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Barriers to Maternal Iron-Folic Acid Supplementation and Compliance in Kisumu and Migori, Kenya

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Acknowledgements

The Maternal and Child Survival Program (MCSP) is a global, United States Agency for International Development (USAID) Cooperative Agreement to introduce and support high-impact health interventions with a focus on 24 high-priority countries with the ultimate goal of ending preventable child and maternal deaths within a generation. The program is focused on ensuring that all women, newborns, and children—especially those most in need—have equitable access to quality health care services. MCSP supports programming in maternal, newborn and child health, immunization, family planning and reproductive health, nutrition, health systems strengthening, water/sanitation/hygiene, malaria, prevention of mother-to-child transmission of HIV, and pediatric HIV care and treatment. Visit www.mcsprogram.org to learn more. This report is made possible by the generous support of the American people through USAID under the terms of the Cooperative Agreement AID-OAA-A-14-00028. The contents are the responsibility of the MCSP and do not necessarily reflect the views of USAID or the United States Government.

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Abbreviations

ANC	antenatal care
BCC	behavior change communication
CHW	community health worker
FGD	focus group discussion
IFA	iron-folic acid
ITN	insecticide-treated net
LBW	low birth weight
MCHIP	Maternal and Child Health Integrated Program
MCSP	Maternal and Child Survival Program
MIYCN	maternal, infant, and young child nutrition
MOH	Ministry of Health
SDT	Self-Determination Theory
USAID	United States Agency for International Development
WHO	World Health Organization

Background

Iron-folic acid (IFA) supplementation is a key cost-effective intervention to address anemia among pregnant women, as part of an integrated package to address multiple causes of anemia. Maternal IFA supplementation has been shown to reduce maternal anemia and, consequently, maternal mortality, newborn mortality, and poor birth outcomes, such as low birth weight (LBW) (Peña-Rosas and Viteri 2009; Scholl and Johnson 2000; Kozuki, Lee, and Katz 2012). In 2012, the Government of Kenya instituted national policy guidelines for combined IFA supplementation for pregnant mothers, as part of the focused antenatal care (ANC) initiative, to aid in reducing maternal anemia. Current Kenyan recommendations during pregnancy are one IFA tablet daily (60 mg iron and 400 ug (0.4 mg) folic acid) from conception until delivery for all pregnant women as a preventive measure for maternal anemia; these mirror the World Health Organization (WHO) 2012 global recommendations of 30–60 mg iron and 400 ug folic acid (Kenya Ministry of Health Division of Nutrition 2012; WHO 2012).

In Kenya, the Maternal and Child Survival Program (MCSP) works to strengthen health system delivery of key nutrition interventions, including micronutrient supplementation and Baby-Friendly Community Initiative, at the national, county, and sub-county levels. MCSP operates in two priority counties, Kisumu and Migori, and in East Pokot, Igembe North, and Igembe Central sub-counties, which were part of the nutrition portfolio under the Maternal and Child Health Integrated Program (MCHIP), the predecessor to MCSP. MCSP continues the ongoing and strong partnership with the Nutrition and Dietetics Unit of the Kenya Ministry of Health (MOH) to increase the knowledge, uptake, and utilization of IFA. MCHIP supported the development of IFA supplementation policies and guidelines at the national level. MCSP continues to support the MOH's rollout of the combined IFA tablet versus separate doses of iron and folic acid, through training health workers on micronutrient supplementation to address micronutrient deficiencies, providing mentorship to healthcare workers on IFA supplementation counseling, and aiding in documentation and routine reporting of IFA supplies.

According to the WHO Global Database on Anemia, from 1991–2011, maternal anemia prevalence decreased from 55% to 36% in Kenya.[a] While Kenya has made gains in maternal anemia reduction and is on track to meeting World Health Assembly targets for anemia in women of reproductive age, according to recent Global Nutrition Report data, barriers to uptake of IFA supplementation through a focused antenatal care package (ANC) remain (International Food Policy Research Institute 2014). Recent Demographic and Health Survey data indicate that, although 69% of Kenyan women reported receipt of any IFA supplements during their last pregnancy, only 2.5% of women consumed IFA pills/syrup for 90+ days, indicative of widespread low compliance to IFA supplementation (Kenya National Bureau of Statistics 2010).

