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ASSIST PROJECT
*Applying Science to Strengthen
and Improve Systems*

A comparison of improvements in anemia indicators in ASSIST and non-ASSIST sites in Mali

Summary

The USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project and its predecessor, the USAID Health Care Improvement Project, provided technical assistance to the Division of Nutrition at the Ministry of Health of Mali and its partners to improve the delivery of evidence-based services aimed at reducing anemia among pregnant women and infants at facility and community levels in the Sikasso Region.

The aim of this short report is to assess whether improvements in anemia prevention and management among women and children were greater in ASSIST-supported health facilities compared to non-ASSIST-supported health facilities.

A historical “control” group was used to compare changes in anemia indicators during the first six months of the intervention in the first phase of the project (October-March 2012) to the six months preceding the implementation of the intervention in extension sites (July-December 2015).

Overall, findings indicate that improvements in performance over the six-month period appeared greater or slightly greater in ASSIST-supported sites for eight out of 12 indicators: 1) the percentage of pregnant women for whom pallor and hemoglobin were checked at antenatal care (ANC) visits; 2) the percentage of new ANC women who received iron/folic acid; 3) the percentage of pregnant women in ANC at 4-8 months gestation who received iron, folic acid, antimalarial, and deworming; 4) the percentage of women giving birth in facility who received Vitamin A post-partum before discharge; 5) the percentage of newborns who received immediate breastfeeding; 6) the percentage of delivering women who received counseling for exclusive breastfeeding; 7) the percentage of children under five who received Vitamin A supplements according to standards; and 8) the percentage of sick children under five years old whose pallor was checked and documented.

While this analysis optimizing the use of existing data suggests that the interventions of the USAID ASSIST Project were associated with higher improvement in anemia-related care and services in the Sikasso Region of Mali, it suffers from a few limitations, including a short follow-up period and the possibility that factors other than the intervention may have accounted for differences in performance over time.

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Introduction

Anemia increases child mortality, impairs physical and cognitive development, and has long-term impacts. Beginning in 2012, the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project and its predecessor, the USAID Health Care Improvement (HCI) Project, provided technical assistance to the Division of Nutrition of the Ministry of Health in Mali and its partners to develop and implement a package of services for anemia control and prevention at both facility and community levels. The overall purpose of this activity was to contribute to the reduction of the prevalence of anemia among children 6-59 months of age and pregnant women through the application of quality improvements methods to strengthen the delivery of evidence-based interventions in the Sikasso Region.

The first phase of the project started in October 2012 in the Bougouni Health District and involved 43 facilities. The second phase of the project involved 57 health facilities in three health districts (Kolondièba, Yanfolila, Kadiolo) of Sikasso. Best practices resulting from the first phase were implemented in the extension sites. Prior to implementation, baseline data collection was collected from extension sites for a period of six months (July to December 2015).

Objectives

The objective of this analysis was to assess whether improvements in anemia prevention and management among women and children were greater in ASSIST-supported health facilities compared to non-ASSIST-supported health facilities.

Methodology

This was a retrospective evaluation of interventions and activities to improve the quality of anemia prevention and management services carried out by the USAID ASSIST Project and its predecessor, the USAID HCI Project, using existing data. A historical “control” group was used to compare changes in anemia indicators during the first six months of the intervention in the first phase of the project (October–March 2012) to the six months preceding the implementation of the intervention in extension sites (July–December 2015).

- Intervention group: 43 sites during the period of October 2012–May 2013 (HCI/ASSIST sites)
- Comparison group: 57 sites during the period of July–December 2015 (extension sites supported by ASSIST, before the start of the intervention)

The comparison group consisted of sites that were to join the intervention supported by ASSIST as part of its extension. Baseline data was collected from those sites for a six-month period prior to the intervention. ASSIST carried on the work begun under HCI. Intervention sites are therefore referred to as “ASSIST sites” and comparison/“control” sites as “non-ASSIST sites”.

Chart reviews were conducted in both the intervention and comparison groups to collect data on the following 12 indicators:

1. Percentage of pregnant women (new and old) for whom pallor and hemoglobin were checked during antenatal care (ANC) visits
2. Percentage of new ANC women who received iron/folic acid

3. Percentage of pregnant women in ANC at 4-8 months gestation who received iron, folic acid, antimalarial, and deworming
4. Percentage of women who received appropriate counseling on how to prevent anemia during ANC visits
5. Percentage of women giving birth in the facility who received Vitamin A post-partum before discharge
6. Percentage of newborns who received immediate breastfeeding (within one hour or birth)
7. Percentage of delivering women who received counseling on exclusive breastfeeding
8. Percentage of children under five for whom pallor was checked and documented
9. Percentage of children under five who received Vitamin A supplements according to standards
10. Percentage of breastfeeding women who received nutrition counseling for themselves and age-appropriate counseling for their children
11. Percentage of sick children under five years old whose pallor was checked and documented
12. Percentage of children 6-11 months who received Vitamin A supplements

Times series charts were obtained to compare the values of each of the indicators in ASSIST-supported and non-ASSIST-supported sites over a six-month period.

