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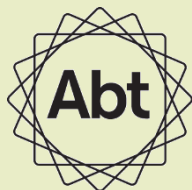


Strengthening Health Outcomes
through the Private Sector

Diarrhea Management Knowledge, Attitudes and Practices among Providers in Benin

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Abt Associates leads the project in collaboration with
Banyan Global
Jhpiego
Marie Stopes International
Monitor Group
O'Hanlon Health Consulting

Project Overview

The Benin provider survey was designed as a formative tool to begin answering questions about how providers treat children under five presenting with diarrhea, particularly around treatment with zinc and ORS. There is currently little information on this subject and as such SHOPS designed the survey in the hopes of gaining greater insight into the beliefs and practices of this important population in diarrhea management.

Program Description

- Beginning in 2007, PSI has trained over 400 public sector health clinic workers, visited private clinicians and pharmacies to disseminate provider brochures and reference materials, and trained pharmacist assistants in 7 departments of Benin. Trainings for providers contained the following elements:
 - IMCI guidelines on diarrhea management
 - Importance of low-osmolarity ORS and reasons for using zinc to treat diarrhea
 - Introduce Orasel Zinc as best choice for fighting diarrhea

Goals and Timeline

In 2011 SHOPS administered two surveys aimed at understanding diarrhea treatment practices for children under five. The first was a quantitative survey of a random sample of 750 caregivers of children under five with diarrhea in the past 2 weeks located in all 12 departments of Benin. The second was a formative survey of providers (nurses, midwives, and pharmacy agents) in the public and private sectors located in 7 departments of Benin. The overarching goal of this research was to add to the body of knowledge of zinc programs and better inform program design and implementation.

The primary objectives of the provider survey were twofold:

- To determine current diarrhea management practices and to examine barriers preventing providers from correctly prescribing zinc and ORS to treat all cases of uncomplicated pediatric diarrhea.
- To better understand public and private providers' behavior relative to continuing to recommend antimicrobials either along with, or instead of, zinc and ORS for diarrhea treatment.

Study Design

- **Target audience:** the survey was conducted with public and private pharmacy agents, nurses, and midwives located in the 28 communes (across 7 departments) where PSI (under the POUZN project) had conducted training for providers on diarrheal treatment. A range of 4 to 8 providers were interviewed in each commune with a larger number (17) selected from Cotonou. A total of 60 providers comprised of 30 nurses/midwives and 30 pharmacy agents were sampled. The providers were selected based on proximity to the data collection teams conducting the caregiver survey.
- **Survey instrument:** The questionnaire was formative in nature and comprised of quasi-qualitative questions that allowed the data collectors to both record quantitative data as well as probe for additional information based on the provider's responses to the questions. The survey included questions about how the providers interact with caregivers when they see a child with diarrhea, how they evaluate the child and the type of diarrhea, their preferred treatment(s) by type of diarrhea, how they advise the caregiver to administer the treatment(s), reasons for or not using ORS or zinc, perceptions of different treatments, and pricing considerations related to their chosen products.