[a] World Health Organization. 2008. *Worldwide prevalence of anemia 1993-2005: WHO global database on anemia.* Geneva: WHO.
World Health Organization. 2015. *The Global Prevalence of Anaemia in 2011*. Geneva: WHO.

A qualitative formative assessment was conducted to identify barriers to uptake of maternal IFA supplementation in MCSP-supported areas, with a focus on compliance to IFA supplementation. These findings will be used to develop targeted IFA supplementation messages for use by health providers and community health workers (CHWs).

Objectives

This formative assessment had two main objectives:

1. To identify barriers to IFA supplementation, with a focus on improvement of compliance to IFA, as a basis for development of additional behavior change communication (BCC) messages or materials.
2. To recommend short- and long-term strategies to address compliance, side effects, and dispelling of misconceptions among pregnant and lactating women on IFA supplementation in Migori and Kisumu counties.

Study Description and Methodology

The aim of this study was to determine the factors that influence women's use of and compliance to IFA supplementation. It also investigated women's knowledge about anemia, anemia prevention, and sources of information about IFA supplementation. A total of six FGDs were conducted with pregnant women and mothers of infants (0-6 months) at randomly selected health facilities, representing three sub-counties each from Migori and Kisumu counties. These maternal child health clinics were chosen to include variations in socio-economic status, geographic location, and exposure to interventions. All centers were public and run by the government. The participants within the maternal and child health clinics were randomly selected from pregnant and lactating women with children aged 0-6 months who were attending the health center on the day of the study. Eight to ten women were randomly selected for each of the six FGDs for a total of forty-eight women interviewed. The final number of women in each discussion ranged from four to ten, as some respondents dropped out. The participant distribution is described in Table I, and the composition of FGDs is illustrated in Figures I and II.

Table 1. Study areas

County	Sub-county/Health facility	Number of women per FGD
Migori	Nyamara Health Center	9
	Macalder Sub-district Hospital	9
	St. Barnabos Dispensary	9
Kisumu	Seme/Oswere Dispensary	7
	Miranga Health Center	4
	Nyakach/Sondu Health Center	10

Two experienced data collectors were recruited from each county to assist with the administration of the FGDs. These were the sub-county nutritionist and a nutritionist at the

health facility, who were selected because of their knowledge of nutrition, experience with FGDs, fluency in the local language and familiarity with local cultural norms.

The nutritionists recruited and mobilized the women with the help of the community health extension worker, who also arranged for a suitable meeting place for the FGDs. Consent to participate in the discussions and permission to record the FGDs was obtained from participants prior to beginning discussions.

Figure I. Focus group discussion with pregnant women

Figure II. Focus group discussion with mothers of children aged 0-6 months

The moderator guided the discussions using the FGD guide, and the FGDs were conducted in Luo, the local language. The consultant and MCSP Nutrition Advisor were present at all the discussions to ensure interviews were conducted as planned.

Data analysis

Qualitative data were transcribed into Microsoft Word files and thereafter transferred to NVIVO 11 software (QSR International Pty Ltd.) for coding, analysis, and identification of major themes. Codes were based on main themes derived from the qualitative interview guide. The data were coded based on recurring themes identified in the transcripts of FGDs and recurring issues raised by participants. Thematic analysis was used due to its

appropriateness for selecting the most common recurring themes and issues. Table II below provides a summary of the coded information by theme. The FGD guide and detailed analysis can be found in Appendices I and II, respectively.

