



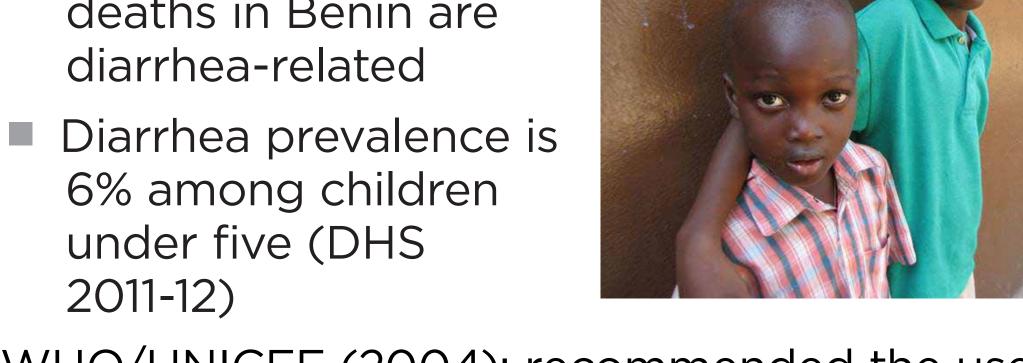
Increasing Use of Zinc in the Treatment of Pediatric Diarrhea in Benin: Lessons Learned for Global Programs



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Pediatric Diarrhea in Benin

- Diarrhea is the second-leading cause of death among children under five worldwide and in Benin
- 13% of all childhood deaths in Benin are
- 6% among children under five (DHS



- WHO/UNICEF (2004): recommended the use of zinc plus oral rehydration solution (ORS) to manage acute diarrhea in children under five
- Benin MOH adopted policy in 2007

Benin POUZN Program

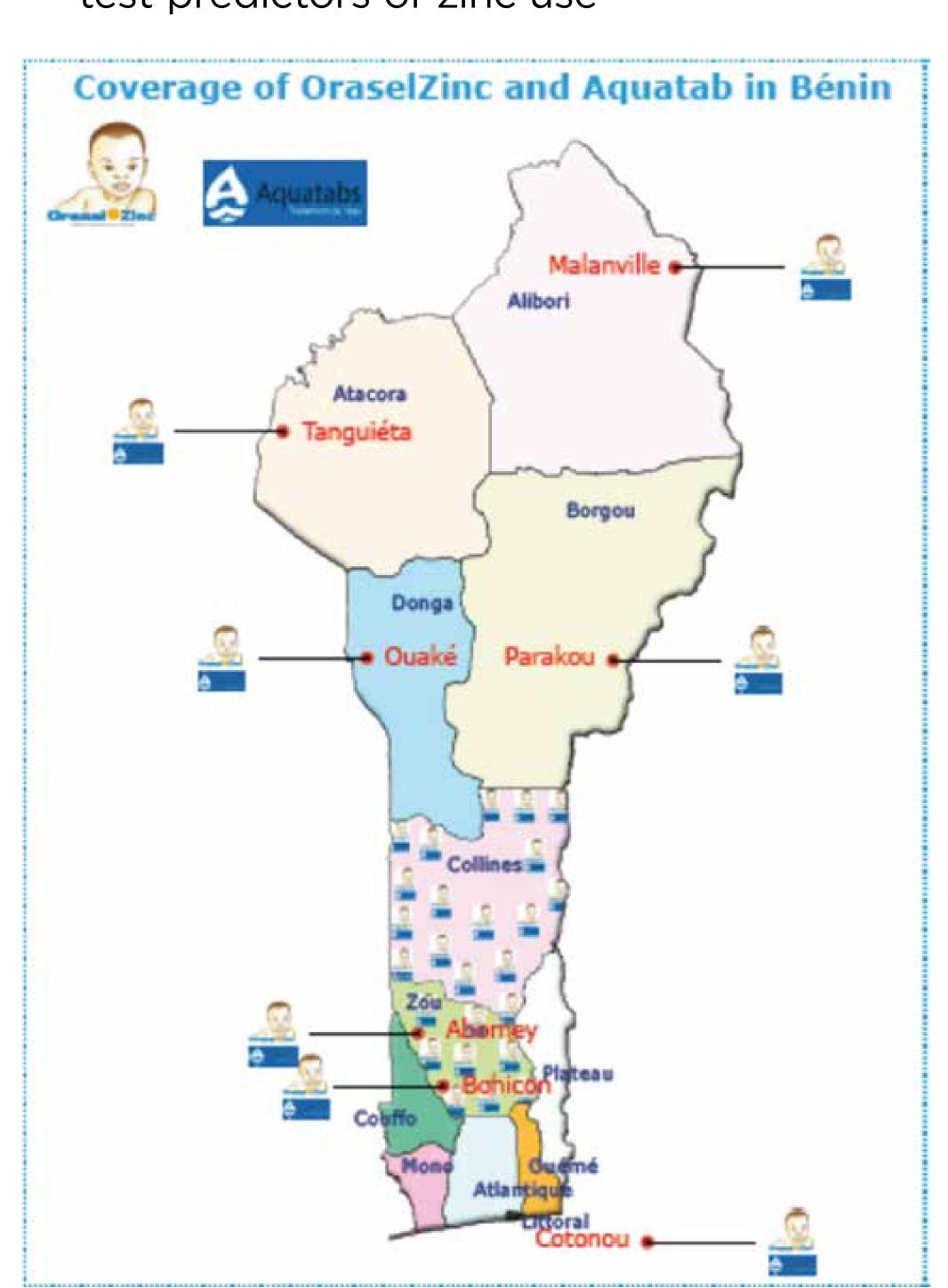
- Introduction of Orasel Zinc diarrhea treatment kit in Benin (2008)
- POUZN program expansion nationwide in 2009
- Orasel Zinc is only zinc product on the market in
- Two main program components:
- Demand creation: television, national/community radio, community-based interpersonal communication and sales
- Training and outreach to private health providers