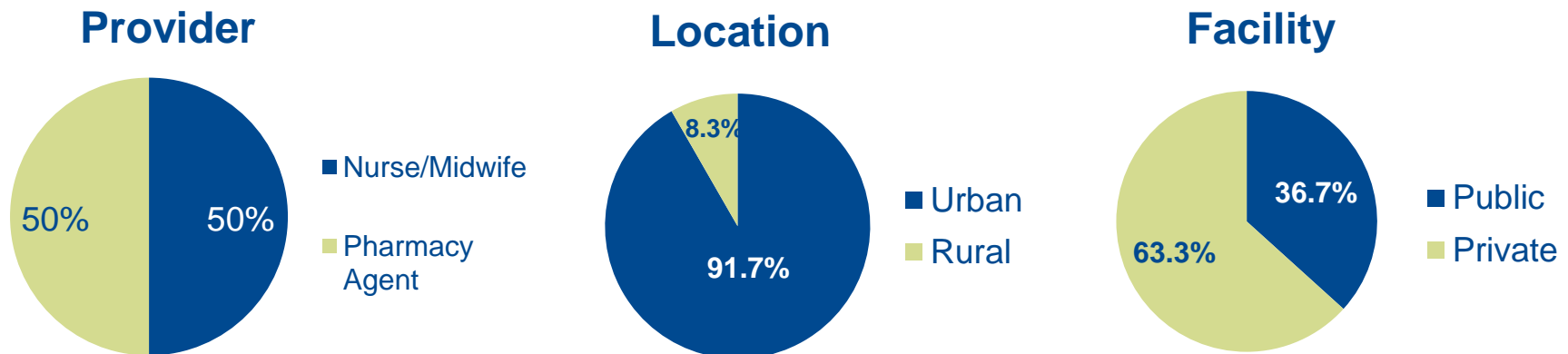
Research Questions

- What are the primary provider practices, knowledge and attitudes relative to pediatric diarrhea treatment?
- What are the barriers preventing providers from recommending zinc along with ORS as a co-prescription over less effective and potentially harmful antibiotics and anti-diarrheals?
 - Are providers aware of the current WHO/UNICEF recommendation that zinc and ORS should be used together as the first-line treatment for uncomplicated pediatric diarrhea?
 - Are providers aware of the benefits of zinc for diarrhea treatment?
 - Do providers stock ORS and zinc products?
 - Do providers recommend ORS and zinc for diarrhea treatment?
 - Why do providers NOT recommend ORS and zinc for diarrhea treatment?

Findings

Provider Characteristics

- A total of 60 providers were interviewed. Half were nurses/midwives and the other half worked in pharmacies/drug shops.*
- Almost all providers (92%) were located in urban/peri-urban areas
- 2/3 of providers worked in the private health sector



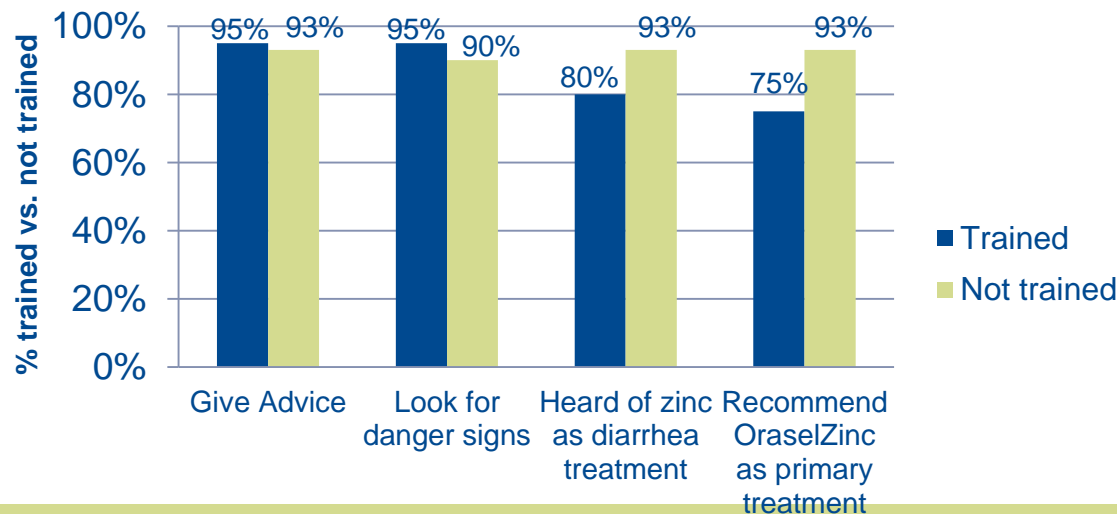
*See additional table in Annex

Provider Characteristics – Diarrhea Management

- Almost all providers (97%) reported that they carry childhood diarrhea treatment products
- The majority of providers (93%) give advice/counseling on treatment of childhood diarrhea
- On average, providers report seeing an average of 53 patients/clients a day. Of these, they estimate that they give advice/treatment on childhood diarrhea to an average of 4 cases per day.

Training in Diarrhea Management

- 33% of providers indicated that they had received training on diarrhea management
 - Pharmacy agents (predominantly in the private sector) were more likely than nurses/midwives to report training (60% vs. 27%), despite the PSI program's focus on training providers at public health centers.
 - Training did not appear to be associated with whether providers gave advice on diarrhea management or whether they looked for danger signs
 - The percentage of providers that had heard of/recommended zinc for treatment of diarrhea was *lower* among those who reported being trained than those who were not trained in diarrhea management.



