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# Nepal Child Health Diarrhea Treatment

Qualitative research to inform ORS and zinc promotion

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# Nepal Child Health Diarrhea Treatment

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# Acronyms

|              |   |
|--------------|---|
| <b>CRS</b>   | Nepal CRS Company                                     |
| <b>FGD</b>   | Focus Group Discussion                                |
| <b>KAP</b>   | Knowledge, Attitudes, and Practices                   |
| <b>IPC</b>   | Interpersonal communication                           |
| <b>mCPR</b>  | Modern Contraceptive Prevalence Rate                  |
| <b>MOHP</b>  | The Ministry of Health and Population's               |
| <b>NDHS</b>  | Nepal Demographic and Health Survey                   |
| <b>ORS</b>   | Oral Rehydration Solution                             |
| <b>RAI</b>   | Remote Area Initiative                                |
| <b>SBC</b>   | Social and Behavior Change                            |
| <b>SHOPS</b> | Sustaining Health Outcomes through the Private Sector |
| <b>SLC</b>   | School Leaving Certificate                            |
| <b>SSS</b>   | Sugar salt solution                                   |

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# Introduction and background

In Nepal, Sustaining Health Outcomes through the Private Sector (SHOPS) Plus is supporting the Nepal CRS Company (CRS), a Nepalese social marketing organization and key USAID partner, to strengthen its child health program and launch an oral rehydration solution (ORS) and zinc co-pack. The Ministry of Health and Population's (MOHP) Child Health Division is fully committed to promoting appropriate diarrhea case management in Nepal. They believe there is insufficient zinc in the private sector, and, consequently, caregivers are reverting to antibiotics and antiprotozoals to treat childhood diarrhea. In response, the MOHP Child Health Division has encouraged SHOPS Plus to launch a co-pack in the private sector.

SHOPS Plus and CRS will launch the product in two distinct areas to develop and test effective commercial approaches and community-based demand creation activities. The first activity area will be within four hill districts (Arghakhanchi, Tanahun, Ramechhap, and Terhathum) where CRS is already implementing community-based social and behavior change (SBC) activities called the Remote Area Initiative (RAI). These areas are some of Nepal's more rural and difficult-to-access areas. The second area of implementation is Province 2, which is in the *terai* where the population is denser, the roads are better, and commercial infrastructure is stronger. SHOPS Plus will work with CRS to aggressively detail the co-pack to pharmacists and chemists and promote it as a better alternative to antibiotics for uncomplicated cases of childhood diarrhea.

In Nepal, diarrhea is one of the most common illnesses among children and continues to be a major cause of childhood mortality and morbidity (MOH, New Era, and ICF, 2017). Though the country implemented a nationwide program to treat diarrhea with ORS and zinc, it has not achieved all desired results. According to the 2016 Nepal Demographic and Health Survey (NDHS), 37 percent of childhood diarrhea cases were treated with ORS, 18 percent were treated with zinc, and 10 percent were treated with ORS and zinc.

Further, SHOPS Plus recently conducted a knowledge, attitudes, and practices (KAP) survey in the RAI areas of Nepal, and one key finding was that caregivers are extremely conflicted regarding effective diarrhea treatments. For example, nearly two-thirds of caregivers reported that antiprotozoals and antibiotics are the best treatment for diarrhea. Over 90 percent said that ORS is effective for diarrhea, but 40 percent also said that ORS is only a supplement and not an essential treatment. Nearly 90 percent believe that zinc is an effective treatment, yet less than one-fourth of caregivers gave zinc to their sick children.

Based on these KAP findings and in order to maximize the effectiveness of co-pack promotion activities, **SHOPS Plus conducted qualitative research with caregivers of children under five to better understand diarrhea care seeking and treatment perceptions and practices.** These findings will inform SBC messages as CRS promotes its new co-pack as well the child health modules of the RAI curriculum. This qualitative research was also used to pre-test brand options (e.g., package design, product name) for CRS's new co-pack. Results from the pre-test are included in a separate report.

