



# The Community Infant and Young Child Feeding Counselling Package in Kaduna State, Nigeria

A Mixed Methods Evaluation

FINAL REPORT

JUNE 2018



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Cover Photo: Peggy Koniz-Booher, SPRING

# Contents

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<b>Abbreviations and Acronyms</b> .....	<b>xi</b>
<b>Executive Summary</b> .....	<b>xv</b>
<b>Chapter 1: Introduction</b> .....	<b>1</b>
Background.....	1
<i>Emergence of the Generic Community Infant and Young Child Feeding (C-IYCF)</i>	
<i>Counselling Package</i> .....	1
<i>Why Nigeria was Selected for the C-IYCF Counselling Package Evaluation</i> .....	3
Study Objectives .....	5
Study Design .....	7
<i>Location</i> .....	7
<i>Intervention</i> .....	8
<i>Data Collection</i> .....	8
<i>Data Analysis</i> .....	10
Limitations.....	11
Study Team.....	11
<b>Chapter 2: Processes and Costs of Implementing the C-IYCF Counselling Package</b> .....	<b>13</b>
Program Planning .....	13
<i>Step 1: Build Partnerships, Conduct Advocacy, and Implement Coordination Mechanisms</i> .....	14
<i>Step 2: Conduct a Rapid Review of Existing Community-Based Services and Programs</i> .....	15
<i>Step 3: Confirm Target Program Area</i> .....	15
<i>Step 4: Conduct a Situation Assessment</i> .....	16
<i>Step 5: Identify, Sensitize, and Involve Community-Based Stakeholders</i> .....	16
<i>Step 6: Undertake Pre-Implementation Planning and Design</i> .....	16
Program Implementation.....	17
<i>Activity 1: Train Health Authorities and Health Facility Staff</i> .....	17
<i>Activity 2: Sensitize Community Leaders</i> .....	21
<i>Activity 3: Nominate and Screen Community Volunteers</i> .....	21
<i>Activity 4: Train Community Volunteers</i> .....	23
<i>Activity 5: Mobilize Community Leaders and Members</i> .....	24
<i>Activity 6: Conduct C-IYCF Support Group Meetings</i> .....	25
<i>Activity 7: Conduct C-IYCF Home Visits</i> .....	28
<i>Activity 9: Monitor C-IYCF Activities</i> .....	30
<i>Activity 10: Conduct C-IYCF Monthly Review Meetings</i> .....	32
<i>Activity 11: Support and Supervise C-IYCF Activities and Service Providers</i> .....	33
<i>Planning and Implementation Challenges</i> .....	35
Cost of the C-IYCF Counselling Package.....	36
Sustainability and Scalability of the C-IYCF Counselling Package .....	41

<b>Chapter 3: Counselling and Communication Skills and MICYN Knowledge among Health Workers and Community Volunteers .....</b>	<b>43</b>
Knowledge, Attitudes, and Confidence of Health Workers .....	44
<i>Maternal Nutrition</i> .....	45
<i>Breastfeeding</i> .....	46
<i>Complementary Feeding</i> .....	47
<i>Sanitation and Hygiene Practices</i> .....	48
<i>Counselling and Support Skills</i> .....	49
<i>Implementation of the C-IYCF Counselling Package</i> .....	50
Knowledge, Attitudes, and Confidence of Community Volunteers.....	50
<i>Maternal Nutrition</i> .....	51
<i>Breastfeeding</i> .....	52
<i>Complementary Feeding</i> .....	53
<i>Sanitation and Hygiene</i> .....	54
<i>Counselling and Support Skills</i> .....	54
<i>Implementation of the C-IYCF Counselling Package</i> .....	55
<b>Chapter 4: Maternal Knowledge, Attitudes, and Practices .....</b>	<b>57</b>
Characteristics of Respondents .....	58
Nutrition Support and C-IYCF Counselling Package Reach.....	60
MIYCN Knowledge, Attitudes, and Practices.....	61
<i>Maternal Nutrition</i> .....	62
<i>Breastfeeding Initiation</i> .....	63
<i>Exclusive Breastfeeding</i> .....	64
<i>Continued Breastfeeding</i> .....	67
<i>Breastfeeding Techniques</i> .....	68
<i>Introduction of Complementary Foods</i> .....	69
<i>Complementary Feeding</i> .....	72
<i>Sanitation and Hygiene Practices</i> .....	75
<i>Adjusted Differences in Differences in Priority MIYCN Practices</i> .....	75
<b>Chapter 5: Contextual and Environmental Factors that Enabled and Limited Success of the C-IYCF Counselling Package .....</b>	<b>79</b>
Policies.....	80
Governance.....	82
<i>Political Will</i> .....	82
<i>Decision-Making</i> .....	85
<i>Coordination</i> .....	85
<i>Private Sector Influence</i> .....	86
Resources .....	86
<i>Human Resource Capacity</i> .....	86
<i>Financial Resources</i> .....	88
Sociocultural Context.....	89

<b>Chapter 6: Conclusions and Recommendations.....</b>	<b>91</b>
Conclusions.....	91
Recommendations.....	99
<b>References.....</b>	<b>102</b>

**Annex 1: Implementation Resources**

**Annex 2: Evaluation Methods**

**Annex 3: Tables of Findings from Assessments and Surveys of Health Workers, Community Leaders, and Community Volunteers**

**Annex 4: Tables of Findings from Maternal Surveys**

**Annex 5: C-IYCF Monitoring Data**

**Annex 6: Baseline Data Collection Tools**

**Annex 7: Endline Data Collection Tools**

**Annex 8: C-IYCF Counselling Package Monitoring Forms**



# Figures and Tables

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Figure 1-1. Generic C-IYCF Counselling Package .....	2
Figure 1-2. Country Uptake of the UNICEF <i>C-IYCF Counselling Package</i> .....	3
Figure 1-3. Nigerian C-IYCF Counselling Package .....	4
Figure 1-4. Indicators of IYCF and Nutritional Status in Nigeria .....	5
Figure 1-5. Study Domains .....	7
Figure 1-6. Intervention and Comparison LGAs for the Evaluation of the C-IYCF Program.....	7
Figure 1-7. Data Collection Methods .....	8
Figure 2-1. C-IYCF Planning Steps.....	14
Figure 2-2. Program Impact Pathway for Implementation of the <i>C-IYCF Counselling Package</i> .....	18
Figure 2-3. Training Cascade Followed for Implementation of the <i>C-IYCF Counselling Package</i> .....	20
Figure 2-4. Number of C-IYCF Support Groups that Met at Least Once, by Month, Based on Monitoring Data.....	26
Figure 2-5. Number of People Who Attended C-IYCF Support Group Meetings, Based on Monitoring Data .....	27
Figure 2-6. C-IYCF Monitoring Data Flow.....	31
Figure 2-7. Supervisory Structure for the Implementation of the <i>C-IYCF Counselling Package</i> .....	33
Figure 2-8. Challenges Implementing of the <i>C-IYCF Counselling Package</i> .....	36
Figure 2-9. Total Number of <i>C-IYCF Counselling Package</i> Activities Conducted in the Intervention LGA....	38
Figure 2-10. Cost of At-Scale Implementation of the C-IYCF Counselling Package in the intervention LGA, by Month Costs Were Incurred .....	40
Figure 2-11. Cost (Excluding Capacity Building) per Contact Made by the Intervention LGA <i>C-IYCF Counselling Package</i> through Support Groups and Home Visits Only .....	40
Figure 3-1. Health Worker Beliefs Regarding Maternal Nutrition Practices, by Time Point.....	45
Figure 3-2. Health Worker Knowledge of Optimal Breastfeeding Practices, by Time Point .....	46
Figure 3-3. Health Worker Responses When Asked the Age at Which a Child Should First Be Given Soft, Semi-Solid Foods, by Time Point.....	48
Figure 3-4. Health Worker Knowledge of Micronutrient-Rich Foods, by Time Point .....	48
Figure 3-5. Percentage of Health Workers Who Were “Very Confident” or “Somewhat Confident” in Their Ability to Promote and Change Key MIYCN Practices at Endline.....	50
Figure 3-6. Community Volunteer Beliefs about Maternal Nutrition Practices, by Time Point.....	51

Figure 3-7. Community Volunteer Knowledge of Optimal Breastfeeding Practices, by Time Point .....	52
Figure 3-8. Community Volunteers’ Responses When Asked the Age at Which a Child Should First Be Given Soft, Semi-Solid Foods, by Time Point.....	53
Figure 3-9. Community Volunteers’ Knowledge of Micronutrient-Rich Foods, by Time Point .....	54
Figure 3-10. Percentage of Community Volunteers Who Were “Very Confident” or “Somewhat Confident” in Their Ability to Promote and Change Key MIYCN Practices at Endline.....	56
Figure 4-1. National C-IYCF Counselling Card Image Shown to Respondents to Determine Exposure to the C-IYCF Program.....	60
Figure 4-2. Percentage of Mothers of Children under Two Who Saw C-IYCF Materials Used, by Event or Location (Based on Recognition of the Cover Image of the C-IYCF Counselling Card Booklet).....	61
Figure 4-3. Knowledge, Attitudes, and Practices Related to Eating More during Pregnancy, among Pregnant Women, by Time Point and Location .....	62
Figure 4-4. Knowledge, Attitudes, and Confidence Related to Early Initiation of Breastfeeding, among Pregnant Women, by Time Point and Location .....	64
Figure 4-5. Knowledge, Attitudes, and Practices Related to Exclusive Breastfeeding, among Mothers of Children under Two, by Time Point and Location.....	66
Figure 4-6. Knowledge, Attitudes, and Practices Related to Continued Breastfeeding among Mothers of Children under Two, by Time Point and Location.....	68
Figure 4-7. Knowledge, Attitudes, and Practices Related to the Introduction of Complementary Foods, among Mothers of Children under Two, by Time Point and Location.....	71
Figure 4-8. Age at which Baby Was Introduced to Soft, Semi-Solid Foods according to Mothers of Children under Two, by Time Point and Location .....	72
Figure 4-9. Diets of Children 6–23 Months Old, Indicators of Priority Feeding Practices, by Time Point and Location.....	74
Figure 5-1. Critical Elements of an Enabling Environment for Implementation of the <i>C-IYCF Counselling Package</i> .....	80
Figure 5-2. Priorities at the National, State, LGA, and Health Facility Levels.....	83
Figure 5-3. News Related to Nutrition in Kaduna State between 2014 and 2017 .....	84
Figure 5-4. Health Facilities Usual Nutrition-Related Activities at Baseline .....	87
 Tables	
Table 2-1. Estimated Population and Number of Community Volunteers Trained, and People to Be Reached.....	22
Table 2-2. Cost of At-Scale Implementation of the <i>C-IYCF Counselling Package</i> in the Intervention LGA...	39

Table 3-1. Roles and Responsibilities of Service Providers* Involved in Implementing and Supporting the <i>C-IYCF Counselling Package</i> .....	43
Table 4-1. Total Sample by Location and Time Point .....	57
Table 4-2. Summary Table of Findings, by Time Point and Location .....	76
Table 6-1. Summary of Factors Enabling and Limiting Impact of the <i>C-IYCF Counselling Package in Nigeria</i> .....	96



# Abbreviations and Acronyms

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ANC	antenatal care
ASNO	assistant state nutrition officer
BFGM	breastfeeding gear model
BMS	breast-milk substitutes
C-IYCF	community-infant and young child feeding
CHEW	community health extension worker
CHO	community health officer
CHS	Center for Human Services
CMAM	community-based management of acute malnutrition
CSPro	Census and Survey Processing System
CS-SUNN	Civil Society Scaling-Up Nutrition in Nigeria
C4D	communication for development
DHA	Demographic and Health Survey
EA	enumeration area
ENN	Emergency Nutrition Network
FCT	Federal Capital Territory
FMOA	Federal Ministry of Agriculture
FMOH	Federal Ministry of Health
FMOP	Federal Ministry of Planning
FMOSD	Federal Ministry of Social Development
GAM	Global acute malnutrition
HFPA	health facility personnel and authorities
IEC	information, education and communication
IFA	iron and folic acid
IFE	Infant Feeding in Emergencies

IFPRI	International Food Policy Research Institute
IPD	immunization plus day
IRB	Institutional Review Board
IYCF	infant and young child feeding
JSI	JSI Research & Training Institute, Inc.
KAP	knowledge attitudes and practices
LAM	lactational amenorrhea method
LBW	low birthweight
LGA	local government area
M&E	monitoring and evaluation
MAM	moderate acute malnutrition
MICS	Multiple Indicator Cluster Survey
MIYCN	maternal, infant, and young child nutrition
MNP	micronutrient powders
MUAC	mid-upper arm circumference
NAFDAC	National Agency for Food and Drug Administration and Control
NBS	National Bureau of Statistics
NCFN	National Committee on Food and Nutrition
NDHS	National Demographic and Health Survey
NFP	nutrition focal person
NHREC	National Health Research Ethics Committee
NPP	Nutrition Policy and Practice
ORS	oral rehydration salts
PHC	primary health care
PI	principal investigator
PIP	program impact pathways
PSI	Population Services International

SAM	severe acute malnutrition
SEED	Supply–Enabling Environment–Demand
SMART	Standardized Monitoring and Assessment of Relief and Transitions
SMOH	State Ministry of Health
SNO	state nutrition officer
SPRING	Strengthening Partnerships, Results, and Innovations in Nutrition Globally project
SPHDA	State Primary Healthcare Development Agency
UNEG	United Nations Evaluation Group
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
WASH	water, sanitation and hygiene
WAZ	weight-for-age Z scores
WDC	Ward Development Committee
WFP	ward focal person
WHO	World Health Organization



# Executive Summary

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## Introduction

Community-based promotion, counselling, and support constitute one of the key pillars of effective infant and young child feeding (IYCF) programming. Recognizing a global gap in evidence-based guidance, tools, and other resources for training and counselling at the community level, the United Nations Children's Fund (UNICEF) and its partners launched the generic *Community Infant and Young Child Feeding (C-IYCF) Counselling Package*<sup>1</sup> in 2010. Since its introduction, the package—or elements of the package—have been used in nearly 60 countries (UNICEF 2017). Because a formal evaluation of the package had never been conducted, UNICEF;<sup>2</sup> the Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) project; and the Nigerian Federal Ministry of Health (FMOH) embarked on a strategic partnership in 2015 to rigorously evaluate its effectiveness when implemented at scale, with engaged government and support systems in place. We believe that the findings will be useful for future programming throughout Nigeria and for other countries globally.

The study focused on four domains, with the following objectives:

1. Assess planning and implementation of the *C-IYCF Counselling Package*.
2. Evaluate the impact of the *C-IYCF Counselling Package* on the related knowledge and counselling/communication skills of health workers and community volunteers.
3. Evaluate the impact of the *C-IYCF Counselling Package* on related knowledge, attitudes, and practices among pregnant women and mothers of children under two.
4. Assess environmental or contextual factors that affect the impact of the *C-IYCF Counselling Package*.

## Methods

The evaluation used a mixed methods approach, collecting data at baseline (December 2014 to June 2015); periodically throughout 18 months of implementation across Kajuru local governance area (LGA), Kaduna State; and at endline (January and March 2017). Kauru LGA, also in Kaduna State, served as the study comparison site. Following the training of health authorities, health workers, and community volunteers, the intervention included community mobilization and sensitization events, support group meetings, and home visits. These were conducted in all 10 wards of the intervention site. We tested differences between time points using t-tests for continuous variables and Chi Square tests for binary variables. We ran logistic or linear regressions to determine whether differences over time in maternal, infant, and young child nutrition (MIYCN) knowledge, attitudes, and practices in the intervention and comparison sites were statistically significant.

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<sup>1</sup> The *C-IYCF Counselling Package* was finalized and field tested under a strategic collaboration between UNICEF/New York and the combined technical and graphic design team of Nutrition Policy and Practice and the Center for Human Services, the not-for-profit affiliate of the [University Research Co., LLC](https://www.unicef.org/nutrition/index_58362.html). The entire package can be found at [https://www.unicef.org/nutrition/index\\_58362.html](https://www.unicef.org/nutrition/index_58362.html).

<sup>2</sup> This includes staff from UNICEF headquarters in New York and offices in Abuja, Nigeria and Kaduna State.

Planning for implementation of the *C-IYCF Counselling Package* in the intervention site benefited from several years of advocacy, adaptation, translation, and implementation in other parts of the country. The planning process followed UNICEF's *Planning Guide*, and was conducted with adequate time and active participation of national, state, and LGA officials; Ward Development Committees (WDCs); and other community leaders. Key informants interviewed at endline consistently reported that plans for implementation of the *C-IYCF Counselling Package* were well-thought-out and well-communicated to the various stakeholders. Roles and responsibilities were clearly and widely communicated – in writing and verbally – resulting in community members, leaders, health workers, and LGA staff being highly supportive of, committed to, and engaged in the program.

## Results

This evaluation demonstrated the effectiveness of the *C-IYCF Counselling Package* when implemented at scale. At endline, more than two thirds of women surveyed (69.3 percent) in the intervention site reported having seen the C-IYCF counselling card images being used, which was our proxy for program participation. According to monitoring data, the intervention reached 7,358 unique people over the 18 months of implementation. Through support group meetings, community volunteers made 64,132 contacts with community members. According to the final population based survey, almost one third (29.2 percent) of the randomly surveyed women reported having participated in one or more C-IYCF support group meetings, as expected, given the number of trained community volunteers throughout the LGA. Community volunteers conducted 8,614 home visits, reaching 4,467 individuals. Nearly one fifth of the randomly surveyed women reported having received a C-IYCF home visit. Finally, the intervention reached approximately 4,800 community leaders and other community members through sensitization and mobilization events, as well as others through the work of health facility staff and diffusion of messages from participants to non-participants.

The total cost of implementation of the C-IYCF program in the intervention LGA over 18 months was \$152,431.<sup>3</sup> This includes the cost of training health workers and community volunteers, routine management, printing materials and counselling cards, transportation to and from review meetings, and refreshments provided during review meetings. This is equivalent to \$12.89 per unique person reached through a support group or home visit, if training costs are included, and \$8.43, if training costs are excluded as a fixed cost.

## Impact on the knowledge and skills of health workers and community volunteers

If the *C-IYCF Counselling Package* is to sustainably affect the use of MIYCN practices, those responsible for various aspects of implementation – particularly health workers and community volunteers – must understand and appreciate their roles and responsibilities, have knowledge of optimal MIYCN practices and why they are important, and have the skills and tools needed to promote and support the adoption of those practices. Findings strongly support the conclusion that the C-IYCF trainings were successfully implemented in the intervention site and had the intended impact on knowledge and attitudes among health workers and community volunteers.

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<sup>3</sup> All monetary amounts are in US dollars.

At baseline, health workers who helped train and support community volunteers already knew a number of key MIYCN practices promoted by the program. By the end of the training, their knowledge had improved, and they understood and felt confident in their role implementing the C-IYCF program. By endline, they strongly believed in the importance of these key practices for the health of the mother and child. However, specific practices related to the introduction of complementary foods to children 6 months of age remained challenging. Although immediately after the training, 93.4 percent of health workers knew that children should be given complementary foods (soft or semi-solid foods) at 6 months, just a little over half knew this at endline (56.7 percent), and the remaining 43.3 percent thought that children should be 8 months old or older before receiving solid, semi-solid, or soft food.

Community volunteers who conducted monthly support group meetings and one-on-one counselling demonstrated significant improvements in both knowledge and attitudes compared with pre-training assessment results. At endline, they also strongly believed that the key MIYCN practices were important for the health of a child. However, given their training by health workers who had difficulty with complementary feeding concepts, it is not surprising that the community volunteers' knowledge of the introduction of complementary food remained quite low. The percentage of community volunteers who knew that children should be given solid, semi-solid, or soft food at 6 months of age never reached more than 41.2 percent, and by endline had decreased.

### **Impact on knowledge, attitudes, and practices among pregnant women and mothers of children under two**

Implementation of the *C-IYCF Counselling Package* resulted in a number of improvements from baseline to endline in maternal knowledge, attitudes, and practices in the intervention site. Since only 69.3 percent of the randomly surveyed women reported having seen the C-IYCF counselling card images in use, only 29.2 percent reported having participated in at least one C-IYCF support group meeting, and only 6.2 percent of women surveyed had attended five or more support group meetings, our findings may underestimate the impact of C-IYCF intervention when implemented over a longer period of time or implemented in a more intensive manner.

There were impressive improvements in knowledge, attitudes, and practices related to early initiation of breastfeeding and exclusive breastfeeding in the intervention site as compared to the comparison site. In the intervention site, the percentage of children born in the last 24 months who were put to the breast within one hour of birth increased by more than 12 percentage points, while it remained constant in the comparison site ( $p < 0.01$ ). Similarly, the proportion of infants 0–5 months of age who were fed exclusively with breast milk increased by 28 percentage points in the intervention site. In the comparison site, the proportion improved only by 14 percentage points ( $p < 0.01$ ). Both differences in differences were statistically significant ( $p < 0.01$ ). From the start, women were likely to continue breastfeeding for at least a year as the baseline survey found that 95 percent of children 12–15 months old were still breastfed in the intervention site and 96.8 percent in the comparison site. At endline, the prevalence of breastfeeding at one year was high in both the intervention and comparison sites (95.7 and 97.5 percent, respectively), but was lower at two years (37.5 and 55.2 percent, respectively).

Knowledge of the importance of eating more food during pregnancy improved in both sites, as well, but was still low at endline – at less than 50 percent in the intervention area. However, the proportion of

women who reported eating more during pregnancy in the intervention site increased by 23.8 percentage points ( $p < 0.05$ ) while remaining unchanged at around 35 percent in the comparison site.

The program appears to have had a protective effect on the timely introduction of complementary food and meal frequency. While the percentage of infants 6-8 months of age who received solid, semi-solid or soft food during the previous day remained statistically constant in the intervention site, it declined by 23 percentage points in the comparison site ( $p < 0.01$ ). Similarly, the proportion of breastfed and non-breastfed children 6-23 months of age who received solid, semi-solid, or soft food the minimum number of times or more (MMF) remained constant in the intervention site while it declined by 13 percentage points in the comparison site ( $p < 0.01$ ).

Although the percentage of women who agreed or strongly agreed with the importance of feeding children a diverse diet was high and increased more in the intervention site than in the comparison site, the percentage of children 6-23 months of age who actually received food from four or more food groups (MDD) during the previous day declined in both study sites as did the percentage who received a minimum acceptable diet (MAD). However, the decline in prevalence of MDD was slightly less in the intervention site (16.8 percentage points) than in the comparison site (17.2 percentage points), but the difference in differences was not statistically significant ( $p = 0.071$ ). Our findings around complementary feeding remind us that behavior change often requires a significant and sustained investment. In fact, 18 months of community-based IYCF promotion may not be enough to change some deeply ingrained behaviors, such as women's decision-making power and their control of resources. Dietary practices, in particular, are also influenced by affordability and availability of food, which was negatively affected by the significant inflation, fuel shortages, and spikes in fuel prices that occurred during the intervention period.

### **Environmental or contextual factors that enabled or limited the impact**

Findings indicate that the intervention was conducted in a supportive and enabling environment. The factors that enabled and limited the impact of the package can be grouped into four categories: policies, governance, resources, and social support. Relevant policies, including national strategies and protocols and the adapted *C-IYCF Counselling Package* were in place when implementation began. Several new related policies were developed while this study was being conducted, highlighting the country's commitment to improving nutrition, particularly among pregnant women and young children. Furthermore, the government of Nigeria joined the SUN Movement in 2011, recognizing the role of nutrition as a development issue and committing to addressing malnutrition.

Findings from our in-depth interviews indicate that maternal and child nutrition and health were a priority at all levels of government. The package's successful implementation elsewhere in the country made it possible for it to be accepted and successfully launched in the intervention site. Key informants suggested that there were nutrition champions at all levels of government. One way that this was demonstrated was by the Nigerian government's interest in evaluating the package and using the evidence generated to guide future decision making. Another strong indicator of the political support for the intervention is that upon completion of the study, the local government allocated and released resources to support continued implementation.

Nonetheless, key informants expressed concern that this amount is less than that provided by development partners during the intervention, and that implementers of the *C-IYCF Counselling Package* will still need to compete for attention, funding, and human resources with other health and nutrition-related programs. Furthermore, several key informants felt that understanding of the multi-sectoral nature of nutrition and ways of supporting nutrition is still lacking, particularly in non-health sectors. Additionally, the government health system is challenged by high staff turnover and vacancies, irregular or minimal remuneration, overburdened staff with a wide range of responsibilities, and limited hours of operation among many health facilities.

Unfortunately, the macroeconomic situation deteriorated over the course of implementation in Kaduna State and throughout Nigeria. There was significant inflation and a decline in the value of the naira, as well as fuel shortages and accompanying spikes in fuel prices—all of which resulted in higher prices of foods and major staples. Compounding matters, government revenue has dwindled, thus restricting cash in circulation and weakening the purchasing power of households.

Moreover, during the period of implementation, some wards in the intervention site experienced insecurity<sup>4</sup> and unrest which, over time, may contribute to food insecurity, reducing production and accessibility (availability and affordability) of food, particularly diverse, nutrient-rich foods. Community leaders, who play an important role in behavior change, shifting social norms and providing social support, were involved in C-IYCF activities. Even at baseline, they knew and appreciated the importance of several priority MIYCN practices. However, at endline, 20 percent of community leaders still did not fully understand their role and responsibilities related to the *C-IYCF Counselling Package*, nor the importance of a number of key practices. For example, it appears that they were not fully convinced of the importance of continued breastfeeding for at least two years or the negative consequences of waiting until a child is 1 year old before feeding him or her animal source foods. These findings are concerning given the influence these leaders have in their communities. Additional formative research would help to better understand social norms and cultural beliefs, inform strategies to more actively engage community leaders in the promotion of IYCF, and position community leaders as IYCF advocates.

## Recommendations

Based on findings from the study and inputs from key stakeholders in Nigeria, members of the study team believe that the following recommendations are both relevant and feasible for strengthening future implementation of the *C-IYCF Counselling Package* in Nigeria. Many are appropriate for consideration in other contexts where the package is currently being implemented or will be adapted and implemented in the future:

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<sup>4</sup> See for example <http://leadership.ng/2017/06/08/incessant-kidnapping-reps-summon-ministers-service-chiefs/>

## **Policies and Systems**

1. Review, update, and/or enact relevant multi-sectoral policies and legislation to support, promote, and protect IYCF and C-IYCF services as a RIGHT to every child, applying a systems lens.
2. Review and strengthen implementation and monitoring of the International Code of Marketing of breastmilk substitutes (BMS) to protect, promote, and support optimal infant and young child feeding.
3. Establish and maintain clear communication and coordination mechanisms between nutrition-related programs and sectors to avoid duplication of effort and maximize opportunities to harmonize activities.

## **Planning and Management**

1. Share evidence and essential MIYCN policies, protocols, job aids, and relevant data with key stakeholders to raise awareness and understanding of MIYCN as a multi-sectoral priority.
2. Orient, sensitize, and mobilize stakeholders at all levels, including government officials, community leaders, and health workers, on an ongoing basis to strengthen their role in advocating for IYCF.
3. Leverage existing systems and services, when feasible and appropriate, for implementation and monitoring of the *C-IYCF Counselling Package*.
4. Be realistic about the capacity of community agents, especially volunteers. Establish appropriate job descriptions and qualifications, develop low-literacy monitoring tools and reporting forms.

## **Funding**

1. Develop cost projections, ideally for a ratio of 1:30 community agents per children under two (White and Mason 2013), that include adequate remuneration, incentives, and support for conducting C-IYCF activities.
2. Use these projections to advocate for local, state, and national funding for sustained implementation of the *C-IYCF Counselling Package* at scale.

## **Training**

1. Develop training cascades that routinely train a sufficient number of master trainers, recognizing that there will always be turnover, and prioritize state-level trainers for more cost-effective scale-up of trainings.
2. Explore options for integrating C-IYCF training into pre-service education as well as continuing education programs for health providers and community agents.
3. Ensure that all trainers have the knowledge and skills needed to conduct trainings and that participants are, in turn, gaining the knowledge and skills needed to implement the *C-IYCF Counselling Package*.
4. Emphasize and/or reinforce communication, counselling, and facilitation skills during training and supervision, ensuring that topics for C-IYCF activities are selected based on participants' interests,

needs, and challenges. Allow time during training to practice these skills, preferably in a community setting.

### **Supervising, Mentoring, and Monitoring**

1. Designate and train managers at all levels in supportive supervision, mentoring, and monitoring, following guidance provided in the *C-IYCF Counselling Package*.
2. Integrate priority MIYCN indicators into information systems to ensure that these data are routinely captured, reported, and used to facilitate decisions about future programming.
3. Monitor implementation to identify and address challenges or bottlenecks as they occur.
4. Provide routine and timely feedback to health workers and community agents to help ensure that they feel supported and are able to execute their role in implementing the *C-IYCF Counselling Package*.

### **Expanding Reach**

1. Develop strategies to identify, sensitize, and mobilize pregnant women and mothers from marginalized and vulnerable families to increase their willingness or ability to participate in regular C-IYCF activities.
2. Prioritize the participation of pregnant women and mothers of children under two in C-IYCF support group meetings, but encourage the participation of other family members—such as mothers-in-law, grandmothers, and fathers—when space allows.
3. Conduct community engagement activities focused on family members and other key influencers, including community and religious leaders, to facilitate change in social norms and individual behavior change.

### **Supporting Behavior Change**

1. Conduct formative research on hard-to-change MIYCN behaviors to identify enablers and barriers to the adoption of improved practices and inform implementation of the *C-IYCF Counselling Package*.
2. Include additional locally-relevant MIYCN topics and practical food demonstrations, when possible, in C-IYCF support groups and other activities to increase participation, maintain interest, and build capacity.
3. Identify opportunities to reinforce C-IYCF messages through the formal health system and through mass media and other social and behavior change programs and platforms.
4. Coordinate and collaborate with other (e.g. agricultural extension, income generation, savings and loan, and WASH) programs that aim to increase women's empowerment, as well as access to and the availability of diverse foods and household resources that can be used for their family's nutrition, health and hygiene.



# Chapter 1: Introduction

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Following the development and global dissemination by the United Nations Children’s Fund (UNICEF) of the generic *Community Infant and Young Child Feeding (C-IYCF) Counselling Package*, interest grew in evaluating the effectiveness of the package. In 2014, UNICEF, the Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) project, and the Nigerian Federal Ministry of Health embarked on a collaboration to conduct a formal evaluation of the package. The research design and results described in this report focus on programming in one Nigerian state, but are intended to inform future programming throughout Nigeria and to provide important insights for other countries where the *C-IYCF Counselling Package* may be implemented. Nigeria was considered an ideal location for the evaluation based on several factors, including the early adoption and uptake of the package by the Federal Ministry of Health and their willingness to partner with UNICEF and SPRING on this endeavor. All partners agreed that for purposes of the evaluation, the package would be implemented at scale in one local government area (LGA) in Kaduna State that had not previously benefited from any IYCF-related programming. This report presents the findings of the evaluation.

## Background

### **Emergence of the Generic *Community Infant and Young Child Feeding (C-IYCF) Counselling Package***

Community-based promotion, counselling, and support is one of the key pillars of strategic infant and young child feeding (IYCF) programming. Recognizing a global gap in evidence-based guidance, tools, and other resources for training and counselling at the community level, UNICEF and its partners officially launched the generic *C-IYCF Counselling Package* in 2010 (figure 1-1). The package includes state-of-the-art information on maternal, infant, and young child nutrition (MIYCN), hygiene, and care practices,<sup>5</sup> and describes user-friendly adult learning techniques needed to promote and support the adoption of these behaviors in the community. Individual countries are encouraged to adapt the generic package for use within their context-specific health and nutrition policies and programs.

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<sup>5</sup> In this report, we use the terms "behavior" and "practice" interchangeably.

Figure 1-1. Generic C-IYCF Counselling Package



Whereas previous generic training and counselling packages developed and disseminated by the World Health Organization (WHO) focused primarily on health facilities, the *C-IYCF Counselling Package* focuses on community volunteers and community health workers. It seeks to empower them to support efforts by pregnant women, mothers, and other caregivers in their communities to adopt and sustain optimal MIYCN practices. In addition to providing guidance on program planning and practical tools for adaptation to local contexts, the package includes an engaging set of counselling tools and take-home materials. During training of community agents, emphasis is placed on inter-personal communication and counselling skills, as well as the organization and facilitation of support groups, other group discussions, and community mobilization activities.

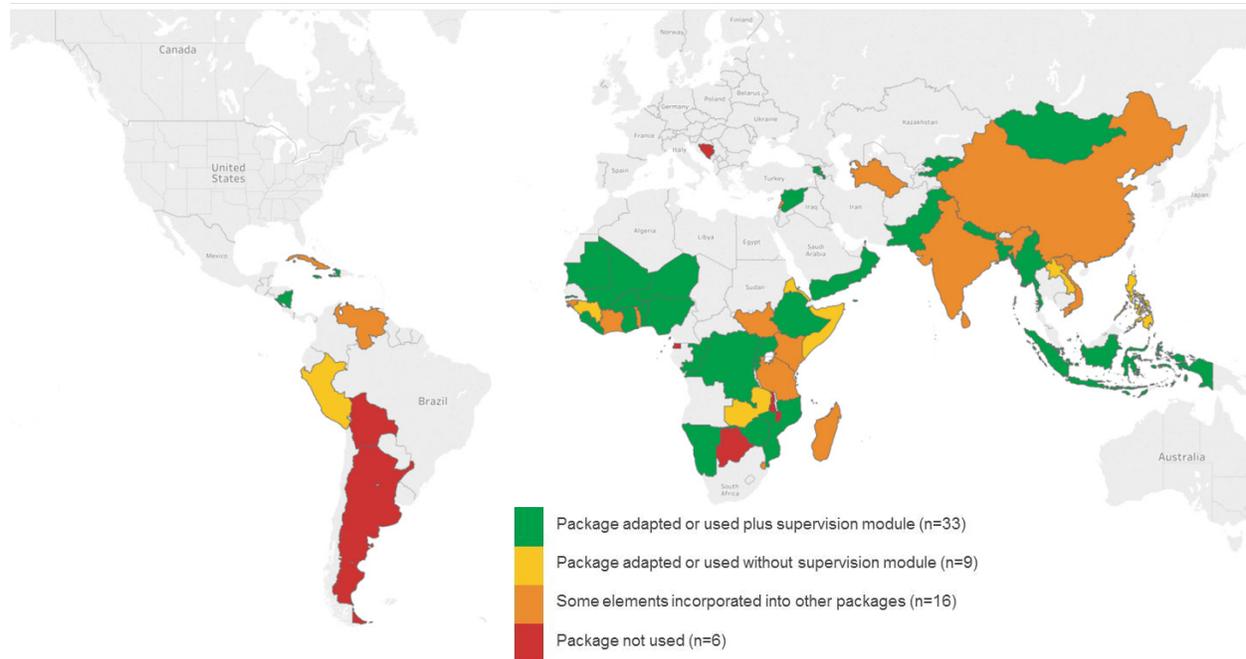
The package includes—

- guidance for policymakers on planning or expanding national IYCF programs, and on adapting the package, including a variety of templates and tools
- guidance on conducting community mobilization and advocacy among key stakeholders and community members
- training materials based on adult learning principles (facilitator guide, training aids, participant manual)

- counselling cards and a key message booklet for use during individual and group counselling
- three brochures designed for caregivers to take home
- tools for the supportive supervision, monitoring, and mentoring of community agents

By the end of 2016, 59 of the 65 countries surveyed had used some or all elements of the *C-IYCF Counselling Package*, but no formal evaluation of the efficacy or effectiveness of the package had been conducted before this evaluation in Nigeria (figure 1-2).

**Figure 1-2. Country Uptake of the UNICEF C-IYCF Counselling Package**



Note: A total of 65 countries responded to the survey.

### Why Nigeria was selected for the *C-IYCF Counselling Package* evaluation

Nigeria was selected for the evaluation for a variety of reasons, including the fact that it was one of the first countries to officially adopt the *C-IYCF Counselling Package* as a national program. Beginning in 2010, under the leadership of the Nigerian Federal Ministry of Health, a strategic investment was made in adapting the core elements of the generic package to the Nigerian context. The adaptation process was supported technically and financially by UNICEF and the United States Agency for International Development (USAID), initially through the Infant & Young Child Nutrition project.<sup>6</sup> SPRING supported the final review process, which included adjustments to the training and counselling materials to reflect the updated national infant feeding and HIV policies (figure 1-3). SPRING also supported the translation of the counselling tools and take-home brochures into the six major local languages in Nigeria.

<sup>6</sup> USAID Infant & Young Child Nutrition Project (Cooperative Agreement GPO-A-00-06-00008-00, 2006-2012, [www.iycn.org](http://www.iycn.org))

Figure 1-3. Nigerian C-IYCF Counselling Package



Then, in 2011, with support from UNICEF, 21 master trainers were trained in the *C-IYCF Counselling Package* by Nutrition Policy and Practice (NPP), which had been contracted previously by UNICEF to conduct similar trainings in other countries. The package was then field tested in the Federal Capital Territory (FCT). The Federal Ministry of Health then led a National Stakeholder Review meeting with SPRING, UNICEF, Save the Children (UK) and other agencies to review the findings from the field test. Following a final technical review, Nigeria's *C-IYCF Counselling Package* was published in 2012.

