



# Results of an Impact Evaluation of USAID Advancing Nutrition Activities in the Kyrgyz Republic

## Focus on Infant and Young Child Feeding Outcomes

### Background

The Kyrgyz Republic, a mountainous country in Central Asia, formerly part of the Soviet Union, is classified as a lower middle-income country (Wigle et al. 2020). The prevalence of stunting and wasting are low for a lower middle-income country at 7.0 percent and 0.8 percent, respectively (MOH of the Kyrgyz Republic et al. 2021). However, approximately half of pregnant women and 21 percent of children 6–59 months have some degree of anemia; the prevalence of iron deficiency is also high (e.g., 47 percent among children 6–59 months) (MOH of the Kyrgyz Republic et al. 2021). The country has made substantial progress on nutrition since 2012, but some nutrition-related indicators are still of concern, such as dietary diversity, especially in the cold winter months when it is not possible to harvest fresh fruits and vegetables in most of the country. For example, only 26.2 percent of young children consumed a minimally diverse diet (MOH of the Kyrgyz Republic et al. 2021).

Since 2019, USAID Advancing Nutrition has worked to improve the nutritional status of women of reproductive age (ages 15–49) and children under five, with a specific focus on the 1,000 day window of opportunity. Working closely with partners in national and local government, village health committees, oblast and district-level health centers, local and international nongovernmental organizations, and other nutrition stakeholders, we aimed to—

- improve knowledge, attitudes, and motivation related to healthy nutrition practices, including increased use of facility-based nutrition services
- improve household demand for a variety of nutritious foods, while increasing access to these foods year-round
- improve the capacity of the health system to plan, deliver, and monitor nutrition services
- build the capacity of local institutions that deliver nutrition services
- advocate for improved policies and resource allocation for nutrition services.

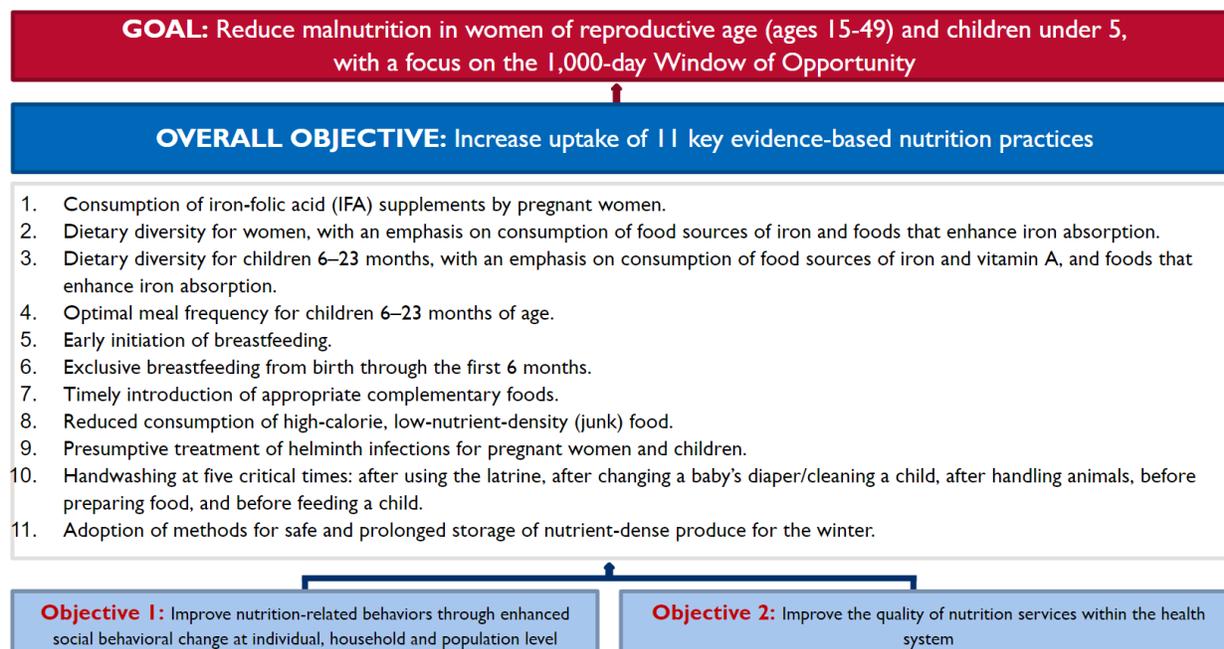
Specifically, the project sought to encourage better practices in 11 different areas, as shown in figure 1, including six related to infant and young child feeding (IYCF). Support was provided through two main arms. The first focused on improving nutrition behaviors through community outreach via a cadre of volunteers (activists) who conducted household visits and community meetings in program areas on nutrition and hygiene-related topics, based on a seasonal schedule. The second arm focused on improving the quality of nutrition services offered at health facilities, including updating national