Findings

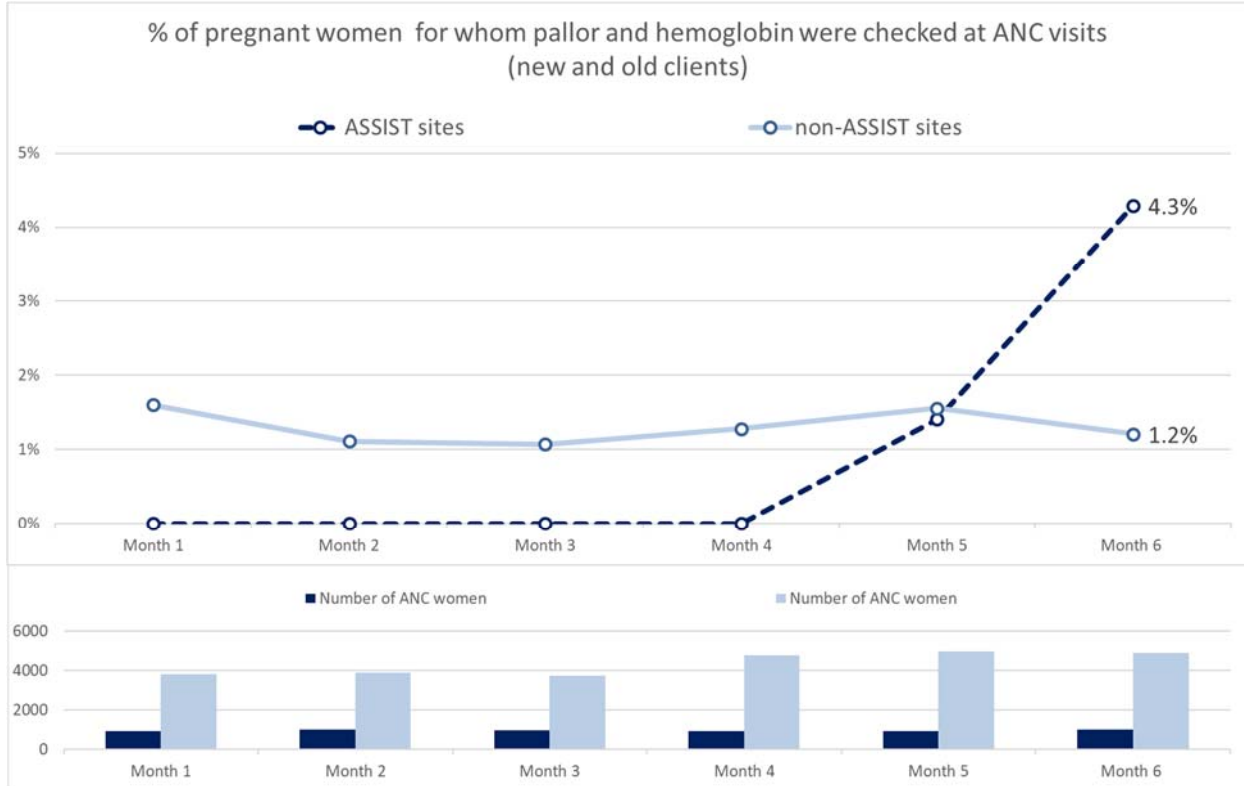
A. Anemia screening indicators

Figures 1-10 compare anemia indicators in ASSIST and non-ASSIST sites. ASSIST sites are in dark blue with a dashed line, and non-ASSIST sites are in light blue.

Percentage of pregnant women for whom pallor and hemoglobin levels were checked during ANC visits

The percentage of pregnant women for whom pallor and hemoglobin levels were checked during ANC visits was very low at baseline for ASSIST sites (0%) and non-ASSIST sites (1.6%) and remained very low in both groups during the six-month period (less than 5%). The indicator remained at 0% for ASSIST sites during the first four months of the intervention. By the sixth month, performance increased to 4.3% in ASSIST sites but decreased to 1.2% in non-ASSIST sites (**Figure 1**).

Figure 1. Percentage of pregnant women for whom pallor and hemoglobin levels were checked during ANC visit



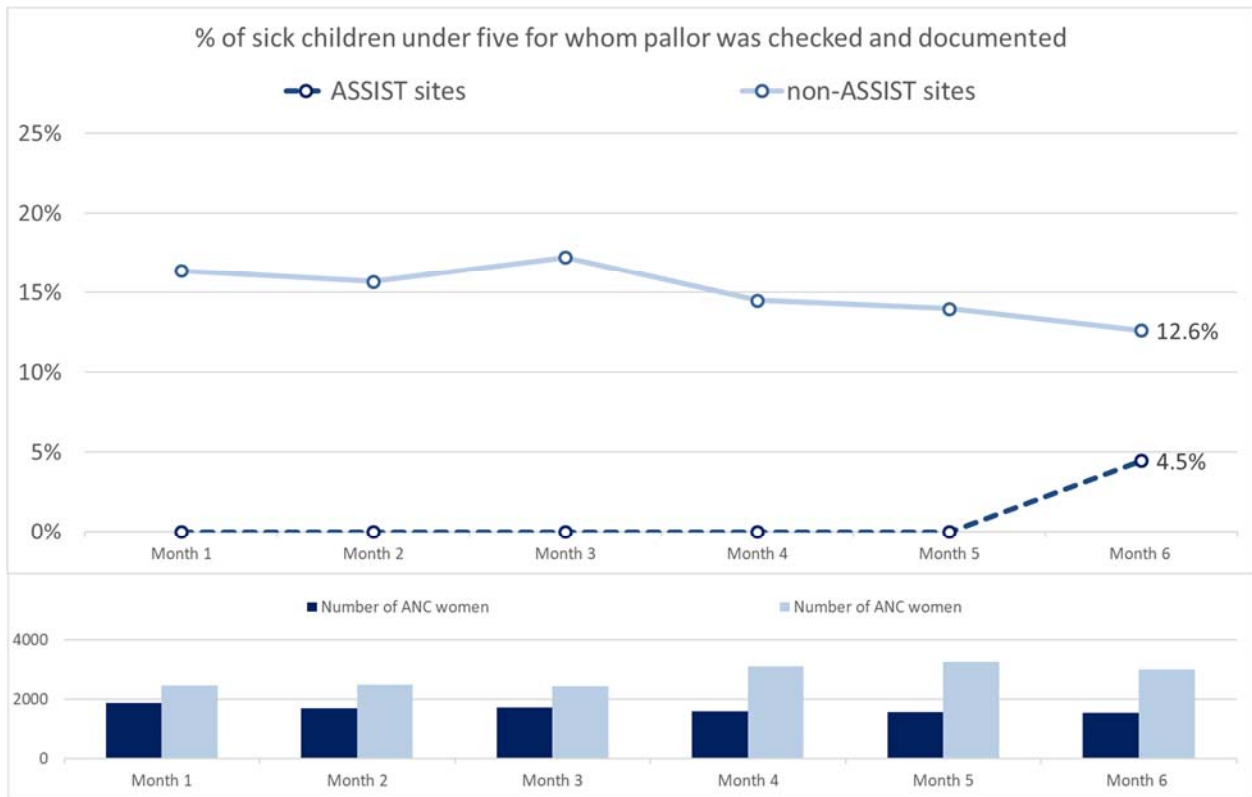
Percentage of children under five for whom pallor was checked and documented