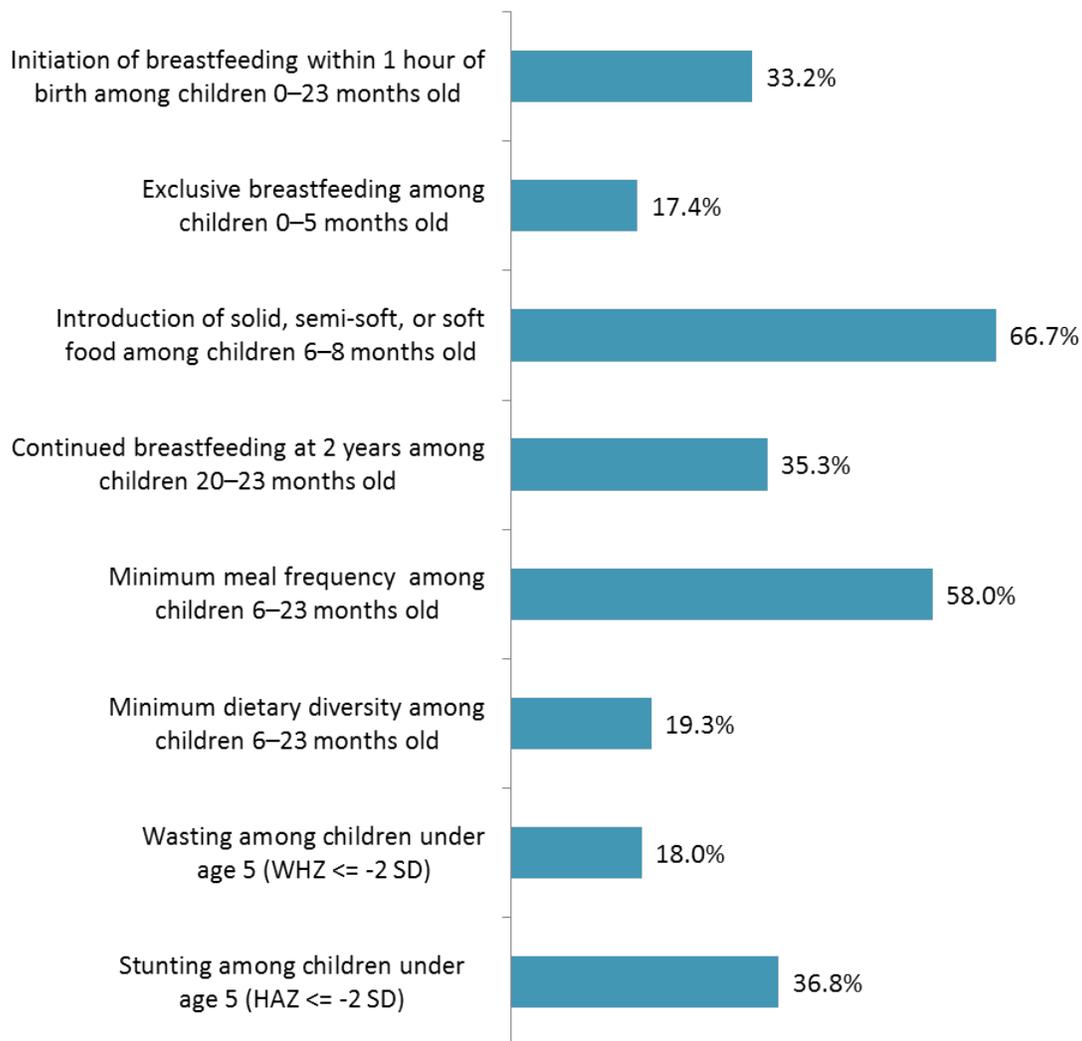
In addition, stakeholders had ample experience implementing the package in Nigeria. The rollout of the Nigerian package (figure 1-3) began in 2013, with support from the Federal Ministry of Health, the State Ministry of Health, UNICEF, and SPRING. To date, the package has been implemented, to varying degrees, in nearly every state in Nigeria.

Finally, another factor that contributed to the selection of Nigeria was a strong interest by the Federal Ministry of Health, UNICEF, and USAID in formally evaluating the impact of the full package to guide future maternal, infant and young child nutrition (MIYCN) investments.

There is ample room for the improvement of MIYCN practices in Nigeria. According to the 2013 Demographic and Health Survey (NDHS), fewer than 1 in 5 children under 6 months of age are exclusively breastfed, and complementary feeding practices are equally poor (figure 1-4). One third of all children

under the age of five have stunted growth, a sign of chronic malnutrition, and 1 in 10 children are acutely malnourished (National Population Commission of Nigeria and ICF International 2014).<sup>7</sup>

**Figure 1-4. Indicators of IYCF and Nutritional Status in Nigeria**



Source: DHS 2013

## Study Objectives

The overall goal of this study was to determine the effectiveness of the *Community Infant and Young Child Feeding Counselling Package* when implemented at scale<sup>8</sup> in an area where the government was supportive, and systems were in place to facilitate implementation. The study focused on four domains (figure 1-5), with the following objectives:

<sup>7</sup> The WHO crisis threshold is 15 percent.

<sup>8</sup> We defined “at scale” implementation as implementation across a large enough geographic area and population to be considered adequate for assessing replicability and generalizability to implementation at the national level.

**1. Assess planning and implementation of the *C-IYCF Counselling Package*.**

- Was planning for implementation of the *C-IYCF Counselling Package* adequate? Did it appropriately and adequately take into consideration, involve, and engage key stakeholders, including community members and community volunteers?
- Did implementation of the *C-IYCF Counselling Package* go according to plan and reach the target populations?
- What were the costs of implementing the *C-IYCF Counselling Package*?

**2. Evaluate the impact of the *C-IYCF Counselling Package* on MIYCN knowledge and counselling and communication skills among health workers and community volunteers.**

- What impact did the implementation of the *C-IYCF Counselling Package* have on MIYCN knowledge, counselling and communication skills, problem identification and solving capacities, group facilitation skills, and monitoring/data collection abilities among health workers and community volunteers?

**3. Evaluate the impact of the *C-IYCF Counselling Package* on related MIYCN knowledge, attitudes, and practices among pregnant women and mothers of children under two.**

- How much did MIYCN knowledge, attitudes, and beliefs related to MIYCN among caregivers change as a result of implementation of the *C-IYCF Counselling Package*?
- What was the impact of the *C-IYCF Counselling Package* on recommended breastfeeding practices (early initiation, exclusive breastfeeding, and continued breastfeeding)?
- What was the impact of the *C-IYCF Counselling Package* on complementary feeding practices (introduction of solid, semi-solid or soft foods, minimum dietary diversity, minimum meal frequency) and on complementary feeding outcomes (minimum acceptable diet, nutrient adequacy of the diet)?

**4. Assess environmental or contextual factors that may have enabled or limited the impact of the *C-IYCF Counselling Package*.**

- How was the agenda for nutrition, IYCF, and implementation of the *C-IYCF Counselling Package* set?
- Did the policy framework and systems (including human resource, information and referral systems) enable or hamper the success of the *C-IYCF Counselling Package*?
- Was there adequate leadership or champions for nutrition who supported implementation of the *C-IYCF Counselling Package* in the intervention site?
- Was there social support for nutrition and IYCF among key informants and influential persons in intervention areas?

Figure 1-5. Study Domains



## Study Design

This was a quasi-experimental population-based study that spanned a two-year period, including 18 months of community-based implementation.

### Location

Together, the Federal Ministry of Health, UNICEF, and SPRING, in close consultation with local authorities, selected Kaduna State and two of its 23 local government areas (LGAs) as locations for the study (figure 1-6). Kajuru LGA (area of 2,464 km<sup>2</sup> with a projected population of 148,200 in 2016) served as the intervention site, while Kauru LGA served as the comparison site (area of 2,810 km in 2016<sup>2</sup>). Kaduna State and, specifically, these two LGAs, were selected based on the following inclusion criteria:

- Limited previous exposure to IYCF program interventions and limited routine IYCF services delivered through the health care system.
- Relatively food-secure; therefore, the main nutrition-related causes of undernutrition for most households were related to suboptimal maternal, infant, and young child feeding practices and behaviors and not to severe food insecurity.
- No other recent, ongoing or planned food or feeding-related interventions for food-insecure populations, such as food assistance, supplements, and other food security programs or social protection schemes.
- Politically stable environments.

At the time of selection, there were 42 public and private health facilities in the intervention site<sup>9</sup> and an estimated population of 140,433 (approximately 9,550 children under two), located in ten wards or LGA

Figure 1-6. Intervention and Comparison LGAs for the Evaluation of the C-IYCF Program



<sup>9</sup> Following a rapid facility assessment, we determined that there were 55 health facilities in Kajuru LGA.

sub-divisions. In the comparison site there were 48 public and private health facilities and an estimated population of 215,361 (including approximately 14,645 children under two), located in eleven wards.

## Intervention

The *C-IYCF Counselling Package* was implemented over an 18-month period in the intervention LGA and included training of health authorities, health workers, and community volunteers, as well as community mobilization and sensitization events, support groups, and home visits. Planning and implementation processes are described in greater detail in Chapter 2.

## Data Collection

Data were collected at baseline (prior to implementation), from December 2014 to June 2015,<sup>10</sup> and at endline (after 18 months of implementation), between January and March 2017. The evaluation used a mixed methods approach which used the following data collection methods (figure 1-7):

- qualitative key informant interviews conducted at the national, state, and local government levels at baseline and endline
- quantitative assessments of health workers' and community volunteers' knowledge and attitudes before training, immediately after training, and at endline in the intervention site
- baseline and endline quantitative surveys of community leaders' knowledge and attitudes at the intervention site
- baseline and endline population-based surveys of pregnant women and mothers of children under two in the intervention and comparison sites that covered maternal education; work history; control of resources; role in decision-making; nutrition-related knowledge, attitudes, and practices; and anthropometry (height and weight of non-pregnant mothers and children)
- process monitoring of support groups conducted, attendees, and referrals
- a costing exercise that tracked all expenditures related to program implementation to determine the cost per beneficiary and to assess the scalability of the program.

Data collection on **health facilities** began in the intervention site during a rapid assessment in March 2015. The assessment explored management, staffing, and services provided. Findings from this assessment are presented in Chapter 3 and in the [Evaluation of the Nigeria Community Infant and Young Child Feeding Counselling Package: Baseline Report](#).

Figure 1-7. Data Collection Methods



<sup>10</sup> Baseline data collection was delayed due to presidential elections held in February 2015.

Knowledge, attitudes, and confidence of **health facility staff** in the intervention site were measured using self-administered assessments prior to the C-IYCF trainings<sup>11</sup> (N=65) and immediately after the C-IYCF trainings (N=63) (conducted in May 2015). They also come from a February 2017 endline survey of health workers who were working in health facilities that supported community volunteers (N=67) in the intervention site. Findings from these assessments and surveys are presented in Chapter 3.

We also measured knowledge, attitudes, and confidence of **community volunteers** in the intervention site only. Surveys were conducted among 237 community volunteers approximately two weeks prior to and two weeks after they had participated in a C-IYCF training in June 2015, and again at endline in February 2017 (N=238). Findings from these surveys are presented in Chapter 3.

In February 2015, before program implementation, 78 **community leaders** in the intervention site were interviewed. Two years later, in February 2017, after more than 18 months of program implementation, 92 community leaders were interviewed. Community leaders represented a range of community groups from each ward and were identified by ward focal persons and other community leaders. Findings from these surveys are presented in Chapter 4.

At endline, between January and March 2017, we also conducted 26 in-depth interviews with **key informants at the federal, state, and LGA levels**. The respondents were selected based on their familiarity with and knowledge of at least one of the following aspects of the *C-IYCF Counselling Package*: the design/development and adaptation of the *C-IYCF Counselling Package* in Nigeria, the selection of Kajuru LGA in Kaduna State in Nigeria as the intervention site, and/or the implementation rollout in Kajuru LGA. The respondents, some of whom were members of the research team, included federal (4), state (7), and LGA (7) workers, as well as national (5) and international (3) donors. The vast majority of interviews were conducted in-person in Nigeria. Findings from these interviews are presented throughout this report.

Finally, we conducted a population-based baseline survey of randomly selected **pregnant women and mothers of children under two** in both LGAs between March and June 2015 (prior to implementation), and again after 18 months of implementation, between February and March 2017. As a result, the sample included people who were not reached by any *C-IYCF Counselling Package* activities as well as those who were reached to varying degrees. Following a training of interviewers led by the study team, the National Bureau of Statistics (NBS) took the lead in collecting data in both LGAs. The NBS randomly selected 176 enumeration areas in the intervention site and 178<sup>12</sup> in the comparison site at baseline. These same enumeration areas were covered during the endline survey.

In each enumeration area, at each time point, all households were visited to identify eligible households—those with a child under the age of two years or a pregnant woman. Thereafter, all such households were visited and the pregnant woman and/or mother(s)<sup>13</sup> of the children under two were interviewed. The surveys asked women questions to ascertain their level of exposure to the *C-IYCF Counselling Package*, their knowledge, attitudes, and confidence to practice priority MIYCN practices, as well as their actual

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<sup>11</sup> During the pre-test, many respondents skipped many questions. We suspect that they skipped questions when they were unsure of the answers. As a result, knowledge may be over-estimated in the pre- and post-training tests.

<sup>12</sup> At baseline, when the first 176 enumeration areas were visited in Kauru, there were two that did not include a single eligible household or respondent. Therefore, two additional enumeration areas were added.

<sup>13</sup> At endline, the primary caregivers of 12 children in Kajuru and 48 children in Kauru were interviewed instead of their biological mother. Data are not available from baseline to determine if the respondent was mother or caregiver.

practices. We also collected anthropometric data on mothers and children.<sup>14</sup> Findings from these surveys are presented in Chapter 4.

In total, we interviewed 1,748 mothers of children under two in the intervention site and 1,777 in the comparison site at baseline and 2,290 in the intervention site and 3,076 in the comparison site at endline (Table 4-1). In so doing, we explored practices related to and measured nutritional status of 1,760 children in the intervention site and 1,783 children in the comparison site at baseline and 2,343 children in the intervention site and 3,125 children in the comparison site at endline. We also interviewed 550 pregnant women (some of who may also be mothers of children under two) in the intervention site and 850 in the comparison site at baseline and 771 in the intervention site and 1,350 in the comparison site at endline.

Additional details on the study methods can be found in Annex 2.

## Data Analysis

We used STATA to analyze quantitative data collected through the assessments and surveys described above. We tested differences between time points using t-tests for continuous variables and Chi Square tests for binary variables.

For health workers and community volunteers, we tested differences between pre- and post-training to assess changes in knowledge and attitudes and between post-training and endline to assess knowledge retention. Only when indicated, and as deemed necessary, we also tested differences between pre-training and endline. For community leaders, we tested differences between baseline and endline only.

Tables of all findings from the assessments and surveys of health worker, community leaders, and community volunteers are presented in Annex 3 and those from the maternal surveys are presented in Annex 4.

We compared demographic or background characteristics of pregnant women and mothers between locations at each time point. We tested differences in women's knowledge, attitudes, and practices between baseline and endline for each location and, for priority outcomes, we ran logistic or linear regressions to determine if differences in differences (DID) were statistically significant (i.e., if differences over time were different in the two LGAs). These regressions included variables for time point, location, and the interaction term for time and location. The p value for the latter was used to determine if differences over time were different in the two LGAs. Finally, for WHO's priority indicators for assessing infant and young child feeding practices (WHO 2008), we ran logistic regressions that controlled for other known determinants of nutritional status (i.e., household wealth, women's age, women's education, women's religion, child's age, child's sex, child's size at birth), as well as the variables for time point, location, and the time/location interaction term. Tables of all findings from the maternal surveys are presented in Annex 4.

Transcripts from the 26 in-depth interviews conducted at endline among key informants were analyzed in Census and Survey Processing System (CSPro), following a systematic qualitative methodology for identifying themes (Bradley et al. 2007).

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<sup>14</sup> We did not weigh pregnant women, as these data would be difficult to interpret. However, we did measure their height. At baseline, anthropometric data were collected on a sub-sample of respondents after the primary survey of knowledge, attitudes, and practices was completed.

## Limitations

This study was not a randomized controlled trial. It followed a quasi-experimental design, meaning that some factors that may affect nutrition practices were outside the manageable control of the study team. Furthermore, we did not collect data on polygamous family structures, which can affect women's control of resources, decision-making power, and, ultimately, nutrition practices. Finally, because the study was conducted in only one state, it may be difficult to generalize findings to all of Nigeria.

## Study Team

The research was implemented under the leadership of two principal investigators (PI): Dr. Sascha Lamstein of SPRING and Dr. Rafael Perez-Escamilla, professor at the Yale School of Public Health and a senior consultant at SPRING. The PIs were assisted by co-investigators from SPRING, the Federal Ministry of Health, UNICEF/New York, and UNICEF/Nigeria.<sup>15</sup> UNICEF signed a letter of commitment with the Kaduna State Ministry of Health. The National Bureau of Statistics was engaged at baseline and endline to conduct all quantitative data collection: the Structured Key Informant Interviews, Health Facility Assessments (baseline only), Self-Administered Health Worker Assessments, the Community Volunteer Survey, and the Maternal Survey. A study coordinator, Ms. Susan Adeyemi, was contracted to oversee data collection and ensure that the program was implemented according to plan. Finally, a qualitative research specialist, Dr. Monica R. Biradavolu, was contracted to conduct endline semi-structured key informant interviews at the national, state, and LGA levels in January 2017. She was responsible for tool development, data management, quality control, and data analysis (with other team members) of the endline qualitative data. The PIs and co-investigators regularly monitored all data collection and program implementation activities via email and telephone, as well as during one mid-term site visit.

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<sup>15</sup> For convenience, throughout this report we refer to UNICEF/New York and UNICEF/Nigeria as "UNICEF".



## Chapter 2: Processes and Costs of Implementing the C-IYCF Counselling Package

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This chapter focuses on the process of implementing the *C-IYCF Counselling Package* in the intervention LGA. In it, we attempt to answer the following study question:

***Was planning and implementation of the C-IYCF Counselling Package adequate, sustainable, and scalable?***

We explore the planning and implementation of the *C-IYCF Counselling Package* to determine if it appropriately and adequately took into consideration, involved, and engaged key stakeholders; if implementation went according to plan; and the cost of implementation. We review the program planning steps and implementation activities illustrated in the program impact pathways (PIP), and present our own experiences, particularly those of the study coordinator and co-investigators who conducted a mid-process assessment in April 2016;<sup>16</sup> routine monitoring data; the findings from key informant interviews conducted between November 2016 and March 2017; as well as endline surveys conducted between February and March 2017 among health workers,<sup>17</sup> community leaders, and community volunteers. Additional information on the qualitative and quantitative data collection and analysis methods is summarized in Annex 3.

Planning and implementation of the *C-IYCF Counselling Package* in the intervention site benefited from several years of advocacy, adaptation, translation, and experience implementing it in other parts of the country.

### Program Planning

The planning process, which followed UNICEF's *Planning Guide* (figure 2-1), was conducted with active participation of national, state, and LGA officials; Ward Development Committees (WDCs); and other community leaders. It included the following steps:

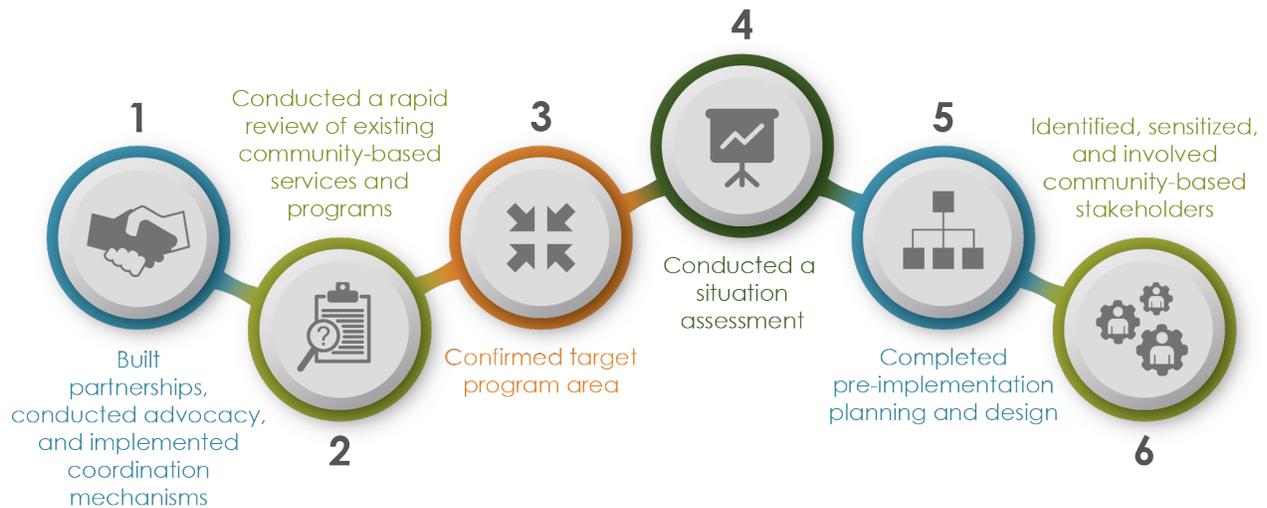
1. Build partnerships, conduct advocacy, and implement coordination mechanisms
2. Conduct a rapid review of existing community-based services and programs
3. Confirm target program area
4. Conduct a situation assessment
5. Undertake pre-implementation planning and design
6. Identify, sensitize, and involve community-based stakeholders.

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<sup>16</sup> See the Evaluation of Nigeria's Community Infant and Young Child Feeding Counselling Package: Report of a Mid-Process Assessment.

<sup>17</sup> "Health worker" refers to health facility staff.

Figure 2-1. C-IYCF Planning Steps



### Step 1: Build Partnerships, Conduct Advocacy, and Implement Coordination Mechanisms

The *Planning Guide* suggests, “A stakeholder meeting (or several sub-national meetings) may be convened to orient the NGO and government partners on the broad objectives of a community-based IYCF program and agree on subsequent actions, including their involvement in bringing community-based stakeholders into the process, conducting a situational analysis, and the development of an implementation plan and timeframe for program implementation and achieving scale. Of paramount importance is the definition of the responsibilities for each partner as the process moves forward, determining ‘who’ makes the decisions around particular issues” (UNICEF 2012a). In this case, the Federal Ministry of Health was represented on the research team by the chief nutrition officer and, as such, the Federal Ministry of Health was closely involved in planning and implementation. Therefore, sensitization and mobilization meetings targeted state and LGA leaders.

Sensitization and mobilization of state and LGA leaders began when UNICEF/Abuja, UNICEF/Kaduna, the Federal Ministry of Health, and SPRING staff met with Kaduna State officials to position and promote the program before implementation began. Two formal sensitization meetings were conducted at the Local Government Secretariat, at the Kaduna State Ministry of Health, and at the Ministry for Local Government and Chieftaincy to—

- explain the importance of the evaluation
- explain why Kajuru LGA was selected
- explain the proposed training, implementation, and supportive supervision of support groups, and the data collection required to support implementation during the evaluation
- discuss the criteria for selection of health facilities and health workers and authorities to be trained
- discuss the process for nominating volunteers and criteria for selection

- discuss how the state, LGA, and/or community members might motivate or incentivize volunteers
- explain the roles and responsibilities of the different partners, with an emphasis on what would be required of the Federal, State Ministry of Health, and the LGA in the near and long term (see Annex 3).

UNICEF and the study coordinator met with Kaduna State Ministry of Health representatives an additional three times to review selection criteria, roles and responsibilities, and plans for program implementation. They

made special effort to engage a range of stakeholders and they took time to agree on the selection criteria for health facilities, health workers, and community volunteers (box 2-1). Furthermore, throughout implementation, UNICEF and the Kaduna State Ministry of Health organized meetings of the Multi-sectoral State Nutrition Partners' Forum and State Committee on Food and Nutrition.

## Step 2: Conduct a Rapid Review of Existing Community-Based Services and Programs

UNICEF and the Federal Ministry of Health conducted a rapid review, through interviews with state and LGA staff, of community-based services and programs in Kaduna to identify LGAs where there had been little to no exposure to C-IYCF programming.

## Step 3: Confirm Target Program Area

Based on this rapid review, the intervention LGA was selected by the Federal Ministry of Health, UNICEF, and SPRING in consultation with Kaduna State officials. The National Bureau of Statistics (NBS) conducted a rapid assessment of health facility staffing in February 2015. The assessment identified a total of 55 health facilities (public and private) that could support *C-IYCF Counselling Package* implementation.

### Box 2-1: Health facility, health worker, and community volunteer selection criteria:

Health facilities were included if they—

- were public or government-run
- delivered maternal and/or child health services
- had at least two health service providers
- had no staff trained in the IYCF package within the last 5 years
- were willing to participate in the program, particularly to support and supervise/mentor community volunteers. Facilities with only one health worker were dropped because training could negatively impact health services coverage.

Eligible health workers were those who worked in one of the selected health facilities as a nurse, midwife, community health extension worker (CHEW), junior CHEW, or Community Health Officer (CHO), and were willing to support the C-IYCF program, supervise and support community volunteers, and promote IYCF in their own work.

Men and women were considered eligible to serve as community volunteers if they resided in the community; had an interest in breastfeeding, child feeding and childcare; had an interest in community service; expressed a willingness/commitment to support the C-IYCF program and fulfill the role of community volunteer; had a basic level of reading and writing; and spoke the local language. Preference was given to men and women of reproductive age and parents.

## Step 4: Conduct a Situation Assessment

As part of the baseline assessment, the NBS conducted a facility assessment and key informant interviews to clarify existing services and staffing, and social support for the *C-IYCF Counselling Package*.

## Step 5: Identify, Sensitize, and Involve Community-Based Stakeholders

During this planning process, the Kaduna State Ministry of Health, UNICEF, and SPRING met with LGA officials, including the LGA chairman, director of personnel, acting director of primary healthcare, nutrition focal person, health educator, social mobilization officer, monitoring and evaluation (M&E) officer, and assistant M&E officer, to—

- explain the proposed training, implementation, supportive supervision, and data collection required to support implementation during the evaluation
- discuss the criteria for selection of facilities and facility staff to be trained (see Annex 2)
- discuss the process for nominating volunteers and criteria for selection (see Annex 2)
- discuss how the LGA and/or community members might motivate or incentivize volunteers
- explain the roles and responsibilities of the different partners, with an emphasis on what would be required of the LGA in the near- and long-term (see Annex 2).

Throughout implementation, UNICEF/Kaduna and the study coordinator maintained a strong relationship with state and LGA officials through regular phone calls and visits. In this way, an implementation team of five people was formed that included representatives from the UNICEF/Kaduna Nutrition Section, the State Ministry of Health, and the LGA, as well as the SPRING study coordinator, who supported and supervised the *C-IYCF Counselling Package* in the intervention site. The role of each member of the implementation team is described in Annex 2.

Perceptions of the program and its impact were positive among LGA leaders at endline.

*Because of this program, we have been lifted higher. We learned that we should start complementary feeding at 6 months. We used to do it after, which caused problems for the children. The training was lively and educational and I really enjoyed it.*

—Government respondent, Intervention LGA (Endline)

There were, however, some challenges with this process, particularly the unusually high turnover of LGA officials. This, according to key informants, negatively affected leadership for nutrition and ownership of the program. It became difficult to coordinate activities as new personnel needed to be engaged on issues that had already been decided on with previous appointees.

## Step 6: Undertake Pre-Implementation Planning and Design

Using findings from these assessments and through these meetings, the Federal Ministry of Health, UNICEF, the State Ministry of Health, and the LGA, with the LGA nutrition focal person (NFP) and SPRING, selected 20 health facilities that met the selection criteria.

Based on the agreed-upon selection criteria, the head of the Health Department from the intervention LGA prepared a list of health workers and health authorities, including the LGA director of primary health care, the LGA nutrition focal person, the health education officer, the assistant monitoring and evaluation officer, the maternal and child health coordinator, the state health education officer, the State Ministry of Health monitoring and evaluation officer, the assistant state nutrition officer (ASNO), and representatives from the State Ministry of Agriculture and the State Ministry of Women Affairs.

In addition, the Federal Ministry of Health, UNICEF, and State Ministry of Health, the LGA nutrition focal person, and SPRING developed a program impact pathway (PIP) (Figure 2-) to foster a shared understanding of implementation processes and expected outcomes. The original version of the PIP, which was drafted by UNICEF, the Federal Ministry of Health, the State Ministry of Health, and SPRING (see Annex 2, figure 1) was modified during a mid-process assessment (for more information on this process, please see Perez-Escamilla, et al. 2016). The final PIP depicts eleven program activities (solid boxes) and the expected intermediate outcomes (solid ovals) with solid lines, indicating elements within the program context that are under the program's control. The PIP also includes externalities (dashed boxes) that can influence program processes and/or intermediate or ultimate outcomes (dashed oval). These externalities are not within the program's scope of work. For instance, the program did not work to change the availability of food or health services.

As with any intervention, the enabling environment plays an important role in facilitating or limiting implementation and impact. In addition to guiding implementation, the PIP allowed the implementation and research teams to better understand the context of the intervention and to identify factors that could influence activities or outcomes (Avula et al. 2013). These factors are explored further in Chapter 5.

At endline, some concern was expressed that too much focus was placed on community-based activities, particularly on support groups, and that using a wider range of social and behavior change approaches, focusing additional resources on improving facility-based IYCF programming, and engaging other sectors in the promotion of optimal MIYCN practices would have been beneficial.

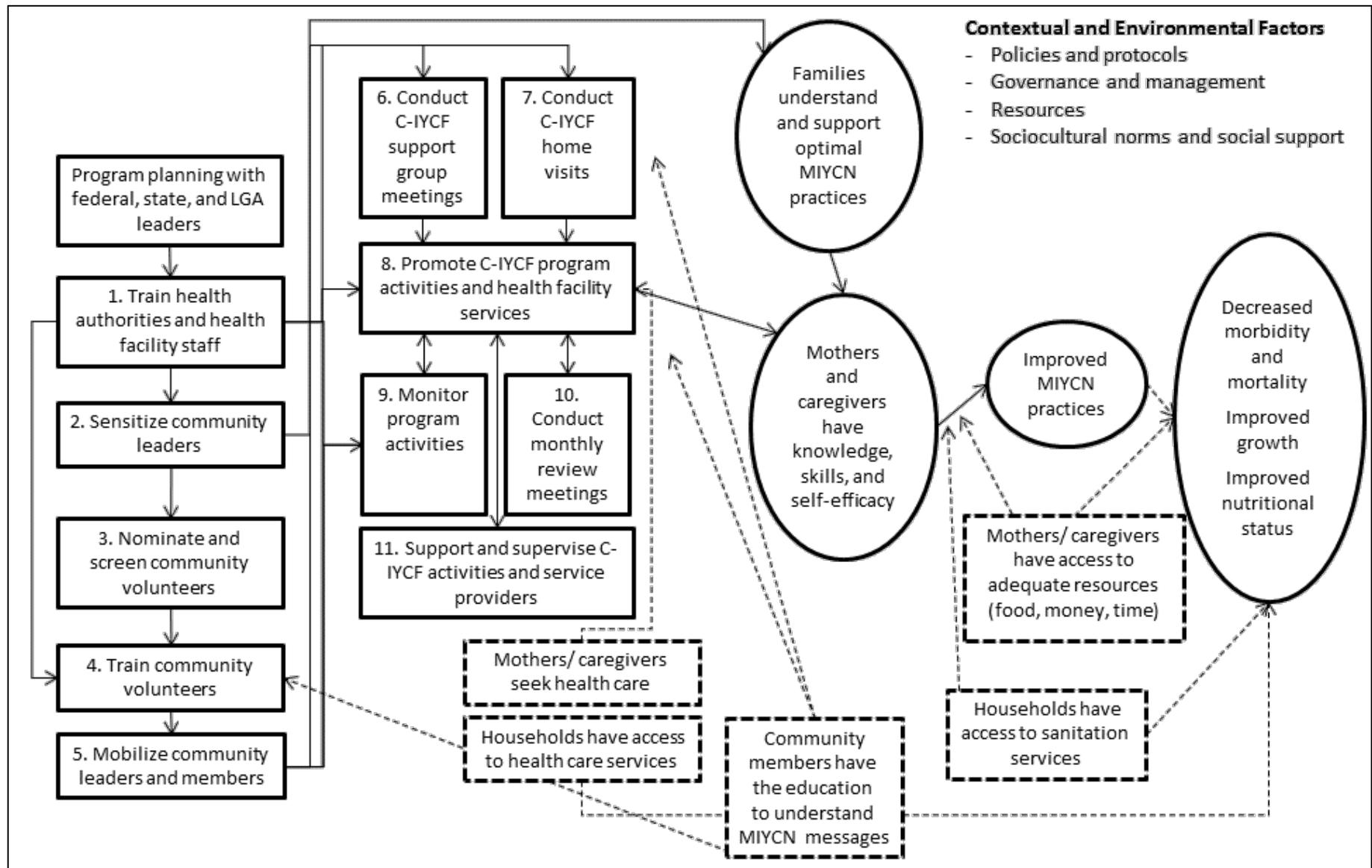
## Program Implementation

Prior to implementation, the generic *C-IYCF Counselling Package* was adapted to the Nigerian context (2010–2011), a cadre of master trainers was trained, and various government and non-governmental organizations in multiple LGAs throughout the country had begun implementing the package. The PIP (figure 2-2) depicts the specific activities implemented during this study, which were described in greater detail below. Activities are also presented by target population in Annex 2.

### Activity 1: Train Health Authorities and Health Facility Staff

In 2012, UNICEF supported the training of 21 Nigerian C-IYCF master trainers. In April 2015, nine of these trainers, as well as the Kaduna Assistant State Nutrition Officer, were trained in the *Supportive Supervision/Mentoring and Monitoring for C-IYCF* module, which was released after the initial training of trainers.

Figure 2-2. Program Impact Pathway for Implementation of the C-IYCF Counselling Package



Note: In this context, MIYCN includes hygiene and healthcare seeking behaviors (recognition of danger signs).

Subsequently, in May 2015, these master trainers trained 10 health authorities (5 from the state and 5 from the LGA) and 68 health workers (54 female, 14 male) from health facilities in the intervention LGA in the *C-IYCF Counselling Package*. Health workers included those who worked in government health facilities as nurses, nurse-midwives, community health officers, community health extension workers (CHEWs), and junior CHEWs, and met the following criteria: (1) provides child welfare antenatal care services, (2) has a minimum of two posted health personnel, and (3) has no current staff trained in the package.

The team had initially planned to train all eligible health workers; however, it was not logistically and financially possible to train all 129 health workers, so the number was reduced to 80. Despite planning, frequent communication, and a concerted effort to avoid overlap with other LGA activities, only 68 health workers were trained due to scheduling conflicts. Among the health workers interviewed at endline, all but six had not participated in a C-IYCF training, due to promotions and transfers.

The C-IYCF trainings followed a training cascade methodology (figure 2-3), which, despite its limitations, is the most efficient and cost-effective way to train large numbers of participants. C-IYCF master trainers trained health authorities, health workers, and community volunteers. Ten recently trained health workers and health authorities, including the state nutrition officers and LGA nutrition focal person, assisted master trainers in training community volunteers. These ten individuals, from health facilities throughout the LGA, were selected based on their mastery of the technical content of the package and training skills.

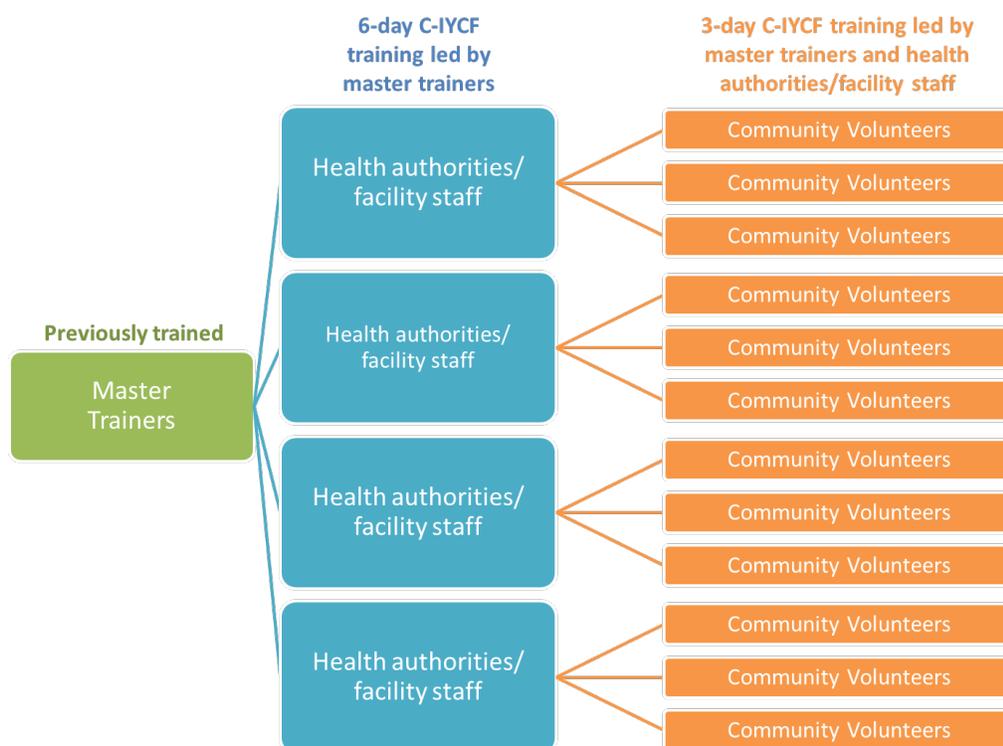
Health authorities and health workers were trained according to the *C-IYCF Facilitator's Guide*<sup>18</sup> and the *Supportive Supervision/Mentoring and Monitoring for Community IYCF* training manual (See Annex 2 for the training agenda). Trainings did not specifically include training of trainer techniques. A total of four trainings were conducted (two at a time), each lasting six days and including approximately 20 participants.

Self-administered assessments conducted immediately after the training and at endline showed high levels of overall satisfaction with the trainings, and also high satisfaction with specific training dimensions including training organization, content, and trainers. After completing the training, almost all health workers were very satisfied with the C-IYCF training and 11.9 percent were somewhat satisfied. The vast majority of health workers reported being very satisfied with the organization of the C-IYCF training sessions (Annex 3, table 3). Only one person was unsatisfied. Half of the health workers trained (56.1 percent) strongly agreed and 36.8 percent agreed that the trainers were supportive, and not critical.