Table II. Themes from focus group discussions

Theme	Responses	Comments/Remarks
Women's knowledge about anemia	• Symptoms include: blurred vision, malaise, back pains, tiredness, and nausea • Not having enough blood • Can be caused by "skipping meals" and not eating foods, such as vegetables, fruits, sardines, beans, and porridge, that are perceived to "add blood" • Can be caused by malaria, worms, and yellow fever • Skipping monthly periods, poor appetite, or blood transfusion	• Few women knew what anemia is and gave varied responses
Women's knowledge of practices for anemia prevention	• Medication • Take iron-folic acid (IFA) supplements when they do not have enough blood • Eat a balanced diet with foods rich in iron, water, fruits, *Ribena* (black currant drink that contains vitamin C), beans, vegetables, and *dagaa*/*omena* (small fish or sardines) • Do not overwork or carry heavy loads • Use mosquito nets and stay in a clean place • Rest	• Only a few women knew how anemia can be prevented
Women's sources of anemia information	• Hospital personnel (e.g., doctors and nurses) • Community health workers (CHWs)	• The majority of women mentioned no one has taught them about anemia
Advice given to women about anemia	• Anemia can lead to edema, blurred vision, and poor health status • Anemia leads to not sleeping a lot	• Most women reported this information was given by CHWs
Women's knowledge about IFA supplementation	• IFA supplementation can increase blood	• Most women said they do not know
Women's experiences with IFA supplementation	• Experienced side effects, including vomiting, nausea, and fatigue • The tablets have a bad smell • Take IFA supplements with food to reduce side effects (e.g., porridge, *ugali*) • IFA supplementation increases energy and appetite • Majority of women start IFA supplementation late (4-5 months into pregnancy)	• Long walking distances to the hospital were cited by some women as the reason for starting antenatal care and IFA supplementation later in pregnancy

Reasons given to women for taking IFA supplements	• To boost blood level • To reduce fatigue • To prevent abnormalities • To prevent premature births • Because the fetus withdraws blood from the mother • To counteract anticipated blood loss during delivery	• Some women did not know why they were given IFA supplements; they were only told not to miss taking them
Women's reasons for taking IFA supplements	• Told not to miss a dose • To increase blood level • To give birth to healthy babies with no abnormalities • To prevent miscarriage	• Some women took IFA supplements because they were told to take it but did not know of the advantages • Only nine women gave at least one accurate reason for taking IFA supplements
Advice given to women about IFA supplementation	• Do not miss a dose of IFA supplements • Take IFA supplements until delivery • Prevents low-birthweight babies • IFA supplementation helps curb shortness of breath	• Some women reported not knowing the benefits of IFA supplementation
Advice/counseling given to women about IFA supplementation side effects	• Take IFA supplements with food • One woman who reported dark stool was informed that it was normal	• Most women were not taught about side effects but were advised by CHWs to go back to the health facility
Women's sources of advice about IFA supplementation	• CHWs • Doctors • Person dispensing (chemist?)	• CHWs were most often mentioned as a source of advice about IFA supplementation
Women's reasons for stopping IFA supplementation	• Side effects (e.g., vomiting, nausea, feeling tired, and bad smell)	• A few women reported that they continued taking IFA supplements despite side effects, as they were told how important IFA supplementation is
Factors to increase IFA supplementation adherence	• Teach the importance of IFA supplementation at the facility • Give more information about IFA supplementation	• Almost all women agreed that adherence would increase if they were given information about the importance of IFA supplementation for pregnant women

Data management

The data were transcribed, translated into English by the moderator and note-taker, and explored by the consultant following the principles of Grounded Theory (Starks and Trinidad 2007). After themes emerged, they were coded into categories reflecting the three

basic pillars of Self-Determination Theory (SDT), which include autonomy, competence, and relatedness (Ryan et al. 2008).

Study Findings and Interpretations

SDT was applied to explain the determinants of women's IFA supplementation decision-making. SDT strives to explain behavior by examining what motivates them. It describes three basic psychological needs (autonomy, competence, and relatedness) that need to be met in order for a person to lead a fulfilled life and be capable of changing his/her behavior. Autonomy, or the decision-making power of an individual, is the first crucial step in behavior change. In contrast to this is external regulation, or the use of authority. When individuals are allowed to act in health-promoting ways on their own terms, they are more likely to keep up the positive behavior. Competence means having the knowledge and skills to act in desired ways. According to SDT, competence is aided by autonomy, as a person who is highly motivated to change is also eager to learn. IFA supplementation practices can be adopted by women who are autonomous in their decision-making but who are also aided in strengthening their competence to make correct decisions and have the practical skills to perform these actions. The third important element for behavior change in SDT is the sense of relatedness or social support from family and others in the community (Ryan et al. 2008).

Women's autonomy to make decisions about IFA supplementation

Among the women studied, there was high perceived autonomy to make decisions within the home regarding their own health. Most of the women perceived themselves as the sole deciders when it came to making decisions about their health. However, the decision to take IFA supplements was influenced more by the information they received from healthcare providers than by that from spouses or family members. Women felt they were competent to make decisions about IFA supplementation for two main reasons: first, they visit the health facilities more often, and second, they have been educated by healthcare providers. Still, some women did not know why they were given IFA supplements and were only told not to miss taking them.

