who had a live birth or stillbirth in the two years preceding the survey and who took any iron-containing supplements during pregnancy (72).
    - Conducted approximately every five years; the most recent round is from 2023–24.

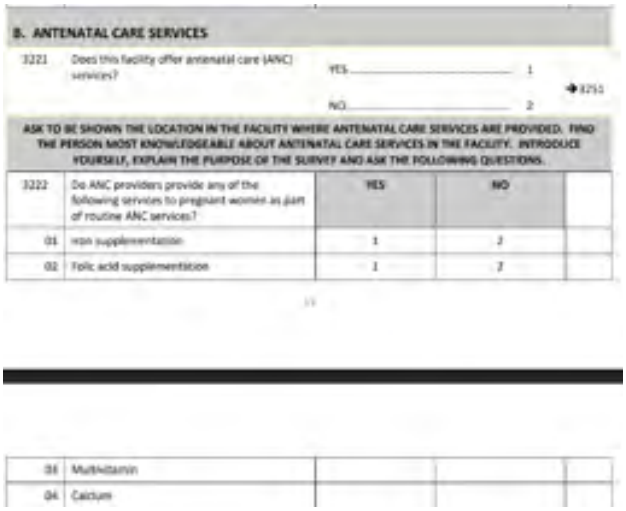
- The survey instruments are adapted from The DHS Program's model questionnaires. The Women's Questionnaire from the 2018 DHS Final Report provides relevant data on IFA supplementation (73).



	receive that tetanus injection? / receive the last tetanus injection prior to this pregnancy?	YEARS AGO
420	During this pregnancy, were you given or did you buy any iron tablets or iron syrup? SHOW TABLETS/SYRUP	YES 1 NO 2 (SKIP TO 422) DON'T KNOW 8
421	During the whole pregnancy, for how many days did you take the tablets or syrup? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS.	DAYS DON'T KNOW 998
422	During this pregnancy, did you take any drug for intestinal worms?	YES 1 NO 2

2. National Health Facility Survey, Nigeria

- In the NHFS, enumerators interview the most knowledgeable person at the facility to assess the availability of iron and folic acid supplements for ANC services.
- Facility readiness to provide ANC services is measured by the average proportion of facilities reporting availability of iron tablets (74).
- Conducted roughly every three years; the most recent survey was in 2023, following earlier rounds in 2016 and 2019.
- The relevant information below is drawn from the NHFS questionnaire.

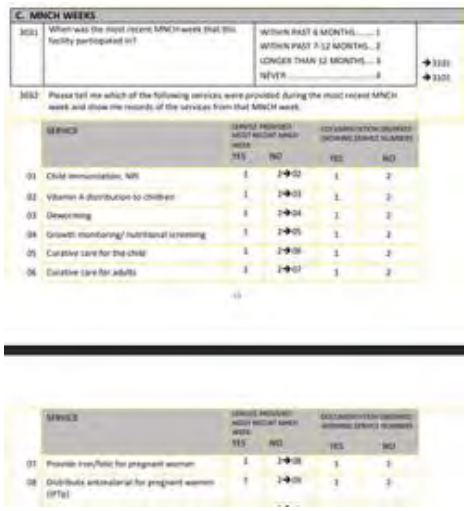


B. ANTENATAL CARE SERVICES

3221 Does this facility offer antenatal care (ANC) services? YES 1 → 3251; NO 2

ASK TO BE SHOWN THE LOCATION IN THE FACILITY WHERE ANTENATAL CARE SERVICES ARE PROVIDED. FIND THE PERSON MOST KNOWLEDGEABLE ABOUT ANTENATAL CARE SERVICES IN THE FACILITY. INTRODUCE YOURSELF, EXPLAIN THE PURPOSE OF THE SURVEY AND ASK THE FOLLOWING QUESTIONS.

3222	Do ANC providers provide any of the following services to pregnant women as part of routine ANC services?	YES	NO	
01	Iron supplementation	1	2	
02	Folic acid supplementation	1	2	
03	Multivitamin			
04	Calcium			



C. MNCH WEEKS

3031 When was the most recent MNCH week that this facility participated in? WITHIN PAST 6 MONTHS 1; WITHIN PAST 7-12 MONTHS 2; LONGER THAN 12 MONTHS 3; NEVER 4 → 3101

3032 Please tell me which of the following services were provided during the most recent MNCH week and show me records of the services from that MNCH week.

	SERVICE	SERVICE PROVIDED DURING MOST RECENT MNCH WEEK: YES	NO	DOCUMENTATION OBSERVED: YES	NO
01	Child immunization, MR	1	2→02	1	2
02	Vitamin A distribution to children	1	2→03	1	2
03	Deworming	1	2→04	1	2
04	Growth monitoring/ nutritional screening	1	2→05	1	2
05	Curative care for the child	1	2→06	1	2
06	Curative care for adults	1	2→07	1	2
07	Provide iron/folic for pregnant women	1	2→08	1	2
08	Distribute antimalarial for pregnant women (IPTp)	1	2→09	1	2

Ethiopia

Key Findings	
Key indicators:	Number of pregnant women receiving MMS, number receiving nutrition counseling, average tablets consumed per woman (adherence), stock availability/stock-out frequency, and maternal and birth outcomes (anemia prevalence, birth weight).
Administrative system:	Pilot MMS data are captured through Ethiopia's DHIS-2 HMIS, with frontline health workers recording in paper-based ANC registers and designated HMIS focal persons entering data; mobile monitoring platforms (EPHI/iMMAP) support real-time data collection in remote woredas.
Recording tools & data flow:	Standard ANC registers document distribution, counseling, and adherence; Monthly Summary Forms and Inventory Control Cards aggregate service and stock data, which are entered into DHIS-2 and subject to periodic data quality assessments.
Supply chain & parallel tracking:	Inventory Control Cards track MMS stocks at facility level and feed monthly reports to regional and national authorities; IFAS and MMS are tracked concurrently throughout the pilot, with parallel reporting structures maintained until evidence justifies a full shift to MMS.
Periodic surveys:	Ethiopia's DHS (EMDHS 2019) and Service Provision Assessment (2021–22) capture only IFA use and facility readiness.
Gaps:	Periodic surveys lack MMS-specific modules and private-sector reporting further creates blind spots in national data coverage.

