



TECHNICAL REPORT:

Evaluating the Impact of a Health Promotion Campaign to Prevent Diarrheal Disease in Children

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I. Abstract

In spring 2000 in Ferghana Oblast, as part of its program of technical assistance to the Government of Uzbekistan, ZdravReform developed an informational campaign on control of diarrheal disease. The campaign was aimed at teaching mothers and health workers the key messages of diarrhea prevention, control and treatment. In order to evaluate the campaign, a ZdravReform team carried out a pre- and post- survey of a sample of mothers of reproductive age.

This report looks at the results of those surveys and attempts to evaluate the impact of the campaign on three key factors: prevention of diarrhea; improved recognition of the signs and symptoms of diarrhea; and management of children with diarrhea. A general improvement in knowledge was clearly visible and it is hoped that the knowledge will be translated into behavioral changes. In addition, ZdravReform was able to define targets for future campaigns based on respondents' incomplete or patchy knowledge.

II. Executive Summary

In spring 2000, ZdravReform developed a detailed work plan for a multi-media information, education, and communication (IEC) campaign on control of diarrheal disease in collaboration with regional health marketing experts. The campaign was designed to reduce childhood morbidity and mortality from diarrhea by providing key messages on prevention and treatment of diarrheal disease to mothers and health workers using a variety of formats, including written materials, use of mass media, lectures by doctors, and community peer education. ZdravReform, in coordination with the Republican Health Center, UNICEF, and other donors, developed and adapted materials such as posters, brochures, and television spots in Uzbek on basic hygiene, breastfeeding to prevent diarrhea, and symptoms and home treatment of diarrhea targeted to mothers. A diagnosis and treatment chart on diarrhea based on WHO materials was developed and translated into Uzbek for primary health care workers.

The month-long campaign was kicked off April 1, 2000 so messages would reach mothers before summer when the prevalence of diarrheal disease increases in Ferghana. Although some television spots were broadcast oblast-wide, the full campaign was limited to three rayons in Ferghana Oblast: Beshariq, Quva, and Yazyavan. ZdravReform surveyed mothers in these rayons before and after the campaign to measure its impact.

There was a small but consistent increase in knowledge regarding signs and symptoms, treatment and prevention of diarrhea and resulting dehydration. Eight percent more women knew the causes of diarrhea and how to prevent it. Sixteen percent more women could name at least two symptoms of diarrhea and resulting dehydration. Thirteen percent more women reported that they would seek medical care if there were no improvements in the health of their child after three days. Finally, 21% more women surveyed said they would give more liquids and 42% more women said they would feed the child more to avoid dehydration and weight loss while the child had diarrhea.

Continued health education on this topic is needed to build on the foundation established by this health promotion campaign.

III. Background

The USAID-funded ZdravReform program provides technical assistance to the Government of Uzbekistan to assist in implementing primary health care reforms in Ferghana Oblast. As part of this technical assistance, ZdravReform initiated health promotion activities aimed at involving the population in health reform efforts, providing accurate information on disease prevention to communities and health personnel, encouraging individuals to take more responsibility for their own health, and advocating the use of family-centered, low-cost primary health care facilities.

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IV. Methodology

In order to measure change in knowledge due to the April campaign, ZdravReform, with the help of Peace Corps Health Volunteers, surveyed mothers in late March and again in mid-May. The questionnaire used was developed and tested by ZdravReform marketing specialists in Kyrgyzstan. The questionnaire was designed to test mothers' knowledge on causes, prevention, and treatment of diarrheal diseases. It has nine questions (see Attachment 1). The questionnaire was translated into Uzbek and reviewed by a number of translators and native Uzbek speakers.

Sample size was determined in two steps: 1) selecting women of reproductive age out of the total number of women in each rayon; and 2) randomly selecting 1% of the women of reproductive age in each rayon. In the three rayons, 240 women of reproductive age were surveyed before the campaign and 236 women of reproductive age were surveyed after the campaign.

Table 1: Number of Women Surveyed by Rayon

Rayon	Pre-test Sample Size	Post-test Sample Size
Beshariq	90	86
Quva	100	100
Yazyavan	50	50
Total	240	236

Ten Uzbek-speaking Peace Corp volunteers served as interviewers. Interviews were conducted simultaneously in all three rayons and were conducted over the course of one week in late March before the campaign was underway and again in mid-May after the campaign had ended.