The percentage of children under five for whom pallor was checked and documented remained at 0% in both ASSIST and non-ASSIST sites during the six-month follow-up period.

Percentage of sick children under five for whom pallor was checked and documented

The percentage of sick children under five for whom pallor was checked and documented was higher in non-ASSIST sites compared to ASSIST-sites at baseline (16.4% versus 0%). While the indicator decreased progressively in non-ASSIST sites (from 16.4% to 12.6%), it remained at 0% in ASSIST-sites during the first five months and increased to 4.5% by the 6th month. While performance remained higher in non-ASSIST sites, improvements appeared slightly greater in ASSIST-sites from Month 5 to Month 6 (**Figure 2**).

Figure 2. Percentage of sick children under five for whom pallor was checked and documented

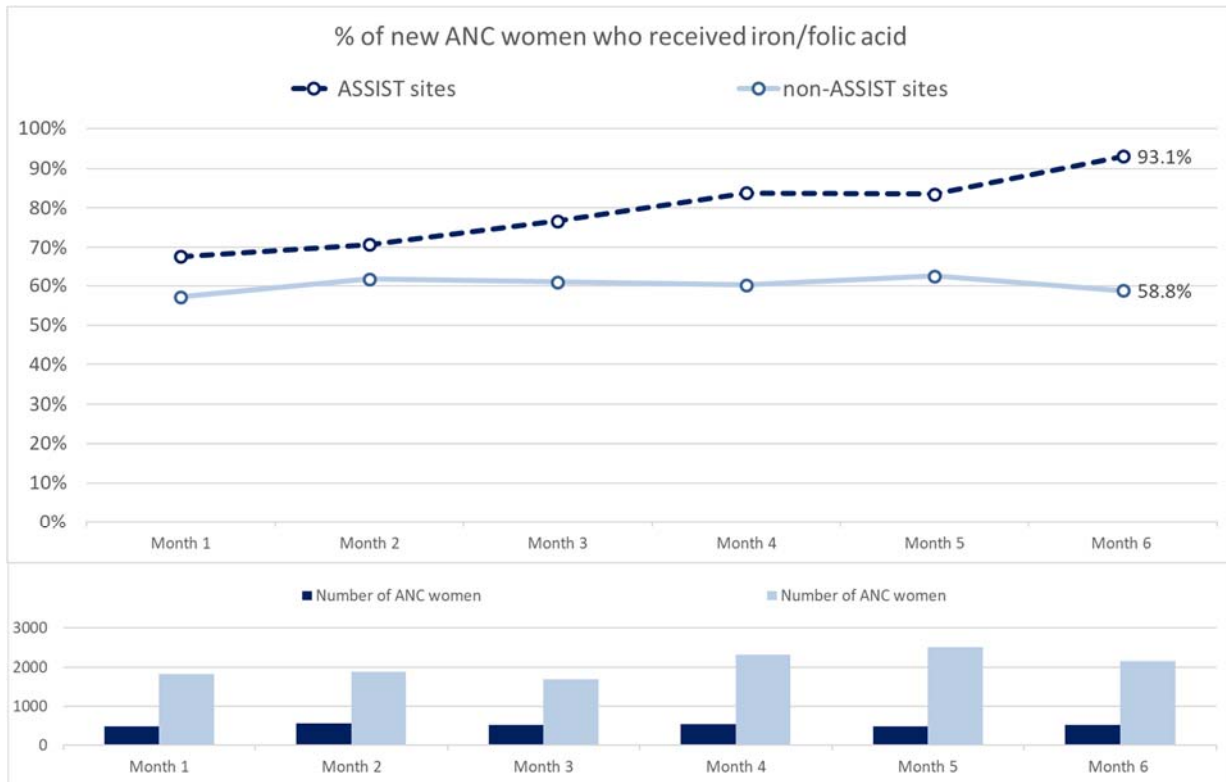


B. Provision of nutrition supplements indicators

Percentage of new ANC clients who received iron/folic acid

Figure 3 shows that the percentage of new ANC women who receive iron/folic acid was higher in ASSIST-supported sites compared to non-ASSIST-supported sites (67.7% versus 57.2%). The value of this indicator increased in ASSIST-supported sites while it remained relatively constant in non-ASSIST-supported sites (93.1% versus 58.8%).

