



RESEARCH INSIGHTS

Benin Caregivers Increase Use of Zinc and ORS for the Treatment of Childhood Diarrhea

In Benin, correct treatment of childhood diarrhea with a combination of zinc and oral rehydration solution (ORS) increased significantly during a short time period. This study suggests that caregivers are more likely to treat their child’s diarrhea with zinc when they have spoken to their health care provider about it or recall radio or television messages about it.

The major causes of childhood morbidity and mortality in Benin are malaria, diarrhea, and acute respiratory infections. Approximately 13 percent of all childhood deaths in Benin are diarrhea-related. International guidelines recommend that children under age five who experience uncomplicated diarrhea (i.e., without fever or blood in their stool) be treated with zinc for at least 10 days. In addition to zinc, ORS should also be given promptly and as needed through the diarrhea episode to prevent dehydration. This combined treatment may reduce the severity of the diarrhea episode and protect against future episodes for up to three months.

In 2007, the USAID-funded Social Marketing Plus for Diarrheal Disease Control (POUZN) project, implemented by Abt Associates and Population Services International, introduced the Orasel Zinc kit into the Benin market. The kit contains ten 20-milligram tablets of pediatric zinc and two sachets of ORS. POUZN conducted campaigns to create a demand for the kit among caregivers of children and trained public and private providers on when to treat with zinc and ORS. POUZN, and subsequently the SHOPS project, conducted household surveys of caregivers of children under age five in the project’s target areas in 2009 and 2011 to assess changes in their knowledge, practices, and beliefs about treatment of pediatric diarrhea.

Methods

In 2009 and 2011, researchers conducted surveys in seven urban and peri-urban communes in six departments* (Alibori, Atacora, Bourguou, Collines, Donga, and Zou) and in the country’s largest city, Cotonou. The research team used a sampling approach to select caregivers of children under five years who experienced diarrhea in the two weeks preceding the survey. In 2009, the survey included information



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A mother tastes the new ORS product from the Orasel Zinc co-pack at a product launch in Abomey, Benin. The event was hosted by the USAID-funded Social Marketing Plus for Diarrheal Disease Control project (POUZN).

Key Findings

- Use of zinc and ORS is increasing, but many caregivers do not use zinc correctly.
- Incorrect treatment with antibiotics continues.
- Health providers play an increasingly important role in encouraging the use of zinc.
- Caregivers who recalled either general diarrhea treatment messages or Orasel Zinc messages were more likely to use zinc.
- Caregivers are more likely to use zinc when they have been exposed to messages about zinc and know where to get it.

* Benin comprises 12 departments, divided into 77 communes.

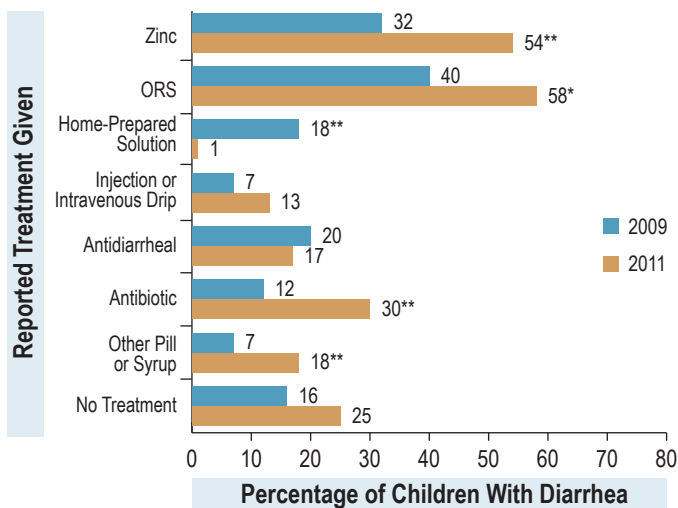
from 294 caregivers; in 2011, 392 caregivers were interviewed. The surveys included questions on household characteristics, the child's diarrhea history, use of zinc and other diarrhea treatments, knowledge and perception of zinc products, and exposure to diarrhea treatment messages through the media. In the analysis of the data, the team took into account the effects of the caregiver's age, education, wealth, and urban or rural residence to assess any differences within each year's survey and between the two years.

Findings

Use of zinc and ORS is increasing, but many caregivers do not use zinc correctly.

In 2009, only one in three children (32 percent) was given zinc when sick with diarrhea; by 2011, over half of children with diarrhea were given zinc (see Figure 1). ORS use also increased from 40 to 58 percent. Almost all zinc users correctly administered ORS in conjunction with zinc in 2009 and 2011 (97 percent and 100 percent, respectively—see Figure 2). Despite the increase in zinc use, a substantial proportion of zinc users did not treat uncomplicated diarrhea correctly (administering zinc for at least 10 days along with ORS), and overall, the proportion of caregivers who did not treat their child's diarrhea increased from 2009 to 2011.