# Methods

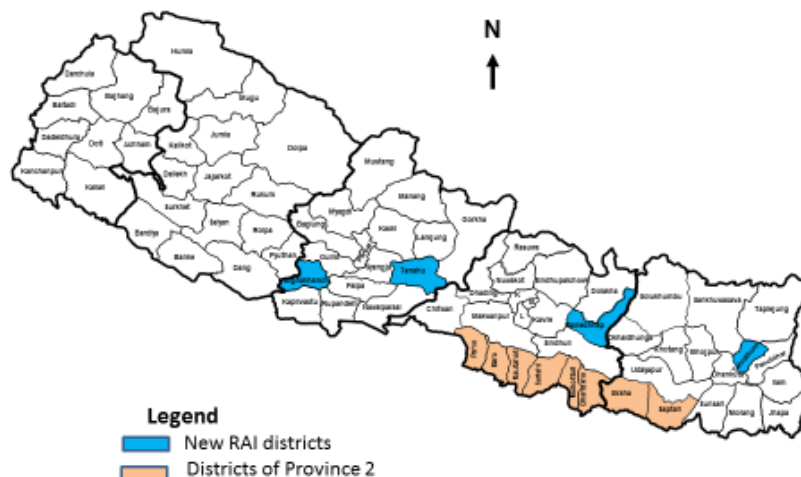
SHOPS Plus conducted 12 focus group discussions (FGDs) with mothers who were at least 18 years old and had at least one child under five. All FGD participants were residents of the area in which the FGD occurred. The research team selected FGDs as the method for data collection because they allowed researchers to compare and contrast caregivers' diarrhea perceptions and practices. Group discussions provided a forum for participants to expand on each other's experiences and reveal the nuances and determinants of diarrhea care. Additionally, FGDs were useful as a market research technique to pre-test CRS's co-pack brand options.

Of the 12 FGDs, four were conducted in Province 2 and eight in the RAI districts (two in each district). Each FGD had a minimum of eight mothers and a maximum of 12, totaling 113 participants. A sample size of 12 FGDs was selected in order to reach theoretical saturation, the point at which themes are repeated in the data and new information does not appear (Glasser and Strauss, 1967; Francis et al., 2010; Guest et al., 2006). Guest et al. (2017) asserts that three focus groups are sufficient to identify 80 percent of all themes in the data. Thus, we do not make comparisons between each of the RAI areas but, instead, between all RAI FGDs versus all Province 2 FGDs.

SHOPS Plus hired local consultants to conduct the FGDs. Consultants were fluent in local languages and participated in a two-day data collection training led by SHOPS Plus and CRS. All discussions were audio recorded, transcribed verbatim, and translated into English. The SHOPS Plus Nepal Research Director and CRS Monitoring and Evaluation Lead oversaw all data collection and conducted quality checks on all transcripts and translations. Consultants used a semi-structured discussion guide to lead each FGD, which was piloted prior to data collect. The guide explored how caregivers decide if care-seeking is necessary, how treatments are selected, perceptions of particular treatment products, and if caregivers typically do anything to prevent diarrhea.

Abt's Institutional review board exempted this research, as the study was deemed primarily market research.

**Figure 1: Map of Nepal highlighting RAI districts and Province 2**



# Demographics

We collected basic demographic information from all FGD participants (see Table 1). The average participant age was 26, ranging from 18 to 42. Women had two children on average and 1.3 children under the age of five. Women in Province 2 had 2.4 children on average compared to 1.8 children in RAI areas.

RAI participants had substantially higher education levels than participants in Province 2. In the RAI areas, over half (52 percent) of participants had a School Leaving Certificate (SLC) or above. In contrast, just 12 percent of Province 2 participants had an SLC or above. The number of participants with no education was much higher in Province 2 compared to those in RAI areas (56 versus 10 percent, respectively). The relatively higher education level among RAI compared to Province 2 participants is important to consider when interpreting findings in this report.