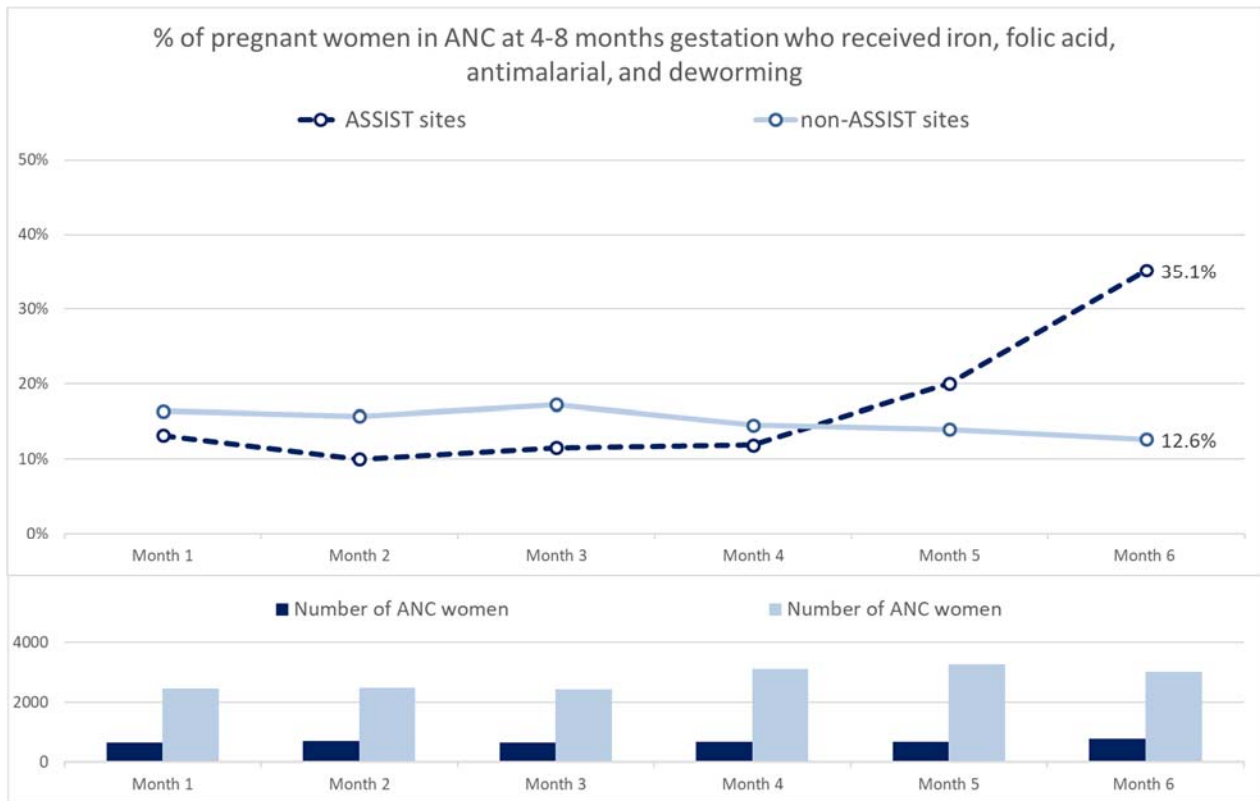
Figure 3. Percentage of new ANC clients who received iron/folic acid



Percentage of pregnant women in ANC at 4-8 months gestation who received iron, folic acid, antimalarial, and deworming

The percentage of pregnant women in ANC at 4-8 months gestation who received iron, folic acid, antimalarial, and deworming was slightly higher in ASSIST-supported sites compared to non-ASSIST-supported sites at baseline (13.2% vs 16.4%). The indicator slightly decreased in non-ASSIST-supported sites while it increased nearly three-fold to 35.1% in ASSIST-supported sites (Figure 4).

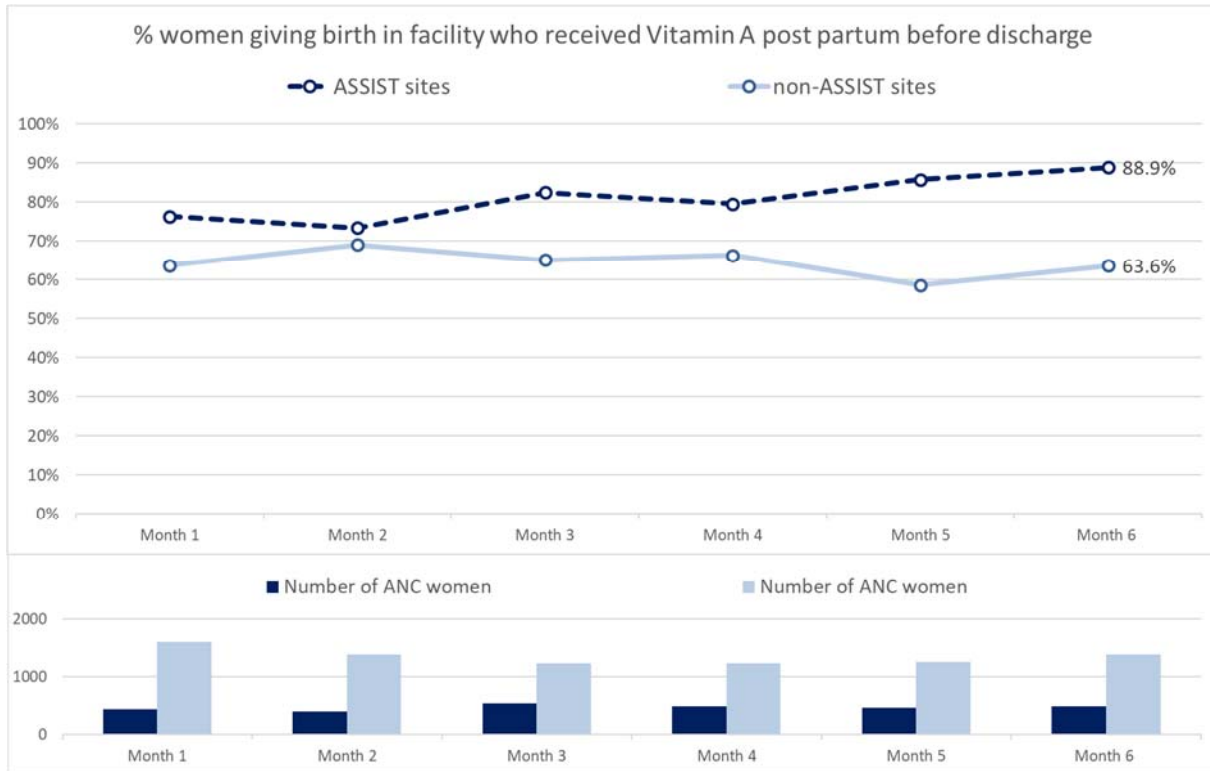
Figure 4. Percentage of pregnant women in ANC at 4-8 months gestation who received iron, folic acid, antimalarial, and deworming