V. Key Findings

Findings from the survey indicate increases in knowledge of mothers about preventing diarrhea, recognizing symptoms, and managing diarrheal diseases properly. Data tables for each question are included as Attachment 2.

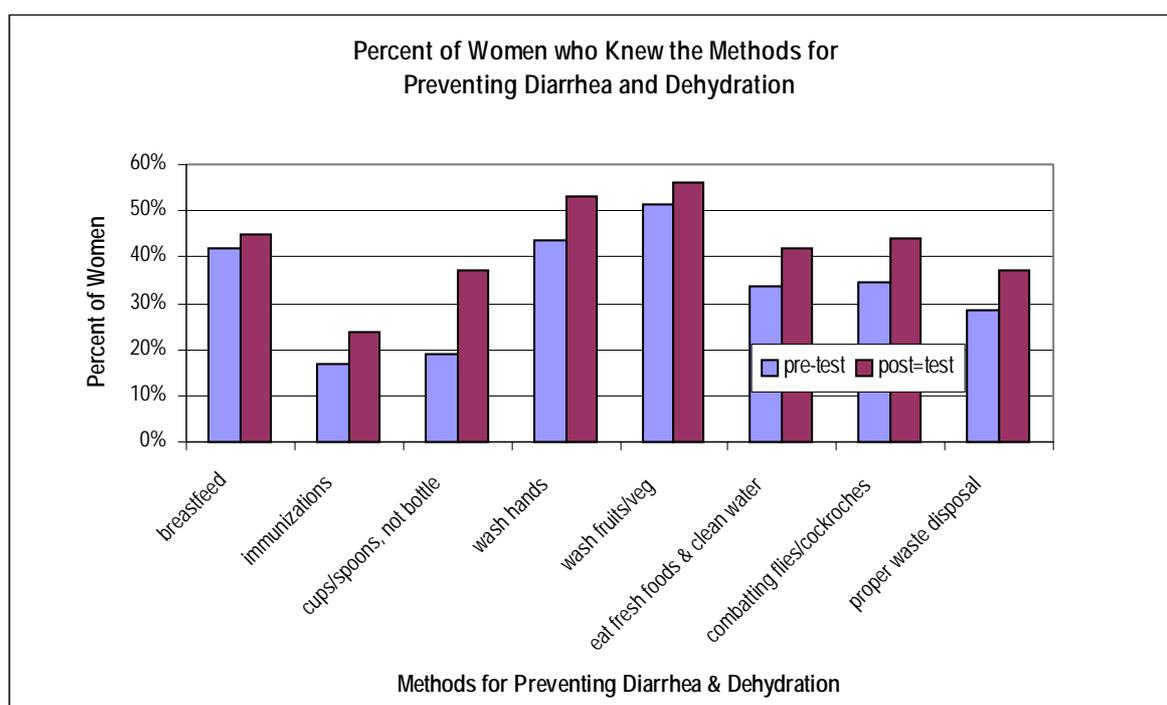
Prevention

Preventing diarrhea and resulting dehydration was one of the ultimate objectives of the campaign. To measure knowledge on prevention, women were asked if they knew what caused diarrhea and if they knew how to prevent it. Knowledge about what caused diarrhea (improper hygiene or contaminated food or water) increased 8%, from 63% of respondents before the campaign to 71% after the campaign. In order to effectively prevent diarrhea, all mothers should have this knowledge.

Women were then asked how they could prevent diarrhea for their children. Means of prevention described during the campaign included:

- Breastfeeding
- Well-timed immunization
- Using cups and spoons instead of bottles for feeding
- Washing hands before eating, after going to the bathroom, and before preparing food
- Washing fruits and vegetables before eating them
- Eating fresh food and drinking clean water
- Combating carriers of diseases, such as flies and cockroaches
- Properly disposing of/cleaning up children's excrement (toilet or burial)

Knowledge about each of these methods of prevention increased following the campaign. Knowledge of hand washing as a method of prevention increased from 44% to 53%, washing fruits and vegetables went from 51% to 56%. The greatest increase in prevention knowledge following the campaign was using a spoon and cup rather than a bottle to feed very young children; it rose from 19% prior to the campaign to 37% post-campaign.



As all these prevention strategies are important, the number of methods women selected was also analyzed. Women who selected at least two prevention strategies increased from 52% to 72%, at least three strategies from 41% to 59%, and at least four methods 30% to 42%. Following the diarrhea campaign 11% were able to list seven to eight of these prevention strategies.