Ethiopia is currently implementing MMS pilot as part of ANC services to enhance maternal and child health outcomes. The Federal Ministry of Health (MoH), with technical and financial support from UNICEF and the Children's Investment Fund Foundation (CIFF), initiated the pilot in 21 selected districts (woredas) across Oromia, SNNPR, Sidama, Somali, and Gambella regions (75,76) . This pilot aims to assess the feasibility of transitioning from IFAS to MMS within routine ANC services.

Although about 11% of facility births in 2019 occurred in private clinics and hospitals(77) , most private providers are not yet required to report service statistics to the national DHIS-2 platform. Reporting remains voluntary and is largely limited to a few urban facilities participating in public–private mix (PPM) projects(78,79) . As a result, under the current MMS pilot, data on distribution and adherence come almost exclusively from public health centers—leaving a significant blind spot for women who receive ANC services through the rapidly expanding private sector.

Key Indicators tracked:

Key performance indicators used to evaluate MMS pilot implementation, some complement the IFA indicators:

Administrative:

These indicators are tracked regularly through facility-level reports entered into DHIS-2, facilitating real-time analysis and program adjustments (76,80)

- **Coverage**: Number of pregnant women receiving MMS ***(also tracked through periodic surveys)***
- **ANC service indicators**: Number of pregnant women receiving nutrition counseling on MMS
- **Supply and stock metrics:** Stock availability and frequency of stockouts at health facilities

Periodic surveys and other studies:

- **Adherence:** MMS adherence rates (average number of tablets consumed per woman)
- **Health outcomes**: Maternal anemia prevalence, birth weight, and incidence of low birth weight
- **Implementation and quality indicators:** availability of supplements, % of health facility types that provide iron tablets.

MMS Tracking and Information Systems

The primary system used for MMS monitoring in Ethiopia is the DHIS-2 platform. DHIS-2 serves as Ethiopia's comprehensive HMIS, enabling the aggregation and analysis of health data from over 30,000 health facilities nationwide (81) .

In the MMS pilot districts, health workers initially record data manually in standard paper-based ANC registers at health facility levels. This data is subsequently entered into DHIS-2 by facility statisticians or designated HMIS focal persons, who also conduct periodic data quality assessments to ensure accuracy and completeness (82).

Additionally, Ethiopia leverages digital innovations, such as mobile monitoring platforms developed in collaboration with the Ethiopian Public Health Institute (EPHI) and iMMAP. These platforms facilitate real-time data collection, enhanced data accuracy, and communication, especially critical in remote regions (83) .

Data Collection Forms and Tools

For effective monitoring and reporting during the MMS pilot, Ethiopia uses standardized data collection tools, including:

- **ANC Register:** Standard paper-based records documenting MMS distribution, adherence, ANC visits, and nutrition counseling.
- **Monthly Summary Forms:** Aggregates ANC and MMS service data for monthly reporting and entry into DHIS-2.
- **Inventory Control Cards (ICC):** Used at health facilities to track MMS stock levels, recording opening balances, quantities received, quantities dispensed to pregnant women, and month-end stock balances.

Supply Chain and Logistics

MMS supply management is monitored using Inventory Control Cards at facility levels, ensuring continuous availability and avoiding stockouts. Stock data is aggregated into monthly reports, enabling regional and national authorities to oversee and manage supplies effectively. Logistics and procurement are managed in collaboration with regional health bureaus and international partners like UNICEF and CIFF (76) .

The tracking of the supply chain is tracked via electronic Logistic Management Information System (eLMIS) – Health Commodity Management Information System (HCMIS), Facility Edition (FE). Ethiopia has been implementing the eLMIS to support inventory control, and logistics management information system. (84)

Parallel Tracking of IFA and MMS

The reporting system during Ethiopia's MMS pilot integrated MMS indicators into the existing monitoring framework, using standardized tools such as the ANC Register, Monthly Summary Forms, and Inventory Control Cards. Data from these tools are entered into the DHIS-2 platform. The government's approach during the phased introduction did not call for an immediate end to IFAS tracking. Instead, the pilot was designed to assess the feasibility of transitioning from IFAS to MMS. As a result, both IFAS and MMS data have been tracked concurrently in rollout areas and continue to be monitored in parallel until evidence from the pilot supports a full national shift to MMS.

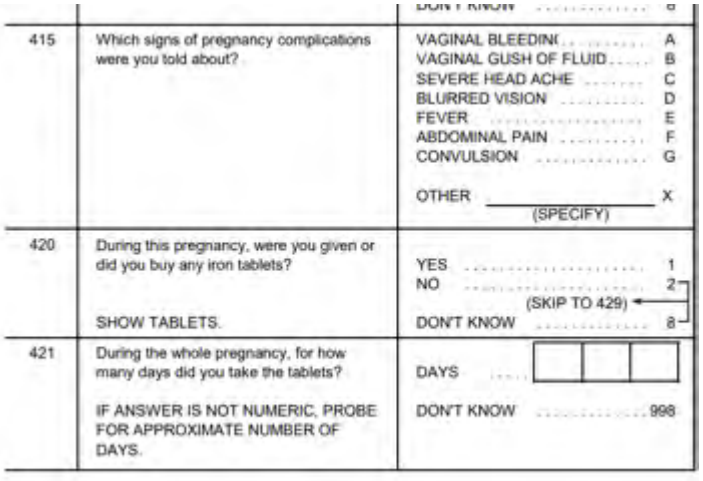
Although, identified challenges in MMS monitoring include data quality, completeness, and timeliness. Continuous capacity building and data quality training are ongoing priorities. Strengthening community engagement and addressing socio-cultural barriers through culturally sensitive communication strategies remain critical for the program's success (85) .

For national scale-up, Ethiopia plans full integration of MMS monitoring into DHIS-2, similar to other routine maternal health interventions. Future enhancements include leveraging more digital tools for data collection and real-time monitoring to ensure comprehensive data coverage and accuracy (86).

Periodic Surveys

1. **Ethiopia Demographic and Health Survey**:

- The Ethiopia DHS collects data on the number of days women took iron tablets during pregnancy for their most recent live birth.
- It also records the percentage of women aged 15–49 who consumed iron tablets during pregnancy with their last child(77).
- Conducted every five years; the most recent full-scale DHS was in 2016, with the latest round being the Ethiopia Mini DHS (EMDHS) in 2019.