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<sup>18</sup> The *C-IYCF Facilitator's Guide* also includes an optional session on infant and young child feeding in emergencies, which was not considered relevant to the context of Kajuru LGA.

**Figure 2-3. Training Cascade Followed for Implementation of the C-IYCF Counselling Package**



Participants found the trainings useful for conducting their jobs. At endline, nearly two years after the initial C-IYCF training and after 18 months of program implementation, the vast majority of health workers thought that their training was very useful for promoting MIYCN practices and implementing the *C-IYCF Counselling Package* (Annex 3, table 5). Likewise, the majority of health workers reported that the training had improved their MIYCN knowledge, skill, curriculum vitae, and their own maternal, infant, and young child nutrition practices.

Participants were less satisfied with the C-IYCF training venue, food, training length, and transportation to and from the training. In addition, due to printing challenges, there was a delay in providing printed training materials to all training participants. However, although described as inconveniences, these challenges appear not to have diminished participants’ training experience. As described above, most trainees reported high levels of satisfaction with the organization of the trainings.

In addition to these trainings and in partnership with the C-IYCF implementation team and the National Orientation Agency, UNICEF’s Communication for Development (C4D) team led a two-day workshop for the 68 health workers on how to prepare, store, and package complementary foods. These workshops were conducted in all ten wards in the intervention site in January 2016 (eight months after the initial training). They complemented, but were independent of, the *C-IYCF Counselling Package* training and responded to requests from community volunteers and community members for additional training. At endline, 89.6 percent of health workers reported participating in this workshop (Annex 3, table 2).

Additionally, UNICEF's C4D, in partnership with the C-IYCF implementation team, conducted two-day theater for development workshops on preparing and performing skits related to the key MIYCN practices being promoted through the *C-IYCF Counselling Package*. These workshops were also conducted in January 2016. They were geared toward community members and existing theater troupes, but were also useful for strengthening health workers' skills in planning, organizing, and conducting action-oriented community mobilization events. At endline, 53.7 percent of health workers reported participating in these workshops (Annex 3, table 2).

At endline, we surveyed the health workers about how useful they found the workshops. The majority reported that the workshops were very useful (Annex 3, table 6).

Over the course of implementation, UNICEF, the Federal Ministry of Health, and C-IYCF implementing partners developed harmonized monitoring forms for C-IYCF (Annex 2). In March 2016, all 68 of the trained health workers participated in a one-day orientation on the new monitoring forms.

According to post-training assessments and the endline survey results, health workers had gained knowledge and understood their role in implementing the *C-IYCF Counselling Package*. For more information on knowledge gained, knowledge retention, and confidence to implement the *C-IYCF Counselling Package*, see Chapter 3.

## Activity 2: Sensitize Community Leaders

The sensitization of community leaders was an important step for ensuring that they felt ownership of the *C-IYCF Counselling Package*, invested in its success, and, more specifically, committed to nominating appropriate community members to serve as C-IYCF community volunteers. As such, SPRING, the State Ministry of Health, and LGA officials invited ward focal persons<sup>19</sup> to an orientation meeting at a local health facility to—

- explain the C-IYCF Counselling Package
- explain the process for nominating volunteers and criteria for selection (Annex 2)
- explain the roles and responsibilities of the different partners, with an emphasis on what would be required of the ward focal persons in the near- and long-term (Annex 2).

Ward focal persons then met with their respective Ward Development Committees<sup>20</sup> to sensitize them on the process and criteria for nominating community members to serve as C-IYCF volunteers.

## Activity 3: Nominate and Screen Community Volunteers

Identifying the best and most appropriate community members to serve as community volunteers was critical to the success of the program. It was also an opportunity to engage community leaders, and thereby establish among them a sense of ownership and commitment to the program. Ward Development Committee members and ward focal persons were asked to nominate a specified number of

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<sup>19</sup> Ward focal persons are the most senior health personnel designated for each political ward as a ward supervisor/ward focal person in the LGA. The job of the ward focal person is to oversee and ensure the implementation of the Ward Health System in accordance with established guidelines and procedures.

<sup>20</sup> Ward Development Committee members are elected or selected to represent the various interest groups represented in the communities in a ward (National Primary Health Care Development Agency 2016).

community members to serve as community volunteers in their wards. According to our endline surveys, 80.6 percent of the health workers (Annex 3, table 11) and 66.3 percent of the community leaders (Annex 3, table 32) interviewed helped recruit or select community volunteers.

The number of community members nominated to serve as community volunteers was calculated to ensure one volunteer for every 40 children under the age of two in each ward (see table 2-1). Ward Development Committee members and ward focal persons were asked to nominate community members (men and women) who were a) willing to serve their community as a volunteer; b) interested in breastfeeding, child feeding, and child care; c) resided in the community; d) had an interest in community service; e) expressed a willingness/commitment to support the *C-IYCF Counselling Package* and fulfill the role of community volunteer; and f) had a basic level of reading and writing skills and spoke the local language.<sup>21</sup> While it was not a criterion for selection, preference was given to married women, women of reproductive age, and parents (both mothers and fathers).

**Table 2-1. Estimated Population and Number of Community Volunteers Trained, and People to Be Reached**

WARDS in Intervention LGA	2014 Projected Population*		Target Number of Community Volunteers to Be Trained with a Ratio of 1 Volunteer per 40 Children <2 Years Old	Maximum Number of Mothers/ Caregivers of Children <2 Years Old to Be Reached through Support Groups***	Maximum Percentage of Mothers/ Caregivers of Children <2 Years Old to Be Reached through Support Groups
	Total	Population <2 Years Old**			
AFOGO	14,879	1,012	25	329	32.5%
BUDA	21,320	1,450	36	471	32.5%
IDON	9,493	646	16	210	32.5%
KAJURU	10,142	690	17	224	32.5%
KALLAH	15,331	1,043	26	339	32.5%
KASUWA MAGANI	18,602	1,265	32	411	32.5%
KUFANA	19,647	1,336	33	434	32.5%
MARO	10,387	706	18	230	32.5%
RIMAU	9,666	657	16	214	32.5%
TANTATU	10,976	746	19	243	32.5%
<b>TOTAL</b>	<b>140,443</b>	<b>9,550</b>	<b>239</b>	<b>3,104</b>	<b>32.5%</b>

\* Data based on 2006 census (2010 report) and an assumed population growth rate of 3 percent per year.

\*\* According to the 2006 census, 6.8 percent of the population in Kaduna State was <2 years of age.

\*\*\* This assumes support groups of 13 mothers/caregivers of children under two.

<sup>21</sup> Initially, the criteria were that community volunteers needed to be able to read and write. However, later this criterion was considered too high an expectation and was lowered to having a basic level of reading and writing.

After community members were nominated, UNICEF, SPRING, the State Ministry of Health, and LGA representatives held orientation meetings with the nominees to discuss the roles and responsibilities of community volunteers and screen them. The implementation team emphasized that the role was voluntary and unpaid—which were important requirements for the project’s sustainability and scalability. They would, however, be provided with a meal during the monthly review meetings and 1,000 naira for transportation to and from the meeting.

Screening involved asking nominees if they would be comfortable talking about breasts and breastfeeding and about their plans to remain in the community for the duration of the project. We also checked with community members if the nominees would likely be well received in the community. Additionally, because it is common for women to relocate to their husband’s community after marrying, some younger women nominated to serve as volunteers were dropped and replaced.

After one year of implementation, only six community volunteers had dropped out. At endline, after 18 months of implementation, only 15 (out of the original 238 community volunteers) said that they had not been trained, suggesting that nine additional community volunteers (for a total of 15) had dropped out and were replaced over the 18-month period of implementation (Annex 3, table 44).

#### **Activity 4: Train Community Volunteers**

In June 2015, the community volunteers were trained following the training cascade depicted in Figure 2-3. In total, 238 community volunteers were trained during ten trainings, each with approximately 25 participants. Each training session was held over three continuous days in the LGA. Of the community volunteers surveyed at endline, 223 reported having participated in one of these trainings (all except the 15 who replaced community volunteers who dropped out or moved away) (Annex 3, table 44).

Community volunteers were trained C-IYCF master trainers and one or two recently trained health workers or health authorities. The 18-session training covered IYCF topics, counselling and support, and monitoring following the *C-IYCF Facilitator Guide* and *Supportive Supervision/Mentoring and Monitoring for Community IYCF* training. During the training, trainees practiced facilitating support group sessions, acting in dramas, and forming a support group in a community near the training venue. Caregivers were invited to a central location in the community, a skit on IYCF was performed, community members discussed what they learned from the drama, and the *C-IYCF Counselling Package* was introduced. In addition, prior to, during, and immediately after trainings, community volunteers were instructed on their role and responsibilities. It was also made clear that this was a volunteer position without pay.

Surveys conducted after the trainings and at endline showed fairly high levels of satisfaction among community volunteers with the trainings overall, and with training organization, content, and trainers. Immediately after the initial three-day C-IYCF counselling training, the majority of community volunteers was very satisfied (66.4 percent) or satisfied (33.2 percent) with the C-IYCF training they received (Annex 3, table 45). There was a similar pattern of satisfaction regarding various aspects of the training, including organization, materials, group size, venue, length, food, and transportation.

About two thirds of community volunteers thought the trainers were very qualified in terms of communication skills and knowledge of the topics (Annex 3, table 45). However, only half of respondents thought that trainers were very qualified in terms of overall performance, provision of opportunities to

practice the new knowledge or skills taught, requesting input from participants, or providing opportunities for participants to give feedback and/or ask questions. This lower rating may be partially due to the fact that the trainings were generally conducted in Hausa, but the *C-IYCF Facilitators' Guide* (UNICEF 2012b) was available in English only. Only the *Counselling Cards*, *Key Message Booklet*, and the brochures were translated and available in Hausa. As a result, facilitators had to translate many sessions "on the spot" for participants, a task which generally requires a high proficiency in both languages and strong understanding of the material.

At endline, 97.3 percent thought the training was very useful for promoting IYCF practices and 96.0 percent specifically thought the training was very useful for implementing C-IYCF activities (Annex 3, table 46). They reported that the training increased their knowledge of MIYCN, improved their skills for conducting nutrition counselling, increased their respect among community members, and strengthened their curriculum vitae for future job opportunities. Additionally, most said that the training led them to change their own MIYCN practices.

At endline, 94.5 percent of the community volunteers interviewed reported having participated in the workshop on how to prepare, store, and package complementary foods and 83.6 percent participated in a theater for development workshop (Annex 3, table 44). Nearly all participants found the workshops very useful for helping them promote optimal MIYCN practices (Annex 3, table 47).

### **Activity 5: Mobilize Community Leaders and Members**

Beyond the initial sensitization and orientation of community leaders, mobilization events were critical for creating an enabling environment for C-IYCF to succeed, creating momentum for social change, and, ultimately, behavior change. Mobilization events were conducted periodically throughout the implementation period.

A wide range of stakeholders from two communities in each of the ten wards in the intervention LGA were invited to participate in community dialogues on two separate occasions in June 2015 and again in August 2016. Approximately 20 stakeholders (district heads, village heads, religious leaders, women leaders, and youth leaders) were invited to each dialogue, reaching a total of 400 people at each time point.

These mobilization events were supported by UNICEF, the study coordinator, and health facility staff. They were facilitated by one ward focal person, one Ward Development Committee member, and one state or LGA representative. They lasted approximately one to three hours and focused on MIYCN topics or key messages, which were suggested by UNICEF and discussed with state, LGA, and other facilitators. During these community dialogues, participants discussed social norms, the recommended MIYCN practices, and barriers to and solutions for adopting them.

Community sensitizations were also conducted in June 2015 and again in August 2016 in four locations in each of the intervention LGA's ten wards. These events lasted approximately one to three hours and covered similar topics to the community dialogues but involved a larger number and wider range of participants. These were important opportunities to reach husbands, grandmothers, and in-laws who strongly influence whether mothers and caregivers can adopt and sustain optimal MIYCN practices. They reached approximately 2,000 people at each time point. Similar to the community dialogues, sensitizations were supported by UNICEF/Kaduna, the study coordinator, and health facility staff. They

were facilitated by one ward focal person, one Ward Development Committee member, and one state or LGA representative.

Given the important role of community leaders, one Ward Development Committee member from each ward was included in the C-IYCF trainings. In total, 47.8 percent of the community leaders interviewed at endline reported having participated in one of the C-IYCF trainings. More than half participated in the complementary food preparation workshop and in the theatre for development workshop (Annex 3, table 27).

The vast majority of health workers, community leaders, and community volunteers thought that these community dialogues and sensitization events were of good quality and useful (Annex 3, table 65). In fact, after the second round of community dialogue and sensitization events, attendance at support group meetings, which had dropped slightly, increased (figure 2-4 and Annex 4).

### **Activity 6: Conduct C-IYCF Support Group Meetings**

A key component of the *C-IYCF Counselling Package* was establishing and conducting monthly support group meetings. Each of the 238 trained community volunteers was expected to manage one or two support groups of approximately 8 to 15 people, which included mothers of children under two and pregnant women, as well as adolescent girls, newly married women, fathers, grandparents, and other caregivers. However, mothers of children under two and pregnant women were the primary target audience of these support group meetings.

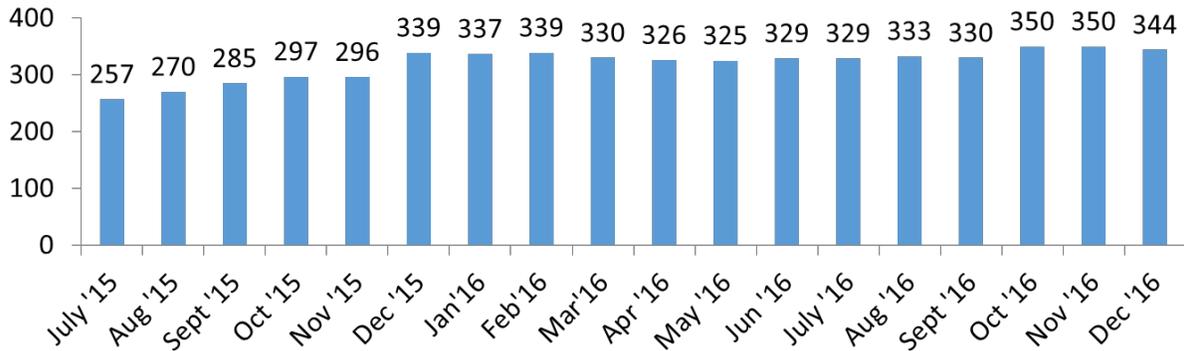
Community volunteers invited support group members to monthly meetings at the homes of community leaders or members. The date, location, and time of the meetings were decided by the community volunteer and support group members and communicated to the health facility so that health workers and other LGA representatives could easily attend if and when time permitted. Support group meetings lasted anywhere from 30 minutes to 2 hours, but were 45 minutes on average. During these meetings, community volunteers facilitated a discussion of one or more topics, using the *National Counselling Cards for Nigeria* (24 cards printed on heavy weight 8x10 paper and bound with three rings) and *Key Message Booklet* that they were provided to guide the discussion.<sup>22</sup> The volunteers decided which counselling cards to discuss, but they tended to follow the sequential order of the *Key Message Booklet*. Other topics discussed depended on the questions asked by caregivers.

At endline, we found that most community volunteers conducted one support group meeting each month (77.4 percent); however, 22.5 percent conducted more, indicating that they managed more than one support group (Annex 4, table 69). Monitoring data submitted to health workers by community volunteers during monthly review meetings corroborated this report, showing that the 238 community volunteers conducted a total of 5,769 support group meetings over 18 months of implementation, or 1.3 meetings per month per volunteer (figure 2-4 and annex 4). According to the implementation team, there were challenges in establishing support groups in isolated and hard-to-reach areas.

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<sup>22</sup> These materials can be found at <https://www.spring-nutrition.org/publications/training-materials/nigeria-community-and-facility-infant-and-young-child-feeding>.

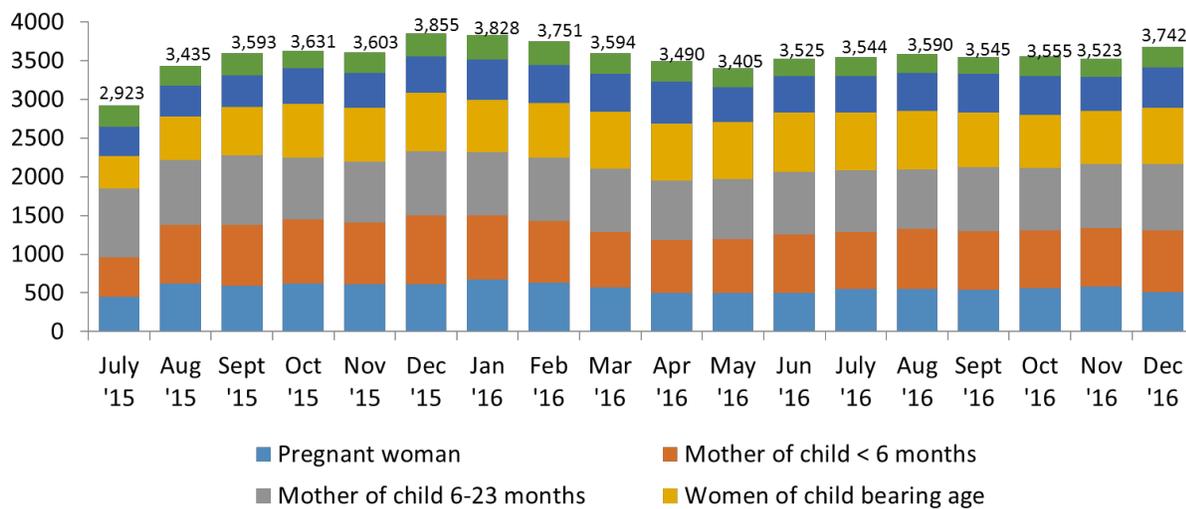
**Figure 2-4. Number of C-IYCF Support Groups that Met at Least Once, by Month, Based on Monitoring Data**



Monitoring data indicated that 7,358 unique individuals attended the C-IYCF support group meetings over the course of implementation (Annex 4), with an average of 3,563 support group meeting participants each month. Mothers of children 6 to 23 months old were the most common demographic represented, followed closely by mothers with children under 6 months of age, other women of child bearing age, pregnant women, grandmothers, and men (figure 2-5).

Given the number of community volunteers trained and the expectation that they would organize one support group meeting per month with an average of 13 members each, we hoped to reach approximately 32 percent of the caregivers of the 9,550 children under two in the intervention LGA. At endline, we verified participation in C-IYCF support group meetings by asking respondents in both study LGAs if they attended any support group meeting during which C-IYCF materials were used. Respondents were shown the cover page of the counselling card booklet. We found that 29.2 percent of the women (both pregnant women and non-pregnant mothers) had participated in at least one C-IYCF support group meeting (Annex 4, table 28).

**Figure 2-5. Number of People Who Attended C-IYCF Support Group Meetings, Based on Monitoring Data**



Ideally, a pregnant woman would attend support group meetings monthly throughout her pregnancy and/or until her child reached two years of age. However, only 6.8 percent of mothers and 4.4 percent of pregnant women had attended seven or more support group meetings (Annex 4, table 28). This low number of meetings attended may be due, in part, to the short intervention period and the fact that women joined support groups at various stages of pregnancy and sometimes when their children were already nearing two years of age.

Nonetheless, most of the health workers, community leaders, community volunteers, and women who attended support groups found the meetings very useful. Nearly three quarters of health workers (73.2 percent) we interviewed at endline who had attended at least one support group meeting thought the meetings were of very good quality (Annex 3, table 70). Most health workers (95.5 percent), community leaders (93.7 percent), and community volunteers (94.7 percent) thought that the meetings were very useful for promoting MIYCN practices (Annex 3, tables 70, 71, and 72). Meanwhile, just about half (43.8 percent) of pregnant women and mothers of children under two who had attended at least one support group meeting thought it was very useful and 54.9 percent thought it was somewhat useful for learning about MIYCN (Annex 4, table 31). When asked what they liked most about the support groups, women surveyed at endline most often mentioned learning new information (77.8 percent), care for themselves and their babies (73.5 percent), and support for adopting new MIYCN practices (49.2 percent) (Annex 4, table 31). Only 33.5 percent of women surveyed at endline reported that they discussed the challenges related to adopting new MIYCN practices during group meetings (Annex 4, table 31). This is generally considered an important aspect of regularly coming together with peers in a support group setting.

It is important to note that community volunteers were encouraged during training and supportive supervision sessions to let support group members guide the direction of support group discussions and group activities. As a result, some support groups started empowerment activities to support their members, such as creating informal voluntary savings and loans programs. These member-initiated

empowerment activities were well received and also made joining support groups more attractive to other members of the community. For more information see the success stories presented on the [evaluation website](#).<sup>23</sup>

Respondents at both state and LGA levels stated that one of the successes of the program was that community members were enthusiastic to join support groups, and the community volunteers were interested and committed to forming and running these groups. Respondents mentioned how the support groups have created a new social network of peer caregivers who learn and change their behaviors through joint problem-solving sessions.

*When they come together, they say, "I've tried it, this is what happened. This is what I saw." And it's an avenue for members to share their problems. And other members who have gone through that problem share how they were able to overcome it. So, the idea is beyond about teaching people. Now, you encourage yourselves to change because it is coming from within the community.*

—Government respondent, Intervention LGA (Endline)

Some respondents viewed the support groups as potentially self-sustaining entities. By using the power of social networks, these groups were not merely a vehicle through which to share health messages. They provided other opportunities as well. They started micro businesses and pooled resources to help one another in times of need. This generated income and interest in support groups. LGA respondents provided examples of small-scale businesses coming out of support groups:

*One of the support groups, they taxed themselves and collected money and made bags... They collected across... they collected, what, 7,000. But, by the end of the sale of those bags, they were able to collect about 15,000 so it was really an encouragement to them and that made other people to want to come and join them. "Look at all that's coming out from that group.*

— Ward Focal Person, Intervention LGA (Endline)

## Activity 7: Conduct C-IYCF Home Visits

Home visits are an important way to reach those at highest risk, reinforce messages, and to support women and caregivers in adopting new MIYCN practices. Recognizing the value of one-on-one counselling, the *C-IYCF Counselling Package* encouraged community volunteers to conduct at least two one-on-one home visits per month.

After conducting one monthly support group meeting, community volunteers began conducting home visits to women who either did not attend a support group meeting or who the community volunteer considered in need of additional counselling or support for adoption of MIYCN practices. During home visits, community volunteers reinforced key messages, discussed challenges and solutions for adopting MIYCN practices, and encouraged participation in C-IYCF activities. Community volunteers were taught to

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<sup>23</sup> <https://www.spring-nutrition.org/publications/success-stories/conquering-challenges-better-nutrition-women-kajuru-nigeria>  
<https://www.spring-nutrition.org/publications/success-stories/women-empower-women-improve-childrens-diets-nigeria>

conduct these visits using listening and learning skills, following the three-step approach of assessing current practices, analyzing if there are any problems, and suggesting small, doable actions. Specific topics covered depended on the need of the caregiver visited (e.g., a recently postpartum woman in need of breastfeeding support or a mother with a malnourished child in need of guidance on feeding and care practices).

According to monitoring data, after 18 months of implementation, community volunteers had conducted 8,308 home visits for an average of 489 per month or 2 per community volunteer per month (Annex 4). However, only 18.3 percent of the women surveyed at endline had received a home visit (Annex 4, table 28).

Most health workers (97.0 percent), community leaders (91.3 percent), and community volunteers (95.3 percent) interviewed at endline thought that home visits were very useful for promoting MIYCN practices (Annex 3, table 73).

About half (48.4 percent) of women who received a home visit found it very useful and 49.7 percent found it somewhat useful (Annex 4, table 31). When asked what they liked most about the home visits, women surveyed most often mentioned learning new information (80.3 percent), care for themselves and their babies (65.4 percent), and support for adopting new practices (49.1 percent) (Annex 4, table 31). The majority of women (71.2 percent) did not identify anything they disliked about the home visits, but 20.7 percent disliked the time of the home visit and 13.5 percent disliked the day of the home visit (Annex 4, table 31).

#### Activity 8: Promote C-IYCF Activities and Health Facility Services

Linking community members to existing health facilities and linking health facility clients to C-IYCF activities was a crucial component of the *C-IYCF Counselling Package*. During trainings and review meetings, health workers and community volunteers were encouraged to refer to one another for support.

Community volunteers referred support group members and other community members to health facility services, including health and MIYCN counselling, health care, and antenatal care, throughout the program. More than half of community volunteers reported encouraging community members to seek care at a health facility between 1 and 10 times, 23.5 percent reporting doing so between 11 and 20 times, and 16 percent had done so more than 20 times since the program began (Annex 3, table 77). Referrals were tracked using a simple report of the number of people referred to a health facility each month by a community volunteer.

Health workers typically give health talks in health facilities. Recognizing this, health workers were also trained to provide IYCF counselling and were provided with copies of C-IYCF counselling materials to help ensure consistency in messages delivered by health workers and community volunteers. At endline most health workers surveyed reported that they had priority C-IYCF counselling materials (Annex 3, table 66). More than half of the women surveyed at endline in the intervention site (66.1 percent) reported seeing the cover of the set of C-IYCF counselling cards being used at a health facility during one or more types of health facility visits (Annex 4, table 28).

Health workers also encouraged their clients to join support groups within the IYCF program. Most reported discussing the *C-IYCF Counselling Package* during facility staff meetings (Annex 3, table 75). One

third (31.3 percent) had encouraged clients to attend an IYCF support group or seek out a community volunteer between 1 and 10 times, 32.8 percent had done so between 11 and 20 times, and 32.8 percent had done so more than 20 times since the program began (Annex 3, table 75).

However, not all health workers were trained. According to baseline data, the majority of facilities surveyed were open either five days (47.1 percent) or seven days per week (47.1 percent) and the mean number of hours of operation per day was 8.4 (Pérez-Escamilla et al. 2016). The implementation team observed that many health facilities closed early or did not open at all. This decreased the health workers' ability to provide IYCF counselling or promote the *C-IYCF Counselling Package* or MIYCN practices. As a result, some caregivers did not receive reinforcement of IYCF messages or support in adopting MIYCN practices.

### Activity 9: Monitor C-IYCF Activities

Monitoring of C-IYCF activities involved community volunteers and health workers from C-IYCF health facilities, as well as the LGA nutrition focal person, other LGA and State Ministry of Health staff, UNICEF, and the study coordinator. Key informants at the state and LGA level stated that the monitoring system was well-planned, and data were collected with the intention of improvement and adaptation, rather than just reporting.

Simple forms (the *C-IYCF Support Group Register*, *One-on-One Counselling Register*, and *Monthly Report*) were developed based on UNICEF's manual on [Supportive Supervision/Mentoring and Monitoring for Community IYCF](#),<sup>24</sup> experiences of C-IYCF implementing partners in Nigeria, and existing information systems. The forms were reviewed and revised by the Federal Ministry of Health, UNICEF, SPRING, and other implementing partners convened through the Nigerian C-IYCF Task Force.<sup>25</sup> They were designed to be easily understood and easily used by community volunteers and health workers.

The forms were distributed to all community volunteers for tracking community-level activities (see Annex 2). At endline, most community volunteers had the monitoring forms (97.1), had completed them (92.9 percent), and felt very confident in their ability to complete them (79.6 percent) (Annex 3, table 79). These forms captured the following indicators:

- Number of support group meetings conducted
- Number of support group participants, by type
- Number of first-time support group participants, by type of caregiver
- Number of people counselled one-on-one (in home)
- Number of people counselled one-on-one for the first time (in home)
- Number of referrals to health facilities made

In early 2016, the Federal Ministry of Health, UNICEF, and other C-IYCF implementing partners created new C-IYCF monitoring forms for community volunteers and health workers to harmonize those used by

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<sup>24</sup> [https://www.unicef.org/nutrition/files/Supervision\\_mentoring\\_monitoring\\_module\\_Oct\\_2013\(1\).pdf](https://www.unicef.org/nutrition/files/Supervision_mentoring_monitoring_module_Oct_2013(1).pdf)

<sup>25</sup> The C-IYCF Task Force was organized by the Federal Ministry of Health to coordinate and harmonize the work of the various agencies implementing the *C-IYCF Counselling Package*, and to share lessons learned.

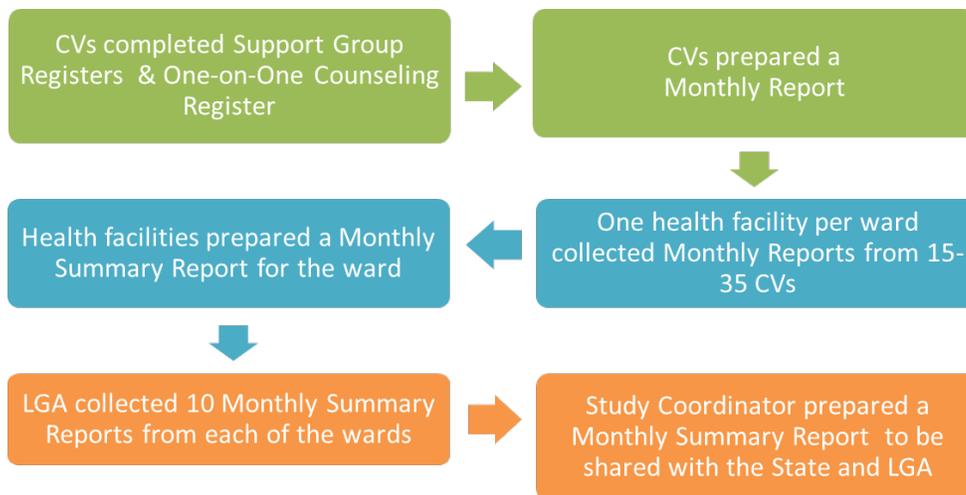
C-IYCF implementing partners in country. For this reason, an extra day-long training on how to use the new form was provided to health workers and community volunteers in March 2016.

These forms were submitted to the officer-in-charge (OIC) of one IYCF health facility per ward during monthly review meetings for aggregation on the *Facility C-IYCF Monthly Report* (see Annex 3 for the monitoring and reporting forms, Figure 2-6 for a depiction of data flow, and Activity 11 for more information on review meetings). When completing this form, health workers also noted the number of supervisory visits that

they conducted. At endline, most health workers interviewed had the monthly report form (94.0 percent) and had helped prepare them for submission to the LGA (97.0 percent) (Annex 3, table 78).

Finally, the implementation team monitored the quality of data reported and assisted the IYCF health facilities with aggregation of data.

**Figure 2-6. C-IYCF Monitoring Data Flow**



Key informants mentioned how the study coordinator, in particular, encouraged the reporting of accurate data and the creation of a culture of data use among LGA staff. Data collected by community volunteers during routine C-IYCF monitoring proved useful for program planning and implementation.

*The Project Coordinator always told us not to cook up figures. Usually, there is a lot of manipulation of figures in monitoring and evaluation. They will just come up with figures for the sake of having more support or whatever...but this was different. If we said, "we did this", she [the Project Coordinator] would ask, "Did you really do this? Did you really?" to show the integrity of the program.*

—Government respondent, Intervention LGA (Endline)

At endline, 95.5 percent of health workers had reviewed the monitoring reports prepared by health workers and 92.2 percent had used the reports in at least one way (92.2 percent) (Annex 3, table 78). They used the reports for general planning (47.5 percent), for planning specific activities (49.2 percent), for planning home visits (30.5 percent), for reporting to supervisors (27.1 percent), and for planning who to supervise (25.4 percent). As a result, 98.4 percent considered the monthly reports to be very useful. Among community volunteers who had completed monitoring forms, 99.1 percent said that they had used them in at least one way (Annex 3, table 79), including for planning activities (56.6 percent), planning support group meetings (45.3 percent), reporting (42.9 percent), and planning home visits (37.3 percent). Almost all community volunteers (96.4 percent) found the C-IYCF monitoring forms very useful.

## Activity 10: Conduct C-IYCF Monthly Review Meetings

Review meetings were conducted almost every month over the course of implementation<sup>26</sup>—first at the ward level and then at the LGA—to collect monitoring reports, share success stories, and discuss challenges, questions, and issues encountered. These served as a platform for program improvement in a number of ways. First, issues with data were clarified during these meetings to strengthen data quality and monitoring. Second, these meetings served as refresher trainings for some topics of concern identified by community volunteers or health workers. Third, the meetings served as an avenue for community volunteers to share ideas and lessons learned about support group management with other community volunteers. Finally, these meetings also served as an avenue for community volunteers to get to know the health workers in their area that were trained on IYCF. Having these connections allowed community volunteers to call on other health workers for support when their supervisors were not available.

UNICEF provided funding for State Ministry of Health and LGA staff to travel to the meetings (1,000 Naira per person), and covered the costs of a tea break and lunch for all participants (1,100 Naira per person).

Key informants agreed that the incentive structure for health workers and community volunteers (travel to these meetings and tea and snack) was crucial. However, key informants were concerned that such incentives would be hard to sustain and could create an expectation that volunteers would be similarly compensated for all meetings.

*[Incentives] are helping community volunteers a lot. You know for some people who can hardly earn 200 naira when you give them 1,000 naira, they really value that 1000! So honestly the community volunteers are really, really happy, and appreciate the allowances being given to them.*

—Government respondent, intervention LGA (endline)

Ward-level monthly review meetings with community volunteers were conducted in one centrally-located health facility in each ward (the same facility where community volunteers had been screened and trained). The time required to travel to the meeting varied greatly, but the implementation team reported that in a few cases it was more than an hour by foot or motorcycle. The LGA nutrition focal person worked with the study coordinator, State Ministry of Health, and LGA colleagues to organize these monthly meetings of community volunteers. At least one representative from the State Ministry of Health or LGA attended each meeting. A State Ministry of Health or LGA representative, the ward focal person, or the health facility's officer-in-charge led the meeting. These meetings were conducted concurrently in all wards.

Among health workers interviewed at endline, 71.7 percent had attended at least seven ward-level monthly review meetings (Annex 3, table 80). Almost all health workers (97.0 percent) felt very confident in their ability to facilitate ward-level monthly review meetings with community volunteers (Annex 3, table 25). More than half (58.0 percent) of community volunteers reported attending at least seven ward-level monthly review meetings, although they were required to attend all (Annex 3, table 81).

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<sup>26</sup> The review meetings did not happen in September 2015, February 2016, May 2016, August 2016, September 2016, and November 2016 because of delays in funds being released and/or because meeting leaders or participants were not available to organize or attend the meetings.

Among those who had attended at least one ward-level monthly review meeting, 92.4 percent of health workers (Annex 3, table 80) and 96.1 of community volunteers (Annex 3, table 81) found them to be very useful for improving C-IYCF activities.

In addition, community leaders occasionally attended these meetings at the ward level. They were given an opportunity to raise concerns and ask questions. At endline, 65.2 percent of community leaders felt very supported (22.8 percent felt somewhat supported). About half of community leaders were very satisfied with the support they received, while 38.0 percent were satisfied. The most commonly mentioned sources of support were UNICEF staff and health workers (Annex 3, table 84).

LGA-level meetings were held at the LGA. The LGA nutrition focal person worked with the study coordinator, State Ministry of Health, and LGA colleagues to organize these meetings. The state nutrition officer or assistant state nutrition officer and the nutrition focal person led the meetings. Only two health workers from each ward—typically the officer-in-charge and the ward focal person—attended these meetings. Therefore, it is not surprising that among the 68 health workers interviewed at endline—many of whom were not officers-in-charge—13.4 percent had not attended a single meeting at the LGA level, 49.3 percent had attended between one and six meetings, and 35.8 percent had attended seven or more (Annex 3, table 80).

### Activity 11: Support and Supervise C-IYCF Activities and Service Providers

LGA staff, health workers, and community volunteers involved in the implementation of the *C-IYCF Counselling Package* were given supportive supervision. Supervision/mentoring was guided by the manual on *Supportive Supervision/Mentoring and Monitoring for Community IYCF* (UNICEF 2013). (The supervision structure is depicted in Figure 2-7.) Supervision/mentoring, as described by a key informant, was based on the existing systems for supervision:

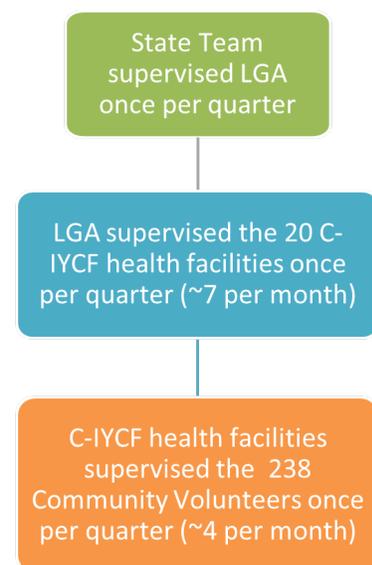
*...planning for the support and supervision was done by the LGA because it has to suit the system that the state official workers run with. We didn't want to plan for them and we didn't want to impose a strategy that will work only when we're there and will not work when the project – when the evaluation– finishes...*

—Donor respondent, international level (endline)

The State Ministry of Health nutrition officers visited the LGA nutrition focal person during monthly review meetings and during other community events. UNICEF provided per diem and transportation for these visits.

In addition to the ten ward-level review meetings, which were conducted in the C-IYCF health facilities each month, the LGA nutrition focal person visited health facilities throughout the month. These were often conducted with the study coordinator since she was able to provide transportation. During these

**Figure 2-7. Supervisory Structure for the Implementation of the C-IYCF Counselling Package**



visits, the LGA nutrition focal person checked for the availability of trained staff and the availability, use, and display of IYCF materials. He also noted the content and quality of messages shared by health staff during health talks.