Recognizing Signs and Symptoms

As a result of the campaign, 15% more mothers properly identified diarrhea as an acute intestinal infection. In Yazyavan rayon, where doctors and mahalla committee members worked more actively to disseminate information, the number of mothers who could accurately define diarrhea increased dramatically.

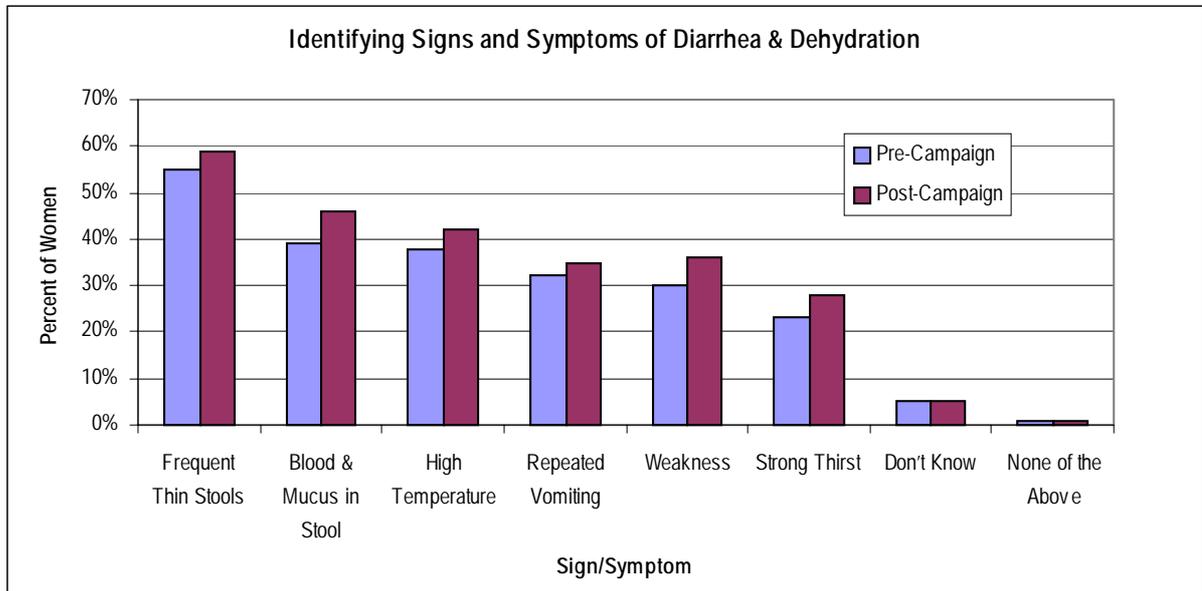
Rayon	Pre-Test	Post-Test	% Increase
Beshariq Rayon	64%	69%	4%
Quva Rayon	61%	71%	10%
Yazyavan Rayon	44%	88%	200%

Women were then asked to identify signs of diarrhea and resulting dehydration. They were given the following options and instructed to select all that applied:

- Repeated vomiting
- Increased thirst
- High temperature
- Frequent thin stools
- Blood and mucus in stools
- Weakness

They could also select “don’t know” or “none listed.” Based on the pre-campaign survey, many women already knew the signs of diarrhea and resulting dehydration, but the proportion of women identifying

each and all signs increased on the post-survey. Fifty-eight percent more women identified “frequent thin stools” as the main sign of diarrhea on the post-campaign survey, a 3% increase. However, since “frequent thin or watery stools” is the key diagnosing sign for diarrhea, future health promotion efforts should work to increase this number to at least 90%. The other responses referred to additional signs and symptoms that often occur with diarrhea. Among these the next highest response rate was for “blood and mucus in stools” (pre-survey 39%, post-survey 46%).



Over 90% of the women surveyed were able to identify as least one sign/symptom on the above list and following our diarrhea campaign (93% and 94% respectively). The greatest increase was among women who knew at least two signs/symptoms, rising from 42% pre-campaign to 58% post-campaign (16% increase). Women that were able to list all six signs/symptoms rose from 9% pre-campaign to 10% post-campaign.

Managing Children with Diarrhea

Women were asked what they would do if their child had frequent thin or watery stools. After the campaign, 21% more women reported that they would increase the amount of liquids they give to the child to rehydrate them. The campaign also resulted in fewer women reporting that they would give drugs to their child immediately (10% decrease) and fewer women reporting that they would stop giving liquids altogether (6% decrease).