		DON'T KNOW 8
415	Which signs of pregnancy complications were you told about?	VAGINAL BLEEDING ..... A VAGINAL GUSH OF FLUID ..... B SEVERE HEAD ACHE ..... C BLURRED VISION ..... D FEVER ..... E ABDOMINAL PAIN ..... F CONVULSION ..... G OTHER _____ X (SPECIFY)
420	During this pregnancy, were you given or did you buy any iron tablets? SHOW TABLETS.	YES ..... 1 NO ..... 2 (SKIP TO 429) DON'T KNOW 8
421	During the whole pregnancy, for how many days did you take the tablets? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS.	DAYS ..... [ ][ ][ ] DON'T KNOW 998

- Relevant information is available in the EMDHS 2019 – Women's Questionnaire.

2. **Ethiopia Service Provision Assessment**:

- The ESPA assesses the availability of medications and supplies for routine antenatal care, including iron tablets, folic acid tablets, combined iron and folic acid, and related supplements (87).

- It also reports the percentage of various health facility types that prescribe iron or folic acid to pregnant women during their first ANC visit and explain the purpose of the supplements.
- Conducted approximately every 7–8 years; the most recent survey was the 2021–2022 ESPA.
- Relevant sections such as below are included in the 2021 ESPA Inventory Questionnaire.

MATERNAL AND CHILD HEALTH

906*	Are any of the following medicines for **maternal health** available in the facility/location today? CHECK TO SEE IF AT LEAST ONE IS VALID (NOT EXPIRED)	(A) OBSERVED AVAILABLE		(B) NOT OBSERVED		
		AT LEAST ONE VALID	AVAILABLE NONE VALID	REPORTED AVAILABLE NOT SEEN	NOT AVAILABLE TODAY/DK	NEVER AVAILABLE
01	CALCIUM GLUCONATE INJECTION	1	2	3	4	5
02	FOLIC ACID TABLETS	1	2	3	4	5
03	IRON TABLETS	1	2	3	4	5
04	IRON + FOLIC ACID COMBINATION TABLET	1	2	3	4	5
05	MAGNESIUM SUPHATE INJECTION	1	2	3	4	5
06	MISOPROSTOL TABLETS/CAPSULES	1	2	3	4	5
07	OXYTOCIN OR OTHER INJECTABLE UTEROTONIC	1	2	3	4	5
08	TETANUS TOXOID VACCINE	1	2	3	4	5
09	ORAL REHYDRATION SALTS (ORS) SACHETS	1	2	3	4	5
10	VITAMIIN A CAPSULES	1	2	3	4	5
11	ZINC TABLETS	1	2	3	4	5
12*	READY TO USE THERAPEUTIC FOODS (RUTF)	1	2	3	4	5

SECTION 14: ANTENATAL CARE

1400	**CHECK Q.102.05**	ANC SERVICES AVAILABLE IN FACILITY ☐	ANC SERVICES NOT AVAILABLE IN FACILITY ☐ → NEXT SECTION OR SERVICE SITE	

ASK TO BE SHOWN THE LOCATION IN THE FACILITY WHERE ANTENATAL CARE SERVICES ARE PROVIDED. FIND THE PERSON MOST KNOWLEDGEABLE ABOUT ANTENATAL CARE SERVICES IN THE FACILITY. INTRODUCE YOURSELF, EXPLAIN THE PURPOSE OF THE SURVEY AND ASK THE FOLLOWING QUESTIONS.

1401	How many days in a month are antenatal care services offered at this facility? USE A 4-WEEK MONTH TO CALCULATE # OF DAYS	NUMBER OF DAYS/MONTH ☐☐	

1402*	Do ANC providers provide any of the following services to pregnant women as part of routine ANC?	YES	NO
01	IRON SUPPLEMENTATION	1	2
02	FOLIC ACID SUPPLEMENTATION	1	2
04	TETANUS TOXOID VACCINATION	1	2
05	IRON + FOLIC ACID COMBINATION TABLET	1	2

1403	**CHECK Q1402.04**	TT VACCINATION PROVIDED ☐	TT VACCINATION NOT PROVIDED ☐ →	1406

1407	As part of ANC services, please tell me if providers in this facility provide the following services to ANC clients	YES	NO
01	COUNSELING ON RECOMMENDED MINIMUM OF 4 ANC VISITS FOR EACH PREGNANCY	1	2
02	COUNSELING ON BIRTH PREPAREDNESS OR PREPARATION FOR DELIVERY	1	2
03	COUNSELING ABOUT FAMILY PLANNING	1	2
04	COUNSELING ABOUT HIV/AIDS	1	2
05	COUNSELING ABOUT USE OF ITNs TO PREVENT MOSQUITO BITES AND MALARIA	1	2
06	COUNSELING ABOUT BREASTFEEDING	1	2
07	COUNSELING ABOUT NEWBORN CARE	1	2
08	COUNSELING ON POSTNATAL CARE VISITS	1	2

1422*	Please tell me if any of the following medicines are available at this services site today. I would like to see them. CHECK TO SEE IF AT LEAST ONE IS VALID (NOT EXPIRED)	(A) OBSERVED AVAILABLE		(B) NOT OBSERVED		
		AT LEAST ONE VALID	AVAILABLE NONE VALID	REPORTED AVAILABLE NOT SEEN	NOT AVAILABLE TODAY/DK	NO, OR NEVER AVAILABLE
01	IRON TABLETS (INDIVIDUAL TABLETS)	1	2	3	4	5
02	FOLIC ACID TABLETS (INDIVIDUAL TABLETS)	1	2	3	4	5
03	COMBINED IRON AND FOLIC ACID TABLETS	1	2	3	4	5
05	TETANUS TOXOID VACCINE	1	2	3	4	5
06	INSECTICIDE TREATED BEDNETS (ITNs, LLINs)	1	2	3	4	5

Kenya

Key Findings

Key indicators:	Coverage (% ANC clients receiving MMS; tablets consumed ≥90/180), adherence (self-report or pill counts), stock availability/stock-outs, maternal anemia prevalence, and low birth weight rates.
Administrative system:	Pilot data captured via revised ANC registers and monthly summary forms, with electronic aggregation into the Kenya Health Information System (KHIS, DHIS-2); real-time dashboards planned upon scale-up.
Recording tools & data flow:	Standardized ANC registers document MMS distribution; monthly summary forms integrate MMS metrics and are submitted electronically through KHIS, achieving 96.5 % reporting completeness for ANC and related services.
Supply chain monitoring:	Utilizes Kenya Medical Supplies Authority (KEMSA) requisition and consumption forms within existing logistics systems to track MMS stock levels, resupply, and prevent stock-outs alongside other essential medicines.
Periodic surveys:	Kenya DHS 2022 and specialized micronutrient assessments capture IFAS use.
Gaps:	MMS-specific variables/indicators are absent, and private-sector MMS delivery remains untracked due to lack of disaggregation by managing authority

Kenya's implementation of MMS remains primarily in the pilot and exploratory phases, without nationwide rollout. A significant demonstration pilot is underway in Bungoma County, where over 3,000 pregnant women are receiving an enhanced MMS formulation (MMS+). This initiative is managed by the Kenya Medical Research Institute (KEMRI) in collaboration with global partners, focusing intensively on monitoring health and developmental outcomes during pregnancy and through one year postpartum (88).