Knowledge of Danger Signs

- Almost all providers (92%) stated that they looked for danger signs when presented with a child with diarrhea
- When asked to specify which danger signs they looked for, providers most frequently mentioned dehydration (75%) – and accompanying symptoms such as sunken eyes – as well as duration of diarrhea (64%) and blood in the stool (51%)
- Overall clinic-based providers tended to more frequently report checking for key danger signs

Sign:	Nurse/Midwife (%)	Pharmacy Agent (%)	Total
	%	%	%
Dehydration	86.2	61.5	74.5
Lethargy	41.4	23.1	32.7
Agitation or irritability	17.2	15.4	16.4
Sunken eyes	48.3	42.3	45.5
Inability to drink	31	3.8	18.2
Mucus in the stool	41.4	50	45.5
Blood in the stool	65.5	34.6	50.9
Duration of diarrhea	51.7	76.9	63.6

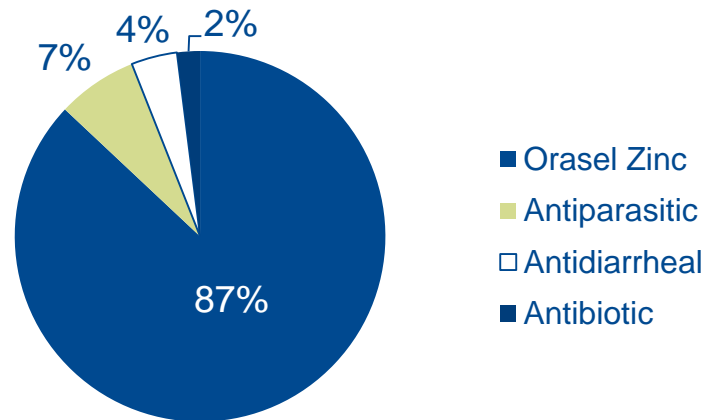
Knowledge of Diarrhea Management

- Providers showed high knowledge about dehydration and the need for ORS
 - 98% of all providers (100% of pharmacy agents) agreed that “all infants with diarrhea should receive ORS” and that children with severe dehydration should be immediately referred to a health center
- Most providers (85%) agreed that children with acute or persistent diarrhea, and without fever, should NOT be given an antibiotic
- Overall a high percentage of providers did not seem to know that anti-motility and adsorbents should not be given to children.
 - Pharmacists were more likely to say that anti-motility drugs should “never” be given to children, yet also more likely to agree that all children with acute diarrhea should be given adsorbents

	Nurse/Midwife		Pharmacy Agent	
	#	%	#	%
Disagree with giving anti-motility	14	47	20	67
Disagree with giving adsorbents	19	63	10	33

Diarrhea Treatment Practices

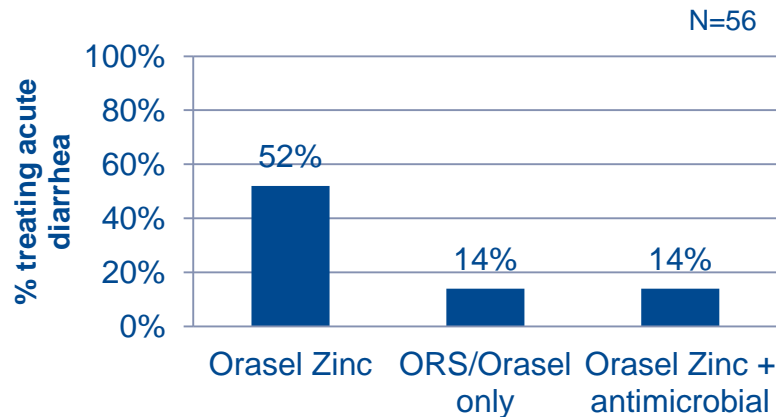
- Most providers (87%) stated that their first recommended treatment for childhood diarrhea was Orasel Zinc.



- Most providers recommending Orasel Zinc (87%) said this was because it “works best to stop an episode of diarrhea/is the most effective treatment”
- Over half (58%) of the respondents that selected Orasel Zinc as their first choice also recommended a second treatment with the anti-parasitic Flagyl
 - Most said this was because it “works best to stop an episode of diarrhea/is the most effective treatment” AND because “it kills bacteria/parasites/amoebas”

Diarrhea Treatment Practices

- Providers reported treating *acute diarrhea* with Orasel Zinc. However a sizeable number are using this in combination with antimicrobials (antibiotics such as CTM or anti-parasitics like Flagyl/metronidazole).



- When asked about which treatments they gave for *severe dehydration* very few providers reported practicing the correct protocol: either referring to a health clinic (7%) or giving IV fluids/Glucose (34%)
- About half (56%) of providers reported correctly administering antibiotics (CTM or amoxicillin) for treatment of *dysentery*.