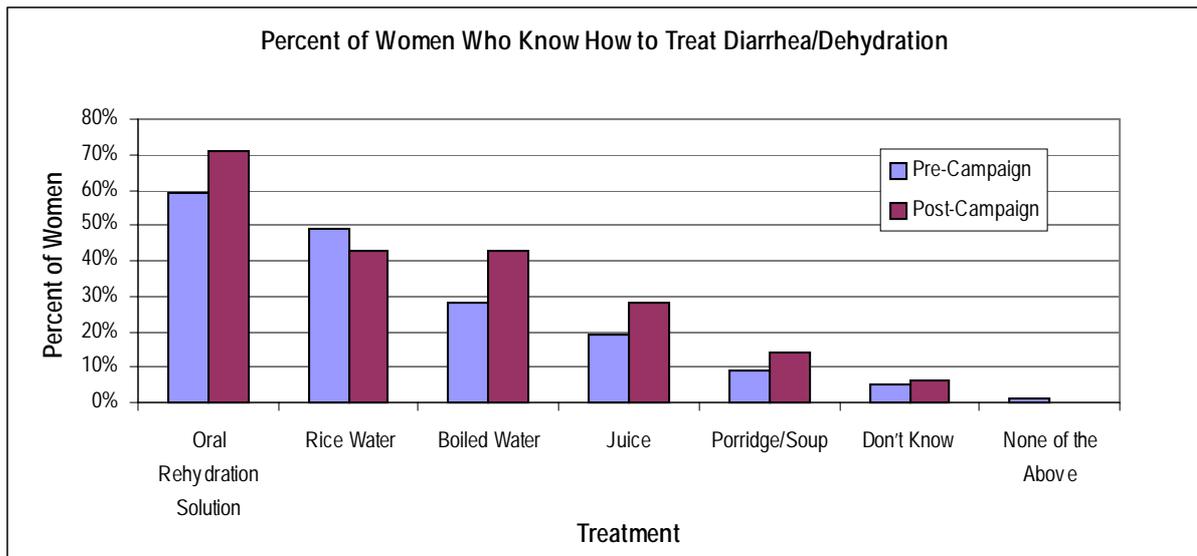
Surveyors were also interested in whether women knew a variety of recommended treatments for diarrhea and resulting dehydration. The options for this question were:

- Rice water
- Liquid porridge and soup
- Oral rehydration solution (ORS)
- Boiled water
- Juice

Women could also respond “don’t know” and “none of the above.” The answer that was expected was ORS, as it replenishes the correct balance of minerals/salts and fluids. Identifying ORS as a treatment went from 59% pre-campaign to 71% post-campaign, illustrating that more women now know to use

ORS for treating diarrhea and resulting dehydration. When asked if they knew how to prepare ORS, 62% of respondents knew pre-campaign and 67% knew post-campaign, a marginal increase. Proper home preparation of ORS should be a major focus of future campaigns.

When ORS is not available rice water also replenishes the salts and minerals in clean water. Unfortunately, this dropped slightly from our pre-campaign survey to the post-survey (49% and 43%, respectively). This is difficult to understand except to speculate that maybe some women chose ORS or other answers instead of rice water. It is important that the use of rice water when ORS is not available is stressed in future health education activities. The other answers will at least all replenish fluids, but are not preferable, as they may not provide the right balance of salts and minerals. Still these treatment choices also increased from pre- to post-campaign survey.



Looking at how many methods women selected pre- and post survey, we found that 94% could list at least one treatment before and following the diarrhea campaign. There was a marked difference pre- to post-campaign in the amount of women who could list at least two and at least three treatments for diarrhea and resulting dehydration. The percentage went from 38% to 56% who listed at least two treatments, and from 19% to 29% who listed at least three. Those that listed all five treatments increased from 3% to 5%.

Children that are ill with diarrheal diseases should continue to be fed properly to combat dehydration, so mothers were asked how they would feed a sick child. Before the campaign only 15% of mothers reported that they would feed the child more frequently than usual, while 57% reported they would do so after the campaign, a dramatic 42% increase in knowledge. In addition, 18% less mothers said they would stop feeding temporarily and 16% less said they would feed their children as usual.