At endline, one third of health workers reported having received between one and five visits from a nutrition focal person, a quarter had received six to 10 visits, and a third had received 11 or more visits (Annex 3, table 83). Only one health worker said s/he had not received a single supervisory visit. According to the health workers, these visits were conducted by UNICEF staff (72.7 percent), Kaduna State representatives (56.1 percent), LGA representatives (54.5 percent), and other health workers (39.4 percent). Most health workers (75.8 percent) who had received a supervisory visit said that they had received feedback. Nearly one fifth did not receive any feedback.

Health workers and the LGA nutrition focal person also supervised community volunteers. Each health worker was assigned to supervise specific community volunteers by the ward focal person and developed a quarterly work plan for those visits. In addition, while supervising health workers, the nutrition focal person often visited one or two community volunteers.

At endline, almost all health workers surveyed said that they had guidelines for supervising C-IYCF community volunteers (see the manual) and felt that the C-IYCF training increased their knowledge of how to do so (Annex 3, table 86). As a result, all health workers interviewed felt very confident in their ability to supportively supervise community volunteers (Annex 3, table 25).

A checklist included in the *Supportive Supervision/Mentoring and Monitoring for Community IYCF* manual guided the supervisory visits. Supervisors were expected to listen to and observe support group meetings. Only at the end of the meeting was the supervisor/mentor introduced and given the opportunity to comment on the discussion, correcting misinformation or adding details. On some occasions, supervisors would lead a support group meeting as a way of demonstrating and reinforcing good leadership techniques and group dynamics. Finally, the supervisor reviewed the data the community volunteer had collected during the meeting. Occasionally, the supervisor would assist the community volunteer in counting and recording the correct number of participants. The visits typically concluded with the supervisor giving the community volunteer praise and constructive feedback on how to improve performance.

Health workers from the 21 C-IYCF health facilities who had participated in the C-IYCF training were expected to monitor and supportively supervise the 238 community volunteers once per quarter—approximately 4 per month per facility—for a total of 1,428 supervisory visits over the course of the 18-month program. According to monitoring data, primary health care staff conducted over 3,000 supportive supervisory visits. According to health workers surveyed at endline, 60 percent conducted one to two visits and 40 percent conducted three or more per month (Annex 3, table 86). They observed support group meetings, demonstrated how to facilitate a support group meeting and to conduct a home visit, answered mothers/caregivers' questions, answered community volunteers' questions, pointed out what the community volunteer did wrong, praised correct performance, discussed challenges with the community volunteer, collected monitoring forms, identified malnourished children, and referred mothers and children to the health facility, as needed (Annex 3, Table 86).

However, according to the majority of community volunteers, they received one to five visits, usually by a health worker (69.3 percent) (Annex 3, table 87). About one quarter received six or more visits and 15.1 percent had not received a single supervisory visit. Most community volunteers said that these visits were conducted by a health worker or UNICEF, but 22.3 percent were visited by an LGA representative, 14.4 percent by a Kaduna State representative, and 16.8 percent by someone from the SPRING project. Although coverage was below target, most of the community volunteers who had received a visit said that they had received feedback. Only 8.4 percent did not receive any feedback. Thus, some community volunteers were visited more than planned while others were not visited at all. Given the monitoring data and what health workers reported regarding challenges, some community volunteers were visited more than planned while others were not visited at all.

However, health workers were not provided with funding for these visits and were not expected to report on them. Therefore, it is likely that many of these “visits” occurred during monthly review meetings and, not surprisingly, that 67 percent of health workers reported lack of funding as a challenge for implementing the program (Annex 3, table 92). Key informants agreed about the value of these visits, and that funding for health workers to conduct supervisory visits was critical.

*If health workers are not given any money to transport themselves to the communities to monitor the support groups that is going to be the end of the program. And the 1,000 naira we pay is not that much money. There is so much inflation in this country, but it is at least better than nothing...*

—Donor respondent, Kaduna State (endline)

An additional challenge to health workers attending support group meetings was that many of these meetings were held at times that were convenient for the caregivers, but not for the health worker who may not live in that particular location. Half of health workers reported that support group meetings and events were held at inconvenient days or times of day. Other challenges reported by health workers included: support group meetings were conducted in high risk locations, support group meetings were far away, and difficulty reaching some community volunteers who might be in difficult terrain (Annex 3, table 92). It is reasonable to assume that community volunteers in communities that were close to the health facility, in safe areas, and with good terrain were more likely to receive supportive supervision visits.

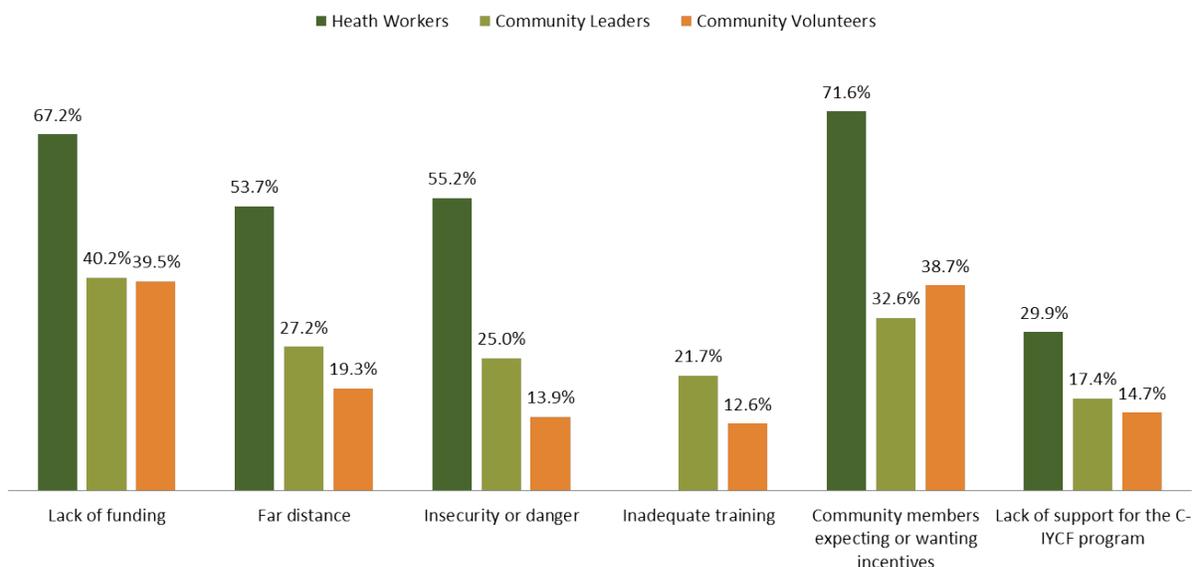
Nonetheless, most health workers thought that supportive supervision of community volunteers was very useful for improving community volunteers’ performance (Annex 3, table 83). Almost all community volunteers (95.0 percent) thought that supportive supervision visits were very useful for improving the *C-IYCF Counselling Package*. The majority of community volunteers felt that they were very prepared for implementing the program, and all were either very satisfied or satisfied with the support they received (Annex 3, table 87).

## Planning and Implementation Challenges

Health workers, community leaders, and community volunteers were asked if they experienced several possible challenges. They identified several as challenges that they experienced in implementing the program (figure 2-8). The most common challenges that they mentioned included community members

expecting or wanting incentives to attend support groups; lack of funding; insecurity or danger; and far distances to travel to supervise community volunteers.

**Figure 2-8. Challenges Implementing of the C-IYCF Counselling Package**



## Cost of the C-IYCF Counselling Package

The Federal Ministry of Health, UNICEF, and SPRING wanted to ensure that implementation occurred according to plan and, therefore, sought to ensure that it was adequately funded. However, they also wanted to ensure that the program could be sustained in the intervention site and scaled up to other LGAs. Therefore, it was adequately, but not excessively, funded.

We closely tracked the costs to provide the intervention LGA and other LGAs and states, as well as the international community, with an estimate of the cost of implementation. In this case, costs were incurred by UNICEF. Costs included in our estimates were the cost of training LGA staff, health workers, and community volunteers, as well as 18 months of community-based activities (e.g., support groups, home visits, sensitizations, review meetings, supervision). These activities are depicted in figure 2-9 below. The specific costs incurred were as follows:

- Capacity building costs:** venue, food, transportation to and from the trainings\* for trainers, LGA staff, health workers, and community volunteers, equipment and materials (facilitators' guide, participants' manual, mats, stationary), and payment of trainers. Costs were incurred in the first two months (May and June 2015).

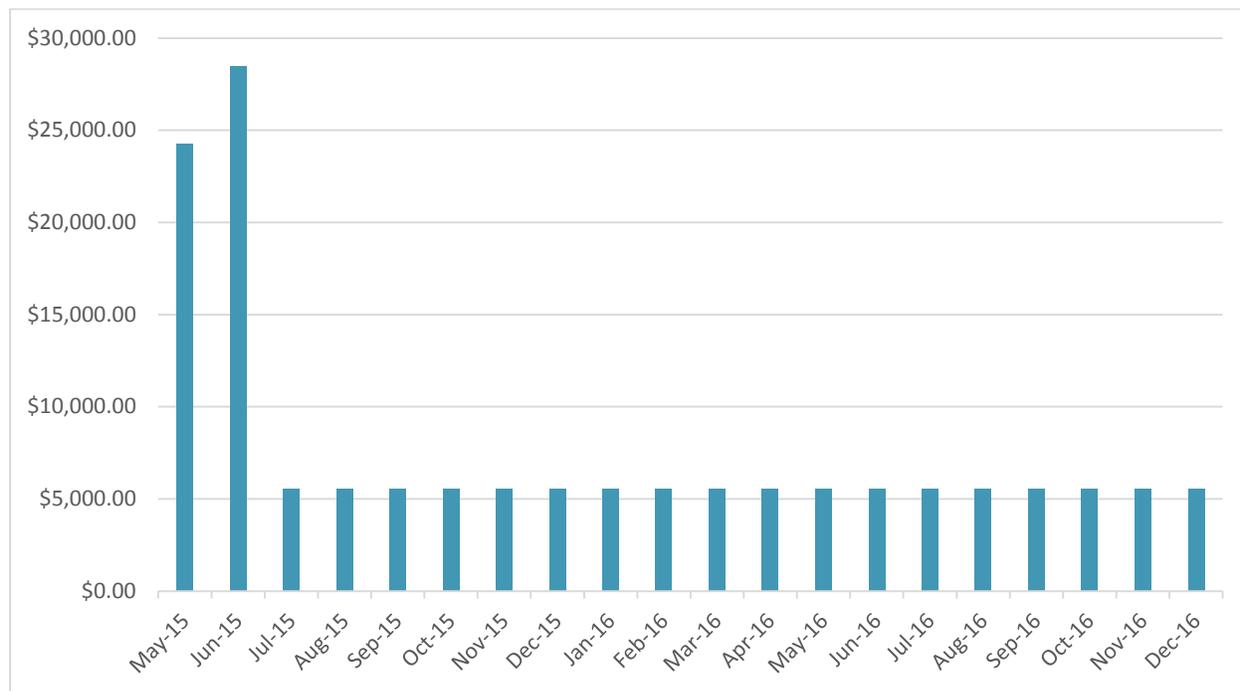
\*Trainings included the 6-day C-IYCF training for LGA staff, health authorities, and health workers; the 3-day C-IYCF training for community volunteers, and the 1-day training for health facility staff on new monitoring and evaluation forms. Though the 1-day training for health facility staff on new monitoring and evaluation forms occurred in March 2016 they were combined with the initial training costs as would be the case if the program were to be repeated.

- **Mobilization and sensitization at state, LGA, and community levels:** transportation for the facilitators and participants to and from mobilization and sensitization events, refreshments provided to health workers and community volunteers during monthly review meetings, materials (C-IYCF brochures), and payment for facilitators. Costs were divided evenly over the 18 months of community-based implementation (Months 3–20, July 2015 – December 2016).
- **Support group meetings and home visits:** print materials (counselling cards, key message booklet, and brochures). Costs were divided evenly over the 18 months of community-based implementation (Months 3–20, July 2015 – December 2016).
- **Monitoring and review meetings\*:** refreshments and transportation to and from the monthly review meetings for facilitators and participants. Costs were divided evenly over the 18 months of community-based implementation (Months 3–20, July 2015 – December 2016).

\* This includes one longer monthly review meeting when community volunteers were oriented to the new monitoring and evaluation forms.

- **Supportive supervision:** transport of the study coordinator, state, and LGA monitors, and health facility staff to conduct supportive supervision visits of health facilities and community volunteers, materials (supervision, mentoring, and monitoring manual and supervision tools). Costs were divided evenly over the 18 months of community-based implementation (Months 3–20, July 2015 – December 2016).

**Figure 2-9. Total Number of C-IYCF Counselling Package Activities Conducted in the Intervention LGA**



Our analysis did not include the cost of adapting the package to the Nigerian context, training master trainers, or planning implementation; nor did we include the cost of any research activities associated with this evaluation, including the salaries or level of effort of the study team. We also did not include the cost (financial, opportunity, and in-kind) of time spent by state and LGA staff, health workers and community volunteers in implementing the program, time spent by mothers and caregivers participating in the program, or costs incurred by community members to travel to and from program activities. The exclusion of the time and salary of state and LGA staff as well as health workers was based on the assumption that these activities are part of their usual job responsibilities.

Our estimates take into consideration the fact that inflation was quite high during the implementation period. For costs incurred between March 2015 and June 2016 we used the average exchange rate of 200 Naira per US dollar. For costs incurred after June 2016 we used the rate of 315 Naira per US dollar.

Using these assumptions and exchange rates, the total cost of capacity building and 18 months of community-based IYCF activities (mobilization and sensitization at the state, LGA, and community levels, support group meetings and home visits, monitoring and review meetings, and supportive supervision) was

Based on monitoring and expenditure data, the average monthly cost of reaching one unique person during C IYCF support group meetings and home visits over the course of 18 months of implementation was \$12.89 if capacity building costs are included, or \$8.43 if capacity building costs are excluded. The corresponding costs per contact made during support group meetings and home visits were \$2.10 or \$1.37, respectively.

\$152,431<sup>27</sup> (see table 2-2, figure 2-10). After the initial cost incurred for capacity building, the cost of implementation was \$100,000. By allocating costs over time, as mentioned above, it becomes clear that the cost per month declines significantly after capacity building has been completed. The average cost per month was \$8,500 or \$5,500 if capacity building costs are excluded.

Based on monitoring data, the C-IYCF support groups reached 7,358 unique people over the 18 months of implementation. Through support group meetings, community volunteers made 64,132 contacts with community members. In addition, community volunteers conducted 8,614 home visits, reaching 4,467 unique people. Using these numbers, the cost per unique person reached through a support group or home visit was \$12.89 if training costs are included and \$8.43 if training costs are excluded as a fixed cost. Each contact through a support group meeting or home visit would be \$2.10 if training costs are included and \$1.37 if training costs are excluded (figure 2-11).

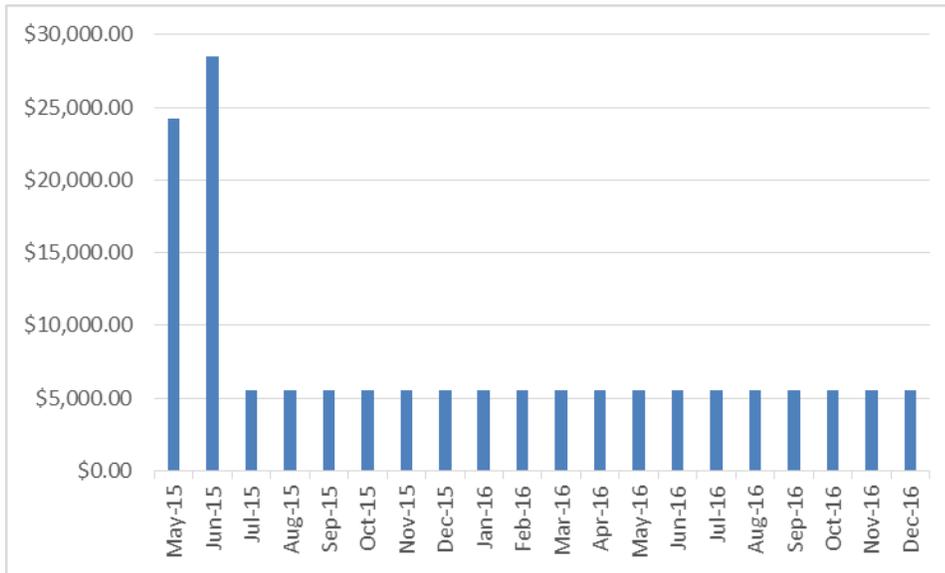
There are several important considerations to make when reviewing these numbers. For example, the cost of implementation would likely be higher in locations without a functioning health care system and supportive local government which takes responsibility for monitoring and supervision. However, the cost of introducing the program might be lower in communities where support groups or care groups are already established and functioning. Also, participation in just one support group, counselling session, or home visit is unlikely to change MIYCN practices or improve nutrition. The *C-IYCF Counselling Package* is designed to engage pregnant women and mothers of children under two during multiple contact points throughout the first 1,000 days. Finally, per person or per contact costs may be overestimated since they are based solely on monitoring data from C-IYCF support group meetings and home visits, and do not reflect the additional diffusion of messages through families and other community members that is likely to occur.

**Table 2-2. Cost of At-Scale Implementation of the C-IYCF Counselling Package in the Intervention LGA**

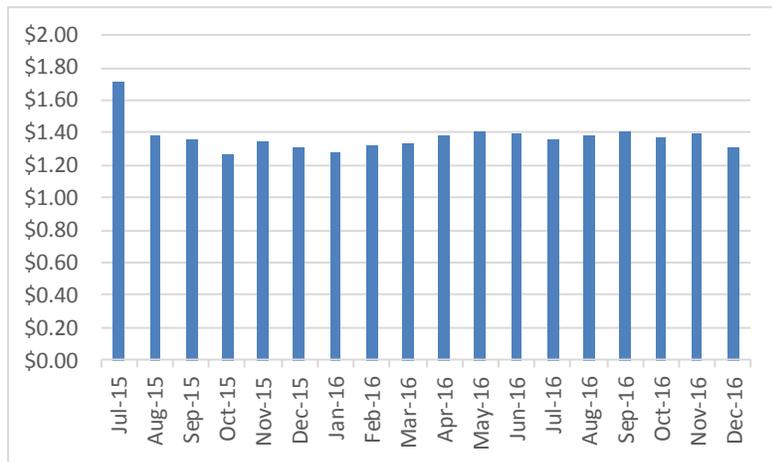
Cost Category	Total Cost in USD
Capacity building	\$52,714
Mobilization and sensitization at state, LGA, and community levels	\$38,641
Support group meetings and home visits	\$7,623
Monitoring and review meetings	\$51,254
Supportive supervision	\$2,198
<b>Total</b>	<b>\$152,431</b>

<sup>27</sup> All monetary amounts are in US dollars.

**Figure 2-10. Cost of At-Scale Implementation of the C-IYCF Counselling Package in the intervention LGA, by Month Costs Were Incurred**



**Figure 2-11. Cost (Excluding Capacity Building) per Contact Made by the Intervention LGA C-IYCF Counselling Package through Support Groups and Home Visits Only**



We have not attempted to calculate cost effectiveness in this report; further analysis will be conducted at a later date.

For a comparative perspective on the cost of the *C-IYCF Counselling Package*, SPRING estimated through a rigorous costing study the cost per child reached with micronutrient powder (MNP) sachets for nine months, in Uganda, to be \$32.63 following a community-based implementation strategy and \$51.41 using a facility-based strategy. In another program, the International Rescue Committee (IRC) estimated that community management of acute malnutrition (CMAM) cost approximately \$100 per child treated in Niger and between \$100 and \$300 per child treated in Mali (IRC 2016). In Malawi, Concern Worldwide

calculated that the cost per child treated in CMAM was between \$140 and \$170 in 2007 (Wilford, Golden, and Walker 2012). These findings are relatively consistent with the World Bank estimate of \$90-110 for the treatment of one episode of wasting or severe acute malnutrition (SAM) (Shekar et al. 2017). The impact of the *C-IYCF Counselling Package* on priority MIYCN activities (described below) suggests a strong potential to prevent malnutrition among children at a much lower cost than the cost of treating both moderate and severe acute malnutrition.

Although the estimated cost of implementing the *C-IYCF Counselling Package* seems relatively low, there are at least two sets of challenges to continued implementation of the *C-IYCF Counselling Package* in the intervention site and through scale-up. The first challenge is the competition with other health and nutrition-related programs for political will and funding. This may be less of an issue or may be an easier “win” if policymakers from non-health sectors are adequately sensitized on the multi-sectoral nature of nutrition and their potential role in promoting nutrition—directly or indirectly. Second, the health workers who play an important role in implementing the *C-IYCF Counselling Package* are chronically over-worked, underpaid, and under-trained.

## **Sustainability and Scalability of the C-IYCF Counselling Package**

The relatively low cost of the program increases the likelihood of it being sustained and scaled up. Key informants interviewed at endline explained that discussions on sustainability beyond donor funding were at the forefront of their planning from the start. The stakeholders (UNICEF, and the relevant health department personnel at the state and LGA levels) did not wait for the end of the implementation to begin the process of securing the LGA’s funding commitment for the *C-IYCF Counselling Package*. Rather, the negotiations began soon after implementation started so that government funding could begin before the donor funding ceased. Indeed, the intervention LGA allocated 500,000 naira per month for implementation of the program over the course of the implementation period and, by the end, had begun to release funds.

*“When C-IYCF came here, there were discussions with UNICEF and all the people that came for the implementation of the project. One of the key things is the commitment of the local government to ensure the success of the project. The local government needs to commit some resources.”*

— Government respondent, Kaduna State level (endline)

Furthermore, the governor of Kaduna State has taken steps to strengthen the healthcare system, which should facilitate sustained investment in health and community-based IYCF programming. See Chapter 5 for additional information on other factors that may affect the sustainability and scalability of the *C-IYCF Counselling Package* in the intervention LGA, Kaduna State, and beyond.

*“There are structures that are in place to ensure it is sustainable. We have the state committee on food and nutrition, through which we access supports for different interventions multi-sectorally.”*

— Donor respondent, Kaduna State level (endline)



# Chapter 3: Counselling and Communication Skills and MIYCN Knowledge among Health Workers and Community Volunteers

Health workers<sup>28</sup> and community volunteers play a critical role in implementing and supporting the *C-IYCF Counselling Package*. The individual and complementary roles and responsibilities of these key actors in the *C-IYCF Counselling Package* are summarized in table 3-1. In this chapter we explore the following question:

***What was the impact of the C-IYCF Counselling Package on MIYCN knowledge and counselling and communication skills among health workers and community volunteers?***

We further explored confidence of health workers and community volunteers to implement the program and improve priority practices. Their knowledge, attitudes, and confidence were built through trainings and sensitization meetings described in greater detail in Chapter 4. The findings presented for each of these key C-IYCF service providers help identify areas that have worked well and others that may need more attention in the future.

**Table 3-1. Roles and Responsibilities of Service Providers\* Involved in Implementing and Supporting the C-IYCF Counselling Package**

Health Workers	Community Volunteers
<ul style="list-style-type: none"> <li>• Participate in the training of community volunteers</li> <li>• Help organize and conduct monthly meetings of community volunteers to collect monitoring reports, review successes and challenges, and discuss questions and issues that the community volunteers have encountered.</li> <li>• Collate community volunteers' monthly reports and prepare a summary report.</li> <li>• Attend monthly meetings with the LGA and State authorities to submit monitoring reports, discuss ward successes and challenges, and discuss questions.</li> <li>• Counsel clients on IYCF during health facility visits, particularly antenatal care, well child, and/or immunization visits</li> <li>• Refer clients to community volunteers.</li> <li>• Supervise community volunteers (observation and support).</li> <li>• Participate in and/or assist with organizing community events whenever possible.</li> </ul>	<ul style="list-style-type: none"> <li>• Participate in a 3-day C-IYCF training</li> <li>• Conduct a minimum of one support group session per month.</li> <li>• Conduct a minimum of two home visits per month.</li> <li>• Refer support group members to health facilities, as appropriate.</li> <li>• Maintain registers of support group members, support groups conducted, and home visits conducted.</li> <li>• Attend monthly meetings at the health facility.</li> <li>• Share data, success stories, and challenges at monthly meetings.</li> <li>• When required, attend community sensitizations and dialogues.</li> </ul>

\* Roles and responsibilities of others involved in implementation can be found in Annex 2.

The data presented in this report come from the baseline assessments (pre- and post-training for health workers and community volunteers) and endline surveys, as described below:

<sup>28</sup> "Health worker" refers to health facility staff.

- **Health workers** from health facilities in the intervention LGA that supported community volunteers were asked to complete the surveys prior to the C-IYCF trainings (N=65) and immediately after the C-IYCF trainings (N=63) (conducted in May 2015).<sup>29</sup> They were also interviewed by trained data collectors 20 months after being trained, in February 2017 (N=67). The majority of health workers were female (78.5 percent), had been employed in their current position for nearly 8 years, and worked as a community health extension worker (53.9 percent) or a junior community health extension worker (21.5 percent) (Annex 3, table 1).
- **Community volunteers** (N=237) from the intervention LGA were interviewed by trained data collectors approximately two weeks prior to and two weeks after they had participated in a C-IYCF training conducted in June 2015 and again at endline in February 2017 (N=238) (Annex 3, table 43). The majority of respondents were women under 35 years old (68.8 percent). Their average age at baseline was 29 years; 75.5 percent were Christian and 24.5 percent were Muslim. Hausa and Adara were the two languages in which respondents felt most comfortable communicating (50.0 percent and 41.1 percent, respectively).

Through these assessments and surveys, we asked health workers and community volunteers questions to ascertain their knowledge and attitudes regarding priority MIYCN practices.

## Knowledge, Attitudes, and Confidence of Health Workers

Health workers had an important role to play in the implementation of the *C-IYCF Counselling Package* in the intervention LGA, including the monitoring and supervision of the community volunteers, and the provision of IYCF support to mothers and caregivers who came to the health facilities for routine screening and other services. To prepare them for this role, all 65 of the participating health workers, nurses, nurse-midwives, community health officers, community health extension workers (CHEWs), and junior CHEWs, received a six-day C-IYCF training (see Annex 3 for the training agenda). Due to changes in staffing, six health workers surveyed at endline had not participated in the C-IYCF training (Annex 3, table 2). In addition, most health workers surveyed at endline (89.6 percent) had also participated in the complementary feeding workshop and about half (53.7 percent) had participated in the theater for development workshop (Annex 3, table 2).

As described in the sections that follow, results from surveys of health workers indicate significant improvements from baseline to endline in the level of knowledge and attitudes related to the key MIYCN practices promoted through the *C-IYCF Counselling Package*, including micronutrient intake, maternal nutrition, breastfeeding, complementary feeding, and sanitation and hygiene. Furthermore, health workers understood their role and responsibilities related to the *C-IYCF Counselling Package*.

Training facility health workers in the *C-IYCF Counselling Package* is an important aspect of the intervention, since they play a key role in supporting community volunteers and in providing facility-based IYCF counselling and support.

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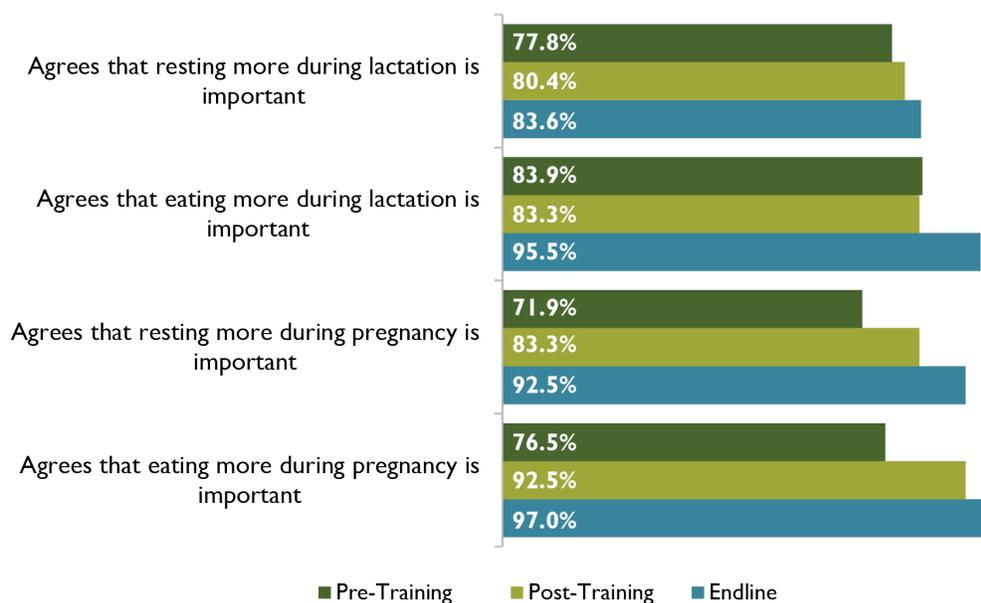
<sup>29</sup> During the pre-test, many respondents skipped many questions. We suspect that they skipped questions when they were not confident of the answers. As a result, knowledge may be over-estimated in the pre- and post-training tests.

## Maternal Nutrition

Knowledge and attitudes related to maternal nutrition also improved, with some exceptions (Annex 3, table 14; and Figure 3-1). The percentage of health workers who knew a woman should space pregnancies at least two years apart was high at baseline (90.0 percent) and this knowledge remained high through to endline (94.0 percent).

Meanwhile, only half of respondents knew that breastfeeding could delay pregnancy before the training, a percentage which remained low through to endline (67.2 percent,  $p \geq 0.1$ ).<sup>30</sup> The percentage of health workers who strongly agreed with the importance of pregnant women eating more during pregnancy increased from 29.4 percent before the training to 62.3 percent after the training ( $p < 0.01$ ) and 74.6 percent at endline ( $p \geq 0.1$ , compared with the post-training test results).

**Figure 3-1. Health Worker Beliefs Regarding Maternal Nutrition Practices, by Time Point**



Those who strongly agreed with the importance of pregnant women resting more during pregnancy increased from 18.8 percent pre-training to 50.0 percent post-training ( $p < 0.01$ ) and 64.2 percent at endline ( $p \geq 0.1$ , compared with the post-training test results). The percentage of health workers who strongly agreed with the importance of women eating more while breastfeeding increased from 35.5 percent pre-training to 55.6 percent post-training ( $0.05 < p < 0.1$ ) and 67.2 percent at endline ( $p \geq 0.1$ , compared with the post-training test results). Those who strongly agreed with the importance of women resting more while breastfeeding increased from 14.8 percent pre-training to 41.2 percent post-training ( $0.05 < p < 0.1$ ) and 55.2 percent at endline ( $p \geq 0.1$ , compared with the post-training test results).

<sup>30</sup> Breastfeeding can delay pregnancy when three specific criteria are met: frequent breastfeeding, including night feeds; menses has not returned; and the infant is under 6 months of age. However, to simplify data collection tools, the question simply asked if breastfeeding can delay pregnancy.

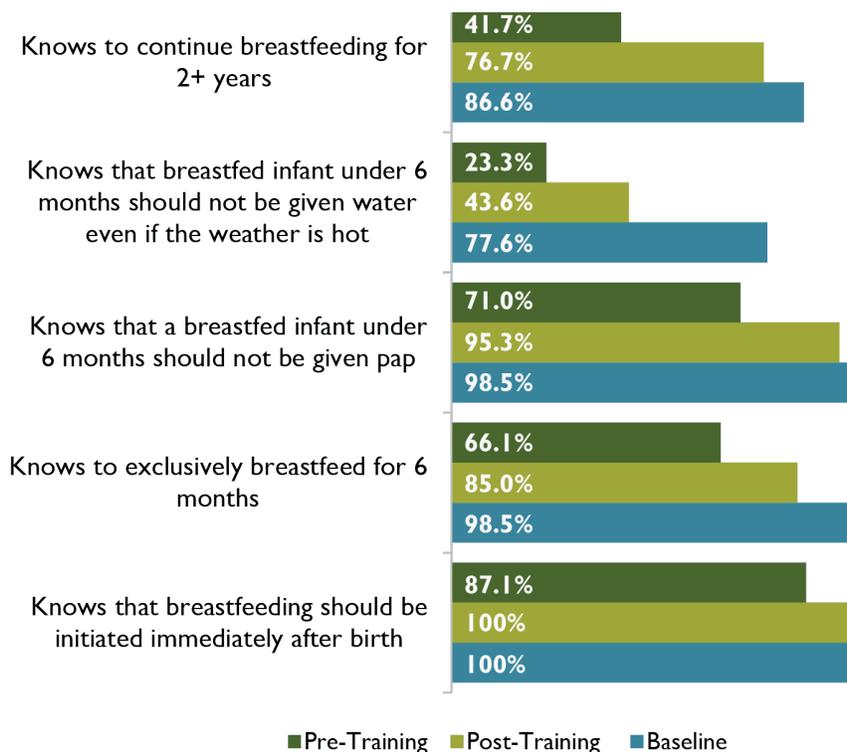
## Breastfeeding

The *C-IYCF Counselling Package* follows WHO guidelines and emphasizes the importance of initiating breastfeeding and skin-to-skin contact immediately after birth for establishing maternal-child bonds and encouraging exclusive breastfeeding.<sup>31</sup> While most health workers knew even before the training that **initiation of breastfeeding** should happen immediately after birth (87.1 percent), all health workers (100 percent) knew this post-training and at endline ( $p < 0.01$ ) (Annex 3, table 15; figure 3-2).

Exclusive breastfeeding is one of the most important IYCF practices for the prevention of infectious diseases and promotion of optimal growth. Only two thirds of the health workers knew that **exclusive breastfeeding** should continue for 6 months before the training (66.1 percent) (Annex 3, table 16; figure 3-2). After the training, 85.0 percent knew this to be true, and by endline, 98.5 percent did. Each progressive improvement—between pre-training and post-training and between post-training and endline—was statistically significant ( $p < 0.05$ ). Before the training, when asked if a breastfed infant under 6 months should be given water, 24.4 percent of health workers thought that should be the case (Annex 3, table 16). After the training, only 3.7 percent thought so ( $p < 0.01$ ), and at endline, only 1.5 percent did ( $p \geq 0.1$ , when compared with post-training results). Findings were similar when the question was posed for tea, sugar water, watery gruel or *pap*, and other liquids. Similarly, at baseline, 13.0 percent of health workers thought that infants under 6 months still needed additional water if the weather is very hot. After the training, only 1.6 percent ( $p < 0.01$ ) thought so, and at endline, only 1.5 percent did.

Women should **breastfeed** for at least two years.<sup>32</sup> At baseline, 41.7 percent of health workers knew this recommendation (Annex 3, table 17; figure 3-2). After the training, 76.7 percent did ( $p < 0.01$ ), and at endline, 86.6 percent did ( $p \geq 0.1$ , compared with the post-training test results).

Figure 3-2. Health Worker Knowledge of Optimal Breastfeeding Practices, by Time Point



<sup>31</sup> See UNICEF's generic *C-IYCF Counselling Package* at [https://www.unicef.org/nutrition/index\\_58362.html](https://www.unicef.org/nutrition/index_58362.html) or the WHO's *Essential Nutrition Actions: Improving maternal, newborn, infant and young child health and nutrition* at [http://www.who.int/nutrition/publications/infantfeeding/essential\\_nutrition\\_actions/en/](http://www.who.int/nutrition/publications/infantfeeding/essential_nutrition_actions/en/).

<sup>32</sup> Ibid.

It is important to understand what exclusive breastfeeding means and to know proper breastfeeding techniques, such as breastfeeding frequently—on demand or whenever a baby shows early signs of hunger<sup>33</sup>—and to continue even through sickness, malnutrition, and pregnancy. When asked how often a baby should be breastfed, before the training, 74.1 percent thought that infants should be breastfed as frequently as they want or “on demand” (Annex 3, table 18). After the training, this figure had increased to 95.2 percent ( $p < 0.01$ ) and was similar at endline. Before the training, only 33.9 percent knew at least two early signs of hunger; after the training, this number increased to 75.8 percent ( $p < 0.01$ ) (Annex 3, table 19). Findings were similar at endline.

At each time point, more than 90 percent of health workers knew that a mother should continue breastfeeding her under-6-month-old baby even if the baby is sick. However, the percentage who knew that she should do so when she is sick was only 77.8 percent before the training. After the training and at endline, nearly all health workers knew this to be the case ( $p < 0.01$ ) (Annex 3, table 20). Before the training, 76.3 percent of health workers thought that mothers should not stop breastfeeding infants under 6 months of age if they become pregnant. After the training and at endline, almost all health workers knew this to be true. However, while the percentage of health workers who knew that a thin or malnourished mother could produce 'enough' breastmilk for her infant increased from 23.9 percent before the training to 100 percent after training ( $p < 0.01$ ), at endline only 64.2 percent thought so ( $p < 0.01$ , when compared with post-training). It is not clear why this figure declined. It is possible that immediately after the training, health workers provided answers consistent with the information shared with them, but that by endline they reverted to their instincts or beliefs. They may also have been affected by news of severe malnutrition in certain parts of the country.

## Complementary Feeding

The WHO defines complementary feeding as “the process starting when breastmilk alone is no longer sufficient to meet the nutritional requirements of infants, and therefore other foods and liquids are needed, along with breastmilk.”<sup>34</sup> The *C-IYCF Counselling Package* follows the WHO guidelines and recommends that infants should receive nutritionally adequate and safe complementary foods starting 6 months after birth, while continuing to breastfeed for up to two years or beyond.

Between the pre-training and post-training tests, the percentage of health workers who knew to start feeding children soft, semi-solid foods at 6 months of age increased from 53.3 percent to 93.4 percent ( $p < 0.01$ ) (Annex 3, table 21; figure 3-3). However, this knowledge was not retained. By endline, only 56.7 percent ( $p < 0.01$ , when compared with post-training results) thought that complementary feeding should begin when a child is 6 months old—another 16.4 percent thought that soft, semi-solid foods should be introduced at 7 months, and another 17.9 percent thought that this should happen at 9 months.