KDHS 2022 reports 82 % of births now occur in a facility and 89 % are attended by skilled providers, yet the Key Indicators Report does not disaggregate by managing authority—so private-sector MMS use remains invisible in KHIS(89).

At present, MMS implementation in Kenya is largely limited to pilot settings, and routine monitoring systems are not yet fully adapted for MMS. Much of the monitoring architecture described below reflects planned integration into national systems, rather than fully operational nationwide practice. Where applicable, distinctions between pilot implementation and future scale-up are noted.

Key Indicators tracked:

The monitoring framework for MMS pilot programs in Kenya includes several critical indicators:

Administrative:

- **Coverage:** Percentage or number of ANC clients who received MMS, including the proportion who consumed the recommended MMS tablets (minimum of 90 or full course of 180 tablets). (***also complemented in periodic surveys)***
- **Stock Availability:** Facilities reporting MMS stock-outs and tracking months of MMS stock available.

Periodic surveys and other studies:

- **Adherence:** Compliance measured through self-reported intake or pill counts.
- **Health Outcomes:** Tracking key health outcomes such as maternal anemia prevalence and rates of low birth weight, monitored through routine ANC services and supplemented by periodic surveys like Demographic and Health Surveys (DHS) or specialized micronutrient assessments (90,91).

Monitoring Framework and Systems Used

Kenya plans to integrate MMS tracking into its existing HMIS (not yet fully implemented beyond pilot settings), specifically the Kenya Health Information System (KHIS), which operates on the DHIS-2 platform. Currently, routine ANC service data, including Iron-Folic Acid Supplementation (IFAS), is collected through DHIS-2. MMS indicators will similarly be incorporated into KHIS, leveraging established infrastructure for data aggregation and reporting (90,92).

Forms and Data Collection Tools

In pilot settings, data collection for MMS largely follows existing IFAS structures, while national-level tools are expected to be revised to include MMS-specific entries during scale-up. Health workers document supplement distribution in these paper-based registers, which will be revised to include MMS-specific entries. Monthly summary forms, also utilized for IFAS reporting, will integrate MMS metrics, such as the number of women receiving MMS and adherence indicators. These forms are then aggregated and submitted electronically through KHIS(90) . KHIS reporting completeness for ANC, delivery, vaccination and OPD forms improved steadily, reaching 96.5 % in 2021, according to the Countdown 2030 data-quality analysis (93).

Supply Chain Monitoring

Supply chain tracking for MMS is expected to utilize existing systems, managed by the Kenya Medical Supplies Authority (KEMSA) although current implementation remains limited to pilot contexts. KEMSA's standard reporting tools, which include requisition and consumption forms, will capture MMS stock levels, stock-outs, and resupply data alongside other essential medicines. This parallel tracking approach ensures alignment of consumption and supply data within the national logistics system (90).

Kenya lacks an end-to-end eLMIS for all essential medicines and commodities, instead through the Kenya Health Information System (KHIS), it collects data on facility-level consumption, stock levels, and commodity requests based on facility needs, which are mostly maintained in paper form by facilities(94). KEMSA's Integrated logistics management information system (iLMIS), developed in 2022 connects the KEMSA's headquarters, regional depots and health facilities at county and sub-

county levels, enhancing stock optimization, preventing overstocking and critical shortages of medical supplies (95).

Reporting and Data Flow Mechanisms

Data on MMS is documented during ANC visits using revised ANC registers and summarized monthly for entry into the KHIS database (DHIS-2) (national-level routine reporting is not yet fully established). Facilities submit aggregated monthly summaries electronically or through sub-county health offices, facilitating real-time data visibility at county and national levels. DHIS-2 dashboards provide automated data aggregation and visualization, aiding program managers in monitoring trends and addressing gaps promptly (90).

Future Monitoring Plans

Kenya aims to fully integrate MMS indicators into the KHIS upon national scale-up, updating monitoring guidelines and providing training to health personnel. The plan involves conducting baseline and periodic surveys to assess MMS impact comprehensively. Additionally, integration of MMS indicators into supportive supervision and health facility assessments will enhance monitoring quality and accountability at all levels of the healthcare system (90,91).

Comparison with IFAS Monitoring

The MMS monitoring approach closely mirrors the existing IFAS system, sharing data platforms, indicator types, and reporting mechanisms. However, MMS monitoring introduces broader outcome metrics due to the supplement's comprehensive nutritional profile and requires distinct tracking during the transitional phase to avoid data confusion. Enhanced monitoring activities, including baseline and adherence assessments, represent an additional layer compared to IFAS, highlighting the need for rigorous evaluation during MMS introduction (90,96) .

Periodic Surveys

1. **Kenya Demographic Health Survey** (97)**:**
    - In the Kenya DHS, women who had a live birth or stillbirth within the two years preceding the survey—regardless of whether they attended antenatal care (ANC)—were asked if they took iron supplements and deworming medication during their most recent pregnancy.
    - The survey also captured the number of days these women took iron-containing supplements during that pregnancy.
    - The most recent DHS was conducted in 2022, following the previous round in 2014, representing an eight-year interval.
    - Relevant information can be found in the Kenya DHS Questionnaire:

426	During this pregnancy, were you given or did you buy any iron tablets/IFAS or iron syrup? SHOW TABLETS/SYRUP/MULTIPLE MICRONUTRIENT SUPPLEMENT.	YES ..... 1 NO ..... 2 DON'T KNOW 8	→ 429