Women then were asked what they would do if they had recognized that their child had diarrhea but the child's condition did not improve in three days. Respondents who reported that they would take their child to the doctor increased 13% (from 70% pre-campaign to 83% post-campaign). The number of women who would give drugs or go to a traditional healer decreased but only slightly (about 3% in each case).

VI. Conclusions and Recommendations

There was a small but consistent increase in knowledge regarding signs and symptoms, treatment and prevention of diarrhea and resulting dehydration. Hopefully this will lead to a change in practices and behaviors of the target population. Increases confirm the appropriateness of the materials distributed and the dissemination approaches used during the campaign.

However, continued health education on this topic is needed to build on the foundation established by this health promotion campaign. Based on the results reported above, future campaigns should narrow their focus to ensure that knowledge is increased on the cause of diarrhea (only 71% correctly identified poor hygiene or contaminated food and water post-campaign), the main sign/symptom of diarrhea as frequent thin or watery stool (only 58% answered correctly), and how to prepare ORS (67% reporting correctly). On several issues, however, relatively high levels of knowledge among mothers even prior to the campaign indicate that more advanced messages related to preventing and treating diarrheal disease might be appropriate.

Better results in Yazyavan rayon, where doctors and mahalla committees more actively participated in disseminating information through lectures and peer education sessions, confirm the importance of personal contact with mothers to reinforce the messages they see on television or read in brochures.

In addition, better or more exact wording in the survey instrument and its translation into Uzbek as well as clearer instructions for interviewers whether they should wait for responses or prompt respondents might eliminate chances for confusion.

Attachment 1: Questionnaire

Hello, my name is _____. I am a representative of the ZdravReform project that is providing technical assistance to the Government of Uzbekistan in implementing health care reforms in your rayon. We plan to conduct (conducted) an information and education campaign on preventing diarrheal disease, and hope it helps (helped) to increase the knowledge of mothers in preventing diarrhea.

Could you please spare 10 minutes to answer a few questions related to diarrhea problems? All of the information will be used for the purposes of the survey and kept confidential. Your responses and participation in this survey will contribute to the monitoring and evaluation process of the campaign.

Instructions for the interviewer: When stating each question, read every option, listen to the respondent, and check their answer.

Name: _____

Oblast: _____

Rayon: _____

1. Diarrhea is (choose the best answer):
 - a. Infection of the respiratory tract
 - b. Infection of the urinary tract
 - c. Acute intestinal infection
 - d. Don't know
 - e. None of the answers are correct
2. What ways of infection do you know?
 - a. Through air
 - b. By not observing hygiene rules and through food
 - c. Sexually transmitted
 - d. Don't know
 - e. None of the answers are correct
3. What acute signs of diarrhea do you know?
 - a. Repeated vomiting
 - b. Strong thirst
 - c. High temperature
 - d. Frequent thin stool
 - e. Blood and mucus in stool
 - f. Weakness
 - g. Don't know

- h. None of the answers are correct
4. If your child's condition does not improve during three days and you identify acute signs of diarrhea, what will you do?
 - a. Immediately go to the doctor
 - b. Begin giving medicine
 - c. Go to a healer
 - d. Don't know
 5. If your child has thin stool what will you do?
 - a. Give him/her a lot of liquids
 - b. Begin giving medicine
 - c. Stop giving liquids
 - d. Don't know
 6. What drugs recommended at diarrhea do you know?
 - a. Rice-water
 - b. Liquid porridge and soup
 - c. Oral rehydration solution
 - d. Boiled water
 - e. Juice
 - f. Don't know
 - g. None of the answers are correct
 7. Oral rehydration solution is prepared in the following way:
 - a. 1 teaspoon of oral rehydration salt per 1 spoonful of water
 - b. 1 pack of oral rehydration solution per 1 liter of water
 - c. 1 spoonful of oral rehydration salt per 1 glass of water
 - d. Don't know
 - e. None of the answers are correct
 8. How will you feed a sick child?
 - a. Temporarily will stop feeding
 - b. Will feed more frequently than usual
 - c. Will feed as usual
 - d. Don't know

9. What methods of preventing diarrhea do you know? (Instructions for the interviewer: do not read the options to the respondent)
- a. Breastfeeding
 - b. Well-timed immunization
 - c. Using cups and spoons instead of bottles for feeding
 - d. Washing hands before eating, after going to the bathroom, before preparing food
 - e. Washing fruits and vegetables before eating them
 - f. Eating fresh food and drinking clean water
 - g. Combating carriers of disease (flies, cockroaches, etc.)
 - h. Properly cleaning up children's excrement (toilet or burial)
 - i. Don't know

Instructions for the interviewer: Thank the mother for answering the questions.