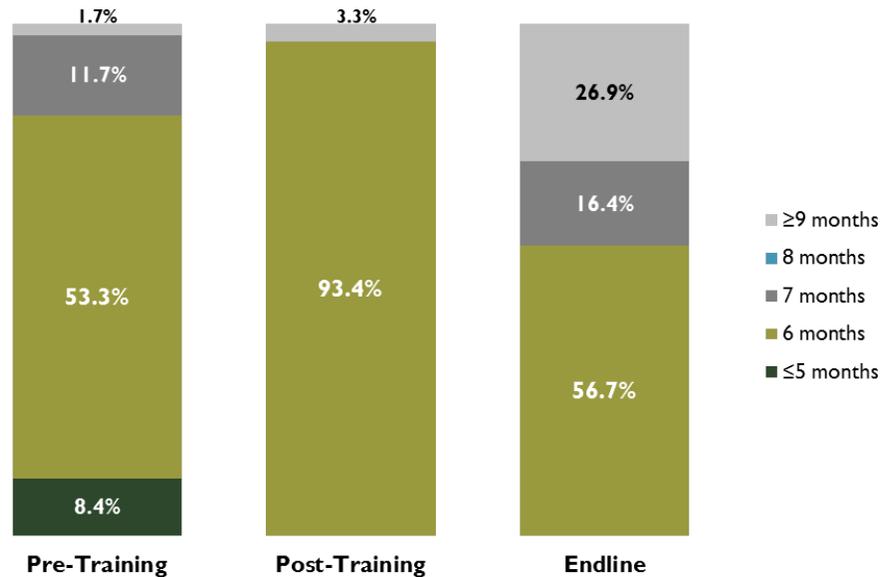
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<sup>33</sup> Early signs of hunger are defined in the C-IYCF materials as restlessness, opening mouth, turning head from side-to-side, putting tongue in and out, and suckling on fingers and fists. During the training it is explained that crying is typically a late sign of hunger or a sign of some other problem.

<sup>34</sup> See WHO's e-Library of Evidence for Nutrition Actions (eLENA) at [http://www.who.int/elena/titles/complementary\\_feeding/en/](http://www.who.int/elena/titles/complementary_feeding/en/).

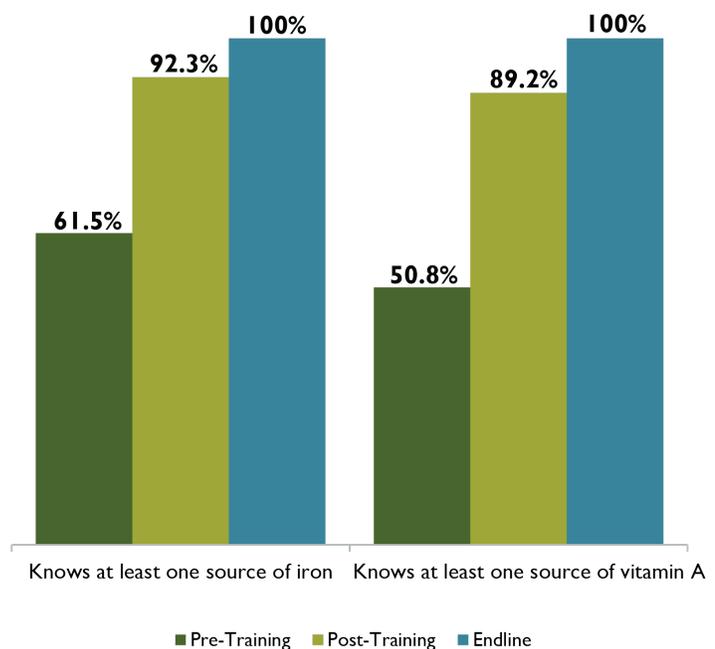
The percentage of health workers who strongly agreed with the importance of feeding children over 6 months a diverse diet increased from 9.5 percent before the training to 33.3 percent after the training ( $p < 0.05$ ) and 47.8 percent at endline ( $p < 0.01$ , when compared with post-training), indicating that a stronger link could be made between the introduction of complementary foods at 6 months and the importance of dietary diversity (Annex 3, table 21).

**Figure 3-3. Health Worker Responses When Asked the Age at Which a Child Should First Be Given Soft, Semi-Solid Foods, by Time Point**



Finally, health workers need to know which foods are particularly nutritious if they are to counsel women and caregivers on dietary practices. The percentage of health workers who could identify at least one source of iron-rich foods increased from a baseline of 61.5 percent to 92.3 percent post-training ( $p < 0.01$ ) and 100 percent at endline ( $p < 0.05$ , compared with the post-training test results) (Annex 3, table 13; figure 3-4). Similarly, knowledge of at least one source of vitamin A-rich foods increased from 50.8 percent to 89.2 percent post-training ( $p < 0.01$ ) and 100 percent at endline ( $p < 0.01$ , compared with the post-training test results).

**Figure 3-4. Health Worker Knowledge of Micronutrient-Rich Foods, by Time Point**



### Sanitation and Hygiene Practices

Sanitation and hygiene is increasingly recognized as an important determinant of nutritional status. The *C-IYCF Counselling Package* emphasizes—

- using a clean spoon or cup to give foods or liquids to your baby
- storing the foods to be given to your baby in a safe, hygienic place
- washing hands with soap and water before preparing foods and feeding a baby
- washing hands before eating
- washing hands with soap and water, or ash and water, after using the toilet, after cleaning a baby's bottom, or after touching pets or livestock.

From the start of this study, most health workers agreed that handwashing was important (Annex 3, table 22). However, before the training only half (50 percent) strongly agreed that washing hands with soap before eating was important for good health. This increased to 78.4 percent after the training ( $p < 0.05$ ) and remained high through to the end at 82.1 percent ( $p \geq 0.1$ , when compared with post-training). We saw similar trends in attitudes regarding the importance of handwashing with soap before preparing food and feeding children. Health workers were less likely to strongly agree with the importance of keeping animals outside of the living area at all time points: 41.7 percent before the training, 58.7 percent after the training ( $p \geq 0.1$ ), and 67.2 percent at endline ( $p \geq 0.1$ , when compared with post-training results).

### Counselling and Support Skills

The C-IYCF training emphasizes that health workers should employ (and can support community volunteers to employ) effective counselling and support group techniques. According to the *C-IYCF Facilitator's Guide*, the seating arrangement of an IYCF support group should allow all participants to make eye contact; should be limited to 3 to 12 people; and should be open to all interested pregnant women, breastfeeding mothers, women with older children, fathers, caregivers, and other interested women. At endline, 86.6 percent of health workers knew that support groups are best organized in a circle and 85.1 percent knew that they should have approximately 3–12 participants (Annex 3, table 23).

An important skill for counselling and supporting is being aware of others' and one's own non-verbal communication. According to the *C-IYCF Counselling Package*, non-verbal **communication** includes:

- keeping head at same level as participants
- paying attention (eye contact)
- removing barriers (tables and notes)
- taking time (to listen and ask questions)
- using appropriate touch.

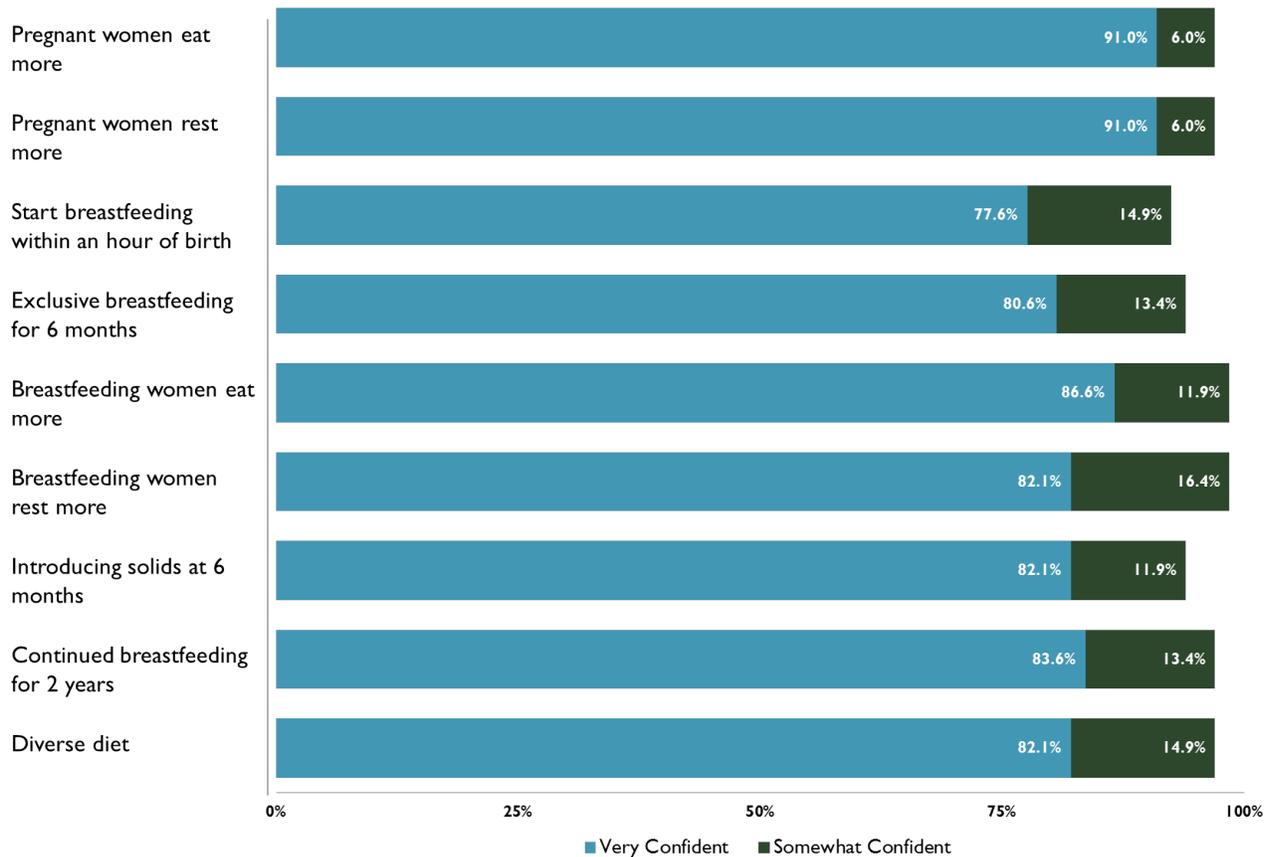
At endline, when health workers were asked an open-ended question to name ways of communicating without words, 46.3 percent mentioned keeping head at same level as participants, 61.2 percent mentioned paying attention, 32.8 percent mentioned making eye contact, 11.9 percent mentioned removing barriers, 19.4 percent mentioned taking time, 25.4 percent mentioned using appropriate touch, and 55.2 percent mentioned using positive body language/hand gestures (Annex 3, table 24).

## Implementation of the C-IYCF Counselling Package

Health workers must have the appropriate knowledge and skills to perform the tasks expected of them. They also need to understand their role and responsibilities related to *C-IYCF Counselling Package* implementation.

At endline, most health workers reported having a job description that listed his/her role and responsibilities related to the *C-IYCF Counselling Package* (88.1 percent) and reported understanding that role (95.5 percent) (Annex 3, table 7). They felt very confident in their ability to perform those responsibilities: to prepare C-IYCF monthly reports (97.0 percent), to organize IYCF monthly review meetings with community volunteers at the ward level (97.0 percent), and to supervise community volunteers (100.0 percent). By endline, they also felt very confident that they could help improve MIYCN practices in the community (Annex 3, table 10; figure 3-5).

**Figure 3-5. Percentage of Health Workers Who Were “Very Confident” or “Somewhat Confident” in Their Ability to Promote and Change Key MIYCN Practices at Endline**



## Knowledge, Attitudes, and Confidence of Community Volunteers

Community volunteers played one of the most important roles in the *C-IYCF Counselling Package*. All community volunteers surveyed pre- and post-training participated in the three-day C-IYCF training (see Chapter 4 for a more detailed description of the training). Due to drop-out, 15 of those surveyed at

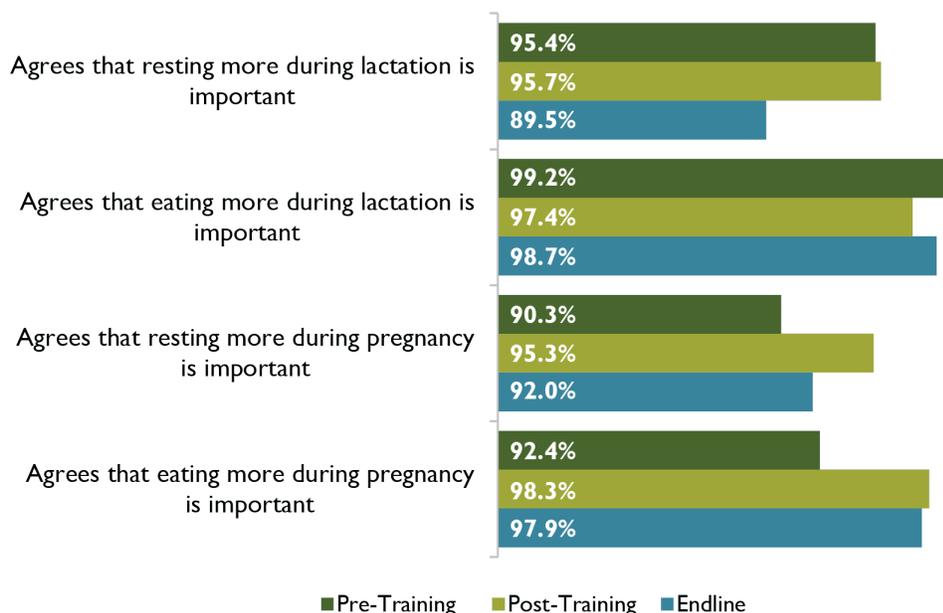
endline had not participated in the training, but were operating as community volunteers (Annex 3, table 44). In addition, most of those surveyed at endline had participated in the complementary feeding workshop (94.5 percent) and theater for development workshop (83.6 percent) (Annex 3, table 44).

From the findings presented below, it appears that the C-IYCF trainings, supervision, and support activities improved the knowledge and attitudes of community volunteers with respect to MIYCN.

### Maternal Nutrition

Knowledge of maternal nutrition also improved (Annex 3, table 51; figure 3-6). The percentage of community volunteers who knew a woman should wait at least two years after giving birth before becoming pregnant again was already high at baseline (84.4 percent) and increased significantly to 90.2 percent post-training ( $0.05 < p < 0.1$ ) and 96.6 percent at endline ( $p < 0.01$ , when compared with post-training results). While at baseline only 8.6 percent knew that breastfeeding could delay pregnancy, after the training, 34.2 percent knew this ( $p < 0.01$ ), and by endline, the percentage increased to 44.7 ( $p < 0.05$ , when compared with post-training results). Meanwhile, the percentage who strongly agreed with the importance of pregnant women eating more during pregnancy increased from 40.5 percent pre-training to 62.6 percent post-training ( $p < 0.01$ ) and 70.2 percent at endline ( $0.05 < p < 0.1$ ) (Annex 3, table 51). The percentage who strongly agreed with the importance of pregnant women resting more during pregnancy increased from 31.2 percent pre-training to 61.3 percent post-training ( $p < 0.01$ ) and remained statistically constant throughout implementation.

**Figure 3-6. Community Volunteer Beliefs about Maternal Nutrition Practices, by Time Point**



## Breastfeeding

Before the training, only half of the community volunteers knew that **breastfeeding** should begin immediately or within one hour of birth. After the training, nearly all knew this ( $p < 0.01$ ) and even more did so at endline ( $0.05 < p < 0.1$ )

(Annex 3, table 52; figure 3-7).

However, even at endline, only 69.3 percent strongly agreed with the importance of starting breastfeeding immediately after birth. The surveys indicated that more education is needed about the risks of feeding newborns sugar water. At baseline, only 14.4 percent strongly disagreed with giving newborns sugar water. After the training, more community volunteers strongly disagreed (39.1 percent,  $p < 0.01$ ), but this did not improve statistically any further by endline.

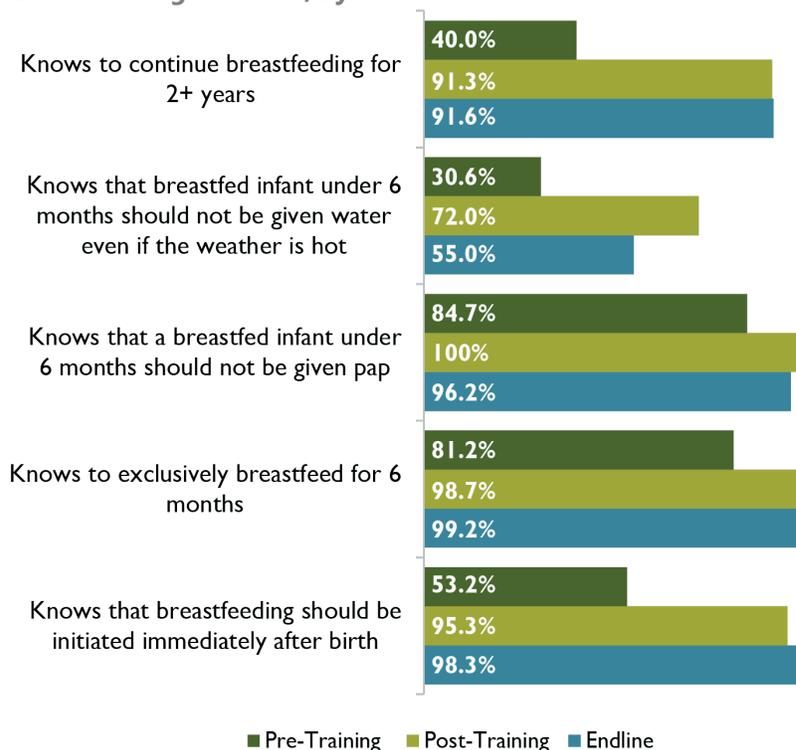
Knowledge of the optimal duration of **exclusive**

**breastfeeding** (6 months) was high even before the training, but after the training, it increased to

98.7 percent ( $p < 0.01$ ), remaining constant through to the endline (Annex 3, table 53; figure 3-7). The percentage of community volunteers who thought that breastfed infants under 6 months need additional water if the weather is hot declined dramatically from 38.7 percent at baseline to 1.7 percent after the training ( $p < 0.01$ ) and remained low through to the endline. Furthermore, the percentage who strongly disagreed with giving infants under 6 months thin or watery pap increased from 13.6 percent before the training to 41.9 percent after the training ( $p < 0.01$ ) and remained statistically stagnant through endline. When we asked community volunteers if they thought breastfed children under 6 months should be given a number of different liquids (e.g., infant formula, water, tea, coffee, sugar water, watery gruel or pap, animals' milk, and other liquids), 98.3 percent of respondents said "no" to all of the items after the training, compared to only 45.8 percent before the training ( $p < 0.01$ ). However, this percentage declined slightly to 86.6 at endline ( $p < 0.01$ ).

At baseline, 40.0 percent of community volunteers knew that children should be breastfed for at least two years. After the training and at endline, more than 90 percent did so ( $p < 0.01$ ) (Annex 3, table 54; figure 3-7). Consistent with these findings, before the training only 20.7 percent strongly agreed that children should be breastfed for at least two years, while after the training and at endline 57.7 percent ( $p < 0.01$ ) and 68.5 percent did so ( $p < 0.05$ ), respectively. If we combine those who agree and strongly agree, the

**Figure 3-7. Community Volunteer Knowledge of Optimal Breastfeeding Practices, by Time Point**



change in attitude is even more impressive: from 82.3 percent at baseline to 97.9 percent after the training and at endline ( $p < 0.01$ ).

Before the training, only 66.4 percent thought that infants should be breastfed as frequently as they want or “on demand” (Annex 3, table 55). Immediately after the training this figure had increased to 86.3 percent ( $p < 0.01$ ) and remained constant through to the endline. The percentage who knew at least two early signs of hunger increased from 9.7 percent before the training to 47.0 percent after the training ( $p < 0.01$ ) and 56.3 percent at endline ( $p < 0.05$ ) (Annex 3, table 56). Additionally, only 22.5 percent knew that a thin or malnourished mother can produce “enough” breastmilk for her infant before the training while after the training 68.5 percent did so ( $p < 0.01$ ). By endline, this percentage had declined to 58.0 percent ( $p < 0.05$ ) (Annex 3, table 57).

Even before the training, most community volunteers (95.8 percent) knew that a mother should not stop breastfeeding her under-6-months-old baby even if he is sick, but the percentage who knew that breastfeeding should continue when the mother is sick was only 71.3 percent. After the training and through to endline, nearly all volunteers knew these recommendations. At baseline, 45.8 percent thought that a mother should stop breastfeeding her infant if she becomes pregnant. After the training, only 30.0 percent thought so ( $p < 0.01$ ) and at endline only 12.2 percent did ( $p < 0.01$ , in comparison to post-training). Many community volunteers learned that frequent breastfeeding can increase milk production: before the training 59.9 percent were aware of this fact while after the training the percentage increased to 92.7 ( $p < 0.01$ ) and remained at this level through to the endline.

### Complementary Feeding

Knowledge of the correct age to start feeding complementary foods (6 months) also improved among community volunteers, but not as much as might have been expected; it went from 32.1 percent at baseline to 41.2 percent after the training ( $p < 0.05$ ), where it statistically remained through to endline (Annex 3, table 58, figure 3-8). At endline, nearly two thirds (63.4 percent) of community volunteers thought that families should wait until a child is at least 7 months old to feed him/her soft or semi-solid foods (figure 3-8). The percentage who agreed or strongly agreed with the importance of starting to feed children soft, semi-solid foods at 6 months was high even before the training (82.1 percent) and

**Figure 3-8. Community Volunteers’ Responses When Asked the Age at Which a Child Should First Be Given Soft, Semi-Solid Foods, by Time Point**



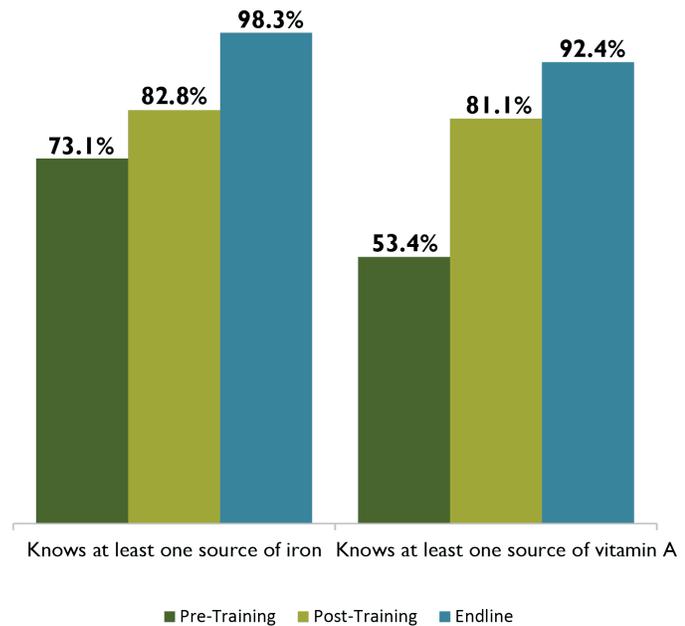
remained constant after the training, but at endline, only 68.9 percent agreed or strongly agreed that this was important ( $p < 0.01$ ). Additionally, we asked community volunteers if they agreed or disagreed that it was important to wait until a child is one year old before feeding him or her animal source foods,<sup>35</sup> which is not recommended. Before the training, only 22.6 percent disagreed or strongly disagreed. After the training, 51.5 percent did so ( $p < 0.01$ ), a figure which remained constant through to endline.

The percentage of community volunteers who agreed or strongly agreed with the importance of feeding children over 6 months of age a diverse diet reached 81.2 percent after the training, up from 68.4

percent before the training ( $p < 0.01$ ) (Annex 3, table 58). This attitude toward dietary diversity did not change, statistically speaking, over the course of implementation; at endline, 76.5 percent agreed or strongly agreed ( $p \geq 0.1$ , when compared with post-training).

The percentage of community volunteers who knew at least one source of iron-rich foods increased from 73.1 percent at baseline to 82.8 percent post-training ( $p < 0.01$ ) and 98.3 percent at endline ( $p < 0.01$ , when compared with post-training) (Annex 3, table 50; figure 3-9). Similarly, knowledge of at least one source of vitamin A-rich foods increased from 53.4 percent to 81.1 percent post-training ( $p < 0.01$ ) and 92.4 percent at endline ( $p < 0.01$ ).

**Figure 3-9. Community Volunteers' Knowledge of Micronutrient-Rich Foods, by Time Point**



### Sanitation and Hygiene

From the start, most community volunteers agreed that handwashing was important. However, before the training, only 26.2 percent strongly agreed that washing hands with soap before eating was important for good health. This increased to 65.0 percent after the training ( $p < 0.01$ ) and remained high until the end, when it reached 72.3 percent ( $0.05 < p < 0.1$ ) (Annex 3, table 59). We saw similar trends in attitudes about handwashing with soap before preparing food and feeding children and keeping animals outside of the living area at all time points—from 20.9 percent of community volunteers before the training, to nearly two thirds after the training ( $p < 0.01$ ), remaining at this high level until endline.

### Counselling and Support Skills

One of the primary responsibilities of a community volunteer is to conduct support groups and provide counselling during home visits. Through the training, community volunteers are expected to learn the

<sup>35</sup> In Nigeria people believe that they should wait until a child is one year old before feeding him or her animal source foods. This is not recommended.

characteristics of a support group meeting, such as the optimal size (3–12) and the seating arrangement (in such a way that allows all participants to have eye-to-eye contact), as well as the listening and learning skills needed for counselling and support.

Community volunteers are also taught (within the limits of a three-day training) basic skills for building confidence and giving support, which are particularly important for counselling. These skills involve accepting what a mother/father/caregiver thinks and feels; recognizing and praising what a mother/father/caregiver and baby are doing correctly; giving practical help; giving a little, relevant information; using simple language; using the appropriate counselling card(s); and making only one or two suggestions, not commands.

Additionally, the *C-IYCF Counselling Package* teaches that the first thing a counselor should do at the start of any meeting or counselling session is to welcome participants and introduce himself/herself. Both before and after the training, most respondents (62.8 percent pre-test and 73.2 percent post-test) stated that a greeting or introduction is the first thing a facilitator should do when starting a support group meeting (Annex 3, table 60). Although these skills are believed to be critical, these aspects of support groups were not explored at endline and may be an important aspect of the program for future evaluation.

Before the training, 67.1 percent said classroom style was the best way to arrange a support group (Annex 3, table 61). Only 29.2 percent initially knew a circle was more appropriate for actively engaging participants during support groups. After the training, almost all (84.7 percent) knew that the best way to arrange a support group was in a circle. At endline, 79.4 percent knew that it is best to organize a support groups in a circle and 85.3 percent knew that a support group should have between 3 and 12 participants.

Before the training, 42.2 percent of community volunteers said that they did not know anything that could make counselling more effective (Annex 3, table 60). After they were trained, all respondents were able to identify at least one counselling skill. The most common responses to the open-ended question posed to community volunteers were greeting the client or introducing the topic, having a friendly demeanor, and using good communication skills.

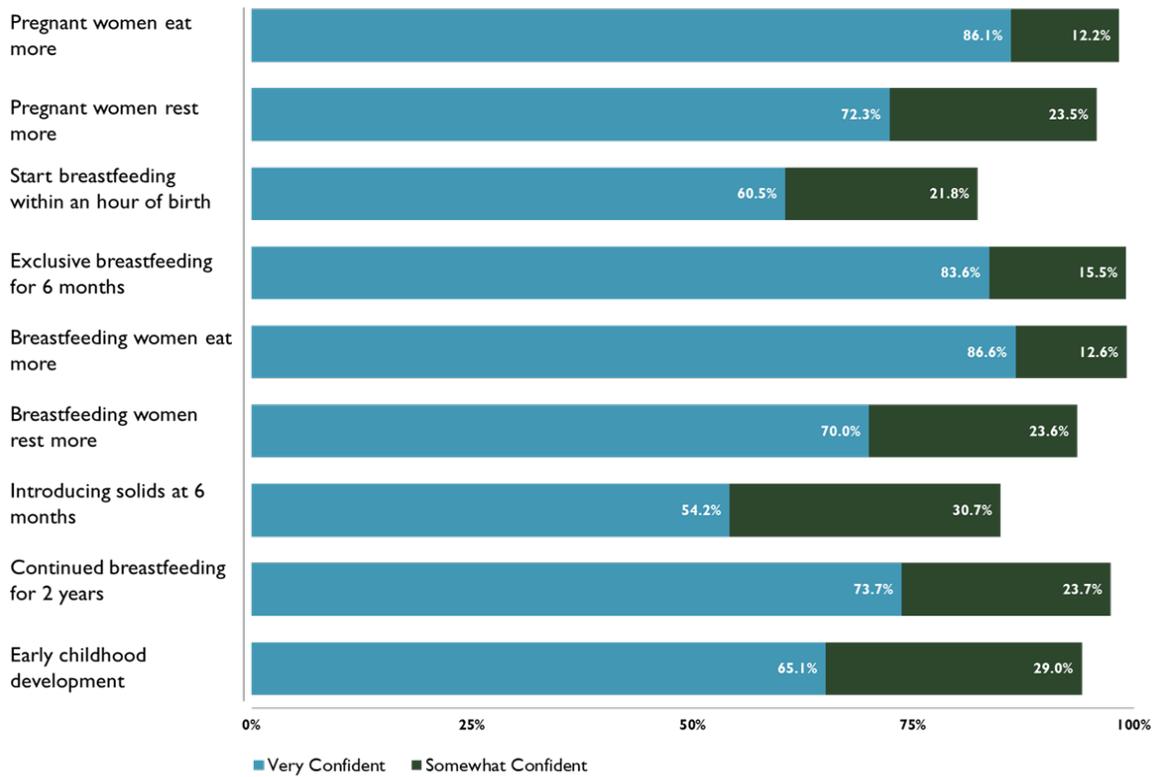
Because non-verbal communication is also important, at endline, we also asked community volunteers to mention ways of communicating without words. The most commonly mentioned methods included paying attention, using positive body language or hand gestures, making eye contact or looking clients in the eyes, keeping head level with client, and using appropriate touch (Annex 3, table 62).

### **Implementation of the C-IYCF Counselling Package**

At endline, most C-IYCF community volunteers had a job description that listed his/her role and responsibilities related to the *C-IYCF Counselling Package* and reported understanding that role (Annex 3, table 48). They felt very confident in their ability to perform their responsibilities; i.e., to conduct C-IYCF support group meetings and complete monthly report forms (Annex 3, table 63).

In addition, by endline, the majority of community volunteers were confident or very confident that they could help improve MIYCN practices in the community (Annex 3, table 49; figure 3-10). They were slightly less confident in their ability to promote and timely breastfeeding initiation and the introduction of complementary foods at 6 months (Annex 3, table 49).

**Figure 3-10. Percentage of Community Volunteers Who Were “Very Confident” or “Somewhat Confident” in Their Ability to Promote and Change Key MIYCN Practices at Endline**



## Chapter 4: Maternal Knowledge, Attitudes, and Practices

In this chapter we seek to answer the following study question:

***Did the C-IYCF Counselling Package have an impact on MIYCN knowledge, attitudes, and practices among pregnant women and mothers of children under two?***

To answer this question, we interviewed 1,748 mothers of children under two in the intervention site and 1,777 in the comparison site at baseline and 2,290 in the intervention site and 3,076 in the comparison site at endline (table 4-1). In so doing, we explored practices related to and measured nutritional status of 1,760 children in the intervention site and 1,783 children in the comparison site at baseline and 2,343 children in the intervention site and 3,125 children in the comparison site at endline. We also interviewed 550 pregnant women (some of who may also be mothers of children under two) in the intervention site and 850 in the comparison site at baseline and 771 in the intervention site and 1,350 in the comparison site at endline.

**Table 4-1. Total Sample by Location and Time Point**

	Baseline		Endline	
	Intervention Site	Comparison Site	Intervention Site	Comparison Site
Women*	2,236	2,562	3,055	4,397
Pregnant women	550	850	771	1,350
Mothers** of children under two years	1,748	1,777	2,290	3,076
Children	1,760	1,783	2,343	3,125
<6 months old	531	580	731	943
6–12 months old	473	473	628	878
13–18 months old	438	508	556	792
19–24 months old	318	222	428	512

\* The sum of pregnant women and mothers does not sum to the total number of women since some women are both pregnant and mothers of children under two.

\*\* This does include some primary caregivers who are not the biological mother of the child. At endline, 12 in the intervention site and 48 in the comparison site were the primary caregivers, not biological mothers. At baseline, we assumed but did not confirm biological relationship between respondent and child.

We tested differences between sites and time points using Chi-square tests as well as differences in differences (DID) using logistic and linear regression models. In table 4-2, at the end of this chapter, we also present adjusted DID that control for a number of known determinants of MIYCN practices that were outside the manageable control of the *C-IYCF Counselling Package*. In this report, we do not present findings related to dose response. The data will be further analyzed to do so. Findings will be presented in future publications.

## Characteristics of Respondents

Despite efforts to select a comparison LGA that was similar to the intervention site, there were a number of differences between respondents in the intervention site and in the comparison LGA. Unless indicated otherwise, the findings related to characteristics of respondents are from baseline and for mothers of children under two, which was the largest target group.

The average household size (number of household members) was lower in the intervention site than in the comparison site. At baseline, the mean household size of mothers was 6.4 people in the intervention site and 7.5 people in the comparison site ( $p < 0.01$ ) (Annex 4, table 2). Findings were similar among pregnant women.

In both LGAs, just about a quarter of respondents reported having an improved latrine (Annex 4, table 5). Mothers from the intervention site reported that, on average, their household owned more assets (3.3 at baseline) than those in the comparison site (2.7 at baseline) ( $p < 0.01$ ) (Annex 4, table 4). However, at baseline, mothers from the intervention site were less likely to report owning a means of transport (66.8 percent) than in the comparison site (73.1 percent,  $p < 0.01$ ). The difference was not statistically significant at endline, however (Annex 4, table 4). Mothers in the intervention site were less likely to report that their households owned agricultural land (88.4 percent) than those in the comparison site (93.2 percent,  $p < 0.01$ ). Again, the difference was not statistically significant at endline (90.2 percent vs. 93.6 percent, respectively,  $p \geq 0.1$ ). A similar trend was observed regarding more ownership of livestock/animals in the comparison site and findings were similar for pregnant women. Consistent with the findings on assets, mothers from the intervention site were more likely to fall into the highest wealth quintile (27.2 percent) than those in Kuru (14.2 percent,  $p < 0.01$ ) at baseline and also at endline (27.2 percent compared to 14.8 percent, respectively,  $p < 0.01$ ) (Annex 4, table 6). Results were similar for pregnant women and their households.

While the average age of pregnant women was 25 years in both LGAs and at both time points, at baseline, mothers in the intervention site were slightly older (27.3 years at baseline) than those in the comparison site (26.2 years,  $p < 0.01$ ) (Annex 4, table 7). This difference was not present at endline. The percentage of women with a normal body mass index (BMI) (18.5–24.9) went from 79.1 percent to 76.2 percent ( $p < 0.01$ ) in the intervention site and from 65.5 percent to 78.9 percent in the comparison site ( $p < 0.01$ ). Similarly, the percentage of underweight (BMI  $< 18.5$ ) increased in the intervention site, from 3.5 percent to 6.2 percent ( $0.1 < p < 0.05$ ), and decreased in the comparison site, from 13.4 percent to 7.9 percent ( $p < 0.05$ ). Mean BMI remained constant in both LGAs (Annex 4, table 73).

Nearly all respondents were married and living with their partners (Annex 4, table 11). As was expected, mothers in the intervention site were predominantly Christian (83.8 percent), while in the comparison site the majority were Muslim (61.2 percent,  $p < 0.01$ ) (Annex 4, table 8). Results were similar at endline and also among pregnant women.

Although almost all women spoke Hausa in both LGAs at baseline, only a third of mothers from the intervention site (34.5 percent) reported that it was their primary language (the language in which respondent is most comfortable communicating), compared to 62.2 percent of women in the comparison

site ( $p < 0.01$ ) (Annex 4, table 9). The majority of mothers from the intervention site said that the language in which they were most comfortable communicating was Adara (57.6 percent).

Women in the intervention site were better educated than women from the comparison site. At baseline, nearly twice the percentage of mothers in the comparison site (59.6 percent) had received no education as those in the intervention site (31.2 percent,  $p < 0.01$ ) (Annex 4, table 15). Findings were similar at endline and among pregnant women. In addition, mothers from the intervention site were more likely to have been employed in the previous 12 months (68.6 percent at baseline) than mothers in the comparison site (49.5 percent,  $p < 0.01$ ) (Annex 4, table 16). Findings were similar at endline and among pregnant women.

Finally, we asked respondents a number of questions related to agency, including decision-making power, mobility, and control of resources. Women (both pregnant women and mothers who may or may not be pregnant) were equally likely to control resources to pay for fruits, vegetables, and meat or animal foods. However, those from the intervention site were more likely to control resources to pay for transportation to a health center or for medicine if she or her child became ill than those in the comparison site ( $p < 0.05$ ) (Annex 4, table 19). Results were similar at endline ( $p < 0.01$ ).

At baseline, mothers from the intervention site were much more likely to disagree or strongly disagree that only men should make the important decisions in the family (38.0 percent) than those from the comparison site (19.8 percent,  $p < 0.01$ ) (Annex 4, table 20). They were also more likely to strongly agree that a mother should be allowed to participate in mother's groups at baseline (87.0 percent in the intervention site, 80.6 percent in the comparison site,  $p < 0.01$ ). Findings were similar at endline and among pregnant women.

Mothers in the intervention site were more likely ( $p < 0.01$ ) than mothers in the comparison site to have participated in decision-making regarding how money that her husband/partner earns is used, her health care, major household purchases, visits to her family or relatives, when to stop breastfeeding, what to feed a child, when to feed a child, or what to do if a child falls ill (Annex 4, table 21).