427	Where did you get the iron tablets/IFAS or syrup? Anywhere else? PROBE TO IDENTIFY THE TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC, PRIVATE, OR NGO SECTOR, RECORD 'X' AND WRITE THE NAME OF THE PLACE(S).	**PUBLIC SECTOR** GOVERNMENT HOSPITAL ..... A GOVERNMENT HEALTH CENTER ..... B GOVERNMENT DISPENSARY ..... C MOBILE CLINIC ..... D COMMUNITY HEALTH WORKER/ FIELDWORKER ..... E OTHER PUBLIC SECTOR _____ F (SPECIFY) **PRIVATE MEDICAL SECTOR** PRIVATE HOSPITAL ..... G PRIVATE CLINIC ..... H PHARMACY ..... I PRIVATE DOCTOR ..... J MOBILE CLINIC ..... K COMMUNITY HEALTH WORKER/ FIELDWORKER ..... L OTHER PRIVATE MEDICAL SECTOR _____ M (SPECIFY) **NGO MEDICAL SECTOR** NGO HOSPITAL ..... N NGO CLINIC ..... O OTHER NGO MEDICAL SECTOR _____ P (SPECIFY) **FBO MEDICAL SECTOR** FBO/MISSION HOSPITAL ..... Q FBO/MISSION CLINIC ..... R FBO MOBILE CLINIC ..... S OTHER FBO MEDICAL SECTOR _____ T (SPECIFY) **OTHER SOURCE** SHOP ..... U MARKET ..... V MASS DISTRIBUTION CAMPAIGN .... W OTHER _____ X (SPECIFY)
428	During the whole pregnancy, for how many days did you take the iron tablets/IFAS or syrup? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS.	DAYS ..... | | | | DON'T KNOW 998

Tanzania

Key Findings	
Key indicators:	Number of women receiving MMS; adherence percentage; facility stock availability; maternal anemia rates; low birth weight, preterm birth, stillbirth, and neonatal mortality metrics.
Administrative system:	MMS demonstration (IMAN) in Mbeya uses paper ANC registers and MMS stock cards, with data aggregated into the national DHIS-2; mobile phone–based collection supplements reporting in remote areas.
Recording tools & data flow:	ANC registers and stock cards capture distribution and inventory; digital entry into DHIS-2 occurs monthly, supported by mobile data uploads; DHIS-2 reporting completeness reached 99 % in 2022.
Supply chain & logistics:	Medical Stores Department manages MMS forecasting, distribution, and stock monitoring through integrated logistics management systems to prevent stock-outs.
Periodic surveys:	TDHS-MIS (2022) and Service Provision Assessment surveys tracks the consumption of IFA, and also its availability in the health facility.
Gaps:	The surveys focus on IFA, not MMS; MMS variables are absent, and dual IFAS/MMS tracking under the national MEAL framework still remains to guide the transition.

The Government of Tanzania is implementing a MMS demonstration project, known as the Improving Maternal Nutrition Project (IMAN), targeting pregnant women in the Mbeya region. The project's monitoring system includes tracking MMS distribution, adherence, stock availability, and maternal and child health outcomes.

Key Indicators Tracked:

Administrative:

- **Coverage and Distribution Metrics**: Number of pregnant women receiving MMS and total doses distributed.
- **Stock Availability Metrics**: Percentage of facilities with MMS stock available and inventory levels.

Periodic surveys and other studies*:*

- **Adherence Metrics**: Percentage of women adhering to prescribed MMS doses.
- **Health Outcome Metrics**: Maternal anemia rates, low birth weight rates, preterm birth rates, stillbirth rates, and neonatal mortality rates *(98)*. ***(tracked through routine system but are supplemented by periodic surveys and specialized assessments.)***

The Countdown 2030 Statistical Report for Tanzania shows that completeness of monthly DHIS-2 facility reporting for ANC, delivery, immunization and OPD forms averaged 96–97 % during 2018-21 and climbed to 99 % in 2022(99).

MMS Tracking Mechanisms

MMS tracking in Tanzania utilizes multiple forms and digital tools:

- **Forms**:
  - Antenatal care (ANC) registers are used to record MMS distribution to pregnant women during ANC visits.
  - MMS stock cards track inventory and manage stock availability within health facilities (100) .
- **Digital Tools**:
  - DHIS-2 serves as the primary data aggregation and reporting platform for MMS. This system is endorsed by Tanzania's Ministry of Health, Community Development, Gender, Elderly, and Children (MoHCDGEC) and is already widely used nationwide for routine health data management (101).
- **Digital Platforms**:
  - Mobile phone-based data collection systems are employed to facilitate timely data collection and reporting in remote or resource-constrained settings (100) .

Integration into Routine Health Information Systems

As Tanzania plans for nationwide scale-up of MMS, the government aims to integrate MMS monitoring fully into the existing health information system:

- MMS indicators will be incorporated into the existing DHIS-2 platform, aligning MMS tracking with current routine health information practices.
- Training programs will be rolled out to prepare health workers for accurate data collection and reporting.
- Regular data quality audits are planned to maintain high-quality data standards (100).

Supply Chain and Stock Management

Medical Stores Department (MSD) plays a key role in logistics, storage, and distribution of supplements based on the needs of health facilities. Utilizing the eLMIS, MSD oversees MMS distribution to health facilities, ensuring stock management aligns with demand at ANC clinics. MMS stock tracking and forecasting systems are integrated into broader logistical management practices to reduce stock-outs and ensure uninterrupted supply (102).

Comparative Tracking (MMS vs IFAS)

The MMS monitoring approach in Tanzania is similar to IFAS in its utilization of routine health information systems, particularly DHIS-2. However, MMS tracking incorporates additional adherence metrics due to the complexity and higher nutrient density of MMS compared to IFAS (98,103).

Parallel Tracking of IFA and MMS

During the phased scale-up of MMS in Tanzania, the reporting system is designed to track both IFAS and MMS concurrently in areas where MMS is being introduced. This approach supports a gradual transition and allows for comparison between the new and existing supplementation strategies. The reporting mechanism is aligned with Tanzania’s Monitoring, Evaluation, Accountability, and Learning

(MEAL) framework, as outlined in the National Multisectoral Nutrition Action Plan II (NMNAP II), and supports monitoring of coverage, adherence, and health outcomes during implementation. In regions where MMS has not yet been introduced, IFAS continues to be tracked independently. While a shift to exclusive MMS reporting may occur as the program expands, current evidence suggests that dual tracking will remain in place during the early phases to support program adjustments and guide policy decisions.

Periodic Surveys

1. **Tanzania Demographic and Health Survey and Malaria Indicator Survey** (104)**:**
    - The survey collects data from women aged 15–49 who had a live birth in the two years preceding the survey, focusing on whether they received any form of iron supplementation during their most recent pregnancy.
    - It also records the number of days these women took iron-containing supplements and identifies the sources of the supplements, including public health facilities, religious institutions, and voluntary organizations.
    - The TDHS-MIS is conducted approximately every five years, with the most recent round completed in 2022.