Percentage of women giving birth in the facility who received vitamin A post-partum before discharge

Figure 5 shows that this indicator was slightly higher in ASSIST-supported sites compared to non-ASSIST-supported sites at baseline and increased in ASSIST-supported sites (to 88.9%) while it remained overall constant in non-ASSIST-supported sites (76.3% to 88.9% versus 63.6% to 63.6%).

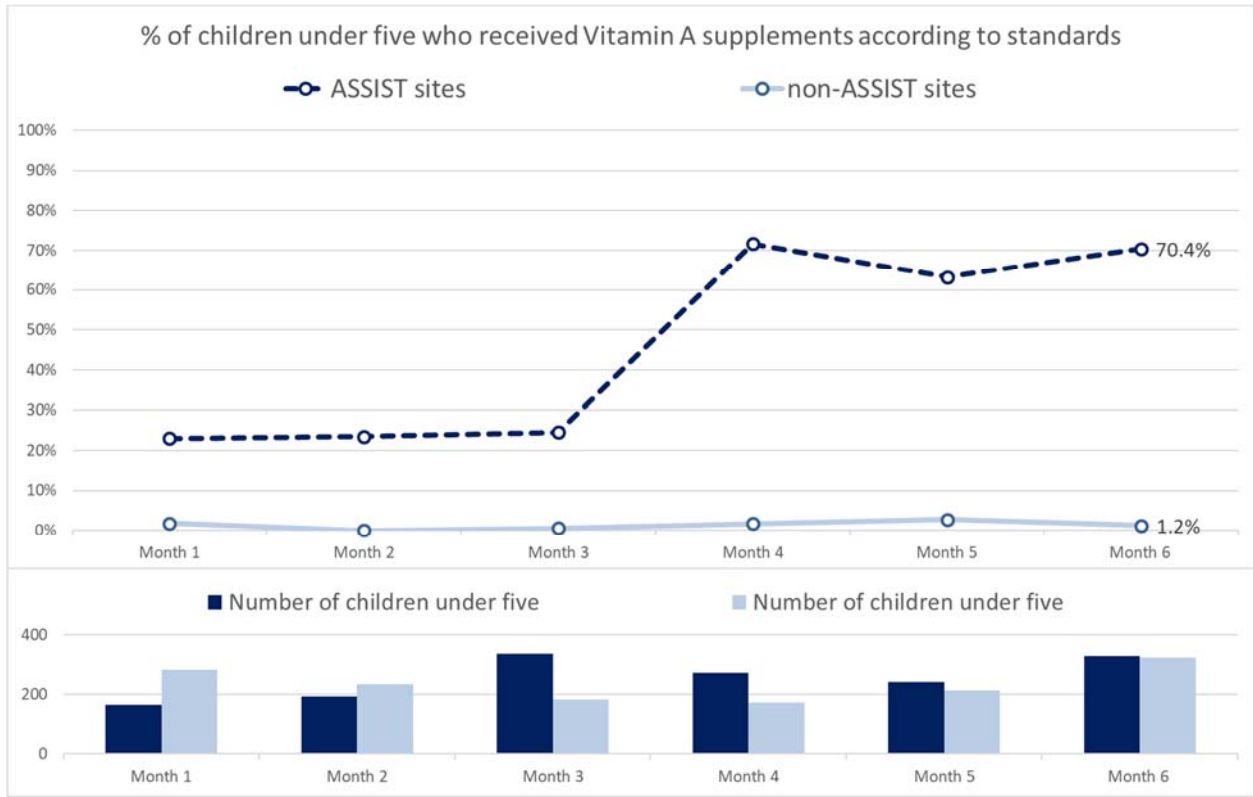
Figure 5. Percentage of women giving birth in facility who received Vitamin A post-partum before discharge



Percentage of children under five who received Vitamin A supplements according to standards of care

The percentage of children under five who received Vitamin A supplements according to standards of care was higher in ASSIST-supported sites compared to non-ASSIST-supported sites at baseline (23.0% versus 1.8%). The indicator remained very low in non-ASSIST-supported sites but increased to 70.4% in ASSIST-supported sites during the follow-up period (Figure 6).