Objectives/Research Questions

- Describe caregiver knowledge, attitudes and practices surrounding diarrhea management, including the correct use of ORS and zinc
- 2009 (after ~1 year of implementation)
- 2011 (after ~3 years of implementation)
- Describe the primary barriers preventing caregivers from using zinc and ORS to treat all cases of uncomplicated diarrheas in 2009 and 2011

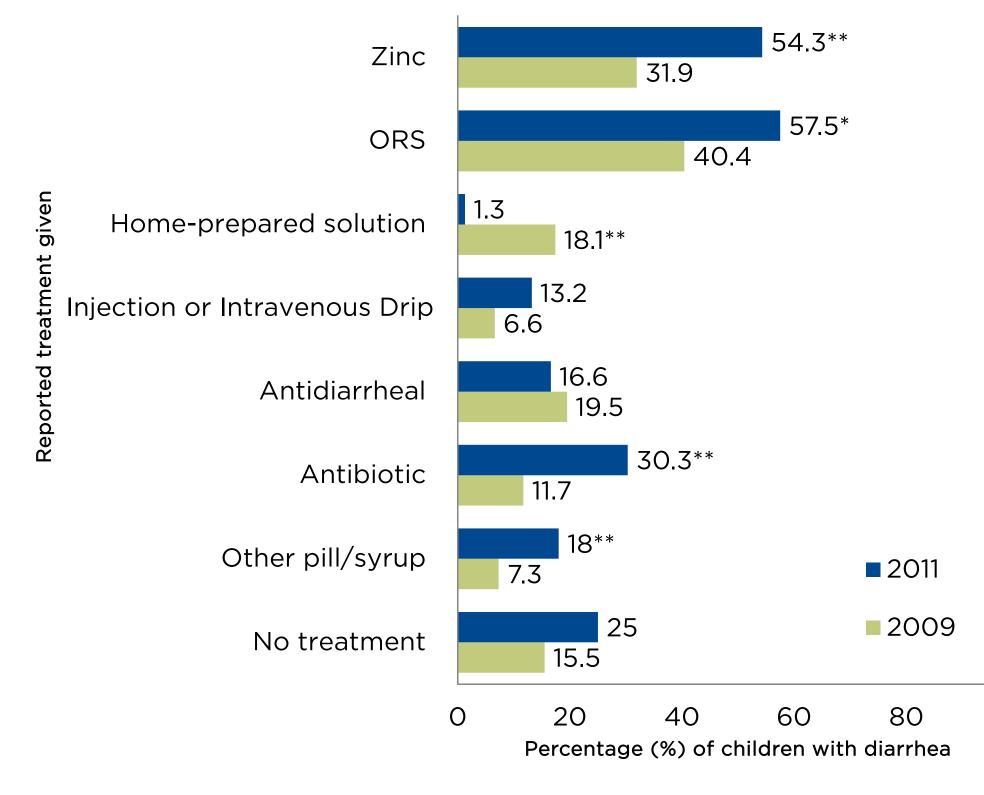
Methodology

- Survey conducted in 7 urban/peri-urban communes located in 6 targeted departments and in Benin's largest city of Cotonou
- Multi-stage sampling approach used to select female caregivers of children 0-59 months with diarrhea in 2 weeks prior to survey in 2009 (n=294) and 2011 (n=392)