Figure 1. Use of ORS and zinc increased between 2009 and 2011

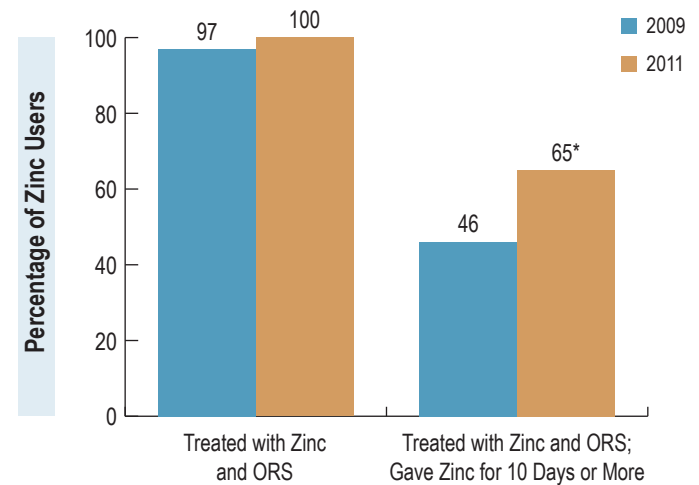


Note: Respondents were allowed to report multiple choices.

* $p < 0.05$ for statistically significant difference between 2009 and 2011 proportions.

** $p < 0.01$ for statistically significant difference between 2009 and 2011 proportions.

Figure 2. Almost all zinc users used ORS, but correct use of zinc could improve



* $p < 0.05$ for statistically significant difference between 2009 and 2011 proportions.

Incorrect treatment with antibiotics continues.

The results suggest a trend in which the proportion of children with uncomplicated diarrhea treated with antibiotics increased from 12 percent in 2009 to 30 percent in 2011. Antibiotics were sometimes used with zinc; the proportion of children given both zinc and an antibiotic rose significantly from 11 percent in 2009 to 39 percent in 2011. Of the 114 caregivers who asked for and received a specific treatment from their health provider in the 2011 survey, the majority (59 percent) stated that they requested Orasel Zinc, while only 6 percent requested an antibiotic. This discrepancy between the low proportion of caregivers who reported requesting antibiotics and the relatively high proportion of caregivers who used antibiotics (30 percent in 2011) raises questions about the possible contribution of providers to incorrect diarrhea treatment.

Health providers play an increasingly important role in encouraging the use of zinc.

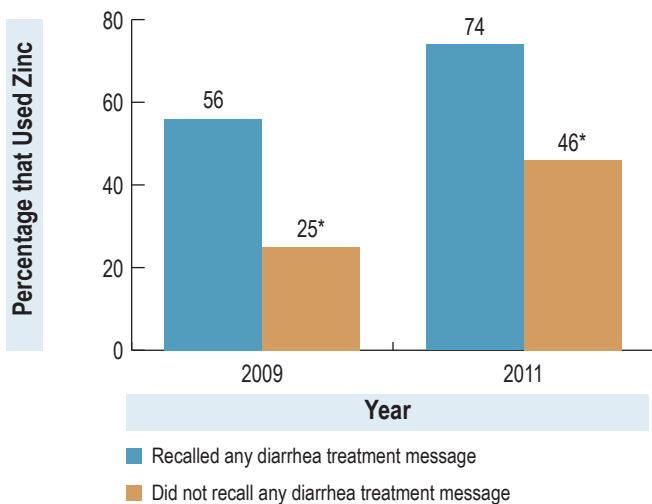
Between 2009 and 2011, the proportion of caregivers who spoke to someone about zinc increased from 12 percent to 32 percent. Many of these caregivers spoke with a health provider, which includes health facility personnel, pharmacists, and shopkeepers. Most caregivers using zinc in 2011 (62 percent) treated their child with zinc because their health provider recommended it.*

*This question was not included in the 2009 survey.

Caregivers who recalled either general diarrhea treatment messages or Orasel Zinc messages were more likely to use zinc.

Among caregivers in 2009 who recalled hearing or seeing any message about diarrhea treatment in the three months prior to the survey, more than half (56 percent) used zinc. By contrast, among those caregivers who did not recall any messages about diarrhea treatment, only 25 percent used zinc (see Figure 3). In the next two years, use of zinc increased substantially. Among those who recalled any diarrhea treatment message in 2011, 74 percent used zinc, compared to 46 percent among those who did not recall messages. Similar patterns were evident when respondents were asked about having heard messages specifically about Orasel Zinc in the past three months (see Figure 4). These findings suggest that, even among caregivers who had not seen or heard treatment messages recently, the use of zinc as treatment for diarrhea is becoming a more common practice.