An important measure of a woman's agency is her mobility or ability to move freely. At both time points, mothers in the intervention site were more likely than those in the comparison site to be able to go to the local market to buy things, to the local health center or doctor, or to a nearby mosque/church at baseline and endline ( $p < 0.05$ ). Interestingly, at baseline, mothers in the intervention site were just as likely to be allowed to go to the homes of friends in the neighborhood as their counterparts in the comparison site ( $p \geq 0.1$ ); however, by endline they were more likely to be able to do so (89.1 percent in the intervention site, 84.5 percent in the comparison site,  $p < 0.01$ ). This was true of pregnant women as well. While more than half of the respondents from the intervention site reported being a member of some association, group or club, just over one quarter of respondents from the comparison site reported the same ( $p < 0.1$  at baseline and endline) (Annex 4, table 23). The most common types of groups in both LGAs were religious and women's groups.

Children's sex was similar in both LGAs (Annex 4, table 24). However, the mean age of children was statistically different at baseline (10.4 months in the intervention site, 10.0 months in the comparison site,  $p < 0.01$ ), but was not at endline (10.5 months in both LGAs). Respondents were also asked to report on

children's size at birth as a proxy for low birthweight.<sup>36</sup> Findings were similar in both LGAs and at both time points. At baseline, 16.4 percent of children from the intervention site and 18.1 percent from the comparison site were considered by their mothers to have been smaller than average or very small at birth ( $p \geq 0.1$ ).

Finally, the percentage of children stunted (height-for-age Z (HAZ) score  $< -2$  SD) increased from 18.5 percent to 28.6 percent ( $p < 0.01$ ) in the intervention site while in the comparison site it remained constant at about 44 percent (Annex 4, table 72).<sup>37</sup> The mean HAZ scores also declined in both LGAs, but more so in the intervention site than in the comparison site ( $p < 0.01$ ). In the intervention site the mean HAZ score went from -0.51 to -1.2 ( $p < 0.01$ ) while in the comparison site it went from -1.64 to -1.76 ( $p < 0.01$ ). Likewise, the mean weight-for-age (WAZ) scores declined from -0.51 to -0.92 in the intervention site and from -1.3 to -1.4 in the comparison site. Again, the decline in the intervention site was greater than in the comparison site ( $p < 0.05$ ). These changes were results of the economic crisis that occurred during the intervention period (for more information, see Chapter 5).

## Nutrition Support and C-IYCF Counselling Package Reach

The C-IYCF training and its related mobilization and sensitization events were designed to equip health workers and community volunteers with knowledge and skills to provide mothers with the information, education, and support they need to practice optimal IYCF practices. (See Chapter 2 for more details on program implementation.)

The percentage of mothers of children under two who reported that they had spoken with a volunteer about breastfeeding or feeding their children increased in both LGAs between baseline and endline. Among mothers in the intervention site, 36.1 percent had done so at baseline and 62.7 percent had at endline ( $p < 0.01$ ). In the comparison site, 25.8 percent had at baseline while 47.4 percent had at endline ( $p < 0.01$ ) (Annex 4, table 25). Rates and trends were similar among pregnant women. The difference in differences is not statistically significant

( $p \geq 0.1$ ). This finding is confusing given that no known intervention was conducted in the comparison LGA that would have increased exposure to such IYCF counselling and support.

**Figure 4-1. National C-IYCF Counselling Card Image Shown to Respondents to Determine Exposure to the C-IYCF Program**



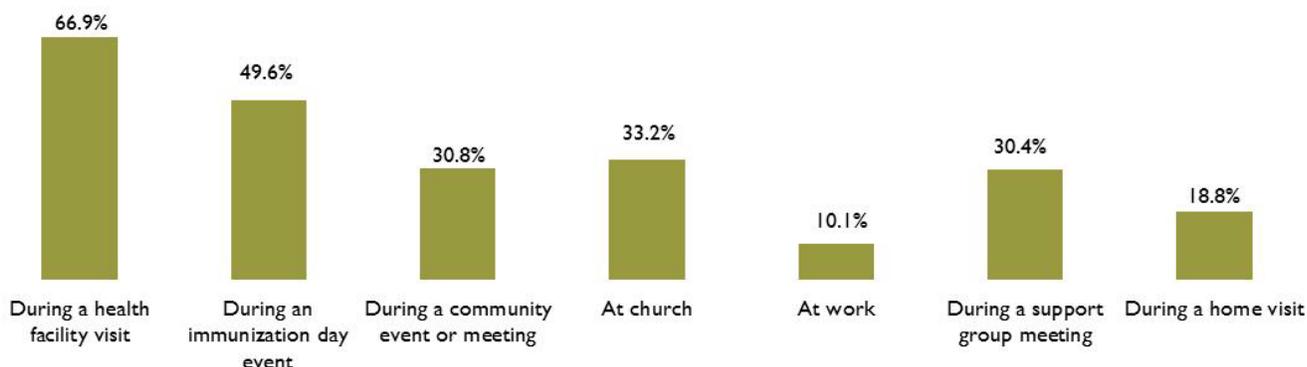
<sup>36</sup> Children born with low-birthweight are effectively born malnourished and are at higher risk of dying in early life. LBW is defined as a birthweight of less than 2,500 grams. This indicator is widely used because it reflects not only the status (and likely nutritional health risks) of the newborn, but also the nutritional wellbeing of the mother. Unfortunately, women do not often have a reliable record of a child's birthweight and, therefore, this proxy indicator (perception of being smaller than average or very small at birth) is sometimes used.

<sup>37</sup> We did not expect to see an impact in maternal or child anthropometry due to the relatively short intervention period we did measure maternal and child weight and height/length.

Similarly, at baseline, half of the mothers from the intervention site (52.7 percent) and the comparison site (50.6 percent) said that they had seen the image of the cover page of the counselling card booklet (Figure 4-1) (Annex 4, table 27). By endline, the percentage that reported seeing the cover image or C-IYCF brochures increased to 71.8 percent in the intervention site ( $p < 0.01$ , when compared to baseline) while in the comparison site it declined to 43.2 percent ( $p < 0.01$ ). The difference in differences was statistically significant ( $p < 0.01$ ).

We further explored exposure to C-IYCF cards in the intervention site to identify the contexts in which respondents had encountered C-IYCF materials. More than two thirds of mothers of children under two in the intervention site said that they had seen the image of the counselling cards during a health facility visit, while half said that they had during an immunization day. Others reported seeing them during a community event or meeting, at church, during a support group meeting, or during a home visit (Annex 4, table 28, figure 4-2). Among pregnant women, findings were similar.

**Figure 4-2. Percentage of Mothers of Children under Two Who Saw C-IYCF Materials Used, by Event or Location (Based on Recognition of the Cover Image of the C-IYCF Counselling Card Booklet)**



We aimed to reach approximately 32 percent of mothers of the 9,550 children under two in the intervention LGA through support groups. We reached 30.4 percent of the randomly sampled mothers of children under two surveyed at endline (Annex 4, table 28, figure 4-2). While the percentage may seem low, it met expectations given the limited number of volunteers who were trained in each community.

Ideally, a woman should attend support group meetings monthly throughout her pregnancy and/or until her child has reached two years of age to reinforce and support behavior change. However, only 6.8 percent of mothers and 4.4 percent of pregnant women had attended seven or more support group meetings (Annex 4, table 28). This is most likely due to the short duration of the intervention (18 months) and the limited number of community volunteers and support groups in each community.

## MIYCN Knowledge, Attitudes, and Practices

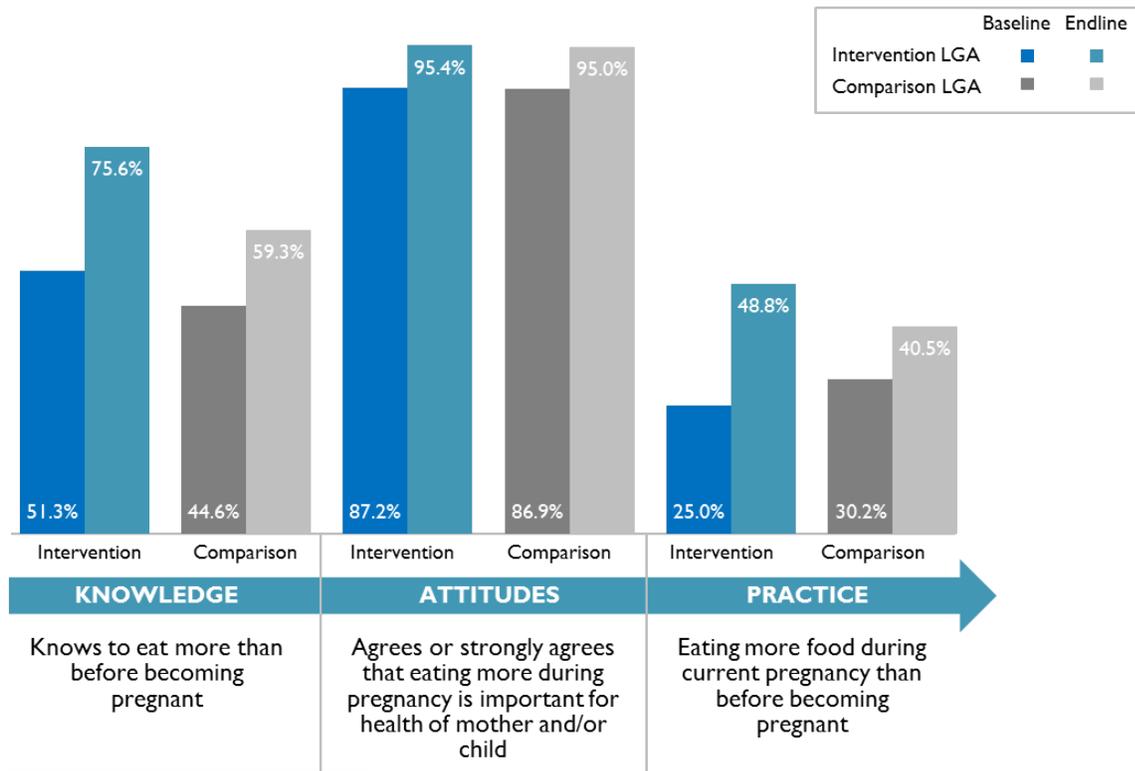
We asked all respondents about their knowledge, attitudes, and practices related to maternal, infant, and young child nutrition (see instruments in Annex 6 and 7).

## Maternal Nutrition

The *C-IYCF Counselling Package* emphasized the importance of women eating one additional small meal or “snack” each day during pregnancy to provide energy and nutrients for themselves and their growing baby.

In the intervention site, among pregnant women, the percentage who knew that women should eat more during pregnancy than before increased from 51.3 percent at baseline to 75.6 percent at endline ( $p < 0.01$ ) (Annex 4, table 34; and figure 4-3). Knowledge also improved in the comparison site—from 44.6 percent to 59.3 percent ( $p < 0.01$ ). The differences in differences is statistically significant ( $p < 0.05$ ) indicating that the improvement was greater in the intervention site.

**Figure 4-3. Knowledge, Attitudes, and Practices Related to Eating More during Pregnancy, among Pregnant Women, by Time Point and Location**



\* Significant at  $p < 0.05$  \*\*Significant at  $p < 0.01$

The percentage of pregnant women who strongly agreed that eating more during pregnancy is important for the health of mothers or children nearly doubled in both LGAs (Annex 4, table 34; and figure 4-3). We also surveyed pregnant women about their eating practices (i.e., if they ate more during pregnancy), but the results were not statistically significant.

Results were similar for all three of the above indicators of maternal nutrition knowledge, attitudes, and practices among mothers of children under two.

As part of the C-IYCF activities, the importance of taking iron-folate tablets to prevent anemia during pregnancy and to promote healthy fetal development was emphasized. We focused on mothers and their reported purchase or receipt of iron tablets. The percentage who reported purchasing or receiving any iron supplement during their most recent pregnancy increased statistically, but not substantially in both LGAs (Annex 4, table 35).

## Breastfeeding Initiation

Following the WHO guidelines, the *C-IYCF Counselling Package* emphasizes the importance of initiating breastfeeding and skin-to-skin contact immediately after birth to encourage maternal-child bonding and exclusive breastfeeding.<sup>38</sup>

Among mothers of children under 2 years of age, the percentage who knew that breastfeeding should be initiated immediately after birth increased from 56.1 percent to 71.0 percent ( $p < 0.01$ ) in the intervention site. In the comparison site, knowledge did not improve (annex 4, table 36; and figure 4-4). The difference in differences is statistically significant, suggesting program impact. Results among pregnant women were similar (annex 4, table 36).

The percentage of mothers who agreed or strongly agreed with the importance of initiating breastfeeding within one hour of birth increased from 84.5 percent to 89.3 percent in the intervention site ( $p < 0.01$ ), but declined from 78.5 percent to 70.9 percent in the comparison site ( $p < 0.01$ ) (figure 4-4). Meanwhile, the percentage who strongly agreed with the importance of initiating breastfeeding within one hour of birth increased from 35.3 percent to 58.4 percent in the intervention site ( $p < 0.01$ ) and from 24.8 percent to 35.1 percent in the comparison site ( $p < 0.01$ ) (Annex 4, table 36). Though women in both LGAs were more likely to strongly agree with the importance of this practice at endline, the increase in the intervention site was greater, and the difference in differences was statistically significant ( $p < 0.01$ ). Results among pregnant women are similar.

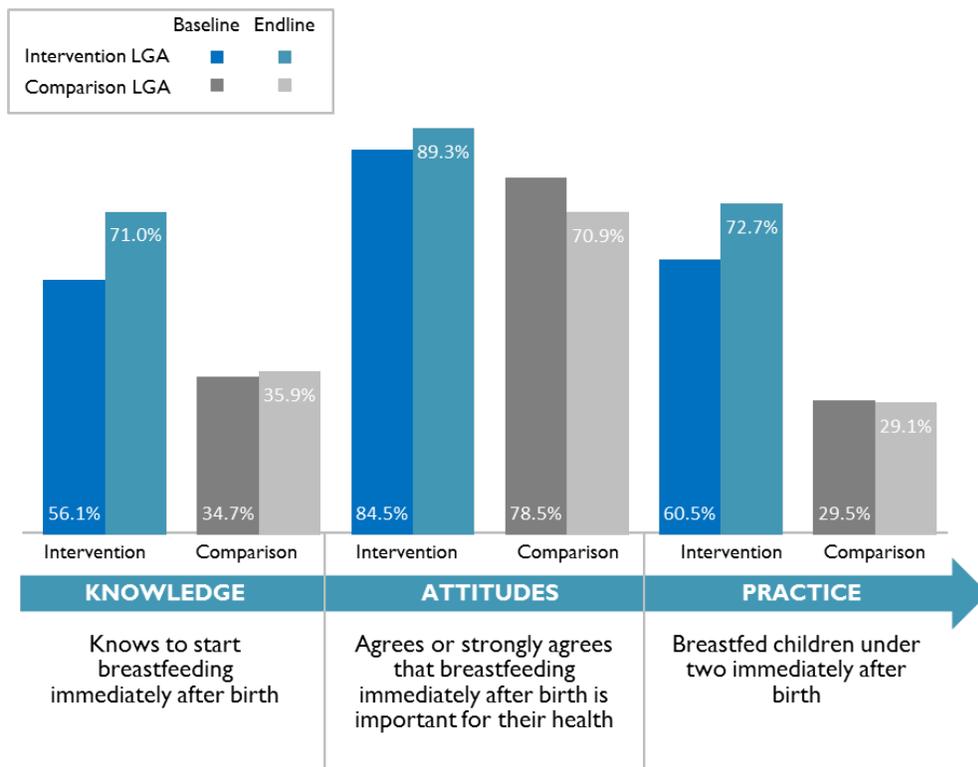
Pregnant women were also asked how confident they were that they would be able to breastfeed within one hour of giving birth. In the intervention site, the percentage who were very confident increased from 1.4 percent to 49.9 percent ( $p < 0.01$ ), whereas in the comparison site, 4.4 percent felt this way at baseline and 36.3 percent did so at endline ( $p < 0.01$ ) (Annex 4, table 36). The difference in differences was statistically significant ( $p < 0.01$ ).

Of greatest importance are the actual practices. The percentage of children under 2 in the intervention site who were put to the breast within one hour of birth increased from 60.5 percent to 72.7 percent in the intervention site, but remained constant at 29 percent in the comparison site (Annex 4, table 37; and figure 4). Similarly, the percentage of children under 2 in the intervention site who were **not** given anything other than breastmilk in the first three days after birth increased from 45.9 percent at baseline to 63.6 percent at endline, according to survey responses from their mothers ( $p < 0.01$ ) (Annex 4, table 38). Again, in the comparison site, there was no meaningful change. As a result, both differences in differences were statistically significant ( $p < 0.01$ ).

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<sup>38</sup> See UNICEF's generic C-IYCF Counselling Package at [https://www.unicef.org/nutrition/index\\_58362.html](https://www.unicef.org/nutrition/index_58362.html) or the WHO's *Essential Nutrition Actions: Improving maternal, newborn, infant and young child health and nutrition* at [http://www.who.int/nutrition/publications/infantfeeding/essential\\_nutrition\\_actions/en/](http://www.who.int/nutrition/publications/infantfeeding/essential_nutrition_actions/en/).

**Figure 4-4. Knowledge, Attitudes, and Confidence Related to Early Initiation of Breastfeeding, among Mothers of Children under Two, by Time Point and Location**



\* Significant at  $p < 0.05$  \*\*Significant at  $p < 0.01$

Among children under 1 year of age (0–11 months) in the intervention site, 60.1 percent were breastfed immediately after birth at baseline and 72.0 percent at endline ( $p < 0.01$ ), according to their mothers (Annex 4, table 37). In the comparison site, this practice remained unchanged between baseline and endline, at 28.1 percent and 30.0 percent, at baseline and endline, respectively ( $p \geq 0.1$ ). The difference in differences between time points and LGAs was statistically significant ( $p < 0.05$ ).

Almost all children in both LGAs were put to the breast at least once within the first three days of birth (Annex 4, table 37). The percentage of children 0 to 11 months old in the intervention site who were put to the breast within three days of birth at baseline was slightly higher than at endline (98.9 percent at baseline vs. 96.8 percent at endline,  $p < 0.01$ ). While the change is statistically significant, it is not practically significant.

### Exclusive Breastfeeding

Exclusive breastfeeding is considered one of the most important IYCF practices for the prevention of diarrhea and promotion of optimal growth.<sup>39</sup> The C-IYCF package instructed caregivers to provide only breastmilk during a baby’s first six months, even if the weather was hot, the baby was sick, or the mother was sick or malnourished. The package explains, “giving [a] baby foods or any kind of liquids other than breastmilk, including infant formula, animal milks, or water before 6 months can damage [his/her]

<sup>39</sup> *ibid*

stomach. This reduces the protection that exclusive breastfeeding gives, and all of the benefits that [he/she] gets from [a woman's] breastmilk."

In the intervention site, when asked for how long children should be exclusively breastfed, just about half of mothers said six months at baseline (52.7 percent) (annex 4, table 39; and figure 4-5). By endline, 83.4 percent knew this to be the case ( $p < 0.01$ ). In the comparison site, knowledge of the optimal length of exclusive breastfeeding also increased from 48.7 percent to 67.2 percent ( $p < 0.01$ ). The difference in differences was statistically significant ( $p < 0.01$ ), hence the improvement in the intervention site was greater than that in the comparison site.

We also asked when respondents thought a breastfed baby should first start to receive liquids (including water). In the intervention site, 43.8 percent knew that this should not happen until a child is 6 months of age at baseline and 73.7 percent did so at endline ( $p < 0.01$ ) (Annex 4, table 39). In the comparison site, knowledge of the optimal age also increased from 40.7 percent to 65.0 percent ( $p < 0.01$ ). The difference in differences was marginally significant ( $0.1 > p > 0.05$ ).

Furthermore, recognition that breastfed children under 6 months of age do not need additional water even if the weather is hot increased from 24.7 percent at baseline to 76.1 percent at endline in the intervention site ( $p < 0.01$ ) (annex 4, table 39; and figure 4-5). The difference in the comparison site was also significant, but was less pronounced, moving from 24.5 percent at baseline to 55.2 percent at endline ( $p < 0.01$ ). As a result, the difference in differences was statistically significant ( $p < 0.01$ ).

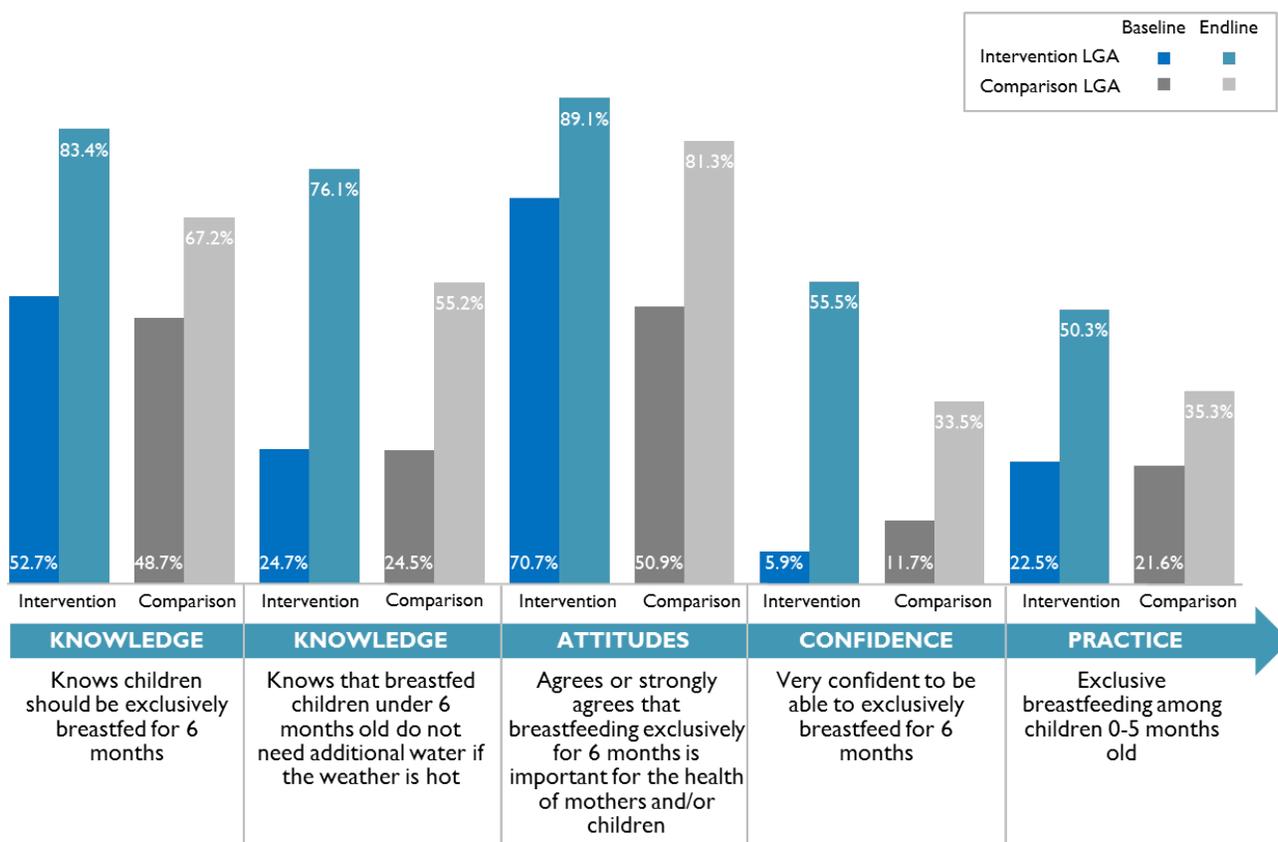
The percentage of mothers in the intervention site who knew that infants should be exclusively breastfed for six months, that liquids should not be introduced until 6 months of age, that no water should be given even if the weather is very hot, and that none of the liquids mentioned should be given increased from 7.0 percent to 43.1 percent ( $p < 0.01$ ) (Annex 4, table 39). In the comparison site, 8.2 percent knew this at baseline, while 25.8 percent did at endline ( $p < 0.01$ ). Again, the difference in differences was statistically significant ( $p < 0.01$ ), hence the improvement in the intervention site was greater than that in the comparison site.

Attitudes regarding exclusive breastfeeding also improved in both LGAs (Annex 4, table 39; and figure 4-5). The percentage of mothers of children under 2 years who agreed or strongly agreed with the importance of exclusively breastfeeding children for 6 months increased from 70.7 to 89.1 percent in the intervention site ( $p < 0.01$ ) and from 50.9 to 81.3 percent in the comparison site ( $p < 0.01$ ). However, in this case, the difference in differences was not statistically significant ( $p \geq 0.1$ ). The same is true for the percentage that strongly agreed with the importance of this practice (Annex 4, table 39).

At baseline, only 14.3 percent of respondents in the intervention site and 12.7 percent in the comparison site knew that a breastfed child under 6 months of age should not be fed any of the liquids mentioned (e.g., water, glucose or sugar water, infant formula, milk, thin porridge, juice or juice drinks, tea, coffee, clear broth, yogurt, or other liquids). By endline, 57.4 percent in the intervention site and 34.6 percent in the comparison site did not think any should be given. Both improvements were statistically significant ( $p < 0.01$ ), and so too was the difference in differences ( $p < 0.01$ ).

Confidence in ability to breastfeed exclusively for six months increased more in the intervention site than in the comparison site (Annex 4, table 40; and figure 4-5). In the intervention site, the percentage of mothers who were very confident that they would be able to breastfeed exclusively for six months was 5.9 percent at baseline and 55.5 percent at endline ( $p < 0.01$ ). In the comparison site the percentage who were very confident increased from 11.7 to 33.5 percent ( $p < 0.01$ ). The improvement in the intervention site was greater than that in the comparison site, as the difference in differences was statistically significant ( $p < 0.01$ ).

**Figure 4-5. Knowledge, Attitudes, and Practices Related to Exclusive Breastfeeding, among Mothers of Children under Two, by Time Point and Location**



\*Significant at  $p < 0.05$  \*\*Significant at  $p < 0.01$

Knowledge, attitudes, and confidence related to exclusive breastfeeding were similar among pregnant women in both LGAs. Intentions among pregnant women, however, increased much more in the intervention site than in the comparison site. In the intervention site, the percentage of pregnant women who said that they intended to breastfeed exclusively for 6 months increased from 37.9 percent at baseline to 72.0 percent at endline ( $p < 0.01$ ). In the comparison site, there was a relatively small increase, from 35.7 percent to 47.7 percent ( $p < 0.01$ ). The difference in differences was statistically significant ( $p < 0.000$ ).

While almost all children under 6 months of age were breastfed at least once during the previous day (Annex 4, table 42), the percentage exclusively breastfed was low at baseline: 22.5 percent in the intervention site and 21.6 percent in the comparison site. In both LGAs this figure increased, to 50.3

percent in the intervention site ( $p < 0.01$ ) and to 35.3 percent in the comparison site ( $p < 0.01$ ). The difference in these differences was statistically significant ( $p < 0.01$ ) (Annex 4, table 43).

Of those given liquids, the most common liquid given to breastfed children under 6 months of age in the previous 24 hours was water (Annex 4, table 44). The most common foods were porridge, bread, rice, noodles, or other foods made from grains.

### Continued Breastfeeding

The *C-IYCF Counselling Package* follows WHO guidelines and recommends that women continue breastfeeding for at least two to three years.<sup>40</sup> In the intervention site, at baseline, 45.7 percent of mothers knew that children should be breastfed for at least two years (Annex 4, table 45; and figure 4-6). By endline, 61.3 percent knew this ( $p < 0.01$ ). In the comparison site, knowledge also improved—from 49.0 percent to 58.0 percent ( $p < 0.01$ )—but not as much as in the intervention site ( $p < 0.05$ ). Improvements in knowledge among pregnant women was similar; however, the difference in differences was marginally significant ( $0.1 > p > 0.05$ ).

Likewise, the percentage who strongly agreed with the importance of continued breastfeeding for at least two years increased from 30.1 percent to 49.6 percent in the intervention site ( $p < 0.01$ ) (Annex 4, table 46). In the comparison site, the percentage who strongly agreed was already high at baseline (49.3 percent) and increased to 52.2 percent ( $p < 0.01$ ). While the difference in differences was statistically significant ( $p < 0.01$ ), the end result was similar in both LGAs.

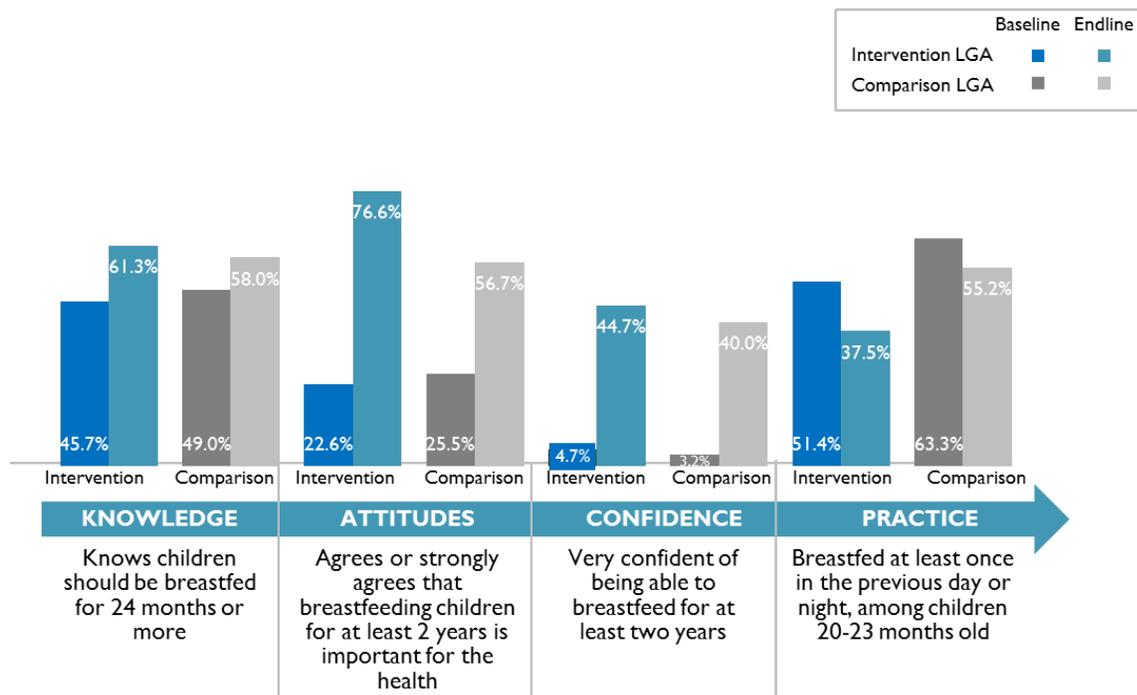
Surprisingly, given that there was no related intervention in the comparison site, confidence to continue breastfeeding for two years increased similarly and substantially in both LGAs (Annex 4, table 47; and figure 4-6). In the intervention site, the percentage who were very confident increased from 4.7 percent to 44.7 percent ( $p < 0.01$ ), while in the comparison site it increased from 3.2 percent to 40.0 percent ( $p < 0.01$ ). The trend was similar among pregnant women.

Despite an increase in confidence, pregnant women's intentions to prolong breastfeeding remained constant in both LGAs (Annex 4, table 48) and, most importantly, continued breastfeeding practices, which may be strongly dictated by culture, declined (Annex 4, table 49). Among children 20 to 23 months old in the intervention site, only 51.4 percent were breastfed the previous day at baseline. At endline, only 37.5 percent were ( $p < 0.01$ ). In the comparison site, the corresponding percentages were 63.3 percent at baseline and 55.2 percent at endline ( $p \geq 0.1$ ). The difference in differences was not significant ( $p < 0.01$ ). Our only explanation for the declines is that the economic crisis led more mothers to seek work outside the home, and they were therefore unable to continue breastfeeding.

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<sup>40</sup> See previous.

**Figure 4-6. Knowledge, Attitudes, and Practices Related to Continued Breastfeeding among Mothers of Children under Two, by Time Point and Location**



\* Significant at  $p < 0.05$  \*\*Significant at  $p < 0.01$

### Breastfeeding Techniques

The *C-IYCF Counselling Package* encourages mothers to breastfeed children on demand, both day and night, 8 to 12 times per day, explaining that “this will maintain his or her health and strength as breastmilk continues to be the most important part of your baby’s diet.” It also explains that this practice helps to build the breastmilk supply, because more suckling (with good attachment) makes more breastmilk. In addition, to achieve the greatest benefits from breastfeeding, it is important to know the early signs of hunger and to continue breastfeeding even through sickness, malnutrition, and pregnancy.

The percentage of mothers who knew that a baby should be breastfed “as frequently as the baby wants, requests, or demands” increased from 67.1 percent to 71.8 percent in the intervention site ( $p < 0.05$ ), while it decreased in the comparison site from 69.8 percent at baseline to 65.8 percent at endline ( $p \geq 0.1$ ) (Annex 4, table 51). As a result, the difference in differences was statistically significant as well ( $p < 0.05$ ). The percentage who strongly agreed that this practice was important for the health of the child was similar in both LGAs at baseline and increased similarly as well. Results were similar among pregnant women.

According to the *C-IYCF Counselling Package*, early signs of hunger include restlessness, opening mouth, turning head from side-to-side, putting tongue in and out, and suckling on fingers and fists. The package explains that crying is typically a late sign of hunger or a sign of some other problem. However, the percentage of mothers who knew two or more early signs of hunger did not improve in either LGA (Annex 4, table 52).

The *C-IYCF Counselling Package* explains that even a mother who is thin and malnourished will produce a sufficient quantity of breastmilk if the child suckles frequently, that it is important to continue breastfeeding even if the mother or child becomes ill, and that a mother of a child under 6 months of age should NOT stop breastfeeding if she becomes pregnant.

Knowledge that a thin or malnourished mother can produce “enough” breastmilk for her infant under 6 months of age declined in both LGAs, from 25.0 percent to 16.8 percent in the intervention site ( $p < 0.01$ ) and from 23.8 percent to 13.1 percent in the comparison site ( $p < 0.01$ ) (Annex 4, table 52). The difference in differences was not statistically significant ( $p \geq 0.1$ ).

Knowledge regarding continued breastfeeding increased in both LGAs (Annex 4, table 52):

- Women should continue breastfeeding even when they are ill: from 70.1 percent to 86.3 percent in the intervention site ( $p < 0.01$ ) and from 77.3 percent to 92.1 percent in the comparison site ( $p < 0.01$ ).
- Women should continue breastfeeding even when their child is ill: from 74.3 percent to 95.8 percent in the intervention site ( $p < 0.01$ ) and from 89.0 percent to 97.3 percent in the comparison site ( $p < 0.01$ ).
- Women should continue breastfeeding if they are pregnant: from 35.6 percent to 65.4 percent in the intervention site ( $p < 0.01$ ) and from 56.5 percent to 72.0 percent in the comparison site ( $p < 0.01$ ).
- Breastfeeding more frequently can increase milk production: from 59.6 percent to 90.6 percent in the intervention site ( $p < 0.01$ ) and from 70.8 percent to 84.7 percent in the comparison site ( $p < 0.01$ ).

All but the first differences in differences was statistically significant at  $p < 0.01$ , indicating that knowledge increased more in the intervention site than in the comparison site.

Finally, mothers were questioned about their bottle-feeding practices, which can interfere with optimal breastfeeding practices and is associated with increased diarrheal disease, morbidity, and mortality. The *Nigeria C-IYCF Facilitators' Guide* states “Do not use feeding bottles (sucking method is different than breastfeeding, so can cause ‘nipple confusion’).” Bottles with a nipple are particularly prone to contamination (WHO 2008). Bottle feeding was initially higher among children in the intervention site than in the comparison site (Annex 4, table 54). It went from 15.9 percent at baseline to 8.6 percent at endline ( $p < 0.01$ ) in the intervention site and from 7.2 percent to 7.3 percent in the comparison site ( $p \geq 0.1$ ). The difference in these differences was, once again, statistically significant ( $p < 0.01$ ).

## Introduction of Complementary Foods

The WHO defines complementary feeding as “the process starting when breastmilk alone is no longer sufficient to meet the nutritional requirements of infants, and therefore other foods and liquids are needed, along with breastmilk.”<sup>41</sup> Nigeria’s *C-IYCF Counselling Package: Key Message Booklet* follows the WHO guidelines and recommends that infants should receive nutritionally adequate and safe complementary foods starting 6 months after birth, while continuing to breastfeed for up to two years or beyond.