### Key Messages

An impact evaluation carried out in the Kyrgyz Republic showed significant improvement in infant and young child feeding (IYCF) indicators in areas supported by USAID Advancing Nutrition. Eleven out of 12 IYCF indicators fared better in intervention villages than comparison areas between baseline and midterm surveys, and all 12 indicators did better in full intervention areas between midterm and endline. Results were strongest for exclusive breastfeeding, children’s diet, and “junk food” consumption.

protocols and guidelines; training health workers; and integrating supportive supervision, mentorship, and quality improvement approaches into routine care.

**Figure I. Goal and Objectives of USAID Advancing Nutrition Project Support to Kyrgyz Republic**



USAID Advancing Nutrition worked in Batken and Jalal-Abad oblasts (regions), with some national level cross-cutting activities, primarily in districts where other nutrition projects had not worked before. The project also worked in Issyk-Kul oblast, beginning in 2023, replicating the same approach taken in the other oblasts albeit with a truncated timeline. Before most project activities began in 2020, the project team designed an impact evaluation to determine the extent to which project activities and support contributed to improved nutrition outcomes. It should be noted that, especially in 2020, some project activities were affected by the COVID-19 pandemic because of the reduced ability of project staff and partners to travel and convene meetings. For activists, it meant that information sessions on key topics were done mainly through WhatsApp chat groups rather than household visits.

## Methodology

We used a cluster-randomized, modified stepped-wedge design to examine the impact of project interventions on 20 outcomes associated with the 11 nutrition-related practices. Baseline, midterm, and endline surveys were carried out in mid-to-late fall (October–December) in 2020, 2021, and 2022, respectively. Because the baseline survey took place during the first year of the COVID-19 pandemic, all interviews were conducted by phone using computer assisted telephone interview (CATI) technology, minimizing personal contact and potential disease transmission that could occur through in-person interviews or public transport to survey sites. To enable comparability, we used the same phone survey approach, sampling design, and questionnaire in the subsequent surveys.

Prior to the baseline survey, villages within Batken and Jalal-Abad oblasts were randomly assigned to either intervention or comparison areas. In the ensuing year, intervention areas would receive a full range of project activities, while comparison areas received only mass media promoting healthy behaviors. After one year of interventions, we carried out a midterm survey, after which villages in the comparison areas began receiving full project interventions through the second year of the study.

Villages in the original intervention areas continued receiving project support, but at a substantially reduced level (called “light touch”) compared to their first year. In that approach, household visits by community activists were less frequent, and the topics discussed during the activists’ visits were combined and streamlined as refresher sessions. In year two, these light touch areas were compared to the areas that began to receive the full intervention in the second year. Thus, the evaluation compared full intervention villages to comparison (no intervention) villages in the first year (the period between baseline and midterm), and full intervention to light touch villages in the second year (midterm to endline). The timing of the interventions and surveys is shown in figure 2.

**Figure 2. Timing of Project Interventions and Assessments**

Region	Area	FY20				FY21				FY22				FY23			
		Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Batken region	Intervention			Full interventions				"Light Touch"									
	Comparison			No interventions				Full interventions									
Jalal-Abad region	Intervention					Full interventions				"Light Touch"							
	Comparison					No interventions				Full interventions							



**Baseline Survey**      **Midterm Survey**      **Endline Survey**

We administered the population-based surveys to women over 18 years old, with at least one child aged 0–23 full months, living in the intervention and comparison villages of Jalal-Abad and Batken (see figure 3). It was carried out in 36 Ayil Aimaks (municipalities) in Jalal-Abad region and 32 Ayil Aimaks in Batken region.