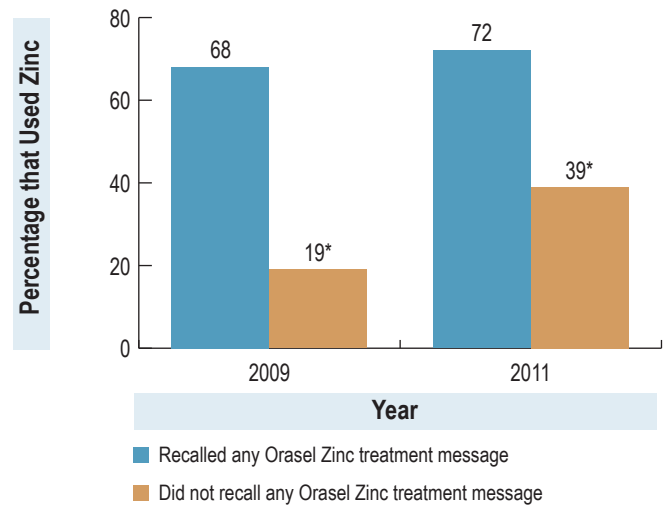
Figure 3. Zinc use is associated with recall of diarrhea treatment messages



* Statistically significant difference within year between groups that recalled/did not recall message at $p < 0.01$.

Note: Statistically significant difference between years for the group that did not recall any diarrhea message at $p < 0.05$.

Figure 4. Zinc use is associated with recall of Orasel Zinc messages



* Statistically significant difference within year between groups that recalled/did not recall message at $p < 0.01$.

Note: Statistically significant difference between years for the group that did not recall any Orasel Zinc treatment message at $p < 0.01$.

Caregivers are more likely to use zinc when they have been exposed to messages about zinc and know where to get it.

After accounting for caregivers' age, education, wealth, and urban or rural residence, in 2009, caregivers who were more likely to use zinc were those who:

- Spoke to health personnel, a pharmacist, or shopkeeper about zinc
- Recalled Orasel Zinc messages or general diarrhea treatment messages
- Took children with diarrhea to a professional health provider

In 2011, these same factors contributed to zinc use, as did caregiver beliefs that zinc tablets are effective for the treatment of diarrhea and that Orasel Zinc kits are available nearby.

Program Implications

While these findings are specific to Benin, many have implications for programming in other countries. Efforts to reach the public and create a demand for a new health product like zinc should use multiple channels, particularly radio, television and patient-provider interactions. These efforts should be carried out on a long-term basis. Although it is not clear which messages will resonate with caregivers and be culturally appropriate in different contexts, key campaign messages should emphasize the protective effects of zinc and the need to administer the treatment for the full 10 days. Campaigns should also include information about where to purchase zinc products.

Continued efforts to reach providers using a variety of channels may be needed to change provider knowledge about the effectiveness of zinc and alter incorrect diarrhea treatment practices. These efforts should be rigorously evaluated and accompanied by marketing activities with private providers to ensure adequate supply and availability of zinc products in the market.

Finally, ensuring access to quality zinc products at an appropriate price point may also increase the likelihood that caregivers will use them to treat their child's diarrhea.



Xeni Jardin

Two brothers from Ouidah, Benin.

Full Report

Sanders, Emily, Kathryn Banke, Julie Williams, and Vicki MacDonald. 2013. *Introducing Zinc through the Private Sector in Benin: Evaluation of Caregiver Knowledge, Attitudes and Practices, 2009 and 2011*. Bethesda, MD: Strengthening Health Outcomes through the Private Sector Project, Abt Associates.

Download this report at www.shopsproject.org.



The Strengthening Health Outcomes through the Private Sector (SHOPS) project is a five-year cooperative agreement (No. GPO-A-00-09-00007-00) funded by the U.S. Agency for International Development (USAID). The project focuses on increasing availability, improving quality, and expanding coverage of essential health products and services in family planning and reproductive health, maternal and child health, HIV and AIDS, and other health areas through the private sector. To access the capabilities of SHOPS, USAID missions and bureaus can buy into the leader agreement or issue their own associate awards. SHOPS is led by Abt Associates Inc., in collaboration with Banyan Global, Jhpiego, Marie Stopes International, Monitor Group, and O'Hanlon Health Consulting. The views expressed in this material do not necessarily reflect the views of USAID or the United States government.

For more information about the SHOPS project, visit: www.shopsproject.org



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