> "*I do not take the small tablets, I was not told what it is meant to cure.*"

Women said healthcare providers advise them to take IFA tablets and to eat a balanced diet that includes fruits, traditional vegetables, beans, small whole fish/sardines (*omena*), and porridge. Some women abided by this advice but did not know the benefits of it, while other women knew that a balanced diet could help prevent anemia. Most women reported that they were not given advice about side effects of IFA supplements. Some found ways to manage side effects on their own, while others stopped taking IFA supplements all together. The statements below clearly show women's autonomy to make decisions about IFA supplementation but also their reliance on healthcare providers for guidance.

> "*I stopped because I was vomiting and no one told me what to do to stop vomiting.*"

> "*They make me feel tired.*"

"*I can change the time that is appropriate for me (e.g., if I vomit when I take them in the morning, I can take it in the evening).*"

"*I have not come back to the clinic since I discovered the problem, but I plan to share with the nurse on the problem when I visit next.*"

Even though women are willing to take IFA supplements, their knowledge about its benefits is limited because they are not receiving all the needed information from healthcare providers. This compromises women's autonomy, as they become dependent on healthcare providers in order to make decisions about using IFA supplements. Women trust the knowledge and experience of the doctors/nurses/CHWS and do not question the information they are given at the health facilities.

Influencers of uptake of IFA supplementation

Many women indicated that health providers have not given them any or enough information about IFA supplementation or its benefits. Some women felt discouraged to visit health facilities if they did not receive quality services, defined in their view as information on why and how to use medications or pills or how to alleviate/remedies for side effects experienced by mothers.

Women's competence and knowledge

Anemia – lack of understanding of anemia

Most women shared a lack of understanding of what anemia is and how to prevent it. They were not well-informed about the benefits of IFA supplements and why they should take them or the consequences of anemia and the importance of anemia prevention.

When asked what anemia is, respondents from Nyamaraga gave varied responses related to "not feeling well." Symptoms of anemia that women named included: blurred vision, malaise, back pains, tiredness, and nausea. Women relayed that anemia means "*not having enough blood*," "*skipping monthly periods*," "*when pregnant you can experience shortage of blood*," "*poor appetite and inadequate food intake*," "*blood transfusion, when you become sick and have low blood*," and "*if you have yellow fever you cannot have blood*." Some women said anemia can be caused by skipping meals and not eating foods that give blood, and a few women also mentioned that anemia can be caused by malaria, worms, and yellow fever.

Importance of IFA supplementation

When asked the reasons they were given by healthcare providers for taking IFA tablets, some women said they were not given any reason yet were told not to miss taking it daily. Other reasons given to women for the importance of IFA supplementation by health providers included: to increase blood level, to boost blood level and reduce fatigue, to prevent abnormalities, to prevent premature birth, to prevent blood loss during delivery, to prevent LBW babies, and to curb shortness of breath. Some women mentioned that they were supposed to take IFA tablets because "*the fetus draws blood from the mother*." Healthcare providers who provided advice about maternal anemia and IFA supplementation

included doctors, nurses, nutritionists, and CHWs. Women were advised not to miss taking the IFA tablets and to continue taking them until delivery.

Responses to questions about the importance of IFA supplementation included:

> "*It is true that this drugs works. There is a day I fainted – I was taken to the hospital and I was 30 weeks pregnant and I was only given IFA and it helped me.*"

> "*The CHWs came to my house and taught me how to use IFA and gave me advice [on how often to take IFA].*"

"*I normally don't know when I am pregnant, so I started my clinic within 8 months but I can advise my friends to use the drugs because they increase blood levels.*"

Prevention of anemia

When asked how to prevent anemia, some women said "only" medication can be used (only two women mentioned IFA specifically). Women said they are advised to take drugs when they do not have enough blood. They were also advised to eat a balanced diet that included water, fruits, ribena, beans, and foods rich in iron. Some women said not overworking or carrying heavy loads can prevent anemia, and others discussed that anemia could be prevented by using insecticide-treated nets (ITNs), staying in a "*clean*" place, and getting adequate rest.