**Table 1: Demographic characteristics of FGD participants**

|                    |                                     | RAI (n=72)  | Province 2 (n=41) | All (n=113) |
|--------------------|-------------------------------------|-------------|-------------------|-------------|
| <b>Average age</b> |                                     | <b>26.3</b> | <b>25.4</b>       | <b>26</b>   |
| <b>Education</b>   | <b>None</b>                         | <b>10%</b>  | <b>56%</b>        | <b>27%</b>  |
|                    | <b>Primary</b>                      | <b>10%</b>  | <b>2%</b>         | <b>7%</b>   |
|                    | <b>Some secondary</b>               | <b>28%</b>  | <b>30%</b>        | <b>28%</b>  |
|                    | <b>SLC or above</b>                 | <b>52%</b>  | <b>12%</b>        | <b>38%</b>  |
| <b>Children</b>    | <b># children (average)</b>         | <b>1.8</b>  | <b>2.4</b>        | <b>2</b>    |
|                    | <b># children under 5 (average)</b> | <b>1.2</b>  | <b>1.5</b>        | <b>1.3</b>  |

# Diarrhea symptom recognition

In each discussion, participants discussed what happens when a child has diarrhea and how they determine if a diarrhea case is severe or not. These findings are directly related to caregivers’ decisions about whether or not to seek care, elaborated on in the next section. Mothers across all groups noted that the most common diarrhea symptoms include loose or watery stool, crying, lethargy, stomach ache, and lack of appetite. Caregivers elaborated that if a child refused to eat, drink, or play this was an indication of serious diarrhea. They noted that fever and vomiting could occur alongside diarrhea in 8 and 6 out of 12 FGDs, respectively.

# Care-seeking decision

Approximately half of participants across all groups reported that they would seek care immediately after presentation of diarrhea symptoms at a nearby health post. In contrast, the other half noted that their first response to diarrhea would be a traditional treatment such as hot water or a homemade sugar-salt solution (SSS), food like bananas or lentils, a heat compress, or a ritual. These respondents said that if the traditional treatment did not cure the diarrhea, only then did they seek care through the formal medical sector. Notably, many of the caregivers who

“I need to give my son to drink a lot of water. I also give him ORS to drink. If he isn’t well yet I consult to the doctor in the nearby health post and then he becomes fine.” – RAI participant

reported immediately seeking care outside the home also said that they would give their child a home remedy such as hot water, food, or heat. In 8 of 12 FGDs, mothers noted that they would give their child ORS inside the home before formally seeking care outside the home, indicating that they keep an ORS supply at home or could easily access it from a pharmacy or shop.

Respondents generally agreed that they sought care if the diarrhea appeared to be severe, defining severity in various ways including loose stools that lasted beyond 24 hours, constant crying, fever, vomiting, or refusal to eat, drink, or play. Respondents also defined severe diarrhea as those cases that continued beyond provision of an initial treatment including ORS or SSS, a hot compress, or feeding the child special food.

“By asking elders and people who know better like, brother and sister. At first, the child is treated in home...if the diarrhea lasts for longer, we have to go to the hospital and use ORS or other medicine.” – RAI participant

In half of the FGDs, including some RAI and some Province 2 groups, several caregivers noted that the decision to seek care is informed, in part, by guidance from mothers- and fathers-in-law or other elders. These influencers advise caregivers on initial treatments and when it is appropriate to seek care from a health provider outside of the home.

Across FGDs, we found that cost was not an important determinant of seeking care or providing treatment. Participants never independently (i.e., without a direct probe from the moderator) mentioned cost as a barrier to care seeking or treatment. When probed by moderators, participants across groups typically said that, of course, cost is a consideration because treatments must be purchased and that sometimes financial stress was created due to treatment expenses. FGD moderators did not probe further to identify which types of treatment regimens might cause financial barriers; however, there was no evidence indicating that caregivers’ perceived ORS or zinc to be expensive. Caregivers maintained that the health of the child was far more important than costs associated with care seeking.

“We cannot let our child die...sometimes we have to take a loan...we take and later repay slowly when we have money.” – Province 2 participant

Additionally, access to nearby health posts or hospitals did not appear to be a barrier to seeking care for FGD participants. Generally, participants across groups noted that health facilities were located conveniently, which enabled them to easily seek care. Participants recognized, though, that if facilities were far away, this would prevent them from seeking care:

“[The] whole day would have been spent if [the health facility] was far, but it’s near. That’s why we go to the hospital.” – RAI participant

Participants in four groups also acknowledged that lack of transportation or poorly constructed roads could be a barrier to accessing care in some of the most remote areas, but participants did not feel that they themselves faced these challenges. In one RAI discussion group, several caregivers noted that lack of service providers in the hospital could be a barrier to seeking appropriate care.