- T-tests and chi-squared tests used to assess statistical significance within and between years; logistic regression used to test predictors of zinc use



Use of Zinc and ORS is Rising

Treatment (reported by caregiver) for diarrhea among children with diarrhea in the past 2 weeks



*p<0.05 for statistically significant difference between 2009 and 2011 proportions **p<0.01 for statistically significant difference between 2009 and 2011 proportions

Role in Encouraging Use of Zinc

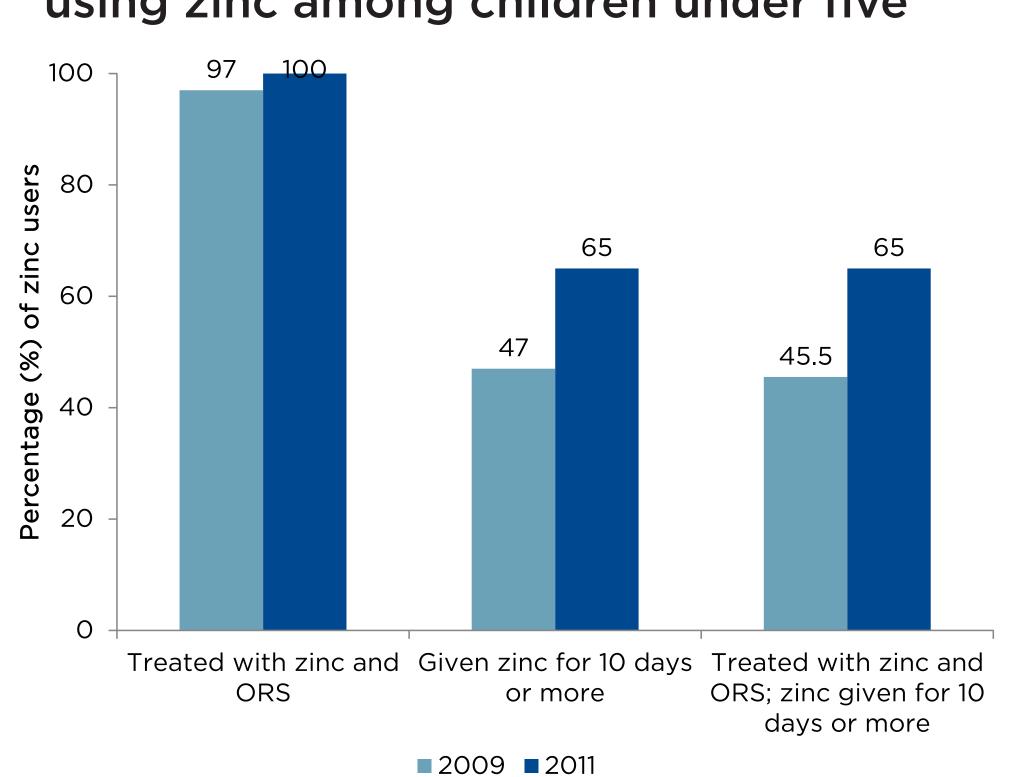
- Statistically significant increase in proportion of caregivers who spoke to someone about zinc (12% in 2009 vs. 32% in 2011)
- In both 2009 and 2011 most conversations were with a provider (community health workers, health personnel, pharmacists an shopkeepers)