426	During this pregnancy, were you given or did you buy any iron tablets or iron syrup? SHOW TABLETS/SYRUP/MULTIPLE MICRONUTRIENT SUPPLEMENT.	YES ..... 1 NO ..... 2 DON'T KNOW 8	→ 429

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES
427	Where did you get the iron tablets or syrup? Anywhere else? PROBE TO IDENTIFY THE TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC, PRIVATE, OR NGO SECTOR, RECORD 'Z' AND WRITE THE NAME OF THE PLACE(S).	**PUBLIC SECTOR** NATIONAL/ZONAL/SPECIALISED HOSP ..... A REGIONAL REFERRAL HOSPITAL ..... B REGIONAL HOSPITAL ..... C DISTRICT HOSPITAL ..... D HEALTH CENTRE ..... E DISPENSARY ..... F CLINIC ..... G OTHER ..... H (SPECIFY) **RELIGIOUS / VOLUNTARY** REFERRAL/SPECIALSED HOSPITAL ..... I DISTRICT HOSPITA..... J OTHER HOSPITAL ..... K HEALTH CENTRE ..... L DISPENSARY ..... M CLINIC ..... N OTHER ..... O (SPECIFY) **PRIVATE MEDICAL SECTOR** SPECIALISED HOSPITAL..... P OTHER HOSPITAL ..... Q HEALTH CENTRE ..... R DISPENSARY ..... S CLINIC ..... T OTHER PRIVATE MEDICAL SECTO..... U (SPECIFY) **OTHER SOURCE** PHARMACY ..... V ACREDITED DRUG DISPENSING OUTLET (ADDO) ..... W NGO/MASS DISTRIBUTION CAMPAIGN..... X SHOP/KIOSK/MARKET/ OTHER ..... Z (SPECIFY)
428	During the whole pregnancy, for how many days did you take the iron tablets or syrup? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS.	DAYS ..... [ ][ ][ ] DON'T KNOW 998

2. **Service Provision Assessment Survey, Tanzania** (105):
    - The SPA survey assesses the availability of medications for antenatal care (ANC) services in health facilities, including iron tablets, folic acid tablets, combined iron and folic acid, and either iron or folic acid tablets.
    - It also measures the percentage of ANC clients who were provided with or prescribed iron and/or folic acid supplements.
    - The survey was conducted in 2014–15 and was the second SPA undertaken in Tanzania, following the first round conducted in 2006, approximately eight years earlier.
    - Relevant data can be found in the SPA questionnaire sections on Antenatal Care – Iron and Folic Acid Supplementation.

1402	Do ANC providers provide any of the following services to pregnant women as part of routine ANC?	YES	NO
01	IRON SUPPLEMENTATION	1	2
02	FOLIC ACID SUPPLEMENTATION	1	2

    - Availability of IFA Supplementation in Health Facility

1422	Please tell me if any of the following medicines are available at this services site today. I would like to see them. CHECK TO SEE IF AT LEAST ONE IS VALID (NOT EXPIRED)	(A) OBSERVED AVAILABLE		(B) NOT OBSERVED		
		AT LEAST ONE VALID	AVAILABLE NONE VALID	REPORTED AVAILABLE NOT SEEN	NOT AVAILABLE TODAY/DK	NO, OR NEVER AVAILABLE
01	IRON TABLETS (INDIVIDUAL TABLETS)	1	2	3	4	5
02	FOLIC ACID TABLETS (INDIVIDUAL TABLETS)	1	2	3	4	5
03	COMBINED IRON AND FOLIC ACID TABLETS	1	2	3	4	5

Zambia

Key Findings

Key indicators:	Coverage (% of pregnant women receiving MMS), adherence (daily intake regularity), birth outcomes (low birth weight, preterm, stillbirth), maternal mortality ratio, anemia prevalence, child stunting/wasting, and cost-effectiveness.
Administrative system:	MMS pilot leverages DHIS-2 and the Zambia Electronic Perinatal Record System (ZEPRS), with CHW mobile apps and EHRs enabling real-time data capture at point of care.
Recording tools & data flow:	Standard ANC registers record MMS provision; data are aggregated by district offices into DHIS-2 monthly; larger facilities feed ZEPRS EHR data directly into the system.
Supply chain & logistics:	Logistics management information system tracks stock levels requisitions, and replenishments; national and district teams coordinate procurement to ensure continuous supply.
Periodic surveys:	Zambia DHS (2024) and SPA (2014–15) capture only IFA use and facility readiness.
Gaps:	MMS indicators are not yet included in national surveys, though plans exist to integrate them into future NNS modules.

The monitoring system for Zambia's MMS pilot project is centered around the existing national HMIS, primarily using the DHIS-2 platform (106).

MMS Monitoring Framework:

Key Indicators tracked:

Administrative:

- **Coverage:** Proportion of pregnant women receiving MMS tracked monthly via ANC clinics and community health workers (CHWs).
- **Birth Outcomes:** Monitored monthly for low birth weight, preterm births, and stillbirth rates from health facility records.

Periodic surveys and other studies:

- **Adherence:** Regularity of MMS intake as per WHO recommendations (daily consumption), collected monthly through ANC clinics and CHWs.
- **Maternal Health:** Maternal mortality ratio and anemia prevalence tracked monthly through ANC clinics and health facility reports.
- **Cost-effectiveness:** Economic evaluations comparing MMS to IFAS through the MMS Cost-Benefit Tool (107).

Tools and Forms:

- Zambia uses standard ANC registers for initial data recording at health facilities. For specific MMS tracking, data is recorded in these registers during ANC visits.
- The Zambia Electronic Perinatal Record System (ZEPRS), an electronic health record system, is utilized for capturing detailed prenatal and delivery information, including MMS data, in real-time at the point of care (108) .

Supply Chain Monitoring:

The supply and distribution of MMS along with other health supply chain are monitored through the eLMIS, deployed in 2014 by the ministry of Health (109). eLMIS has been introduced in all provinces with distribution hubs in each of them that draw from Zambia Medicines and Medical Supplies Agency (ZAMMSA) (110). In Zambia, the logistics system operates as a pull system, where commodities are distributed from Medical Stores Limited to service delivery points (SDPs) based on ordered quantities(111).

Procurement of health commodities is mainly centralized and the ZAMMSA handles procurement on behalf of the government and is responsible for distributing commodities along the supply chain to end-users(112).