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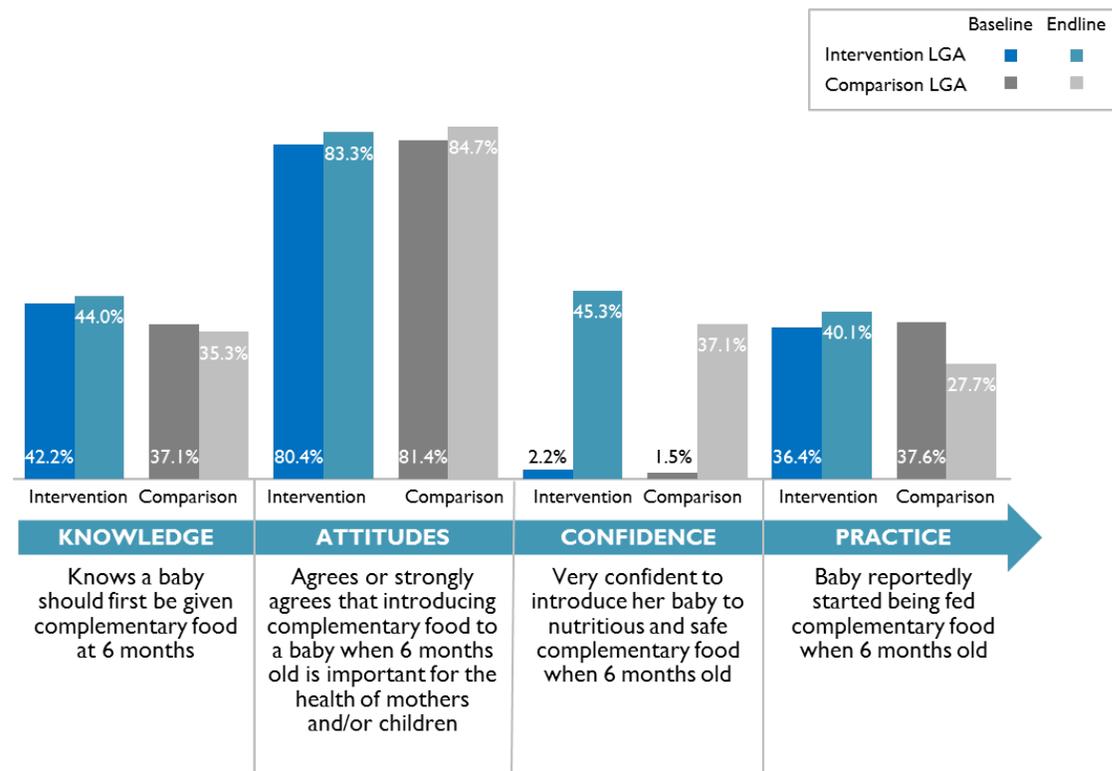
<sup>41</sup> See WHO’s e-Library of Evidence for Nutrition Actions (eLENA) at [http://www.who.int/elena/titles/complementary\\_feeding/en/](http://www.who.int/elena/titles/complementary_feeding/en/).

While knowledge and attitudes related to the introduction of complementary foods improved slightly, practices did not. The percentage of mothers who thought that children should first be given soft semi-solid foods at six months of age remained relatively constant in both sites (Annex 4, table 55; and figure 4-7). However, the percentage of mothers who thought that children should first be given soft semi-solid foods between six and eight months of age increased in the intervention site—from 75.5 percent to 82.5 percent ( $p < 0.01$ )—while it declined from 82.7 percent to 77.8 percent in the comparison site ( $p < 0.01$ ) (Annex 4, table 55). The difference in these differences was statistically significant ( $p < 0.01$ ).

Similarly, the percentage of mothers who agreed or strongly agreed with the importance of introducing soft, semi-solid food to children at 6 months of age did not change much in either LGA (Annex 4, table 56; and figure 4-7). However, the percentage of mothers who strongly agreed with the importance of introducing soft, semi-solid food to children at 6 months of age increased in both LGAs, but more so in the comparison site than in the intervention site—from 27.3 percent to 31.9 percent in the intervention site ( $p < 0.05$ ) and from 22.6 percent to 34.3 percent in the comparison site ( $p < 0.01$ ) (Annex 4, table 56). Here the difference in differences was statistically significant ( $p < 0.01$ ), indicating that the increase was greater in the comparison site than in the intervention site ( $p < 0.05$ ). This result was similar among pregnant women as well.

Likewise, confidence among mothers to introduce nutritious and safe soft, semi-solid foods to their children when they are 6 months old increased in both LGAs—from 2.2 percent in the intervention site at baseline to 45.3 percent at endline ( $p < 0.01$ ) (Annex 4, table 57; and figure 4-7). The change was similar in the comparison site and among pregnant women.

**Figure 4-7. Knowledge, Attitudes, and Practices Related to the Introduction of Complementary Foods, among Mothers of Children under Two, by Time Point and Location**



\* Significant at  $p < 0.05$  \*\*Significant at  $p < 0.01$

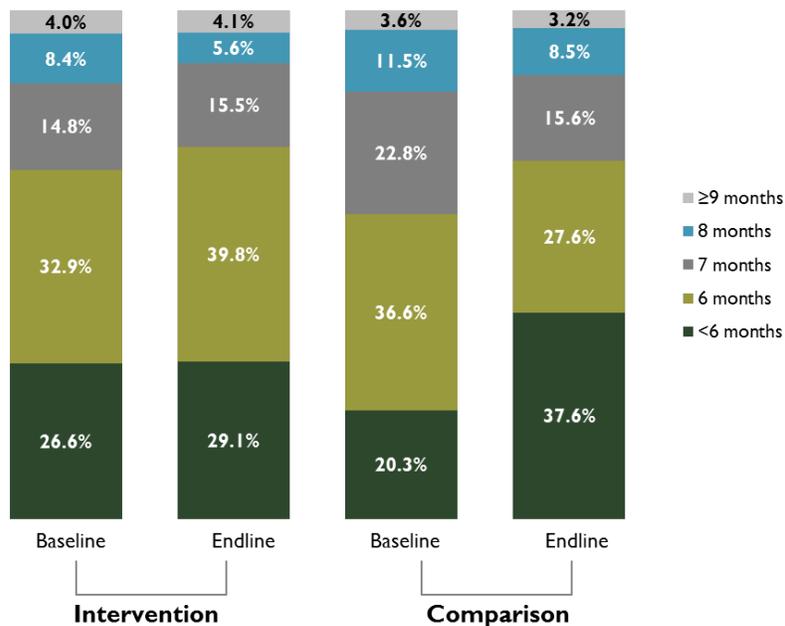
Among pregnant women, intentions to give their child soft, semi-solid food at 6 months of age remained statistically constant in the intervention site at about 50 percent, while it declined from 48.0 percent to 39.8 percent ( $p < 0.01$ ) in the comparison site (Annex 4, table 57). Meanwhile, the percentage who planned to do so between 6 and 8 months increased from 70.7 percent to 83.3 percent in the intervention site ( $p < 0.01$ ) but remained constant at about 74 percent in the comparison site. The differences in differences were statistically significant ( $p < 0.01$ ).

However, the percentage of children who first started to eat solid, semi-solid, or soft foods at 6 months of age went up from 32.9 percent to 39.8 percent—though the difference was not statistically significant ( $p = 0.1$ )—while it declined from 36.6 percent to 27.6 percent in the comparison site ( $p < 0.01$ ) (Annex 4, table 58; and figure 4-8). The difference in differences was statistically significant ( $p < 0.01$ ). We found no change in the percentage of children who first ate solid, semi-solid, or soft foods between 6 and 8 months of age in the intervention site (62.0 percent at baseline, 61.4 percent at endline). However, the percentage of children in the comparison site who did so declined from 72.9 percent at baseline to 51.9 percent at endline ( $p < 0.01$ ). The difference in differences was statistically significant ( $p < 0.01$ ), indicating that the decline in the comparison site was greater than that in the intervention site.

It is important to note that WHO's proposed indicator for assessing the introduction of complementary foods is the proportion of infants 6 to 8 months of age who receive solid, semi-solid, or soft foods during the previous day (WHO 2008). In the intervention site, the percentage of children 6 to 8 months old who

had been given solid, semi-solid, or soft food during the previous day remained unchanged between time points, at about 67 percent. In the comparison site, this figure declined dramatically from 81.6 percent to 58.5 percent ( $p < 0.01$ ). The difference in differences was statistically significant ( $p < 0.01$ ), suggesting a protective effect of the program.

**Figure 4-8. Age at which Baby Was Introduced to Soft, Semi-Solid Foods according to Mothers of Children under Two, by Time Point and Location**



### Complementary Feeding

Knowledge about the nutrition content of food improved in both LGAs. In the intervention site, the percentage of mothers who could identify at least one iron-rich food increased from 66.9 percent at baseline to 95.9 percent at endline ( $p < 0.01$ ) (Annex 4, table 59). Knowledge that legumes were a source of iron increased significantly—from 15.9 percent at baseline to 67.4 percent at endline. We saw very similar improvements in the comparison site, however. Likewise, the percentage of mothers in the intervention site who were able to identify at least one food rich in vitamin A increased from 63.7 percent at baseline to 84.2 percent at endline ( $p < 0.01$ ). More mothers in the intervention site knew that orange fruits and vegetables, green leaves, and liver were good sources of vitamin A at endline, compared with baseline. Again, this was true of mothers in the comparison site as well. Differences in differences were not statistically significant ( $p \geq 0.1$ ).

Change in attitudes regarding feeding children over 6 months of age a diverse diet improved more in the intervention site than in the comparison site (Annex 4, table 60). In the intervention site, the percentage who agreed or strongly agreed with the importance of feeding children over 6 months old a diverse diet increased from 66.2 percent at baseline to 78.6 percent at endline ( $p < 0.01$ ). In the comparison site, the increase was from 75.6 percent to 76.5 percent ( $p \geq 0.1$ ). The difference in differences was statistically significant ( $p < 0.01$ ).

At baseline, only 5.4 percent of respondents in the intervention site and 5.0 percent in the comparison site strongly disagreed with waiting until a child is 1 year old to feed him animal protein. By endline, 12.4 percent strongly disagreed with this detrimental practice in the intervention site and 11.6 percent did so in the comparison site. Both increases were statistically significant ( $p < 0.01$ ) and the difference in differences was not statistically significant ( $p \geq 0.1$ ).

Based on the foods that children reportedly consumed during the previous day, we determined the percentage who had been given or consumed any vitamin A rich food (Annex 4, table 63). There was no change in the intervention site (12.5 percent at baseline, 11.6 percent at endline,  $p \geq 0.1$ ) while in the comparison site there was a significant decline from 20.5 percent to 9.0 percent ( $p < 0.01$ ). The difference in differences was statistically significant ( $p < 0.01$ ).

We also found in both LGAs a decline in the percentage of children who had consumed any iron-rich foods, including meat, organ meats, and fish (Annex 4, table 63). In the intervention site it went from 25.3 percent at baseline to 14.4 percent at endline ( $p < 0.01$ ) and in the comparison site it went from 20.8 percent to 10.4 percent ( $p < 0.01$ ).

Consistent with these findings, children 6 to 23 months old consuming minimum dietary diversity (MDD)<sup>42</sup> also declined in both LGAs—from 24.3 percent to 7.5 percent in the intervention site ( $p < 0.01$ ), from 21.4 percent to 4.2 percent in the comparison site ( $p < 0.01$ ) (Annex 4, table 64; and figure 4-9). This decline in dietary diversity can be seen for all age groups but is greater for the older age groups that were more likely to consume a diverse diet at baseline (Annex 4, table 64).

According to the *C-IYCF Counselling Package*, each meal should ideally include a variety of foods from different food groups to create a 4-star diet. A 4-star diet is achieved by including foods from the following categories:

- animal-source foods, including eggs, milk, and milk products
- staples (maize, wheat, rice, millet, and sorghum) and roots/tubers (yam, cassava, and potatoes)
- legumes and seeds
- fruits and vegetables

Consistent with the declines in MDD, we also observed significant declines in consumption of all of the above food groups, except the staple of grains, roots, and tubers (Annex 4, table 65). Declines in the consumption of legumes and seeds and fruits and vegetables were greater among children in the comparison site ( $p < 0.01$ ).

Meanwhile, the percentage of children 6 to 23 months old consuming the minimum meal frequency (MMF)<sup>43</sup> remained constant over time in the intervention site, but declined in the comparison site (annex

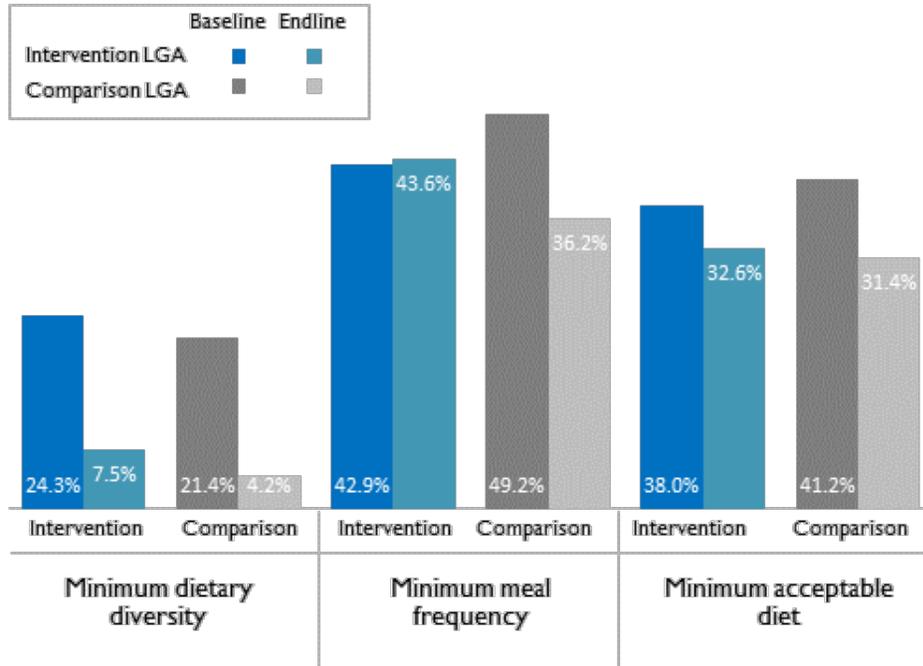
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<sup>42</sup> MDD is defined as receiving foods from four or more of the seven food groups, which include grains, roots and tubers; legumes and nuts; dairy products (milk, yogurt, cheese); flesh foods (meat, fish, poultry and liver/organ meats); eggs; vitamin-A rich fruits and vegetables; and other fruits and vegetables. Consumption of any amount of food from each food group is sufficient to “count” (i.e., there is no minimum quantity, except if an item is only used as a condiment).

<sup>43</sup> The MMF is intended as a proxy for energy intake from foods other than breast milk. It is defined, according to the WHO, as receiving solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more. A “time” include both meals and snacks (other than trivial amounts<sup>1</sup>), and frequency is based on caregiver report. The

4, table 66; and figure 4-9). The difference in differences was statistically significant ( $p < 0.01$ ), indicating a possible protective effect of the *C-IYCF Counselling Package*.

**Figure 4-9. Diets of Children 6–23 Months Old, Indicators of Priority Feeding Practices, by Time Point and Location**



\* Significant at  $p < 0.05$  \*\* Significant at  $p < 0.01$

As a result of the reductions in dietary diversity, we also observed a decline in the percentage of children 6 to 23 months old consuming the minimum acceptable diet (MAD)<sup>44</sup>—from 38.0 percent to 32.6 percent in the intervention site ( $p < 0.05$ ) and from 41.2 percent to 31.4 percent in the comparison site ( $p < 0.01$ ) (Annex 4, table 67; and figure 4-9). The difference in differences, however, was not statistically significant ( $p \geq 0.1$ ).

We did find that age-appropriate feeding improved in the intervention site while it declined in the comparison site ( $p < 0.01$ ) (Annex 4, table 68). In the intervention site the percentage of children 0 to 23 months of age who were appropriately breastfed (meaning that infants 0 to 5 months of age received only breastmilk during the previous day and children 6 to 23 months of age received breastmilk, as well as solid, semi-solid or soft foods, during the previous day) increased over time from 41.8 percent to 54.4 percent ( $p < 0.01$ ), while in the comparison site it declined from 51.5 percent to 47.9 percent ( $0.1 > p > 0.05$ ). The difference in differences was statistically significant ( $p < 0.01$ ).

minimum number varies by age, as follows: two times for breastfed infants 6 to 8 months, three times for breastfed children 9 to 23 months, four times for non-breastfed children 6 to 23 months.

<sup>44</sup> MAD is defined for breastfed children 6 to 23 months of age as those having at least the minimum dietary diversity and the minimum meal frequency during the previous day. For non-breastfed children 6 to 23 months of age, it is defined as receiving at least two milk feedings, at least the minimum dietary diversity not including milk feeds, and the minimum meal frequency during the previous day.

Although diet can provide much of what a child requires to grow and develop, supplementation is often necessary to ensure adequate micronutrient intake. According to Nigeria's *C-IYCF Facilitators' Guide*, the best sources of vitamin A are orange-colored fruits and vegetables, dark-green leaves, organ meat, eggs, milk, and foods made from milk, dried milk powder, and other foods fortified with vitamin A. The guide notes, "if a country has a vitamin-A endemic deficiency, it is important to make sure that children from 6 months to 5 years receive the recommended supplement."

Nigeria's *C-IYCF Facilitators' Guide* explains, the "best sources of iron are animal foods, such as liver, lean meats, and fish. Some vegetarian foods, such as legumes, have iron as well. Other good sources are iron-fortified foods and iron supplements." Unfortunately, the percentage of children who consumed an iron-rich food, such as meat, organ meat, fish, or egg in the 24 hours prior to the survey declined from 16.1 percent to 10.5 percent in the intervention site ( $p < 0.01$ ) and from 18.2 percent to 6.4 percent in the comparison site ( $p < 0.01$ ) (Annex 4, table 69). The difference in differences was statistically significant ( $p < 0.05$ ), suggesting, once again, a possible protective effect of the program.

### Sanitation and Hygiene Practices

Sanitation and hygiene practices were similar among pregnant women and mothers of children under two years of age in both LGAs and at both time points. Even at baseline, nearly all respondents in both LGAs agreed or strongly agreed with the importance of washing hands with soap before eating, preparing food or cooking, and feeding children; and keeping animals outside of the living area (Annex 4, table 70). The percentage that strongly agreed with the importance of each increased significantly over time and with statistical significance in both LGAs (Annex 4, table 71).

### Adjusted Differences in Differences in Priority MIYCN Practices

Finally, we tested differences in differences using linear and logistic regressions that controlled for a child's age and sex; the mother's age, education, employment status, religion, group membership, and number of children; and the household wealth quintile. Table 4-2 presents our findings, indicating that even after controlling for socioeconomic and sociocultural differences in the intervention and comparison LGAs, the *C-IYCF Counselling Package* had a significant effect on women eating more during pregnancy than before pregnancy, early initiation of breastfeeding, early exclusive breastfeeding, exclusive breastfeeding for 6 months, timely introduction of solid foods, and meal frequency.

**Table 4-2. Summary Table of Findings, by Time Point and Location**

Indicator	Intervention Site			Comparison Site			Simple DID (Int - Comp)	P value	Adjusted DID (Predicted Int - Comp)	P value
	Baseline	Endline	P value	Baseline	Endline	P value				
Proportion of pregnant women who reported eating more during current pregnancy than before becoming pregnant	36.1	49.5	0.000	32.6	35.8	0.200	10.2	0.015	12.2	0.014
Proportion of children born in the last 24 months who were put to the breast within one hour of birth	60.5	72.7	0.000	29.5	29.2	0.884	12.5	0.000	13.2	0.000
Proportion of children born in the last 24 months who were NOT fed any liquid other than breastmilk during first 3 days	45.9	63.6	0.000	39	42.3	0.152	14.4	0.001	-13.9	0.000
Proportion of children 0–5 months of age who were fed exclusively with breastmilk	22.5	50.3	0.000	21.6	35.4	0.000	14.0	0.006	9.9	0.002
Proportion of children 0–5 months of age who were NOT given water during the previous day or at night	33.5	59.0	0.000	28.7	44.1	0.000	10.1	0.859	9.0	0.003

Indicator	Intervention Site			Comparison Site			Simple DID (Int - Comp)	P value	Adjusted DID (Predicted Int - Comp)	P value
	Baseline	Endline	P value	Baseline	Endline	P value				
Proportion of children 0–5 months of age who are predominantly breastfed	64.9	71.8	0.053	69.9	73.6	0.235	3.2	0.884	2.0	0.431
Proportion of children 12–15 months of age who were fed breastmilk during the previous day or at night	95	95.7	0.712	96.8	97.5	0.481	0.0	0.865	-0.2	0.526
Proportion of children 6–8 months of age who received solid, semi-solid or soft foods during the previous day or at night	70.1	65.8	0.391	81.6	58.5	0.000	18.8	0.003	7.2	0.016
Proportion of children 6–23 months of age who received foods from four or more food groups (MDD) during the previous day or at night	44.7	23.0	0.000	40.9	19.6	0.000	-0.4	0.871	-1.3	0.051
Proportion of breastfed and non-breastfed children 6–23 months of age who received solid, semi-solid, or soft foods the minimum number of times or more during the previous day or at night (MMF)	42.9	43.6	0.752	49.2	36.2	0.000	13.7	0.000	11.3	0.002

Indicator	Intervention Site			Comparison Site			Simple DID (Int - Comp)	P value	Adjusted DID (Predicted Int - Comp)	P value
	Baseline	Endline	P value	Baseline	Endline	P value				
Proportion of children 6–23 months of age who received a minimum acceptable diet during the previous day or at night (MAD)	38.0	32.6	0.012	41.2	31.4	0.000	4.4	0.157	4.5	0.652
Proportion of children 6–23 months of age who received an iron-rich food during the previous day or at night	25.3	14.4	0.000	20.8	10.4	0.000	-0.5	0.500	-0.4	0.200

# Chapter 5: Contextual and Environmental Factors that Enabled and Limited Success of the C-IYCF Counselling Package

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Successful scale-up of nutrition programs requires careful consideration of the “economics, political and social institutions and ideas, and the values, perceptions, and priorities of decision makers” (Gillespie 2001). Through this study, we assessed the context within which the *C-IYCF Counselling Package* emerged and was implemented, and how it enabled and/or limited success of implementation and the likelihood of sustainability and scale-up in Nigeria. To do so, we asked the following:

***How did the environment<sup>45</sup> or context enable or limit the impact of the C-IYCF Counselling Package?***

We were specifically interested in exploring four related sub-questions:

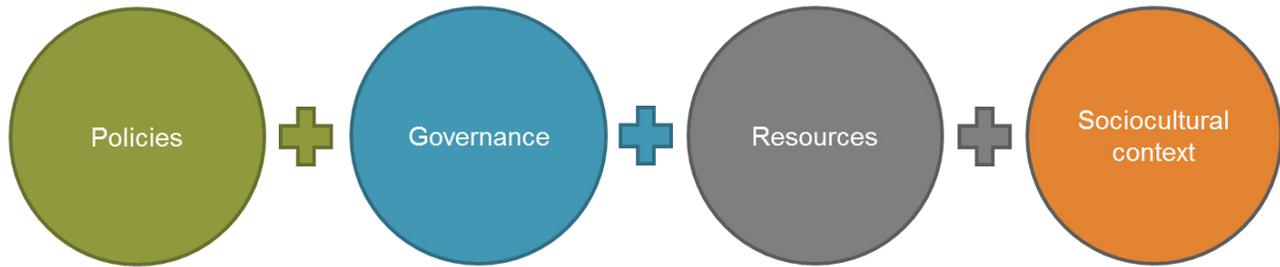
- Did national- and state-level **policies** and the nutrition agenda affect implementation and/or impact of the *C-IYCF Counselling Package*?
- Was there adequate **governance**, including leadership, advocacy, and management, for implementation of the *C-IYCF Counselling Package*?
- Did available **resources**, including human and financial resources, affect implementation and/or impact of the *C-IYCF Counselling Package*?
- Was the **sociocultural context** supportive of the implementation of the *C-IYCF Counselling Package* and the adoption of MIYCN practices?

In this chapter we present our findings related to a wide variety of factors that contribute to an enabling environment: inclusive of policies, governance, resources, and the sociocultural context (Figure 5-1). These findings come from our own experiences and observations, a summary of findings presented earlier in this report, a baseline health facility assessment, community leader surveys, and key informant interviews.

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<sup>45</sup> Gillespie et al (2013) explore how the enabling environment can be cultivated, sustained, and ultimately support reductions in malnutrition. They identify three domains of the enabling environment—knowledge and evidence, politics and governance, and capacity and resources—considered critical for translating political momentum into results in high-burden countries. The Assess, Innovate, Develop, Engage, and Devolve (AIDED) scale-up framework used by the breastfeeding gear model (BFGM) emphasizes the importance of wants and needs, absorptive capacity, and the “political, regulatory, economic, social, cultural and technological environments” (Bradley et al. 2012; Pérez-Escamilla et al. 2012). Finally, the EngenderHealth Supply–Enabling Environment–Demand (SEED) Programming Model, which was initially developed under the USAID-funded ACQUIRE Project for family planning/reproductive health service, describes the enabling environment as “equitable policies; adequate resources; good governance, management, and accountability; and supportive social norms, including the transformation of inequitable gender norms” (EngenderHealth 2011).

**Figure 5-1. Critical Elements of an Enabling Environment for Implementation of the C-IYCF Counselling Package**



In February 2015, before program implementation began (i.e., at baseline), 78 community leaders were interviewed. Two years later, after more than 18 months of program implementation (in February 2017), 92 community leaders were interviewed (Annex 4, table 26). Community leaders were purposefully selected to represent a range of community groups in each ward and were identified by Ward Focal Persons and other community leaders. The majority were male<sup>46</sup> and more than half (57.7 percent) of the community leaders surveyed at baseline had a secondary education or higher.

Key informant interviews were conducted before implementation, between December 2014 and March 2015, and after implementation, between November 2016 and March 2017, at the national, state, and LGA levels. At baseline, we interviewed federal officials (10), Kaduna State officials (5), and members of the LGA team (6) whose work was related to IYCF programming. (This included those responsible for approving and/or supervising activities and budgets/expenditures for nutrition-related activities.) At endline, we conducted 26 interviews with key informants who were selected based on their familiarity with, and knowledge of the design/development and adaptation of the *C-IYCF Counselling Package* in Nigeria and/or the selection of the Kajuru LGA as the intervention site. The respondents included government officials from the federal (4), state (7), and LGA (7) levels, as well as representatives of national (5) and international (3) donors, including several members of the research team. Interviews explored baseline resources and services, experiences with community-based activities (specifically, with community volunteers), priorities related to MIYCN and health, and at endline, perceptions of the *C-IYCF Counselling Package* implementation processes and outcomes.

Additional information on data collection and analysis can be found in Annex 3.

## Policies

When we started planning this evaluation, there were a number nutrition-related policies, national strategies, and protocols in place (Box 5-1). These included the *National Policy on Food and Nutrition in Nigeria* (2002), the *National Plan of Action on Food and Nutrition* (2004), and the *National Strategic Plan for Nutrition* (2014–2019).

<sup>46</sup> This was not measured at baseline, but at endline 85.9 percent were male.

Starting in 2010, UNICEF, USAID, and the Government of Nigeria began adapting UNICEF’s generic package to the Nigerian context. The final package was approved by the Federal Ministry of Health in 2012.

In November 2011, government of Nigeria joined the Scaling Up Nutrition (SUN) Movement, a sign that it recognized the importance of nutrition for development and was committed to addressing malnutrition.<sup>47</sup> During program implementation, the *National Policy on Food and Nutrition in Nigeria* was revised (2016), and the *National Strategy for Infant and Young Child Nutrition* (FMOH 2017) and the *Social and Behavior Change Communication for IYCF Five Year Operational Plan* were developed. These measures highlight the national-level commitment to IYCF.

According to interviews conducted at baseline, these policies and protocols—as well as data reported by Nigeria Demographic and Health Surveys and SMART Surveys—were available in the Federal Ministry of Health offices visited in Abuja. However, key informants from other federal ministries did not have them, and among those who did have them, their use was limited. Only those interviewed from the Ministry of Planning and Economic Growth reported reviewing health-related data.

In Kaduna, state officials rarely had these documents—even within the State Ministry of Health—nor did they consistently have or use reports from the Kaduna State nutrition surveys. Only one person had each of the nutrition-related survey reports. None of those interviewed at the LGA level had the referenced policies, protocols, and data reports. The inadequate distribution of national-level documents is not unusual and is often associated with a slow dissemination and uptake of new policies and protocols at the state and local levels.

Access to documents (printed or electronic), however, is only a first step. Governments must strengthen internal systems to communicate, implement, monitor, and evaluate new or updated policies and protocols. For example, in 2008, per federal policy, the state had established the State Primary Healthcare Development Agency (SPHDA), which was intended to streamline all activities associated with the primary healthcare centers, reduce bureaucracy, and improve efficiency. However, the implementation was truncated because of the weak political will of previous administrations.

#### **Box 5-1. Sample of Nutrition Policies in Nigeria**

1. 2011 National Policy on IYCF in Nigeria
2. 2011 Guidelines on Nutritional Care and Support for People Living with HIV in Nigeria
3. 2011 Guidelines on IYCF in Nigeria
4. WHO Guiding Principles for Complementary Feeding of the Breastfed Child
5. WHO Operational Guidance on Infant Feeding in Emergencies
6. WHO Baby-Friendly Hospital Initiative: Revised, Updated and Expanded for Integrated Care

<sup>47</sup> For more information see <http://scalingupnutrition.org/sun-countries/nigeria/>

## Governance

The development and dissemination of nutrition-related policies is important because of their influence on political will, decision-making, and governance in general. Governance is necessary for making and implementing decisions and providing public goods and services, including those relevant to nutrition. Responsibility for governing nutrition activities often falls among and across various government ministry lines and often requires multi-sectoral and multi-stakeholder platforms.

***“Good governance is perhaps the single most important factor in eradicating poverty and promoting development.”***

- former UN Secretary General Kofi Annan

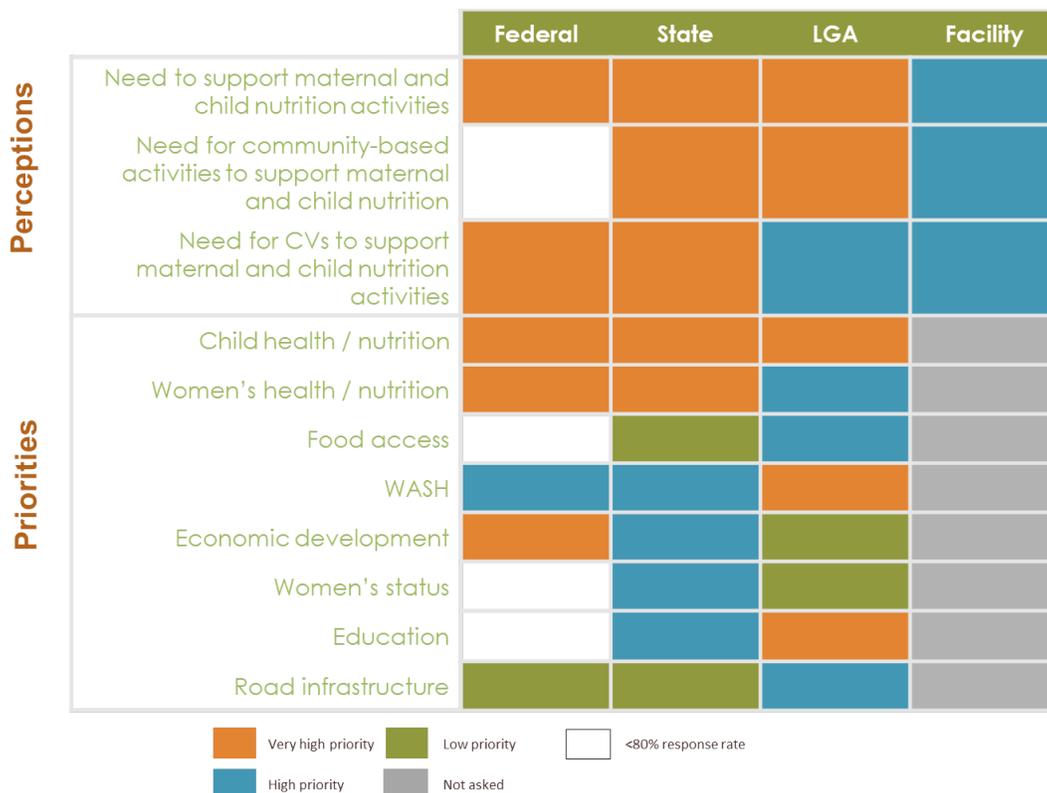
At the national level, several organizations, agencies and committees influence nutrition programming. The National Committee on Food and Nutrition (NCFN), established in 1990, for example, coordinates nutrition planning and programming; the National Agency for Food and Drug Administration and Control (NAFDAC) is responsible for the enforcement of the Code of Marketing of Breast-milk Substitutes; the Standards Organisation of Nigeria guides food manufacturers and maintains sanctions for products based on quality; and the Ministry for Labour and Employment is responsible for implementing the 18 weeks' maternity leave for mothers.

## Political Will

Global IYCF advocacy and efforts to build political will were key for laying the groundwork to adapt the generic *C-IYCF Counselling Package* for implementation on a national level. The Federal Ministry of Health led the process of adapting the package, which involved consensus building with multiple stakeholders, including both governmental and non-governmental agencies, and harmonizing the package with a number of relevant national training and communication materials, as well as relevant Nigerian policies. This process built political will in the country and resulted in rapid rollout of the package. By the end of 2014, when planning for this study began, the adapted Nigeria *C-IYCF Counselling Package* had been implemented by the Government of Nigeria and various development partners in approximately 21 of the 36 Nigerian states in the country.

One major indicator of political will is the understanding of and priority given to MIYCN. At baseline, when asked about their priorities and the needs of their LGA, state, or country, respondents said that there is a high or very high need to support maternal and child nutrition activities (figure 5-2). This support is an excellent first step toward moving MIYCN onto the nutrition agenda in Nigeria. While nutrition does seem to be a priority at various levels of government, understanding of the multi-sectoral nature of nutrition may need to be strengthened, particularly within non-health sectors.

**Figure 5-2. Priorities at the National, State, LGA, and Health Facility Levels**



Baseline interviews suggested widespread support for the C-IYCF Counselling Package at the national level. Most respondents agreed that there was need for MIYCN interventions and, specifically, for community-based investments to carry out MIYCN programs.

Our endline analysis suggested that the strong evidence base and advocacy efforts for MIYCN practices in the international and national arena played an important role in securing political commitment to tackle malnutrition and implement the C-IYCF Counselling Package in Nigeria, and specifically, in Kaduna State and the intervention LGA. Respondents across levels (international, national, and state), and especially within the donor category, said that IYCF programming received a boost once strong evidence emerged on two key ways of reducing malnutrition: (1) focusing on the first 1,000 days from pregnancy to two years of age; and (2) promoting exclusive breastfeeding in the first 6 months of life, and complementary feeding at 6 months with continued breastfeeding for two years or beyond. Respondents mentioned the important influence of the evidence presented in the 2013 Lancet series on nutrition.

High level conferences in Nigeria have also played an important role in generating awareness and bringing attention to the need to invest in multi-sectoral nutrition, as well as the importance of IYCF. A regional complementary feeding conference held in Abuja in 2015 brought together key stakeholders to share program experiences and data on what works from a variety of settings.

All respondents at the federal level—both government and donors—said that there is increasing awareness among political leaders and decision makers at the federal level that nutrition is a key development issue and ought to be prioritized. One sign of change is that nutrition leaders are being appointed to higher positions within various government ministries, departments, and agencies.

There is also a growing recognition of the multi-sectorial nature of nutrition, as reflected in the 2016 version of the Nigeria National Policy on Food and Nutrition, now widely used as an advocacy tool to justify scaling up nutrition interventions in the country. A respondent at the federal level in the Ministry of Agriculture explained how nutrition has been elevated within that ministry’s priorities, evidenced by the fact that nutrition has its own “division” whereas earlier, it had been only a “unit.”

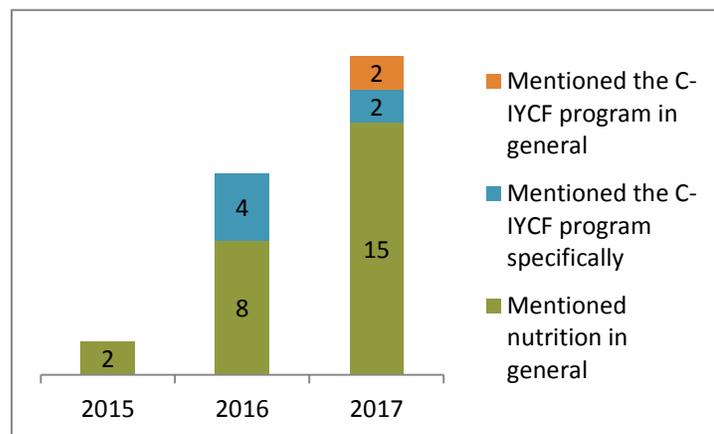
State-level respondents in Kaduna agreed that nutrition had become a greater priority among the leaders at the state level, both in Kaduna State and elsewhere. Respondents noted that there has been enormous interest in nutrition since a new governor took office in Kaduna State in 2015. They thought this would bode well for the sustainability of the C-IYCF Counselling Package in the state. Indeed, efforts are underway to ensure that LGAs have qualified nutritionists, and in Kaduna State, many LGAs are consolidating their committees to improve cross-sectorial coordination of nutrition interventions.

The current governor of Kaduna has taken actions that will improve the state healthcare system, which, respondents argued, should be conducive to the sustainability of all health programs in the state including IYCF. In particular, he has revived the State Primary Healthcare Development Agency.

Nonetheless, key informants at the state-level identified some gaps in political will and commitment. Despite the regular meetings of the Kaduna State multisector committee on food and nutrition, and even though state-level key informants described MIYCN as a high priority at baseline, they did not all consider promoting MIYCN to be within their scope or mandate. This view persisted through to endline, when key informants reported that nutrition is still seen as the exclusive domain of the health sector and that some in non-health sector do not understand the linkage between their sector’s mandate and nutrition.

A Google search of news related to nutrition in Kaduna State returned over 30 articles dating from January 2014 through August 2017 (figure 5-3) with coverage increasing over the same time period that the package was implemented. The *C-IYCF Counselling Package* itself was mentioned in eight unique articles, and the importance of exclusive breastfeeding and other C-IYCF practices was a common theme. At least five different outlets recognized the intervention LGA’s commitment of funds to promote IYCF, indicating significant interest.

**Figure 5-3. News Related to Nutrition in Kaduna State between 2014 and 2017**



Similarly, at the LGA level, key informants overwhelmingly supported the need for MIYCN and, specifically, for community-based actions to carry out these activities (annex 3, table 30). Only three respondents, however, strongly agreed with the need for community volunteers to support such activities. Responses from the closed-ended questions about MIYCN are corroborated by comments made in response to an

open-ended question. Overall, respondents considered MIYCN an important area of focus and called for MIYCN interventions to be made sustainable.