**Figure 3. Map of Intervention and Comparison Villages of Jalal-Abad and Batken**



Our desired sample size was 385 respondents in each category (e.g., child 0–5 months, child 6–23 months, in intervention and comparison areas in each oblast), with a total desired sample of 3,080 per

survey round. This sample size was calculated to enable us to detect changes of at least 10 percentage points in key indicators with 95 percent confidence, a power of 0.8, and a design effect (deff) of 1.0<sup>1</sup>.

Respondents were identified through health facility records in intervention and comparison areas. Virtually all women with children in the Kyrgyz Republic are registered with health facilities, and client records include the child's age and the mother's address and phone number. All facilities in the study areas provided phone lists; these lists were augmented with phone numbers from other nutrition projects and, in the case of the midterm and endline surveys, we also reused numbers from the previous survey(s). The research firm called phone numbers in random order from a call center using the CATI program, and because of high refusal rates and other challenges reaching respondents (typical of phone surveys), numbers not answering received at least eight call-backs before being dropped, except in the cases of refusals or non-functional numbers. The average interview length was 30 minutes in the baseline and 31 minutes in the midterm and endline surveys. Response rates (completed interviews as a percentage of numbers called, including those who did not answer, refused, or were otherwise not reachable) ranged from 11 percent in the baseline to 7 percent in both the midterm and endline surveys. Among eligible women who were reached and asked if they would participate, the rates are much higher, ranging from 41 percent at baseline to 26 percent at midterm, and 18 percent at endline. The final sample sizes for the three surveys were 2,091, for the baseline, 2,234, for the midterm, and 1,928, for the endline. Differences in sample sizes were due to variations in how many phone numbers health facilities provided in each round; and more non-functional phone numbers on the endline survey lists.

In all three survey rounds, the questionnaire contained 12 modules on various topics, which enabled us to measure 20 outcome indicators, of which 12 were related to IYCF. For each indicator, we used difference-in-differences (DiD) analysis to compare changes in areas with different levels of interventions. For the midterm survey, this meant comparing changes in behaviors over time in intervention versus comparison areas, while for the endline survey, the DiD analysis compared changes in the full intervention areas to changes in light touch areas.

The survey protocol and questionnaire were approved/exempted by in-country and JSI's Institutional Review Board. Respondents who completed the interview were given a small credit to their phone account (approximately U.S.\$0.60).

## Results

Figure 4 summarizes the main results for all the IYCF indicators. The left half of the table shows baseline (BL), midterm (MT), and endline (EL) results for the areas that were the original intervention municipalities. During the first year of the evaluation, between the BL and MT surveys, these villages received the full range of project support and activities described above, both through the health system and community outreach. In the second year, the villages continued to receive project support, but less frequently; this is what the project termed light touch support. Our hypotheses were that outcomes in those villages should have improved between BL and MT, and remained steady between MT and EL.

The right half of the table shows results for the villages that were the original comparison villages. In the first year, they did not receive project support, except perhaps unintentionally spilling over from nearby villages or from national activities, such as mass media. In the second year, those villages began receiving the full package of activities and interventions from the project. Our hypothesis for these villages was that outcomes would show little or no change between BL and MT, but would improve when full interventions were active between MT and EL. The far right columns show the DiD results, first comparing changes in the original intervention group with the original comparison group (BL compared

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<sup>1</sup> The justification for a deff of 1.0 was that facility clients live in areas spread across entire districts, and by calling phone numbers in a random order, response would not be clustered in any meaningful way.

to MT results), and then in the last column comparing changes in the second year full intervention group with the light touch group (MT to EL results). We expected that by the end of two years, outcomes in both groups would have improved, with most of the gains in the first group coming in year one, and gains in the second group mostly in year two.

In the columns showing changes between surveys, cells shaded green show where the change between surveys was in the desired direction, while cells shaded light red indicate a change between surveys that was not in the desired direction. Likewise, in the DiD columns, green signifies that the areas with a full intervention had greater changes in the desired direction than the areas they were compared to (original comparison or light touch).

Figure 4 shows that this was indeed the case for most indicators. In the original intervention villages, 11 of the 12 IYCF indicators improved between BL and MT (improvements ranged from 1.1 to 9.0 percentage points), while only one worsened (-0.1 percentage point change). On the other hand, in the comparison areas only four of the 12 indicators improved (range: 0.1 to 7.1 percentage point improvement), with the rest worsening (range: -0.9 to -8.5 percentage points). In the second year, between MT and EL, villages that received full project interventions showed improvement in eight of the 12 outcomes (range: 3.5 to 22.2 percentage points) while four outcomes worsened (range: -2.0 to -6.5). In the light touch villages only five out of 12 indicators improved (range: 0.2 to 6.8 percentage points) and seven worsened (range: -0.7 to -8.3 percentage points).