Caregiver treatment behavior

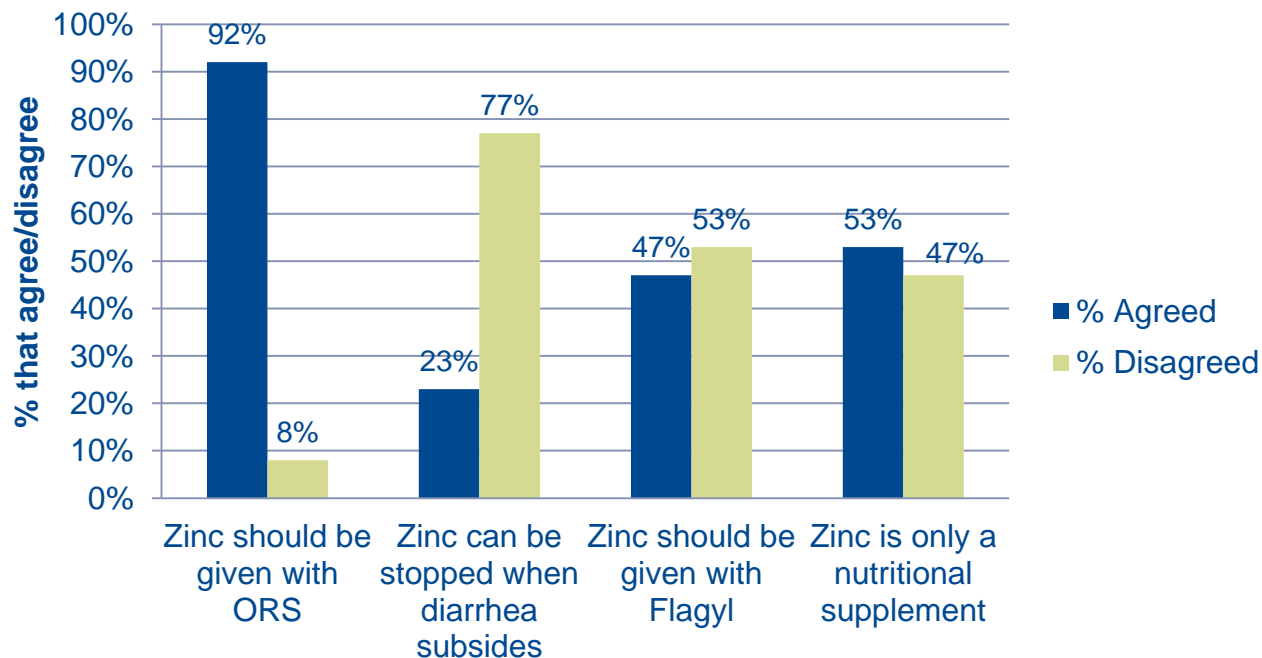
- According to most providers, caregivers ask for specific treatments for their children with diarrhea. The most common treatments requested are:
 - ORS (84%)
 - Orasel Zinc (50%)
 - Antibiotics (36%)
- According to providers, the main reasons caregivers give for not wanting to use ORS are: “don’t like taste/child refuses to drink/vomits” (40%) and “have not heard of it” (28%)

Zinc Awareness

- 88% of providers had heard of zinc as a treatment for diarrhea
 - Most (75%) learned about zinc via TV/Radio
 - About half also said they learned about zinc from medical/drug representatives (53%), continuing medical education sessions (49%) or colleagues/friends (43%)
- The main messages providers report hearing about zinc are:
 - Effective treatment for diarrhea (69%)
 - Lessens duration and severity of diarrhea (62%)
 - Nutritional supplement (42%)
 - Protective effect (42%)

Zinc Knowledge

- Provider knowledge of correct treatment with zinc was high, i.e. most knew to give zinc with ORS (92%) and that the treatment should continue even after the diarrhea subsides (77%).
- However, at the same time, about half agreed with the statement that zinc was “only a nutritional supplement and not effective as diarrhea treatment” and almost half agreed that zinc should be given with Flagyl



Zinc Attitudes

- When asked what it would take for them to recommend zinc plus ORS as the primary treatment for diarrhea, providers said:
 - Knowing zinc is an effective treatment for diarrhea (92%)
 - Knowing that zinc is a safe product (80%)
 - Among nurses/midwives, 43% said “assuring compliance with government protocol/requirements”
- When asked whether they had any concerns about the pricing of zinc products, most (93%) providers said they did not.
- Most providers (88%) have not encountered caregivers that have refused zinc. Among those that have (n=7), the main reason given by caregivers is that:
 - 10 days is too long
 - Don't like taste/child refuses to take