Data Collection and Reporting:

- Data are initially collected manually by healthcare providers using paper-based forms and registers, then aggregated and entered electronically into DHIS-2 monthly at district health offices.
- Larger facilities utilize electronic health record systems directly feeding data into DHIS-2, whereas smaller or rural facilities rely on manual data entry.

- Data consolidation, validation, and electronic transmission occur from districts to provincial and national health authorities, supporting comprehensive monitoring and decision-making.

Digital Integration:

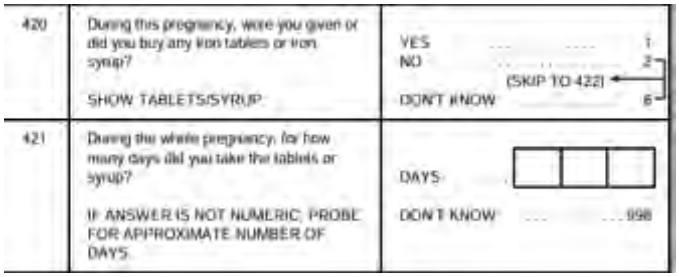
- Zambia increasingly employs digital tools to enhance monitoring and evaluation, including mobile apps for CHWs to collect adherence and coverage data, electronic health records for patient tracking, and web-based DHIS-2 dashboards for data management and analysis (113).

Routine Monitoring Integration:

- Zambia intends to integrate MMS indicators permanently into the routine HMIS system, ensuring sustainable monitoring post-pilot phase.
- Routine monitoring involves periodic data quality assessments, continuous data collection, analysis, and feedback loops for informed decision-making.

Periodic Surveys

1. **Zambia Demographic and Health Survey** (114)**:**
    - The Zambia DHS reports the percentage of women aged 15–49 who had a live birth in the five years preceding the survey and took iron tablets or syrup, as well as medication for intestinal parasites, during their most recent pregnancy.



420	During this pregnancy, were you given or did you buy any iron tablets or iron syrup? SHOW TABLETS/SYRUP	YES ... 1 NO ... 2 (SKIP TO 422) DON'T KNOW ... 8
421	During the whole pregnancy, for how many days did you take the tablets or syrup? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS	DAYS ... [ ][ ][ ] DON'T KNOW ... 98

    - The survey also records the number of days women took iron tablets or syrup during that pregnancy.
    - Conducted approximately every five years; the most recent round was held in 2024.
    - Relevant information is available in the Zambia DHS 2018 – Full Report Questionnaire Section.

Conclusion

Most MMS programs to date remain in pilot or demonstration phases, yet they have almost universally been integrated into existing administrative health information structures in the areas where pilots are taking place. In many instances, this has meant a hybrid approach—paper-based records coupled with digital platforms such as DHIS-2—to track key indicators like coverage, adherence and other service delivery indicators. Supply chain indicators, including stock availability and distribution metrics, are typically tracked through logistics management information systems, which are more consistently digitized across settings. Where fully digital systems exist, real-time dashboards and mobile data collection applications are emerging as valuable tools to minimize stock-outs and improve data reliability. At the same time, there is often limited clarity on how best to integrate or phase out IFAS tracking systems when transitioning to MMS, particularly in contexts where both supplements are distributed concurrently.

Across the countries reviewed, three broad models of integrating MMS into routine health information systems have emerged, reflecting different stages of system readiness and program maturity.

Full Integration into HMIS platforms

In a few settings, MMS indicators have been incorporated directly into existing national systems, with data flowing through standard reporting structures. Indonesia represents the most advanced example, where MMS variables have been embedded within the SIGIZI platform and linked to routine ANC reporting, alongside integration with supply chain systems such as SMILE e-LMIS. Bhutan similarly reflects near-full integration, with MMS tracked through the Druk HMIS using existing maternal and child health modules, albeit with interim adaptations to paper tools.

Partial or adaptive integration within existing systems

Several countries have adopted an intermediate approach, where MMS is recorded within existing IFAS structures or through temporary adaptations, without full system redesign. Sri Lanka, Bangladesh, Ethiopia, and Kenya fall into this category. In these settings, MMS data are often captured through modified ANC registers or interim reporting formats and then entered into DHIS-2. However, the absence of clearly defined MMS fields or standardized reporting protocols creates ambiguity, particularly when both IFAS and MMS are provided concurrently.

Parallel monitoring systems during pilot phases

In early-stage implementations, some countries have established separate reporting streams for MMS alongside existing IFAS systems. Nigeria provides a clear example, where dedicated MMS registers and reporting forms are used in pilot areas to maintain distinction between supplements. This approach allows clearer attribution during implementation research but may introduce duplication and integration challenges as programs scale.

Across these models, countries are effectively navigating a transition continuum—from parallel systems to partial adaptation, and eventually toward full integration. However, movement across these stages is rarely guided by explicit national frameworks, leading to variability in how data are captured, interpreted, and used for decision-making. This variation highlights the absence of a standardized pathway for integrating MMS into national systems, with countries progressing through different models based on operational constraints rather than defined transition strategies.

Classification of MMS integration models into routine monitoring systems

Model	Definition	Country Examples	Key Takeaway
Full Integration	MMS is an official, national digital variable in the primary HMIS (often DHIS-2 platform).	Indonesia, Bhutan	Most efficient for scale but requires substantial system adaptation and policy alignment.
Partial / Hybrid	Digital systems exist but rely on manual workarounds or are only active in pilot districts.	Sri Lanka, Ethiopia, Kenya	Fast to implement but prone to misclassification if workers record MMS in old IFA columns.
Parallel Tracking	Dedicated, separate tools (registers/forms) are used for MMS alongside existing IFAS tools.	Nigeria, Pakistan	Ensures high data quality for pilots but risks "reporting fatigue" for frontline workers.

In contrast to HMIS integration, supply chain monitoring systems appear more standardized across countries. Most settings rely on established logistics management information systems—either paper-based or electronic (eLMIS)—to track stock levels, distribution, and consumption of supplements. Countries such as Indonesia, Bangladesh, Tanzania, and Zambia have integrated MMS into existing eLMIS platforms, enabling routine tracking of stock availability and movement. Even in contexts where HMIS adaptation remains incomplete, logistics systems tend to function with clearer processes and defined indicators. However, integration between HMIS and LMIS remains limited in many settings, reducing the ability to link service delivery data with commodity availability in real time.