**Figure 4. Results from Three USAID Advancing Nutrition Surveys**

Indicator	Initial Intervention Areas					Initial Comparison Areas					Difference in Differences	
	Full Intervention			BL to MT Difference	MT to EL Difference	Comparison Areas			BL to MT Difference	MT to EL Difference	BL to MT	MT to EL
	Baseline	Light Touch				Baseline	Full Intervention					
		Mid-term	Endline	Mid-term	Endline							
Percentage of children 0–23 months who were put to breast within one hour of birth	63.25%	70.77%	67.72%	7.52%	-3.05%	62.38%	69.06%	67.04%	6.68%	-2.02%	0.84%	1.03%
Prevalence of exclusive breastfeeding of children under six months of age	51.06%	55.40%	54.71%	4.33%	-0.69%	48.15%	39.69%	61.88%	-8.46%	22.19%	12.79% *	22.88% **
Percentage of children 6–23 months who ate foods from 5 or more of 8 food groups in the previous 24 hours	64.82%	64.74%	57.40%	-0.08%	-7.35%	66.67%	63.17%	56.65%	-3.50%	-6.53%	3.41%	0.82%
Percentage of children 6–23 months who received food the minimum acceptable number of times for their age and breastfeeding status	24.31%	25.83%	27.00%	1.52%	1.17%	23.12%	20.50%	28.94%	-2.62%	8.44%	4.13%	7.27% *

Indicator	Initial Intervention Areas					Initial Comparison Areas					Difference in Differences	
	Full Intervention			BL to MT Difference	MT to EL Difference	Comparison Areas			BL to MT Difference	MT to EL Difference	BL to MT	MT to EL
	Baseline	Light Touch				Baseline	Full Intervention					
		Mid-term	Endline	Mid-term	Endline							
Percentage of children 6–23 months receiving a minimum acceptable diet	17.72%	18.78%	16.38%	1.06%	-2.41%	16.31%	14.80%	19.76%	-1.51%	4.95%	2.57%	7.36% *
Percentage of children 6–23 months who ate iron-rich foods in the previous 24 hours	62.69%	66.15%	57.89%	3.47%	-8.27%	64.80%	62.92%	57.91%	-1.88%	-5.00%	5.35%	3.26%
Percentage of children 6–23 months who ate vitamin A rich foods in the previous 24 hours	58.29%	61.79%	55.12%	3.50%	-6.67%	61.33%	57.29%	53.48%	-4.04%	-3.81%	7.55% *	2.86%
Percentage of children 6–23 months who are breastfeeding	81.31%	83.66%	85.43%	2.34%	1.78%	83.47%	82.56%	86.03%	-0.90%	3.47%	3.24%	1.69%
Percentage of children 0–5 months who consumed sugary or processed food in the previous 24 hours	14.89%	11.65%	11.47%	-3.25%	-0.18%	14.35%	17.81%	9.38%	3.46%	-8.43%	-6.71%	-8.25% *
Percentage of children 6–23 months who consumed sugary or processed food in the previous 24 hours	85.18%	78.33%	71.54%	-6.84%	-6.79%	86.53%	79.41%	66.93%	-7.12%	-12.48%	0.28%	-5.69%
Percentage of children 0–5 months who consumed tea in the previous 24 hours	12.46%	8.52%	9.41%	-3.94%	0.89%	13.89%	13.75%	7.33%	-0.14%	-6.42%	-3.80%	-7.31% *
Percentage of children 6–23 months who consumed tea in the previous 24 hours	73.37%	64.36%	57.56%	-9.01%	-6.80%	72.67%	68.03%	53.48%	-4.64%	-14.55%	-4.37%	-7.75% *

\* Statistically significant difference between (full) intervention and comparison or light touch (p < 0.05)

\*\* Statistically significant difference between (full) intervention and comparison or light touch (p < 0.01)

Green shading indicates that the change between surveys, or the DiD, were in the desired direction; dark green in the last two columns indicates that the DiD was statistically significant at the levels shown.