> "*If you are pregnant you should eat a lot of foods that increases blood (e.g., dagaa, vegetables, and fruits).*"

> "*When you are pregnant, you go to the clinic and take a balanced diet.*"

> "*We can prevent anemia by taking IFA nutritious meals (e.g., vegetables).*"

"We can prevent anemia by taking IFA and eating nutritious meals (e.g., vegetables)."

Barriers to uptake of IFA supplementation

One woman said that she started to go to the hospital late due to the large distance between her home and the health facility. She took IFA supplements for a 4-5 month duration, and other women took it for even shorter amounts of time; some for three months, and another for only one month. Stock-outs of IFA tablets were identified as an issue in some health facilities by a few of the interviewed women.

Information provided on IFA supplementation, including side effects

More than half of the women interviewed were able to relay at least one or more benefits of IFA supplementation, including: helps to increase energy and blood, increased appetite, "*makes one less tired*," prevents blurred vision, prevents miscarriages, and prevents having a child with "*congenital defects*." These data indicate some women are receiving information from healthcare providers about the benefits of taking IFA supplementation during ANC.

Yet, more than half of women stated they were not given information on side effects of IFA supplementation and how to manage them, should any arise during the course of pregnancy. Some women reported that, despite the reported negative side effects of vomiting, nausea, tiredness, unpleasant taste, and dark stool, pregnant women continued to use IFA supplements if they were counseled about their importance. However, there were only a few women who were deemed equipped enough to know how to address the side effects of IFA supplementation.

Most women are not counseled on IFA supplementation's temporary, negative side effects and are often told by CHWs to return to the health facility if they do not feel well. Only one woman interviewed mentioned that the CHW counseled her to take the IFA tablets with food. Another woman who visited the health facility and reported dark stool was told by the health provider that this was "*normal*." Some women said they took IFA supplements with food (e.g., porridge or ugali) to reduce side effects. There is a need to standardize the messages that healthcare providers are giving to women about IFA supplementation, maternal diet, and anemia prevention. In many cases, women indicated that they had not received any information about IFA supplementation and were simply told to take the tablets every day. This lack of complete information can lead to misconceptions about IFA supplementation and contribute to poor compliance/adherence. The following quotes illustrate the variation in perceptions about anemia and IFA supplementation.

> "*If there is no food there is no blood, but you can still eat and your blood is still low.*"
>
> "*What I can say is it's true that these drugs work, there is a time I fainted and I was taken to the hospital and HB was 3.0 (very low) and I was only given IFA. It helped me.*"
>
> "*I was told to take one daily. I was given after two weeks then rested for two weeks then started taking it daily.*"
>
> *"The combined one is somehow good. The one being used previously was difficult to adhere to. Combined has bad smell but I persevered because of the advantages of taking it only once a day.*"
>
> "*When I started using it, after one month I no longer experienced any tiredness.*"
>
> "*I was not told what it is was meant to cure.*"

When women were asked what help they needed to motivate them to continue with taking IFA supplements, they responded:

> "*If the importance of IFA is explained to the pregnant women and how to take it.*"
>
> "*If told what they help me with to encourage me to continue taking it.*"

Some women were concerned about IFA supplementation and asked the following questions:

> "*Why does one feel nauseated?*"
>
> "*What happens if you stop taking the drug?*"

"*After delivery can we continue taking the drug?*"

"*For those skipping to take the drug is there any effect?*"

"*Why does blood level go down sometimes despite taking the drug?*"

"*Apart from IFAS, is there another way you can improve blood level?*"

The above questions indicate that women need a forum in which they can discuss issues related to IFA supplementation, share experiences, and get answers to questions they may not ask healthcare providers. The fact that there is little information given to women about IFA supplementation and that, when it is given, there is not standard messaging seems to indicate that healthcare providers themselves may not possess adequate knowledge about IFA supplementation and its benefits.

Support for women

Support can be divided into two types: health care support and support from family and friends. Both elements could be found in the study, but to a rather small extent.

Support from healthcare providers

Most women indicated that they get advice and information from CHWs, doctors, nurses, and pharmacists who dispense medicine. Of these, CHWs were the most often mentioned sources, due to home visits and more personal contact with women. Women expressed a desire and need for more support from healthcare workers, in the form of practical assistance and opportunities to ask more questions. Many women did not feel supported in their own decision-making and competence by healthcare workers. Facility-based providers relayed a lack of time and staff shortages.