## Determinants of treatment selection

### Provider recommendation

**First and foremost, caregivers in all FGDs reported that they give their child whichever treatment the provider recommends. Mothers noted that they are not in a position to determine which treatment is best.** They defer to providers' knowledge and expertise:

“I am not educated. Whichever medicine [health providers] prescribe, we give it to our child and throw the bottle [away] after medicine is finished” – Province 2 participant

“[Health providers] know everything since they are educated...We don't know anything since we stay at home. We have not even studied. They have studied related to it.” – RAI participant

This finding is key to CRS's SBC activities, as it highlights the importance of targeting not only caregivers but providers as well. Caregivers do not have high demand for a particular type of treatment, although they do commonly give ORS to their children as a first-line treatment. Elaborated on in the ORS section below, ORS is often given to children in combination with other non-zinc treatments, as recommended by providers.

In 5 of 12 FGDs, participants also mentioned considering the advice of more elder family members or neighbors when determining which treatment to give their sick child. In two of these discussions (both RAI areas), participants said that they valued providers' advice more than that of elders, as depicted in the quote below. Comparatively, in the other groups (all from Province 2), caregivers showed more deference towards the older generations' opinions.

“We would do everything on the basis of what the doctor has suggested. That is it. We don't know how to do anything. The learning passed on by older generation doesn't work. That generation is different.” – RAI participant

### Giving multiple treatments

**Across all discussion groups, participants said that they provide their children with multiple treatments either concurrently or sequentially.** As aforementioned, caregivers often give a traditional treatment or ORS first followed by a clinical treatment after seeking care from a health post or hospital. About half of caregivers, though, reported giving the child both traditional and clinical treatments concurrently in order to try everything and heal the child as quickly as possible.

“We would do as per FCHV and other [health providers say] as well as performing some religious rituals (*jharfuk*) because we never know which might work...We ultimately want our child to get well soon.” – RAI participant

Traditional rituals or prayers will not harm sick children, so there is no need to alter these behaviors. **It is important for CRS to emphasize the provision of zinc *simultaneous* to ORS as the first-line treatment. This requires a shift in care seeking for those who currently give ORS first before providing another treatment like zinc.** Increased availability of and demand for the ORS/zinc co-pack should help serve as a cue to action that these treatments should be given to sick children simultaneous.

## Treating diarrhea based on its cause

In half of the groups, several caregivers noted that they treat diarrhea cases differently based on the perceived cause of diarrhea.

“We know the difference, whether [the diarrhea] is due to the gods being angry or whether it is really due to some disease. The two are quite different.” –RAI participant

In the minds of some caregivers, if the diarrhea is caused by a traditional element such as heat or cold, some caregivers believe that a traditional treatment is needed to counter the cause (e.g., a hot compress and hot liquid if diarrhea was caused by cold). If caregivers attribute the diarrhea to a medical cause such as bacteria in food or water, then they typically seek care through a clinical provider and give the child whatever is recommended (e.g., ORS, zinc, or an antibiotic). **It is important for CRS to emphasize use of ORS and zinc regardless of diarrhea cause.**

# Perceptions of specific treatment products

## ORS

In alignment with previous studies in Nepal including the SHOPS Plus KAP study and the NDHS, knowledge of ORS was widespread throughout the 12 FGDs. Most caregivers reported having used ORS previously and believed this treatment to be effective. For many, ORS—often in tandem with a traditional form of treatment—was the first thing given to a sick child.

FGD moderators asked participants if they believed ORS could be used alone to treat diarrhea or if it was a supplement that should be used together with another form of treatment. Overall, caregivers thought that ORS should be used in combination with other medications, particularly if diarrhea continues after ORS is given. Moreover, some caregivers thought of ORS as an energy booster or rehydrating product, but not as a real “medicine.” For example, the two

quotes below describe instances when participants discussed the role of ORS in comparison to other “medicines.”