Attachment 2: Data Tables by Question

Question 1: Percentage of Women Identifying Diarrhea as an Acute Intestinal Infection

Rayon	Pre-Campaign	Post-Campaign
Beshariq	64%	69%
Yazyavan	44%	88%
Quva	61%	71%
Total	59%	74%

Question 2: Percentage of Women Identifying Poor Hygiene and Contaminated Food and Water as the Main Causes of Diarrhea

	Pre-Campaign	Post-Campaign
Answering Correctly	63%	71%
Don't Know	37%	29%

Question 3: Percentage of Women Identifying Signs/Symptoms of Diarrhea and Resulting Dehydration by Symptom

Sign/Symptom	Pre-Campaign	Post-Campaign
Frequent Thin Stools	55%	59%
Blood & Mucus in Stool	39%	46%
High Temperature	38%	42%
Repeated Vomiting	32%	35%
Weakness	30%	36%
Strong Thirst	23%	28%
Don't Know	5%	5%
None of the Above	1%	1%

Question 3: Number of Signs/Symptoms Identified

Number Identified	Pre-Campaign	Post-Campaign
All 6	9%	10%
At Least 5	15%	16%
At Least 4	23%	26%
At Least 3	32%	41%
At Least 2	42%	58%
At Least 1	93%	94%
Don't Know/None/Missing	8%	7%

Question 4: Treating a Child with Diarrhea After 3 Days

Option	Pre-Campaign	Post-Campaign
Go to Doctor	70%	83%
Give Medicine	8%	6%

Go to Doctor & Give Medicine	8%	5%
Go to Healer	6%	3%
Go to Healer and Doctor	2%	1%
Go to Healer & Doctor & Give Medicine	2%	2%
Don't Know	5%	0%

Question 5: Percentage of Women Properly Giving Liquids

Option	Pre-Campaign	Post-Campaign
Give More Liquids	35%	56%
Give Medicine	37%	27%
Give Liquids & Medicine	10%	6%
Stop Giving Liquids	10%	4%
Give Medicine & Stop Giving Liquids	2%	3%
Don't Know	7%	5%

Question 6: Percentage of Women Identifying Treatment Methods

Treatment	Pre-Campaign	Post-Campaign
Oral Rehydration Solution	59%	71%
Rice Water	49%	43%
Boiled Water	28%	43%
Juice	19%	28%
Porridge/Soup	9%	14%
Don't Know	5%	6%
None of the Above	1%	0%

Question 6: Number of Treatments Identified

Number Identified	Pre-Campaign	Post-Campaign
All 5	3%	5%
At Least 4	8%	14%
At Least 3	19%	29%
At Least 2	38%	56%
At Least 1	94%	94%
Don't Know/None/Missing	6%	6%

Question 7: Percentage of Women that Know How to Prepare Oral Rehydration Solution

	Pre-Campaign	Post-Campaign
Know	62%	67%
Don't Know	38%	33%

Question 8: Percentage of Women Properly Feeding a Child with Diarrhea

Option	Pre-Campaign	Post-Campaign
Feed More Than Usual	15%	57%
Feed as Usual	33%	16%
Stop Feeding	37%	20%
Don't Know	16%	8%

Question 9: Percentage of Women Identifying Methods to Prevent Diarrhea/Dehydration

Method	Pre-Campaign	Post-Campaign
Wash Fruits & Vegetables	51%	56%
Wash Hands	44%	53%
Breastfeed	42%	45%
Combat Flies & Cockroaches	35%	44%
Eat Fresh Foods & Clean Water	34%	42%
Dispose Waste Properly	28%	37%
Use Cup/Spoon, Not Bottle	19%	37%
Immunize Properly	17%	24%
Don't Know	10%	6%
None of the Above	2%	1%

Question 9: Number of Methods Identified

Number of Methods	Pre-Campaign	Post-Campaign
All 8	3%	5%
At Least 7	10%	11%
At Least 6	15%	21%
At Least 5	24%	30%
At Least 4	30%	42%
At Least 3	41%	59%
At Least 2	52%	72%
At Least 1	87%	93%
Don't Know/None/Missing	13%	7%