> "*I think the government facilities should do more…Mothers tend to complain about the services offered in public hospitals…If they were well equipped with adequate staff, then mothers would be able to access such services.*"

Women reported increased IFA supplementation adherence if they were counseled at the facility about its importance. Most women indicated that they would be more compliant with IFA supplementation if they received information about why they should be taking it. Some women relayed a lack of trust in the facility-based health providers, while others mentioned feelings of fear and preferences to rely on other experienced mothers, friends, and relatives.

> "*[Mothers] have an attitude that nurses in the facility are harsh and cannot be approached.*"

Support from family and friends

Women seemed to receive greater support from family and friends, though many said they would like more support in taking care of their work, household, and child care duties so

they can rest more. It was noted that husbands play an important role in this context to support their wives.

> "*Husbands can also give support; like in my case, my husband encourages me to go to the clinic.*"

Participants reported women advising each other, encouraging other pregnant women to attend ANC, and accompanying each other to the health center.

Conclusion

- Although the number of pregnant women attending at least four ANC visits is high, many women do not attend ANC as early or often as is recommended. This may have implications for the health of mothers and babies and for uptake of IFA supplementation, which is provided through ANC.
- More than half of women are not adequately exposed to BCC messaging. Some women's knowledge can be attributed to a mass media IFA campaign from the MOH or to "Malezi Bora" biannual outreaches, but more should be done to educate women about the health benefits of IFA supplementation.
- Most women, though not fully, understand and appreciate the importance of attending ANC early.
- Some women are receiving information about when to take IFA supplements and the benefits of IFA supplementation from healthcare providers, such as CHWs and health facility-based providers, however it is not adequate (what, why, and how it prevents health consequences can be reinforced).
- Side effects are major barriers to adherence that should be addressed, as illustrated in Table III below.
- There is a need to educate women about additional anemia prevention services available at the clinic, including malaria prophylaxis, ITNs, and de-worming medication.

Table III. Key messages on behavior change for anemia and iron-folic acid (IFA) supplementation: Including what, why, how, and compliance

Barriers/ misconceptions	Key messages	Delivery channels
Understanding 'what is' anemia		
Most women did not understand what anemia was	• Anemia is caused by lack of blood due to not eating iron-rich foods • A pregnant woman needs more blood for herself and the baby, and if she does not take IFA supplements, she will suffer from anemia	• Structured health talks by health workers with illustrations • Follow-up messages through home visits by community health workers (CHWs)

	• Anemia can make you have a low birth weight or premature baby • Anemia makes the mother feel weak and fall sick easily because of low iron in the blood. The mother can also bleed a lot during and after delivery • Anemia is common in pregnant women because of the high needs for iron-rich foods to support high blood volume • Food alone is not enough - women also need to take IFA tablets to complement this and increase the blood	• Interactive communications through mother-to-mother support meetings • One-on-one counseling at antenatal care (ANC) clinic • Local radio/TV talk shows • Community meetings lead by local administrators
Understanding what IFA supplementation is and how and why to take IFA supplements (benefits and consequences)		
Women said they were not given any reason but were told not to miss taking it daily	• IFA **<u>is not</u>** a medicine for treating a sickness but complements their diet to **prevent anemia** • IFA has many benefits for both mothers' and unborn babies' health, and mothers should take it as early in pregnancy as possible • IFA tablets will supplement the diet so that the mother's blood is not low • IFA supplementation will prevent low-birthweight (LBW) babies • IFA supplementation will prevent the baby from being born with a bad heart, undeveloped lungs, neural tube defects, or defects of the head or brain • **Dose:** Take one per day, and take at least 180 tablets during your pregnancy (as early as possible) • Come back next month to receive your next package or sachet of 30 tablets and other services at ANC. You should also take one IFA tablet per day for 40 days after you deliver • IFA supplements should be taken every day for at least 90 days before delivery • Eat a variety of foods from animals, such as chicken, fish, liver, and eggs, and legumes, nuts, green leafy vegetables, and fruits, while taking IFA supplements	• Counseling cards used by health workers and CHWs • Guidelines from the MOH • One-on-one counseling and health talks at ANC • Mothers' supper groups, such as through Baby-Friendly Community Initiative • Home visits by CHWs
How to address temporary negative side effects of IFA supplementation to improve compliance		
Women experience nausea, reduction in appetite, dizziness, dark stool, and constipation, yet are not aware of how to handle these side effects	• Hormonal changes during pregnancy can also be causing some of these symptoms • **How to take:** Take in between meals or before going to bed with a little fruit juice. Do not take with tea or coffee, as these drinks decrease the effectiveness of IFA supplements • **Side effects:** You may experience some discomfort (stomach ache, diarrhea, constipation) or black stools when taking IFA supplements.	• Health talks, one-on-one counseling, and follow-up messages by CHWs during home visits • Mother-to-mother support groups • Church meetings for women