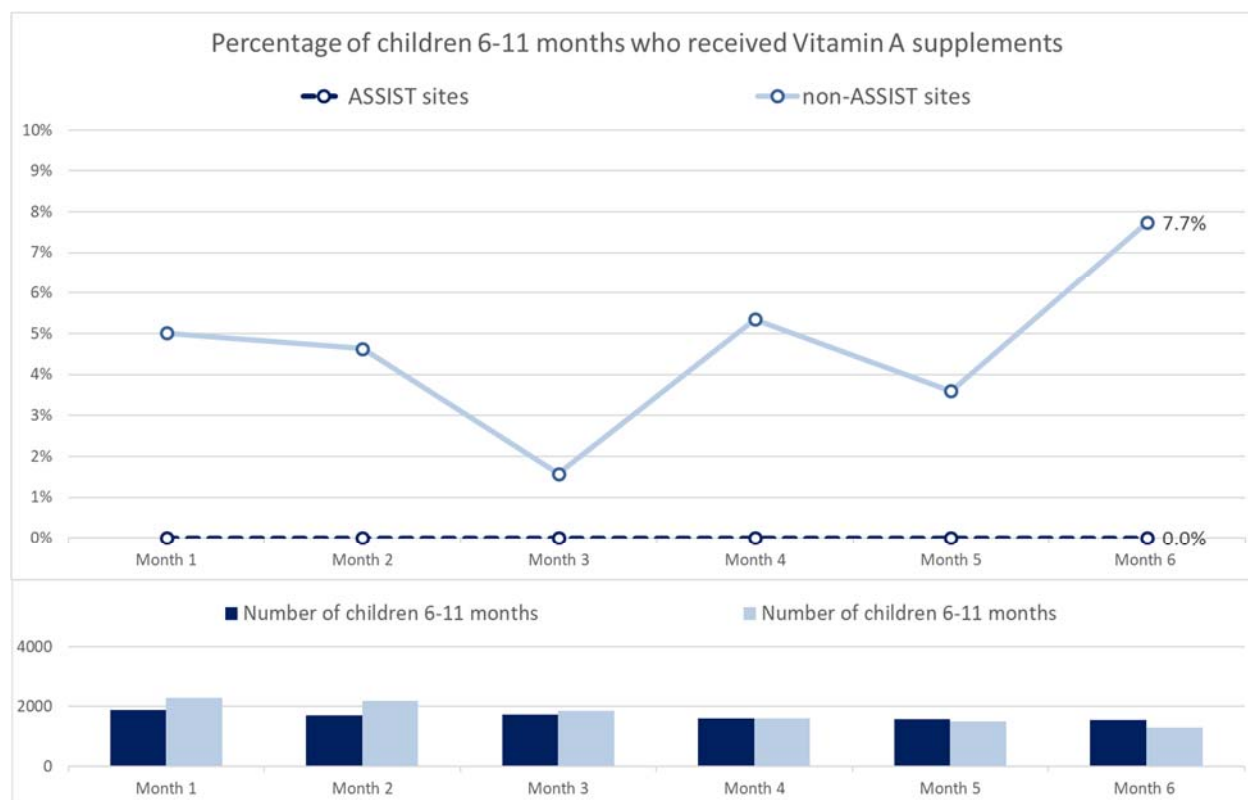
Figure 6. Percentage of children under five who received Vitamin A supplements according to standards of care



Percentage of children 6-11 months who received Vitamin A supplements

The percentage of children 6-11 months who received Vitamin A supplements remained at 0% in ASSIST-supported sites during the six-month follow-up period. In sites not supported by ASSIST, performance increased slightly from 5% at baseline to 7.7% by the end of the six-month follow-up (Figure 7).

Figure 7. Percentage of children 6-11 months who received Vitamin A supplements



C. Breastfeeding and counseling indicators

Percentage of women who received appropriate counseling on how to prevent anemia during ANC visits

The percentage of women who received appropriate counseling on how to prevent anemia during ANC visits remained at 0% in both ASSIST and non-ASSIST sites.

Percentage of newborns who received immediate breastfeeding (within one hour of birth)

Figure 8 shows that the percentage of newborns who received immediate breastfeeding was higher in non-ASSIST sites compared to ASSIST sites at baseline (34.3% vs 26.6%).

Performance progressively increased to 43.5% in ASSIST-sites while it barely increased in non-ASSIST sites (37.5%).

Percentage of delivering women who received counseling for exclusive breastfeeding

The percentage of delivering women who received counseling for exclusive breastfeeding was more than three times as high in non-ASSIST-supported sites compared to ASSIST-supported sites at baseline (5.3% vs 19.6%). The gap between the two groups narrowed over time. By the end of the follow-up period, performance had barely increased in non-ASSIST-supported sites (21.8%) but increased to 12.8% in ASSIST-supported sites. While performance remained higher in non-ASSIST-supported sites, improvements in performance appeared higher in ASSIST-supported sites (**Figure 9**).