“Only one method [alone] doesn’t work. [ORS] just decreases [the diarrhea] slightly and provides energy, but medicine should also be given along with it.” – RAI participant.

“Per my understanding, ORS is just for restoring the reduced water level in children, whereas during diarrhea children must be fed with medicines.” – RAI participant

In addition, some participants lumped ORS together with other traditional treatments, further demonstrating the fact that ORS is viewed less as a medical product and more as a home remedy:

“We should give them fluid containing food, ORS, and also mixture of sugar and salt. Medicine is given after some days. First, we should do home remedies.” – Province 2 participant.

While ORS was viewed as an essential and often first-line component of diarrhea treatment, most caregivers believed that it should be given along with other “medications” that can be prescribed by a health provider.

## Zinc

Prior to each FGD, the moderator asked each participant if she had used zinc before. We found that just under one-third (28 percent) had used zinc. Ever-use of zinc was substantially higher in RAI areas than in Province 2 (36 versus 15 percent, respectively), which aligns with the higher education level in RAI areas as well as the fact that RAI areas have benefited from more donor programs (such as CRS’s RAI) compared to Province 2. Overall awareness of and information about zinc, including correct usage, was low across FGD groups, particularly in Province 2 groups. For example, when moderators probed the participants to learn more about their perceptions of zinc, most participants offered that **it can help treat diarrhea without having much more information. Participants who had heard of zinc reported learning about it from radio or TV campaigns or health providers including CCAs and FCHVs.** These women reported information that they had heard about zinc, for example:

“We have heard that [zinc] must be taken when someone is suffering from diarrhea. It has no side effects for children, so it is effective to treat diarrhea.” – RAI participant

There were several participants who did have more complete and confident knowledge of zinc, asserting that zinc should be used with ORS, given continuously for 10 days, and could help protect against future cases of diarrhea. In one FGD, several participants said that they heard about zinc from CRS and were advised to give their child zinc for 10 continuous days. One caregiver relayed an anecdote in which she gave her child zinc and ORS that she obtained from

the hospital. However, she stopped giving her son the zinc after three days because the diarrhea stopped. She elaborated on what she had learned from CRS after this episode of diarrhea:

“I should have given for 10 days continuously. I didn’t have any idea...I didn’t know then. But it prevents the reoccurrence of diarrhea if we feed zinc continuously for 10 days.” – RAI participant

Given the overall low knowledge level of zinc, there was not a consensus across the FGDs regarding how zinc should be used. A handful of participants noted that it should be used with ORS to treat diarrhea, while some others reported that zinc should be given after ORS if ORS is ineffective. Additionally, several other participants reported that zinc was supplementary:

“Zinc itself isn’t sufficient to help diarrhea. Syringe must correct it.” – RAI participant

FGD anecdotes regarding how participants have learned from RAI CCAs and FCHVs shows great promise for effective scale-up of zinc. Continuing to disseminate information through radio, TV, and interpersonal channels continues to be necessary to communicate that zinc and ORS together is the number-one recommended childhood diarrhea treatment. Messaging regarding zinc should be clear and concise with a limited number of the most essential messages in order for the information to resonate and stay with the caregivers.

## Antibiotic, antiprotozoal, and anti-diarrheal medications

Most participants across FGDs were aware of and had used some form of antibiotic, antiprotozoal, or anti-diarrhea medication. Typically, participants who had used these medications reported that they were effective, and some participants said that antibiotics helped to stop diarrhea more quickly than other treatments. **None of the participants who had used these treatments mentioned requesting them on their own, indicating that they were used due to provider recommendation.** There was no apparent demand from the caregivers themselves for these treatments, further evidenced by the fact that most caregivers did not know the names of these products, but referred to them as “liquid medications” or “injections.” As previously mentioned, many participants believed that antibiotics or antiprotozoals should be used for severe diarrhea that ORS or traditional treatments could not stop:

“It [diarrhea] gets severe, well, ORS increases the appetite and provides some energy. We need to give other medicines along with it.” – RAI participant

Moderators probed participants to see if they had held any negative perceptions about antibiotic, antiprotozoal, or anti-diarrheal medicines. In most cases, participants said no, they had not heard anything bad about these treatments. **However, there were several exceptions to this. In three RAI discussion groups, one or two caregivers said that it is better to avoid antibiotics if possible, noting that it made one weak (especially young children) or made other medications less effective.** The latter point, demonstrated by the quote below,



closely resembles the idea of antibiotic resistance, although, notably, this was a minority viewpoint put forth by just two participants.