Light red indicates that the change between surveys, or the DiD, were not in the desired direction.

We measured the impact of project activities on outcomes of interest by determining whether the DiD values were statistically significant. A large DiD (positive or negative, depending on whether we desire the indicator to increase or decrease) is desired as it signals that the promoted behaviors changed more rapidly in the intervention areas than in comparison/light touch areas. For indicators related to sugary or processed food, note that a decline in the measure is desired rather than an increase.

As seen in figure 4, 11 out of 12 DiDs in year one were positive, meaning that for 11 out of 12 IYCF indicators, the area receiving project support had more positive results than the comparison areas. However, only two of those positive DiDs were statistically significant—exclusive breastfeeding (EBF) and vitamin A consumption. Further, there were some important regional differences for some indicators with improvements in Batken generally being somewhat stronger than in Jalal-Abad in year one (data not shown). That was especially true in the case of EBF, which improved in Batken by 9 percentage points in intervention villages and declined by 11 percentage points in comparison areas (DiD of 20.0). In Jalal-Abad, EBF declined by 4.5 percentage points in both intervention and comparison areas, so the DiD there was minimal at 0.1. Thus, the impressive and significant DiD in EBF during year one was almost entirely due to the increase in the indicator in Batken intervention villages.

Results were even more impressive in year two between the MT and EL surveys, with all 12 DiDs positive and 6 out of the 12 improvements statistically significant. There were also some notable regional differences in year two, with the Jalal-Abad full intervention area improving more than the light touch area in several indicators, most notably with regard to minimum meal frequency and minimum acceptable diet. For those two indicators, results in Jalal-Abad were stronger than in Batken and accounted for most of the overall DiD for those indicators. On the other hand, the significant DiD results for processed and sugary foods was mostly due to improvements in Batken's full intervention areas. Both oblasts achieved improvements in EBF and tea consumption in full intervention areas versus light touch. The one caveat of the year two results is that for three out of 12 indicators, we observed a decline (worsening) in full intervention areas. However, the extent of the decline was greater in light touch areas. Thus, while project support may have prevented those indicators from falling as much as they might have without that support, it is still somewhat discouraging to see some positive DiDs associated with declines rather than improvements.

## Discussion

Results from the three evaluation surveys carried out over two years were encouraging, showing improvements in many IYCF indicators in the areas where USAID Advancing Nutrition operated. For almost all indicators, improvements were greater in areas receiving the full package of interventions than in comparison areas that received either no interventions or a light touch.

As noted, some aspects of the results warrant further study. Some indicator levels varied by region and, in general, year one results were stronger in Batken than in Jalal-Abad. One possible explanation for that is that activities started later in Jalal-Abad than in Batken in year one, so activists in that oblast had less time for each module than activists in Batken. It was also interesting that, in general, most DiD results were better in year two, when we compared full intervention to light touch, than in year one when we compared intervention areas to comparison (no intervention). One possible explanation for that could be that during year one, because of the COVID-19 pandemic, activists were not making household visits, so information sessions were provided using WhatsApp networks. In year two, activists started making household visits again, and those may have been more effective than the WhatsApp approach. It is also possible that the light touch approach in year two wasn't quite extensive enough to keep people in those areas aware of and practicing healthy nutrition practices. For example, in the original intervention areas, the gains achieved in the first year were mostly eroded by the time of the end line. This was true for all indicators except the early initiation of breastfeeding, EBF, minimum meal frequency, and continued breastfeeding. This suggests that for most IYCF behaviors the light touch was not enough to maintain the behavior change achievements of the first year. Finally, results of some of the other

indicators in the study were not as positive as the IYCF ones discussed here. Further qualitative research could shed light on all the above issues and suggest ways to maintain or achieve even stronger results with similar interventions in the future.

Overall, the results suggest that a comprehensive, multi-faceted package of interventions, such as those supported by USAID Advancing Nutrition, implemented in partnership with local partners across sectors, can contribute to improved nutrition outcomes related to breastfeeding, children's diet, and other aspects of IYCF. Local partners such as the Ministry of Health, village health committees, and other partners should continue and, where possible, expand support for activities, such as supportive supervision, refresher training, and community outreach in IYCF and other topics to continue improving nutrition outcomes in the Kyrgyz Republic.

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