Figure 8. Percentage of newborns who received immediate breastfeeding

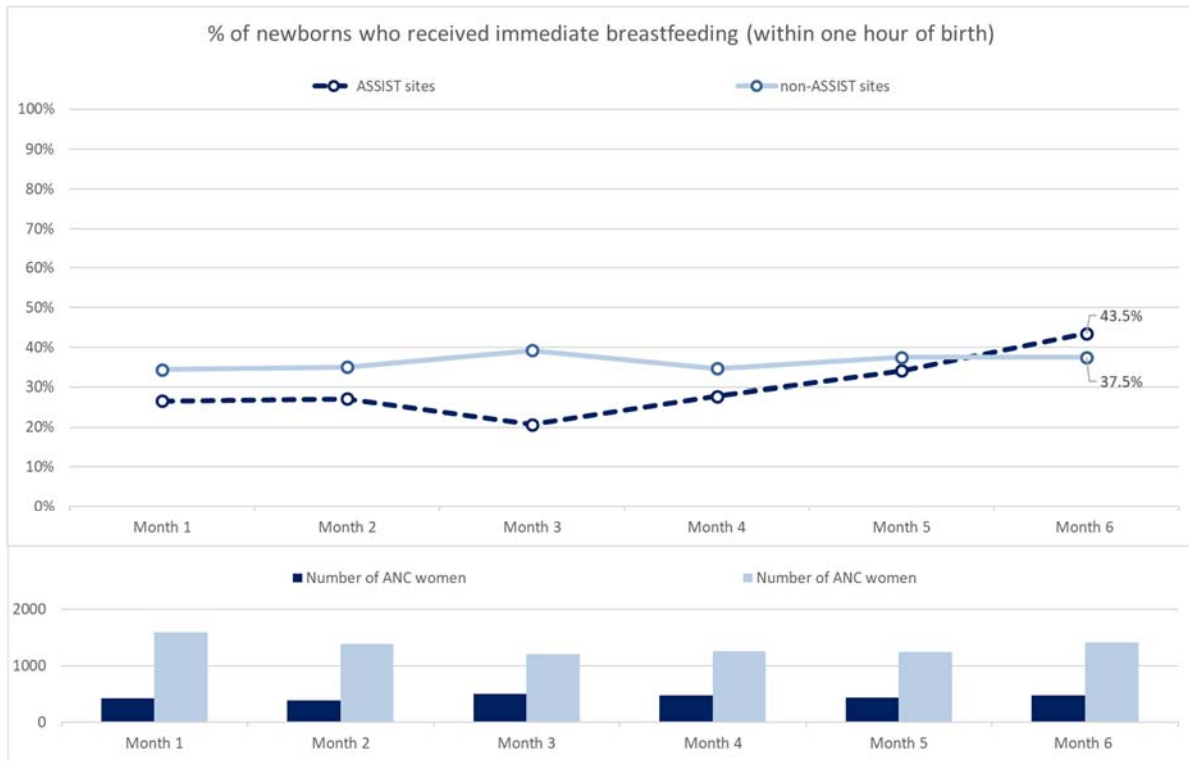
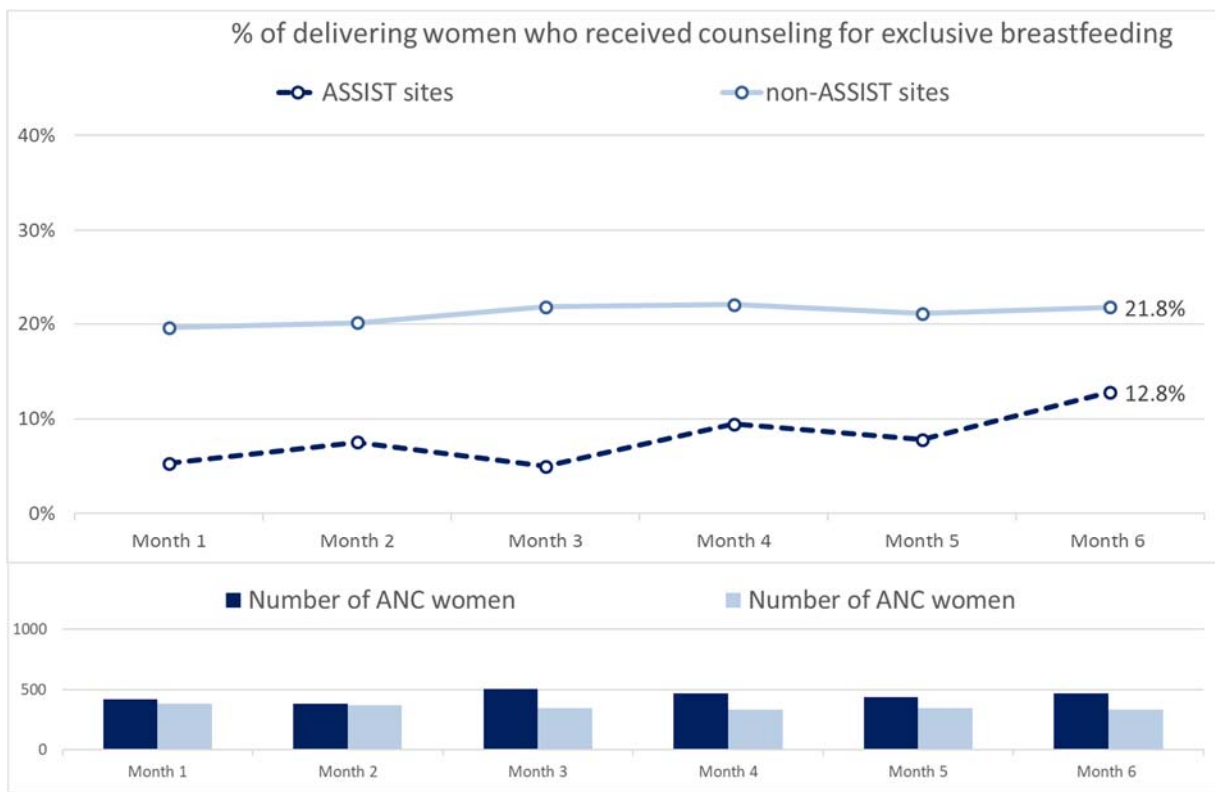