“I don’t know exactly, but I think [antibiotics] is of high dose and after consuming them, I heard other medicines do not work effectively.” – RAI participant

## Perception of most effective treatment

At the end of each FGD, the moderator asked participants what they believed to be the most effective diarrhea treatment(s). Based on the findings discussed above, it is not surprising that FGD participants had conflicting views. In many groups, participants all suggested different treatments including ORS, zinc, ORS and zinc, antibiotics, “whatever the provider recommends,” and even “cleanliness.” In three groups, participants agreed that they are not in a position to determine the most effective diarrhea treatment medications, and they defer to providers’ suggestions.

The focus group findings further support the KAP study that caregivers are conflicted and have insufficient information regarding the most effective treatments for childhood diarrhea. Each caregiver has had unique experiences with diarrhea treatments, primarily based on her interactions with providers, including FCHVs, and with those in her ecosystem of support (e.g., husband, family, neighbors). In **many cases, caregivers do not feel confident about how to treat their children’s diarrhea and are reliant on providers. Thus, behavior change activities must focus not only on generating demand among caregivers but also on providers**, elaborated on further in the Recommendations section.

## Diarrhea prevention

FGD moderators asked participants if they did anything inside their homes to prevent diarrhea. Consistently across all groups, participants noted that hygiene was important to prevent diarrhea. Participants elaborated that keeping children clean, including washing children’s hands after they have been playing outside and ensuring that they urinate and defecate inside the toilet, is important to prevent diarrhea. In eight discussion groups, caregivers also mentioned the importance of washing hands with soap.

“If we don’t clean our hands frequently, or if we don’t wash our hands properly with soap and water, germs might get accumulated in our hands.” – RAI participant

**In one RAI FGD, several caregivers noted that soap is not always available for handwashing, but that it is also unnecessary, as the caregivers can visibly see when water washes the dirt away.** In another RAI FGD, participants discussed the proper sanitation techniques that they have learned about from RAI program CCAs including the importance of washing hands with soap to prevent diarrhea.

In most discussion groups (9 of 12), caregivers asserted that particular types of food can cause diarrhea including oily, spicy, or stale food and junk food such as cheese balls or instant noodles. Junk food, in particular, was associated with unhygienic conditions such as flies, which

women recognized can transmit dirt and cause diarrhea. Women in these groups maintained that diarrhea could be prevented by giving children fresh food including rice, lentils, fruits, and leafy greens rather than spicy and deep-fried foods.

In five groups, caregivers explained that one possible cause of diarrhea is the cold or transitions in the weather from hot to cold or vice versa. Thus, several participants in these groups explained that by keeping children and their homes warm, this helped to prevent diarrhea.

Overall, there was little emphasis on home water treatment as a strategy for diarrhea prevention. In six RAI groups, participants discussed various water treatment strategies to prevent diarrhea including boiling water (four RAI groups), filtering water (two RAI groups), bottled water (one RAI group), and using a chlorine tablet (one RAI group). Notably, water treatment did not come up in any of the four Province 2 discussions.

“We can’t give cold water as well as impure water, so we give water by boiling and purifying. We have to pay more attention upon cleanliness and sanitation.” – RAI participant

One RAI FGD in Tanahu district had particularly more emphasis than the others on water treatment practices: nearly all participants noted treating their water with some method, including boiling, buying bottled water, or using Piyush chlorine tablets. In another RAI discussion group, caregivers explained that children do not like to drink hot water, as it does not satisfy thirst. One participant in this group explained, “We don’t have any tradition of filtering water over here.” Another participant elaborated: “I give boiled water if [children] are sick, otherwise I give cold untreated waters.” **Caregivers in this group recognized that dirty water can cause diarrhea, yet this did not translate into a habitual practice of boiling or otherwise purifying their water unless a child had already become sick with diarrhea. This disconnect between the threat perception of untreated water and habitual water treatment should be a key focus for SBC messages for CRS.**