As MMS programs move beyond initial pilots, a central challenge is how to record MMS data within systems historically designed for IFAS. In many settings, paper-based registers have not been revised to include separate MMS fields, leaving frontline health workers uncertain whether to adapt existing IFAS columns or create informal workarounds. Similarly, digital platforms often lack dedicated MMS entries, increasing the risk of data confusion or misclassification when both supplements are recorded together. The situation is further complicated in contexts where IFAS remains the standard while MMS is introduced incrementally, requiring parallel tracking across different tools and formats. It also remains unresolved whether national health information systems will eventually integrate IFAS and MMS data or maintain them as separate streams—an issue that has implications for data accuracy and system coherence.

As many countries begin phased or partial implementation of MMS, monitoring systems often receive limited attention. Programmatic priorities—such as planning distribution, and training health workers—tend to dominate. In contrast, the development and adaptation of monitoring frameworks are frequently overlooked. As a result, important questions about how to track IFAS and MMS together, maintain data quality, and align paper-based and digital reporting systems are not fully addressed. A consistent gap across multiple countries relates to the limited integration of private-sector service delivery into routine monitoring systems. In countries such as Bangladesh and Pakistan, where a substantial proportion of antenatal care services are delivered through private facilities or pharmacies, efforts are underway to incorporate private-sector data through mechanisms such as pharmacy reporting systems or interoperability with national platforms. However, in most settings—including Kenya, Ethiopia, and Nigeria—private-sector reporting remains weak or absent, creating significant blind spots in coverage and adherence estimates. Without systematic inclusion of private providers, routine monitoring systems risk underestimating program reach and limiting the ability to make fully informed policy and programmatic decisions. Tackling these issues requires early integration of monitoring into program planning, dedicated resources for system improvements, and collaboration across technical teams, policymakers, and frontline providers to build monitoring systems that can support the scale-up of MMS with consistency and reliability.

Despite these operational complexities, several overarching lessons have emerged. Successful MMS monitoring depends heavily on consistent integration with national health management information

systems. Whether through modular adaptations of DHIS-2 or standalone digital solutions, embedding MMS into pre-existing platforms accelerates scale-up, streamlines data flows, and reduces the risk of duplication. Equally important is robust stakeholder engagement: from frontline health workers to policymakers, inclusive involvement helps foster program acceptability, improve data fidelity, and ensure that any new indicators or reporting tools align with end-user needs. In the short to mid-term, however, countries will face the unavoidable challenge of parallel tracking of IFAS and MMS. Without clear separation in registers or digital platforms, it becomes difficult to tell whether women are receiving IFAS, MMS, or both—an issue that matters for evaluating adherence, measuring outcomes, and managing supply forecasts. Explicit guidance on how to record dual supplementation during the transition phase will therefore be essential to avoid data misclassification and ensure program fidelity. Moreover, countries with real-time or near real-time monitoring capacity often demonstrate more timely responses to supply chain challenges, such as stock-outs, thereby ensuring continuous service delivery.

Looking forward, a key priority is refining and harmonizing monitoring frameworks so they can address broader maternal nutrition goals. While tracking coverage and adherence remains essential, expanding to include more advanced analytics—such as rigorous assessments of health impacts and cost-effectiveness—will strengthen the evidence base for MMS. Likewise, ongoing capacity building in data quality assurance, data use for decision-making, and digital integration will be crucial for national programs moving beyond pilot status. Ultimately, by consolidating data, engaging stakeholders at every level, and continuously fine-tuning monitoring methods, countries can position themselves to achieve sustainable, large-scale improvements in maternal and child health outcomes through MMS.

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Annexes

Annex 1: Guiding questions for the review

Indicators, monitoring systems, and reporting mechanisms

1. **Types of indicators and reporting mechanisms**
   - **What types of indicators are used to monitor MMS at different levels (e.g., national, regional, facility-based)?**
     - Are there specific indicators for stock management, distribution, adherence, and maternal health outcomes?
     - Are any indicators disaggregated by geography, age, or socioeconomic group?
   - **What reporting mechanisms are developed to track progress?**
     - How are data collection and reporting integrated into existing HMIS systems?
     - Are digital tools used for reporting? How is paper-based data converted to digital systems, or what is the process for transitioning to digital reporting?

2. **Monitoring systems during pilots**
   - **Which indicators and data platforms or tools are used to monitor MMS in the design & test (piloting) phase?**
     - How are adherence, stock availability, and distribution tracked?
     - How are maternal health outcomes monitored?
     - Is implementation research (IR) specifically used to inform the design of monitoring and information systems for scale-up?
   - **Which reporting mechanisms are being tested, modified, or implemented to support scaling and maintenance?**
     - Are digital tools or platforms utilized for real-time data collection and reporting?
     - How is pilot data integrated into existing HMIS systems?
     - What challenges exist in transitioning from paper-based to digital reporting systems, if applicable?

3. **Parallel tracking of IFAS and MMS**
   - In facilities administering both IFAS and MMS (e.g., for severe anemia vs. standard use), how are the two supplements recorded to avoid conflation?
   - Does the HMIS (e.g., DHIS-2) provide distinct fields for IFAS vs. MMS, or are they merged under a single supplementation variable?
   - Where dual supplementation is given in the same pregnancy, does the system allow both entries, or must the facility choose one supplement code?

4. **Phase-wise rollout**
   - For phased scale-ups, are MMS fields activated solely for participating facilities, or are they visible to all facilities regardless of status?

- How do implementers ensure data accuracy and prevent confusion if some sites use IFAS only, while others distribute both IFAS and MMS?

5. **Digital vs. paper systems**
    - Are frontline workers recording MMS data in paper registers, then transferring this information to digital platforms?
    - What processes are in place to ensure data completeness and accuracy during this transfer?
    - How are offline entries handled in areas with limited connectivity?

6. **Data entry user interface and validation**
    - Do health workers see distinct drop-down menus or checkboxes for MMS, or are existing IFAS fields repurposed?
    - Are there built-in validation rules to prevent conflicting entries (e.g., IFAS plus MMS without proper justification)?
    - How are supervisors or data managers trained to identify anomalies (e.g., unexpectedly high dual supplementation rates)?

7. **Measuring outcomes and usage**
    - Apart from coverage and adherence, do indicators include maternal anemia status, birth weight, or other health metrics to compare IFAS vs. MMS?
    - How are these outcomes integrated with the routine data (e.g., specialized fields for hemoglobin levels at ANC visits)?

8. **Integration of pilot results into national systems**
    - Are the pilot indicators and data-collection workflows intended to become permanent once the pilot concludes, or are they purely experimental?
    - How will IFAS indicators be phased out or repurposed if MMS becomes the national standard?