	These side effects are not serious or harmful, and in most women, they will go away on their own	• Community outreach and dialogues • Interpersonal communication at the ANC clinic
Foods women should eat to prevent anemia and for optimal maternal nutrition		
Women are not well informed about what foods to eat to prevent anemia	• How to make good food choices, in the right amounts and with the proper frequency, to sustain good health and nutrition and prevent anemia during pregnancy	• Health talks at ANC clinics by nutritionists • Follow-up by CHWs through home visits • Local radio messages
Health workers and CHWs do not involve family and community members in advising women on the kind of foods to eat to prevent anemia	• Advocate for support for pregnant women • Educate about culturally acceptable food choices for improved nutrition	• Health talks and dialogues with mothers, spouses, grandmothers, and mothers-in-law at ANC clinics and at home • Home visits by CHWs
IFA supplementation can harm the mother or the baby	• There are many benefits of IFA supplementation for both the mother and the baby • IFA supplementation helps the mother to have more blood and make both her and the baby strong and healthy • IFA supplementation prevents women from getting sick too often • IFA supplementation prevents the mother from losing too much blood during delivery • IFA supplementation will prevent birth defects and LBW babies • The baby will be healthy, of adequate weight at birth, and will not easily get sick • **Safety:** IFA supplementation is safe for mothers and their unborn babies. IFA supplementation will not hurt you or your baby. IFA tablets are designed and prescribed for your use only; do not share them with other family members. Keep IFA supplements out of the reach of children	• Community outreach and dialogues that include all members of the family (men, in-laws, grandparents, friends), church leaders, women and youth leaders, and schools • Organized drama, plays, songs, and local radio/TV shows • Success stories from champion mothers

Long-term strategies for the MOH and partners

- Develop counseling tools and take-home materials for health providers, CHWs, and women about addressing side effects of IFA supplements and generating demand for IFA supplementation.
- Guide healthcare providers on how to integrate maternal IFA supplementation with other support services offered to pregnant women, such as malaria prevention.

- Address supply chain challenges, including forecasting and monitoring IFA supplement stocks at facility level, to ensure consistent and sustainable supply of IFA supplements to health facilities. Ensure combined IFA dose is available.
- Evaluate the IFA supplementation program and assess reasons for disparities in coverage among counties and sub-counties and disparities in performance among health facilities. Share best practices.

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Appendix 1: Focus Group Discussion Tool in English

Focus group discussion on iron-folic acid supplementation: MCSP/PATH Kenya

1. What is anemia? What have you heard? What advice have you been given?
2. Can anemia be prevented? Why do you say that? (Ensure that the responses capture how it can be prevented if they say it can be prevented).
3. What do women usually do to prevent anemia during pregnancy? Can you explain more about that?
4. Who gives advice to women about anemia? (Probe: health facility, community, family members).
5. What advice is usually given to women about anemia in this community?
6. What was your experience with IFA when you were taking it during pregnancy? Can you explain more about that? (Probe if mothers don't mention: when she started; how long she took it; side effects like nausea, black stool, and vomiting).
7. Why did the health provider give you IFA?
8. What advice were you given about these supplements? (Probe: why to take them, how often, how many).
9. Were you given advice on the side effects of these supplements? If yes, what were these side effects?
10. Who gave you advice? (Probe: health provider, CHW).
11. What are the reasons for you taking the IFA supplements for this period?
12. Did you stop taking the supplements? If yes, what were the reasons?
13. Did anyone give you advice to help you solve any problems you had?
14. Did you continue taking the supplements? (Probe: Did anyone help you? What did they tell you?)
15. What would help you continue taking IFA?