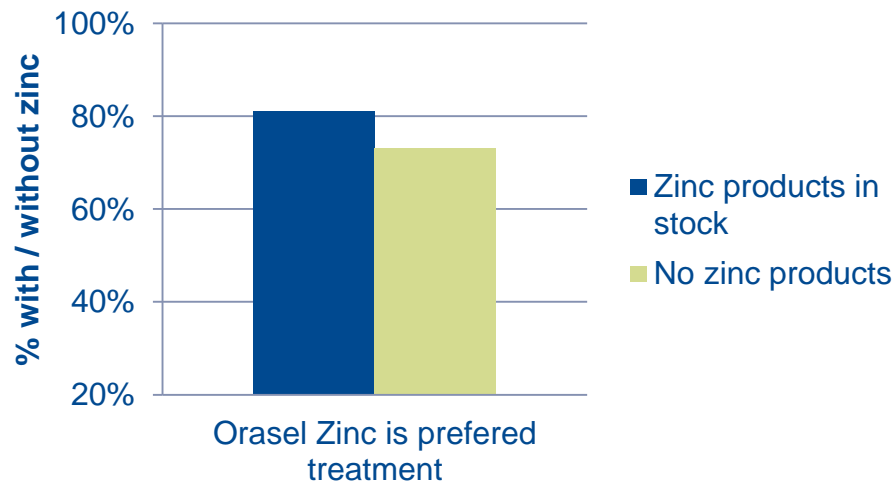
Zinc Practices

- Most providers (97%) said they recommend zinc for children with diarrhea.* The main reasons were:
 - It is the most effective treatment for childhood diarrhea (75%)
 - Zinc reduces severity of diarrhea (61%)
 - Works well for treatment of childhood diarrhea (49%)
- When asked whether they had a preferred treatment overall for childhood diarrhea, most providers (77%) stated that they did. Of these, 79% said Orasel Zinc/Zinc was their preferred choice.*

*Note: question order bias may have effected responses to these questions as they were asked at the end of the questionnaire.

Zinc Practices

- While almost all providers (97%) report carrying products for childhood diarrhea treatment, only slightly more than half (68%) stocked products that contained zinc.
 - Among those that carried zinc products, more private providers (61%) stocked zinc than public providers (39%), and nurse/midwives were slightly more likely to have zinc products in stock (77%) than pharmacy agents (60%).
- Providers that stocked zinc were slightly more likely to state that Orasel Zinc was their preferred treatment for childhood diarrhea.



Conclusions and Implications

1. Public and private providers are an important source of treatment information/advice for caregivers of children with diarrhea, and most providers had learned of zinc through multiple channels (mainly TV/radio, medical drug reps and CMEs).
 - Demand generation campaigns can sensitize both caregivers and providers to zinc as an effective diarrhea treatment, influencing both care-seeking and prescribing behavior. Detailing visits and CME have also proven to be important channels for disseminating awareness of zinc in Benin; however, further exploration is needed on the effects of training on zinc and ORS as the survey did not directly ask providers whether they had specifically received training on the new treatment guidelines.
2. The majority of providers (88%) know about and most (79%) listed Orasel Zinc as their preferred treatment, yet about half still see zinc as a nutritional supplement only and inappropriately recommend co-treatment with antibiotics and antimicrobials.
 - Educating providers about correct pediatric diarrhea treatment, including the pathology of uncomplicated childhood diarrhea, is vital for programs seeking to increase proper prescription of Zinc + ORS and decrease inappropriate prescription of antimicrobials.

Conclusions and Implications

3. While most providers correctly prescribe zinc and ORS for uncomplicated diarrhea, there was also a high rate of co-prescription of Orasel Zinc with antibiotics
 - Programs seeking to change provider behavior must emphasize the following messages:
 - Zinc + ORS is the most effective *stand-alone* treatment
 - Antiparasitics and antibiotics are ineffective treatments for most childhood diarrheas (which are primarily caused by viruses).
4. Given the correlation between stocking and prescribing Orasel Zinc, greater effort is needed to increase availability of the product to providers beyond the 68 percent currently stocking zinc
 - Ensuring an adequate supply of zinc products to providers can increase likelihood that providers will recommend them for diarrhea treatment. Moreover it appears that the co-packaging of zinc with ORS in the Orasel Zinc kit was effective in prompting recommendation of both products.
5. The price of zinc was deemed affordable by both providers and their customers

Annex Tables

Table 1. Number of providers by commune

Commune	# Pharmacy Agents	# Nurse/Midwives	Total
Abomey	3	5	8
Bohicon	3	5	8
Cotonou	11	6	17
Malanville	2	4	6
Ouake	1	3	4
Parkou	5	3	8
Savalou	1	3	4
Tanguieta	2	3	5
Total	30	30	60



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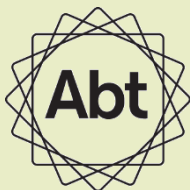


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