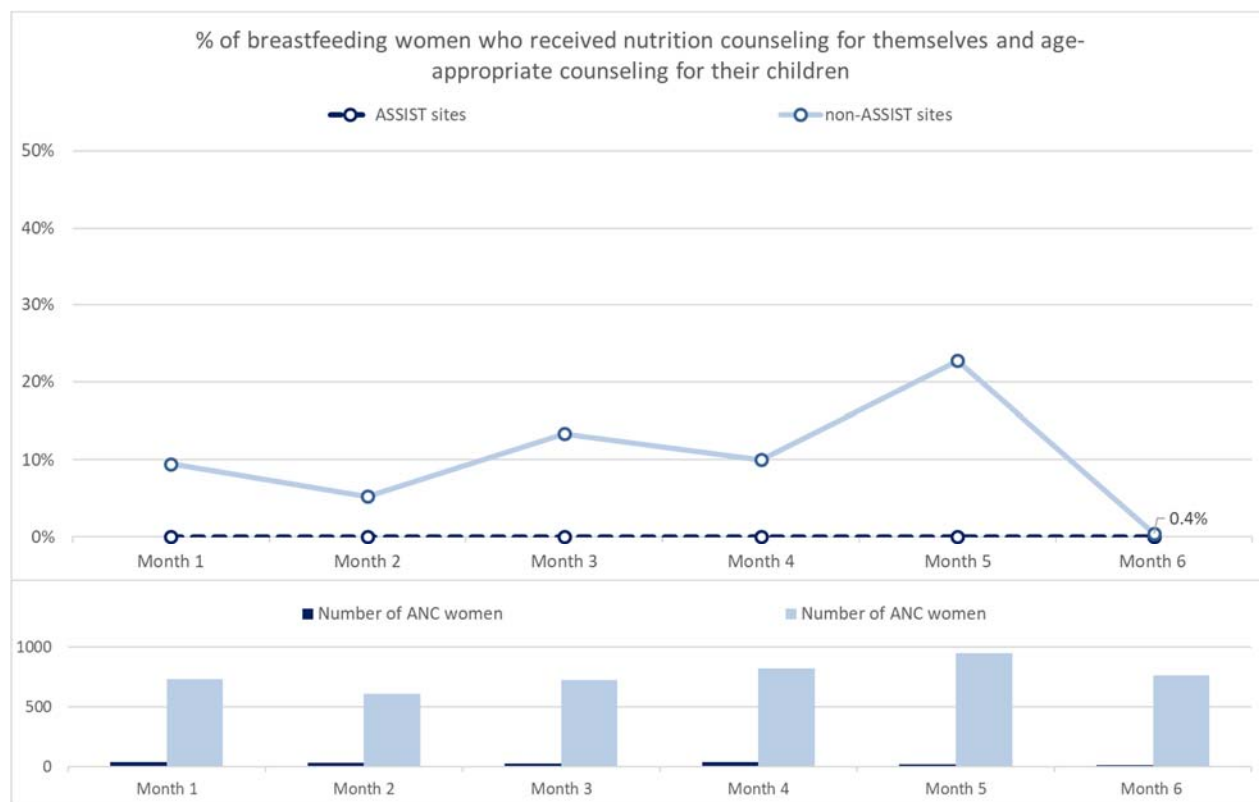
Figure 9. Percentage of delivering women who received counseling for exclusive breastfeeding



Percentage of breastfeeding women who received nutrition counseling for themselves and age-appropriate counseling for their children

The percentage of breastfeeding women who received nutrition counseling for themselves and age-appropriate counseling for their children remained at 0% during the entire six-months period in ASSIST-supported sites. In non-ASSIST-supported sites, performance increased progressively from 9.5% to 22.7% but decreased to 0.4% by Month 6 (Figure 10).

Figure 10. Percentage of breastfeeding women who received nutrition counseling for themselves and age-appropriate counseling for their children



Limitations

While this analysis has optimized the use of existing data, and findings revealed differences in improvements over time between ASSIST-supported sites and non-ASSIST-supported sites, this analysis has limitations. A key limitation is that the follow-up period used to compare changes in performance between ASSIST-supported and non-ASSIST-supported sites was relatively short. This analysis was not able to assess the presence of statistically significant differences between the two groups. A longer follow-up time with more data points would have permitted the use of time series statistical analysis methods.

In addition, intervention and comparison sites are in different districts but are part of the same region. Given that the anemia improvement intervention had been implemented in the region for three years by the time data was collected from comparison sites, it is possible that these comparison sites may have been “contaminated”, resulting in diluted differences between the

ASSIST-supported and non-ASSIST-supported sites. Furthermore, it should be noted that all sites in the ASSIST group did not join the intervention at exactly the same time; this may have underestimated performance in ASSIST-supported sites. Finally, factors other than the intervention may have accounted for differences between the two groups, especially given that the comparison was historical and not concurrent.

Conclusion

This short report shows that improvements in anemia prevention and management indicators were greater for ASSIST-supported sites compared to non-ASSIST-supported sites for eight out of 12 indicators. Improvement in performance appeared greater or slightly greater in ASSIST-supported sites over a six-month period for the following indicators: percentage of pregnant women (new and old) for whom pallor and hemoglobin were checked at ANC visits; percentage of new ANC women who received iron/folic acid; percentage of pregnant women in ANC at 4-8 months gestation who received iron, folic acid, antimalarial, and deworming; percentage of women giving birth in the facility who received Vitamin A post-partum before discharge; percentage of newborns who received immediate breastfeeding (within one hour of birth); percentage of delivering women who received counseling for exclusive breastfeeding; percentage of children under five who received Vitamin A supplements according to standards; and percentage of sick children under five years old whose pallor was checked and documented. While this indicates that the interventions supported by the USAID ASSIST Project were associated with higher improvement in anemia-related care and services, the analysis suffers from a few limitations, including a short follow-up period and the fact that we cannot rule out that factors other than the intervention, such as differences in additional technical support and training, may have accounted for differences in performance.

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