At baseline, the six key informants from the intervention LGA indicated they were willing to support various aspects of the *C-IYCF Counselling Package*. However, the high turnover of staff, specifically at the LGA level, negatively affected leadership for nutrition and ownership of the program. It was often difficult, and time-consuming, to coordinate activities as new personnel needed to be engaged on issues that had already been decided on with previous appointees.

## Decision-Making

How—where and by whom—decisions are made about activities and levels of funding greatly influence the success of IYCF programming. Key national-level informants who were interviewed at baseline indicated that funding and implementation decisions are based heavily on national policies and priorities.

Similarly, key state-level informants explained that the decision-making process within their state offices was strongly influenced by national priorities, state-level mandates, and the level of funding available for specific activities.

At baseline, LGA officials interviewed in the intervention site indicated that decisions regarding which activities to prioritize in the LGA followed a top-down process. However, respondents reported that the LGA council provided advice to the LGA chairman.

This top-down approach underscores the importance of sensitizing and/or re-sensitizing not only national- and state-level leaders on the importance of MIYCN programming, but also the LGA leaders and other key decision makers at the LGA and ward level, throughout program implementation.

## Coordination

Responses from federal-level key informants at baseline suggested that intersectoral collaboration is not strong, as offices tend to focus on their specific mandates. Indeed, one respondent mentioned the need for other sectors to become more involved in nutrition programming.

The situation was similar at baseline in Kaduna State, according to key informants at that level. One respondent explained that the importance of coordination was not well understood or prioritized. Fortunately, over the course of implementation a Kaduna State multi-sectoral food and nutrition committee was organized and met on a regular basis to coordinate nutrition-related programs and funding. Respondents considered the state's multi-sectoral food and nutrition committee to be a critical component in sustaining the program. The committee provides an institutional structure that is stable and remains active even as donor-funded programs come and go.

According to a recent report from Civil Society Scaling-Up Nutrition in Nigeria (CS-SUNN), the Kaduna State government has improved its ability to coordinate nutrition actions between different government agencies by 80 percent since 2015. Other key areas of improvement listed in the report included behavior change communication, high-impact interventions, advocacy and resource mobilization, research, monitoring, and evaluation, and the provision of commodities and equipment (Yatai 2017).

State level respondents explained that there are plans to establish multi-sectoral food and nutrition committees in each LGA to help coordinate nutrition programs and update the LGA chairman. Beyond these things, nothing more was mentioned about coordination at the LGA level.

### Private Sector Influence

According to a respondent with years of experience working in Nigeria, one of the challenges to promoting optimal breastfeeding is the infant formula industry's marketing practices, which are noncompliant with the *International Code of Marketing of Breast-milk Substitutes*, especially in remote towns and villages. It is not just the community that is vulnerable to the advertising messages, but also health care workers in remote regions. These marketing practices have persisted even though Nigeria has officially adopted the Code.

*It's still a challenge because they [the infant formula industry] are still coming in through surreptitious means. They come in gradually, to unsuspecting places. They will tell the clinic, "We want to assist you to organize," and then they give you the tally charts that carry the [company or brand] logo, carry the pictures, and if you are not a trained mind, you will not be able to see the subtle messages...even in our leaders, not too long ago, it was not considered a big issue if you fed the baby artificial foods, or fed it water while breastfeeding in the first 6 months...so you can imagine in the small villages...they see pictures of well-nourished babies on the walls and that influences them...*

— Donor respondent, Nigeria federal level (Endline)

## Resources

Respondents at all levels cited human and financial resources as the primary challenges to IYCF program implementation.

### Human Resource Capacity

At baseline and endline, key informants at all levels raised concerns about the under-staffed, underpaid, overburdened, and under-trained workforce in the primary healthcare sector that is largely held responsible for implementation and supervision of programs like the *C-IYCF Counselling Package*.

At baseline, key national-level informants had been involved in IYCF trainings and information, education and communication (IEC) campaigns; women's agriculture and empowerment initiatives; food and nutrition security improvement strategies, including small-scale farming; infrastructure to support IYCF in areas of conflict; and management of acute malnutrition in northern Nigeria.

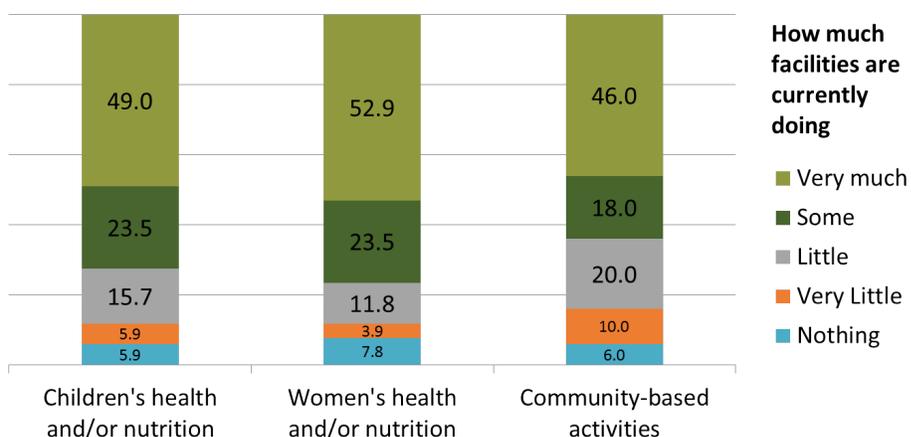
State-level key informants reported at baseline being involved in a variety of activities conducted at the state, LGA, and community levels. They included IYCF trainings; management of severe acute malnutrition; monitoring and evaluation of primary health care; strategic planning; budget development and allocation with input from development partners, NGOs, and communities (i.e., civil society); and agriculture capacity building in vulnerable communities with a specific focus on empowering female farmers. Most of the activities were funded by state ministries, but some—especially those involving IYCF—also received

support from international agencies and development partners. In addition, respondents from the State Ministry of Health and the Ministry for Local Government reported that they were involved in data review activities. When asked about the implementation of these activities, respondents mentioned several challenges, including staffing shortages, a heavy workload, and budgetary constraints.

At baseline, LGA staff had experience conducting health talks, bi-annual Maternal and Child Health Week activities, and annual Breastfeeding Week events. They also reported verifying data, monitoring and supervising activities conducted in the LGA, and conducting vaccination campaigns.

When those in charge of health facilities were interviewed at baseline, approximately three quarters reported experience doing “some” or “very much” in the area of children’s health and/or nutrition and in the area of women’s health and/or nutrition (figure 5-4). Two thirds (64 percent) reported doing “some” or “very much” work at the community level. However, only 33.3 percent of women interviewed at baseline had ever spoken with any health worker or volunteer about breastfeeding or how to feed children in a health facility and only 2.9 percent had done so during a support group meeting (Annex 4, table 25), suggesting either a lack of capacity, time, or reach on the part of health services.

**Figure 5-4. Health Facilities Usual Nutrition-Related Activities at Baseline**



When we asked respondents whether, and how, the project would continue to function if the SPRING study coordinator was no longer in her position, three respondents said that they had faith that the LGA nutrition focal person (or perhaps someone else dedicated to overseeing program implementation), with support from UNICEF and/or the State Nutrition Office, could take over the responsibilities.

We also explored human resources at health facilities in the intervention LGA and found that facilities were under-staffed. At the time of selection, there were 42 public and private health facilities in the intervention site<sup>48</sup> for an estimated population of 140,433 (approximately 9,550 children under two). According to the rapid facility assessment conducted before implementation of the program in the intervention site, only half (21) of those health facilities had two or more health workers on staff. The other 21 were staffed by a single person. (Shortly after this assessment this dropped to 20 health facilities.)

<sup>48</sup> Following a rapid facility assessment, we determined that there were 55 health facilities in Kajuru LGA.

## Financial Resources

Lack of financing for nutrition is one of the biggest barriers to reducing undernutrition. In its *Multi-sectoral Nutrition Strategy* (2014), USAID highlights the importance of financial systems, stating that political will for nutrition must be translated into financial support, at both the national and sub-national levels. Key informants explained that while current funding and commitments for the *C-IYCF Counselling Package* look optimistic, there will always be competition for attention, political will, human resources, and, particularly, funding with other health and nutrition-related programs.

At baseline, key informants expressed concern about the lack of funding for nutrition. To address this, over the course of *C-IYCF Counselling Package* implementation, a number of international meetings were organized to disseminate the latest evidence on nutrition, increase awareness, build political will and donor commitment, and improve funding for nutrition globally. This evidence and enthusiasm for nutrition has also influenced political will in Nigeria.

Respondents agreed that funding for community-based promotion of IYCF has increased internationally in recent years, although they also recognized that there was need for more.

Respondents offered reasons why it is difficult to secure nutrition funding, especially for IYCF programs: first, they said, it is difficult to show results with IYCF.

Second, IYCF competes with community-based management of acute malnutrition (CMAM), immunization programs, and funding for other health priorities, such as malaria. Finally, health issues also compete with non-health issues.

Fortunately, just as awareness of the importance of nutrition has increased over the last few years in Kaduna State, so too has funding. The recognition of nutrition as a development issue has led to the establishment of a state budget for nutrition, which includes IYCF. Having a state budget is a prerequisite for access to any state funding. Given the decentralized nature of funding in Nigeria, advocates are now working to ensure that the LGAs institute budgets for nutrition as well.

Similar increases in funding commitments have been observed at the LGA level. At a Kaduna Ministry of Health and UNICEF organized retreat in Abuja in 2016—to which the chairmen and heads of the health departments of all the state's LGAs were invited—a resolution was signed in which each LGA pledge to commit 500,000 naira per month to implementing the *C-IYCF Counselling Package*.

However, this amount of funding was calculated based on the assumption that 117 community volunteers and 39 health workers would be trained and supported by 10 monitors, far less than the scale at which the C-IYCF package was implemented in the intervention site (see Chapter 2 for additional information on what was included in the intervention).

### Kaduna's Fight Against Malnutrition

"The Kaduna State Emergency Nutrition Action Plan, KADENAP was launched in January 2017 as a task force with the sole purpose of ensuring that the disturbing statistic on malnutrition in Kaduna is reversed through concrete actions to provide food for the vulnerable...Governor El-Rufai stated that the Kaduna State Government has taken steps to address hunger and starvation in the state, where he disclosed that his administration had last year set aside N300 million to take care of 50,000 malnourished children through UNICEF."

Kaduna State Government website  
<https://kdsg.gov.ng/ummi-el-rufai-leads-kadunas-fight-against-malnutrition>

Commitment to fund implementation of the package may also be affected, according to key informants, by competition for funding among various IYCF programs. Both government and donor respondents, especially at the international and federal levels, said that treatment interventions, such as CMAM, continue to receive the overwhelming share of nutrition dollars and are prioritized over prevention interventions, like IYCF, that cost less.

Respondents expressed concern that the amount of money allocated to implementation by the LGA represented a decrease in the amount that community volunteers have been reimbursed for transportation to monthly review meetings (their primary incentive) over the course of implementation. They expressed concern that this would disincentive community volunteers or result in a reduction in their motivation to volunteer.

*It is not as if support groups will die off completely [if community volunteers no longer get their transportation incentives] but community volunteer commitment will decrease. That is very obvious.*

— Ward Focal Person, Intervention LGA (Endline)

However, respondents expressed concern that there was no funding to add more community volunteers. Fewer community volunteers means that demand for support groups may not be met. Moreover, if government funds are insufficient to reimburse community volunteers for transportation to and from monthly review meetings at the current level of 1,000 naira per month, motivation is likely to be affected.

## Sociocultural Context

Sociocultural cultural context includes factors such as political and economic stability, as well as social support from all levels. Information on the sociocultural context came from program documents, news sources, and interviews with community leaders about their attitudes toward the *C-IYCF Counselling Package* and MIYCN practices. Although not included here, it is important to note that C-IYCF trainings of health authorities, health workers, and community volunteers, resulted in positive attitudes or social support for community-based IYCF programming and MIYCN practices (see Chapter 3). Women's own reports of control of resources and decision-making power is another measure of the sociocultural context described in greater detail in Chapter 4.

Political instability in the region threatened the ability of the LGA staff, health workers, community volunteers, and community leaders to promote optimal MIYCN practice in the intervention site. This situation has created a considerable amount of turnover of LGA personnel and uncertainty and fear among those required to venture into remote communities. Although the intervention LGA was generally stable socially and politically, over the course of implementation, according to security reports and feedback from community members, kidnapping and unrest increased in some wards within the LGA. Indeed, one community volunteer was kidnapped (and, fortunately, released unharmed).

Community leaders are thought to play a crucial role in bringing about change in social norms and supporting sustained behavior change in their communities. While ten were included in C-IYCF trainings and others were reached through community mobilization events, they were not the primary target audience. The program did, however, actively engage WDCs, which are made up of community leaders, in the process of nominating community members to serve as C-IYCF community volunteers and forming

support groups. In addition, community leaders often helped encourage participation in support group meetings, and participated in community mobilization events. Their knowledge and attitudes regarding maternal nutrition was relatively high even at baseline and, by endline, they were even more likely to know and believe in the importance of a priority MIYCN practices, though findings also identified some room for improvement.

According to community leaders, at endline, 72.9 percent had encouraged a community member to seek care at a health facility at least once during the intervention period (Annex 3, table 76) and 91.2 percent had encouraged a community member to participate in at least one *C-IYCF Counselling Package* activity at during the same period (Annex 3, table 76).

# Chapter 6: Conclusions and Recommendations

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## Conclusions

This evaluation demonstrated the effectiveness of the *C-IYCF Counselling Package* when implemented at scale. Selected findings related to each of the study objectives are presented below, followed by recommendations for improving implementation and increasing impact.

### Objective 1: Assess planning and implementation of the C-IYCF Counselling Package

Planning and implementation of the *C-IYCF Counselling Package* in the intervention site benefited from several years of advocacy, adaptation, translation, and experience implementing it in other parts of the country. The planning process, which followed UNICEF's *Planning Guide*, was conducted with the active participation of national, state, and LGA officials; Ward Development Committees (WDCs); and other community leaders.

Key informants interviewed at endline consistently reported that plans for implementation of the *C-IYCF Counselling Package* were well-thought out and well-communicated to the various stakeholders. This positive feedback was due, at least in part, to the generous amount of time allotted for planning. Furthermore, roles and responsibilities were clearly and widely communicated—in writing and verbally. Each member of the implementation team and each actor at the state-, LGA-, and community-level had a clear understanding of his or her role and responsibilities and the expectations of others. This approach resulted in community members, leaders, health workers, and LGA staff being highly supportive of, committed to, and engaged in the program.

According to monitoring data, as well as data from surveys and key informant interviews, implementation closely adhered to the initial plan for C-IYCF activities, and engaged actors at all levels in programming, monitoring, and support. It was implemented efficiently, with a reasonable amount of funding, so that the program could more feasibly be sustained, replicated, and expanded to other LGAs in Kaduna State and elsewhere in Nigeria. Key informants interviewed at endline considered this approach to be highly sustainable.

It also helped to—

- Identify and prioritize practices that might be harder to change, such as giving water to breastfed infants under 6 months of age
- Create strong working relationships between UNICEF/Kaduna, the study coordinator, and stakeholders at the state and LGA levels
- Link health workers to community volunteers
- Facilitate the formation of social networks and the organization of income generation, and savings and loan activities by program participants
- Motivate community volunteers, health workers, and LGA staff.

All community volunteers conducted at least one support group meeting per month and all support group meetings were attended by the target number of participants. Based on monitoring data, the C-IYCF support groups reached 7,358 unique people over the 18 months of implementation. Through support group meetings, community volunteers made 64,132 contacts with community members. Almost one third (29.2 percent) of the randomly surveyed women<sup>49</sup> reported having participated in one or more C-IYCF support group meetings. This is what was expected in a population-based survey given the number of community volunteers who were trained in each of the 10 wards throughout the LGA.

In addition, community volunteers conducted the two home visits per month that they were asked to conduct. Monitoring data indicates that community volunteers conducted 8,614 home visits, reaching 4,467 unique people. Not surprisingly, only 18.3 percent of the randomly surveyed women reported having received a C-IYCF home visit.

The package also reached approximately 4,800 community leaders and other community members through sensitization and mobilization events, as well as others through the work of health facility staff and diffusion of messages from participants to non-participants. At endline, more than two thirds of the randomly surveyed women (62.6 percent of pregnant women and 71.8 percent of mothers of children under two) in the intervention site reported having seen the C-IYCF counselling card images, which was our proxy for program participation.

The total cost of implementation over 18 months was \$152,431<sup>50</sup>. This includes the cost of training of health workers and community volunteers, routine management, printing of materials and counselling cards, transportation to and from review meetings, and refreshments provided during review meetings. This is equivalent to \$12.89 per unique person reached through a support group or home visit if training costs are included and \$8.43 if training costs are excluded as a fixed cost. For each contact through a support group meeting or home visit would be \$2.10 if training costs are included and \$1.37 if training costs are excluded.

There are several important considerations to make when reviewing these numbers. For example, the cost of implementation would likely be higher in locations without a functioning health care system and supportive local government which takes responsibility for monitoring and supervision. However, the cost of introducing the program might be lower in communities where support groups or care groups are already established and functioning. Also, participation in just one support group, counselling session, or home visit is unlikely to change MIYCN practices or improve nutrition. The *C-IYCF Counselling Package* is designed to engage pregnant women and mothers of children under two during multiple contact points throughout the first 1000 Days. Finally, per person or per contact costs may be overestimated since they are based solely on monitoring data from C-IYCF support group meetings and home visits, and do not reflect the additional diffusion of messages through families and other community members that is likely to occur.

For a comparative perspective on the cost of the *C-IYCF Counselling Package*, SPRING estimated through a rigorous costing study the cost per child reached with micronutrient powder (MNP) sachets for nine

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<sup>49</sup> These included pregnant women and mothers of children under two years of age. In a few cases, the child's mother was not available. In such cases, the primary caregiver was interviewed.

<sup>50</sup> All monetary amounts are in US dollars.

months, in Uganda, to be \$32.63 following a community-based implementation strategy and \$51.41 using a facility-based strategy. In another program, the International Rescue Committee (IRC) estimated that community management of acute malnutrition (CMAM) cost approximately \$100 per child treated in Niger and between \$100 and \$300 per child treated in Mali (IRC 2016). In Malawi, Concern Worldwide calculated that the cost per child treated in CMAM was between \$140 and \$170 in 2007 (Wilford, Golden, and Walker 2012). These findings are relatively consistent with the World Bank estimate of \$90-110 for the treatment of one episode of wasting or severe acute malnutrition (SAM) (Shekar et al. 2017). The impact of the *C-IYCF Counselling Package* on priority MIYCN activities (described below) suggests a strong potential to prevent malnutrition among children at a much lower cost than the cost of treating both moderate and severe acute malnutrition.

Although the estimated cost of implementing the *C-IYCF Counselling Package* seems relatively low, there are at least two sets of challenges to continued implementation of the *C-IYCF Counselling Package* in the intervention site and through scale-up. The first challenge is the competition with other health and nutrition-related programs for political will and funding. This may be less of an issue or may be an easier “win” if policy makers from non-health sectors are adequately sensitized on the multi-sectoral nature of nutrition and their potential role in promoting nutrition – directly or indirectly. Second, the health workers who play an important role in implementing the *C-IYCF Counselling Package* are chronically over-worked, underpaid, and under-trained.

## **Objective 2: Evaluate the impact of the C-IYCF Counselling Package on the knowledge and counselling/communication skills of health workers and community volunteers**

If the *C-IYCF Counselling Package* is to affect MIYCN practices, those responsible for various aspects of implementation—particularly health workers and community volunteers—must understand and appreciate their roles and responsibilities, have knowledge of optimal MIYCN practices and why they are important, and have the skills and tools needed to promote and support the adoption of those practices. Findings strongly support the conclusion that the C-IYCF trainings were successfully implemented in the intervention site and had the intended impact on knowledge and attitudes among health workers and community volunteers. These findings are fully consistent with qualitative data collected through in-depth interviews with key stakeholders at the national, state, and LGA levels (see Chapter 5).

At baseline, **health workers** who helped train and support community volunteers already knew a number of key MIYCN practices promoted by the program. By the end of the training, their knowledge had improved, and they understood and felt confident in their role implementing the C-IYCF program. By endline, they strongly believed in the importance of the following practices for the health of the mother and child:

- Eating and resting more during pregnancy and lactation
- Initiating breastfeeding immediately or within one hour of delivery and breastfeeding on demand (including how to recognize demand)
- Breastfeeding exclusively for the first 6 months of life (and what this means)

- Feeding children soft or semi-solid foods and a diverse diet starting at 6 months of age
- Continuing breastfeeding for up to 2 years and beyond

However, their understanding of the importance of introducing complementary foods (soft or semi-solid foods) to children when they are 6 months old declined over time. Although immediately after the training, 93.4 percent of health workers knew that children should be given such food at 6 months, just a little over half knew this at endline (56.7 percent), and the remaining 43.3 percent thought that children should be 8 months old or more before receiving solid, semi-solid, or soft food.

**Community volunteers** who conducted monthly support group meetings and one-on-one counselling demonstrated significant improvements in both knowledge and attitudes compared with pre-training assessment results. At endline, they also strongly believed that the following practices were important for the health of a child:

*Satisfaction with program activities among community leaders, volunteers, and health workers was clear and likely contributed to their enthusiasm and motivation as evidenced by their level of participation and the LGA's commitment to fund implementation of the program.*

- Feeding children micronutrient-rich foods
- Initiating breastfeeding immediately after birth and on demand (including how to recognize demand)
- Breastfeeding exclusively for 6 months (and what this means)
- Continuing to breastfeed for at least two years
- Feeding children a diverse diet
- Handwashing with soap at critical moments

When it came to the introduction of complementary food, knowledge remained quite low. The percentage of community volunteers who knew that children should first be given solid, semi-solid, or soft food at 6 months of age never reached more than 41.2 percent.

### **Objective 3: Evaluate the impact of the C-IYCF Counselling Package on knowledge, attitudes, and practices among pregnant women and mothers of children under 2**

Implementation of the *C-IYCF Counselling Package* resulted in improvements in maternal knowledge, attitudes, and practices in the intervention LGA. However, it is important to recall that only 69.3 percent of the randomly surveyed women reported having seen the C-IYCF counselling card images in use and only 29.2 percent reported having participated in a C-IYCF support group meeting. Ideally, a woman would attend support group meetings monthly throughout her pregnancy and as often as possible until her child reaches 2 years of age to reinforce and support behavior change. However, only 6.2 percent of women surveyed had attended more than six support group meetings. The limited reach was the direct result of the number of community volunteers and support groups in each community and the low

exposure was most likely due to the short duration of the intervention (18 months). As a result, our findings may underestimate the impact of C-IYCF activities over a longer period of time.

Knowledge, attitudes, and practices about eating during pregnancy improved more in the intervention site than in the comparison site. Knowledge of the importance of eating more food during pregnancy improved in both sites, but was still low at endline—at less than 50 percent. The proportion of women who reported eating more during pregnancy in the intervention site increased by 23.8 percentage points ( $p < 0.05$ ) while remaining unchanged at around 35 percent in the comparison site.

There were also impressive improvements in knowledge, attitudes, and practices related to early initiation of breastfeeding and exclusive breastfeeding as compared to those that occurred in the comparison site. Knowledge and attitudes related to some IYCF practices also improved in the comparison site, but less so than in the intervention LGA.<sup>51</sup> In the intervention site, the percentage of children born in the last 24 months who were put to the breast within one hour of birth increased by more than 12 percentage points, while it remained constant in the comparison site ( $p < 0.01$ ). Similarly, the proportion of infants 0 to 5 months of age who were fed exclusively with breastmilk increased by 28 percentage points in the intervention site. In the comparison site, the proportion improved only by 14 percentage points ( $p < 0.01$ ). Both differences in differences were statistically significant ( $p < 0.01$ ).

The intervention also appears to have had a protective effect on the timely introduction of complementary food and meal frequency. While the percentage of infants 6 to 8 months of age who received solid, semi-solid or soft food during the previous day remained statistically constant in the intervention site, it declined by 23 percentage points in the comparison site ( $p < 0.01$ ). Similarly, the proportion of breastfed and non-breastfed children 6 to 23 months of age who received solid, semi-solid, or soft food the minimum number of times or more (minimum meal frequency, or MMF) remained constant in the intervention site, while it declined by 13 percentage points in the comparison site ( $p < 0.01$ ). These differences in differences were also statistically significant ( $p < 0.01$ ).

Although the percentage of women who agreed or strongly agreed with the importance of feeding children a diverse diet was high and increased more in the intervention site than in the comparison site, by endline, the percentage of children 6 to 23 months of age who received foods from four or more food groups (minimum dietary diversity, or MDD) during the previous day declined in both LGAs as did the percentage who received a minimum acceptable diet (MAD). However, the decline in prevalence of MDD was slightly less in the intervention site (16.8 percentage points) than in the comparison site (17.2 percentage points) ( $p = 0.071$ ).

The findings related to MDD remind us that behavior change often requires a significant and sustained investment, and that not all target women—or influencers—were reached by the package in the intervention LGA. Furthermore, 18 months of community-based IYCF promotion may not be enough to change some deeply ingrained behaviors, which are influenced by social norms, such as women's decision-making power and their control of resources. Dietary practices, in particular, are also influenced

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<sup>51</sup> Improvements in knowledge, attitudes, and practices in the comparison site were unexpected since neither the *C-IYCF Counselling Package* nor, to our knowledge, any other IYCF-related intervention was implemented in this site during this same time period. Nonetheless, it is for this reason that our focus is on differences in differences rather than improvements in the intervention LGA alone.

by affordability and availability of food, which was negatively affected by the significant inflation, fuel shortages, and spikes in fuel prices which occurred during the intervention period.

### Objective 4: Assess environmental or contextual factors that enable or limit the impact of the C-IYCF Counselling Package

Findings from our assessments and in-depth interviews indicated a supportive and enabling environment for the C-IYCF Package in Nigeria, and particularly in Kaduna State and the intervention LGA. Interest in nutrition—and reducing malnutrition—was high, and political commitment moved beyond talk and into action. This support was evidenced by the intervention LGA's commitment to continue to fund implementation of the C-IYCF Counselling Package. Our findings of the factors that enabled and limited the impact of the package are presented in table 6-1.

*Implementing at scale – in all wards of the LGA – fostered social change and momentum for change in priority MIYNC practices.*

**Table 6-1. Summary of Factors Enabling and Limiting Impact of the C-IYCF Counselling Package in Nigeria**

Types of Factors	Policies	Governance	Resources	Sociocultural Context
<b>Enabling Factors</b>	<ul style="list-style-type: none"> <li>In November 2011, the Federal Republic of Nigeria joined the SUN Movement</li> <li>Availability of nutrition related policies, strategies, and protocols, particularly the <i>Nigerian IYCF Policy</i> and <i>Nigerian C IYCF Counselling Package</i></li> <li>Development of the <i>National Policy on Food and Nutrition in Nigeria</i>, the <i>National Strategy for Infant and Young Child Nutrition</i>, and the <i>Social and Behavior Change Communication for IYCF Five Year Operational Plan</i> were all developed during program implementation,</li> </ul>	<ul style="list-style-type: none"> <li>Access to survey data related to maternal and child nutrition from DHS and SMART surveys</li> <li>Engagement of national, state, and local governments in nutrition programming and enforcement of regulations</li> <li>“Top down” and “bottom up” processes built political will for and ownership of the program</li> </ul>	<ul style="list-style-type: none"> <li>Allocation and release of funds by the intervention LGA for implementation of the <i>C IYCF Counselling Package</i></li> <li>Opportunities for financial support from UNICEF through the State Ministry of Health and other development partners</li> </ul>	<ul style="list-style-type: none"> <li>Social and political stability</li> <li>Community volunteers, who were from the communities where they were asked to work, were familiar with community members’ wants and needs</li> <li>Support for the C IYCF Counselling Package and belief in optimal MIYCN practices among Ward Development Committee members and other community leaders</li> </ul>

Types of Factors	Policies	Governance	Resources	Sociocultural Context
<b>Limiting Factors</b>	<ul style="list-style-type: none"> <li>• Insufficient understanding of the multi sectoral nature of nutrition programming</li> <li>• Competition from other programs</li> <li>• Inappropriate marketing of breastmilk substitutes and follow up formula</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient understanding of the multi sectoral nature of nutrition programming</li> </ul>	<ul style="list-style-type: none"> <li>• Severe understaffing at health facilities</li> <li>• Lack of funding for supervision or mentoring visits to health workers and community volunteers</li> <li>• Insufficiency of funding committed by the local government (less than that provided by UNICEF)</li> </ul>	<ul style="list-style-type: none"> <li>• Security risks limit health workers' ability to conduct supervisory visits</li> <li>• Security situation affected the ability and willingness of health workers to conduct supervisory visits</li> <li>• Lack of importance given to priority MIYCN practices among community leaders</li> </ul>

### **Policies**

Relevant policies, including national strategies and protocols and the adapted *C-IYCF Counselling Package* were in place when implementation began in the intervention site. Several new related policies were developed while this study was being conducted, highlighting the country's commitment to IYCF. Furthermore, the government of Nigeria joined the SUN Movement in 2011, recognizing the role of nutrition as a development issue and committing to addressing malnutrition.

Findings from our in-depth interviews indicate that maternal and child nutrition and health are a high priority at all levels of government. Nonetheless, several key informants felt that understanding of the multi-sectoral nature of nutrition and ways of supporting nutrition is lacking, particularly in non-health sectors.

The package's successful implementation elsewhere in the country made it possible for it to be readily accepted and successfully launched in the intervention LGA. Key informants suggested that there were nutrition champions at all levels of government. One way that this was demonstrated was by the Nigerian government's interest in evaluating the package and generating evidence to guide future decision-making.

Another strong indicator of the political support for the intervention is that the LGA allocated and released (at the end of the study period) resources to support the project, such as travel per diem for supportive supervision and program oversight. Nonetheless, key informants expressed concern that, despite current commitments to fund IYCF programming, implementers of the *C-IYCF Counselling Package* will need to compete for attention, funding, and human resources, with other health and nutrition-related programs.

### **Resources**

Funding for implementation came from UNICEF, funneled through the State Ministry of Health. While this funding was adequate, it is unclear whether funding can be secured for continued implementation in the intervention site or other LGAs. The commitment of the intervention LGA to provide 500,000 naira per

month or \$1,587 USD<sup>52</sup> for *C-IYCF Counselling Package* implementation is a positive sign, but this amount is less than that provided by development partners during the intervention.

While staff within the government and the health system demonstrated a high level of commitment to the program, they are challenged by high turnover and vacancies, as well as irregular or minimal remuneration. Furthermore, they are often overburdened with a wide range of responsibilities, which resulted in delays in C-IYCF activities and/or lower than expected participation. Furthermore, health facilities maintain limited hours of operation.

Finally, the macroeconomic situation has deteriorated over the course of implementation in Kaduna State and throughout Nigeria. There has been significant inflation and a decline in the value of the naira, as well as fuel shortages and accompanying spikes in fuel prices—all of which result in higher prices of foods and major staples. Compounding matters, government revenue has dwindled, thus restricting cash in circulation and weakening the purchasing power of households.

### **Sociocultural context**

Apart from political will, the sociocultural environment is an important determinant of program success and, particularly, behavior change. Unfortunately, during the period of implementation, there was insecurity<sup>53</sup> and unrest in some wards in the intervention site. Both of these factors can contribute to food insecurity, reducing production and accessibility (availability and affordability) of food, particularly diverse, nutrient-rich foods.

Community leaders, who play an important role in behavior change, shifting social norms and providing social support, were involved in C-IYCF activities. Even at baseline, they knew and appreciated the importance of several priority MIYCN practices: eating micronutrient-rich foods; eating and resting more during pregnancy; eating and resting more during lactation; initiating breastfeeding immediately after birth and on demand; breastfeeding exclusively for six months (and what this means); and washing hands with soap before feeding a child. Both knowledge and attitudes appear to have improved over the course of program implementation.

However, even at endline, 20 percent of community leaders still did not fully understand their role and responsibilities related to the *C-IYCF Counselling Package*. They did not learn that a thin or malnourished mother can produce “enough” breastmilk for a child under 6 months old, the early signs of hunger, or when to start feeding children complementary foods (soft or semi-solid foods). It also appears that they were not fully convinced of the importance of continued breastfeeding for at least two years or the negative consequences of waiting until a child is 1 year old before feeding him or her animal source foods. This finding is concerning given the influence these leaders have on behavior change. Additional formative research would help to better understand social norms and cultural beliefs, and to inform strategies to more actively engage community leaders in the promotion of IYCF (e.g., community mobilization activities and media campaigns), and to position community leaders as advocates and influential members of the LGA.

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<sup>52</sup> We used the June 2016 rate of 315 Naira per USD.

<sup>53</sup> See for example <http://leadership.ng/2017/06/08/incessant-kidnapping-reps-summon-ministers-service-chiefs/>

## Recommendations

Based on findings from the study and inputs from key stakeholders in Nigeria, the study team developed a series of recommendations for the FMOH, SMOHs, UNICEF, and other stakeholders to strengthen implementation of the *C-IYCF Counselling Package* in Nigeria. These recommendations are also relevant for other countries and contexts where the package is being adapted, updated and/or implemented.

### A. Policies and systems

1. Review, update, and/or enact relevant multi-sectoral policies and legislation to support, promote, and protect IYCF services as a right to every child (Child's Rights Act), applying a systems lens and recognizing community-based IYCF services as one of many interventions required for improving children's wellbeing.
2. Review existing marketing practices for breast-milk substitutes and strengthen implementation and monitoring of the International Code of Marketing of Breast-milk Substitutes to protect, promote, and support optimal IYCF.
3. Establish and maintain clear communication and coordination mechanisms between nutrition-related programs and sectors, particularly those operating in the same geographic areas, to avoid duplication of effort and maximize opportunities to build synergies and harmonize program activities.

### B. Planning and management

1. Share evidence and essential MIYCN policies, protocols, job aids, and relevant data with key stakeholders to raise awareness and understanding of MIYCN as a multi-sectoral priority.
2. Orient, sensitize, and mobilize stakeholders at all levels, including government officials, community leaders, and health workers, on an ongoing basis to strengthen their role in advocating for and implementing *the C-IYCF Counselling Package*.
3. Leverage existing systems and services, when feasible and appropriate, for implementation and monitoring of the *C-IYCF Counselling Package* (e.g., information systems; supervision systems; human resource management systems; and routine water, sanitation, extension, education, and health services).
4. Be realistic about the capacity of community agents, especially volunteers. Establish appropriate job descriptions and qualifications, develop low-literacy monitoring tools and reporting forms.

### C. Funding

1. Develop cost projections, ideally for a ratio of 1:30 community agents per children under two (White and Mason 2013), that includes adequate remuneration, incentives and support for conducting the *C-IYCF Counselling Package* activities.
2. Use these projections to build support for local, state, and national funding for sustained implementation of *the C-IYCF Counselling Package* at scale, recognizing that behavior change takes time, that population growth is dynamic, and that there are always newly pregnant women

and mothers entering the system who require support throughout their pregnancies and during the first two years of their children's lives.

#### **D. Training and re-training**

1. Develop training cascades that routinely train a sufficient number of master trainers, recognizing that there will always be turnover, and prioritize state-level trainers for more cost-effective scale-up of trainings.
2. Explore options for integrating C-IYCF training into pre-service education, as well as continuing education programs for health providers and community agents.
3. Ensure that all C-IYCF trainers have the knowledge and skills needed to conduct trainings and that participants are, in turn, gaining the knowledge and skills needed to implement the *C-IYCF Counselling Package*.
4. Emphasize and/or reinforce communication, counselling, and facilitation skills during training and supervision, ensuring that topics for C-IYCF activities are selected based on participants' interests, needs, and challenges. Allow time during training to practice these skills, preferably in a community setting. (The time to practice counselling skills in a community setting is often eliminated or truncated when training time and/or funding is limited.)

#### **E. Supervising, mentoring, and monitoring**

1. Designate and train managers at all levels in supportive supervision, mentoring, and monitoring, following guidance provided in the *C-IYCF Counselling Package*.
2. Integrate priority MIYCN indicators into information systems to ensure that these data are routinely captured, reported, and used to facilitate decisions about future programming. This measure would avoid the creation of a parallel system of data collection that over-burdens health workers and often leads to non-compliant or poor quality data.
3. Monitor implementation to identify and address challenges or bottlenecks as they are identified.
4. Provide routine and timely feedback to health workers and community agents to underscore the critical role they play and to help ensure that they execute their role in implementing the *C-IYCF Counselling Package*.

#### **F. Expanding reach**

1. Develop strategies to identify, sensitize, and mobilize pregnant women and mothers from marginalized and vulnerable families. (These population groups may not be willing or able to participate in regular C-IYCF activities.)
2. Prioritize the participation of pregnant women and mothers of children under 2 years in C-IYCF support group meetings, but encourage the participation of other family members, such as mothers-in-law, grandmothers, and fathers, when space allows.

3. Conduct community engagement activities that actively engage family members and other key influencers, including community and religious leaders, to facilitate change in social norms and ultimately enable change in individual behaviors.

#### **G. Supporting behavior change**

1. Conduct formative research on hard-to-change, deeply ingrained MIYCN behaviors, to identify enablers and barriers to the adoption of improved practices and to inform implementation of the *C-IYCF Counselling Package*.
2. Include additional, locally-relevant MIYCN topics and practical food demonstrations, when possible, in C-IYCF support groups and other CIYCF activities, to increase participation, maintain interest, and build capacity.
3. Identify opportunities to reinforce C-IYCF messages through the formal health system, and through mass media and other social and behavior change programs and platforms.
4. Coordinate and collaborate with other programs that aim to increase women's empowerment, as well as access to and the availability of diverse foods and household resources that can be used for their family's nutrition, health and hygiene (e.g., agricultural extension, income generation, saving and loan, and WASH programs).



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