## Recommendations

### 1. Increase zinc awareness and generate demand for use of ORS and zinc *together*

Qualitative findings show that caregivers do not feel knowledgeable about appropriate treatments for childhood diarrhea. Other than a broad understanding that ORS is an effective treatment for uncomplicated diarrhea, caregivers widely defer to providers’ expertise, and, as KAP data has shown, providers often don’t prescribe appropriate treatments (per recommendation two). There is substantial potential to increase demand for ORS and zinc as the frontline treatment and empower caregivers to advocate for their sick children and seek out these treatments rather than solely relying on providers. There seems to be an existing perception that ORS alone is not enough and that additional “medicine” is required. **CRS should consider positioning zinc as the *medicine* that makes ORS and Zinc a complete, effective treatment.** The co-pack has great potential for adoption among caregivers given current wide acceptance and use of ORS. **SBC campaigns can strive to give caregivers agency, making them the experts on diarrhea treatment so that they proactively ask for ORS and zinc when they go to a shop, pharmacy, or health post.**

**In addition, CRS should emphasize that ORS and zinc is the recommended childhood diarrhea treatment regardless of perceived diarrhea cause. Interpersonal communication (IPC) should also reiterate to caregivers that all diarrhea cases are caused by unhygienic conditions such as untreated water or fecal-oral contamination. This messaging will help to minimize the number of cases that are treated with home remedies because caregivers perceive the cause to be related to traditional or non-medical elements.**

## **2. Increase risk perception of using antibiotic, antidiarrheal, and antiprotozoal medicines**

**CRS should emphasize to caregivers the risk of using antibiotics for uncomplicated diarrhea cases and of using antidiarrheal or antiprotozoal medications for any cases of childhood diarrhea.** FGDs showed that very few caregivers had negative perceptions of or had ever heard negative messages about using these medications to treat childhood diarrhea. Only a handful of participants voiced concerns about using antibiotics, including that they may weaken the child or make future medications ineffective. IPC such as the RAI women's groups, could use a positive deviant approach by identifying such caregivers and including their stories and perspectives in the RAI curriculum. **To help make caregivers champions of their children's health, mass media campaigns and IPC should scale-up messages regarding the risk of using these treatments for children under five.**

## **3. Target providers**

Prior to conducting this research, the SHOPS Plus team thought it was possible that use of antibiotic and antiprotozoal medications were high in part because caregivers requested them. However, these qualitative findings do not support this hypothesis. **Rather, antibiotic or antiprotozoal medicines were used because a health provider prescribed them.** As CRS roles out its co-pack, it must conduct intensive provider detailing (e.g., with government health post workers, pharmacists, pharmacy and shop retail staff, Sangini outlet providers) to 1) emphasize the importance of giving ORS and zinc for uncomplicated diarrhea cases and 2) reiterate the risks of prescribing antibiotic, antiprotozoal, and anti-diarrheal medications to children who do not need them.

## **4. Increase risk perception of untreated water by linking it directly to diarrhea**

Across FGDs, few caregivers, especially in Province 2, reported systematically treating their water. Typically, water was treated only when a child is sick. While caregivers reportedly understand that unhygienic conditions, including untreated water, can cause diarrhea, there appeared to be little concern about drinking unpurified water. Participants had much more of a focus on hand washing, using soap, and preventing children from eating potentially contaminated foods. These proactive behaviors demonstrate that caregivers are willing to take steps to prevent diarrhea. SBC activities including mass media campaigns and interpersonal RAI activities should continue to emphasize the direct causal link between unpurified water and diarrhea, with an emphasis on reaching caregivers in Province 2. Anecdotally, participants seemed to be receptive to information they had recently learned from FCHVs or CCAs. Thus, increased education about the risk of drinking untreated water could substantially help prevent diarrhea. CRS should also use this finding to accelerate its plans to launch a new water treatment product (chlorine tablets) to replace Piyush.

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