 Most (62%) zinc users in 2011 treated with zinc because their provider recommended it

Key Findings

Correct Treatment (ORS with Zinc for 10 days) also Increases

Treatment of diarrhea in past 2 weeks using zinc among children under five



Antibiotics Persists, often Given with Orasel Zinc Diarrhea Treatment Given to Children

Inappropriate Treatment with

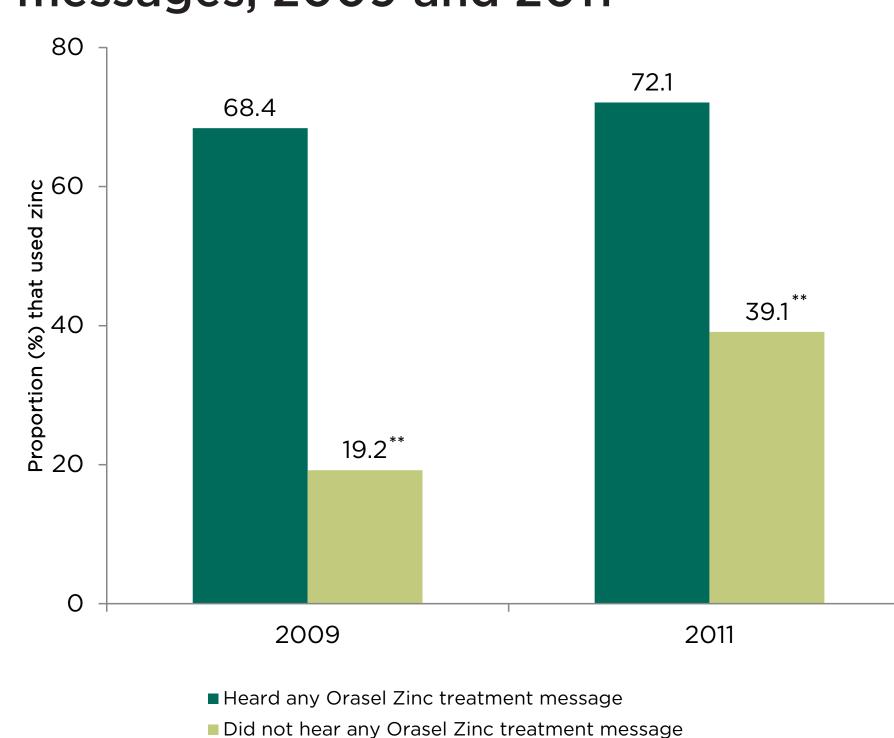
with Uncomplicated Diarrhea

Treatment Given	Children with uncomplicated diarrhea 2009 (%)	Children with uncomplicated diarrhea 2011 (%)
ORS	45.0	47.5
Zinc	40.2	44.1
Antibiotics	12.4	20.0
Antidiarrheals	19.5	21.1
Total # of Children	94	210

Note: Uncomplicated diarrhea is defined as reporting no blood in stool and no fever.

Health Providers Play an Important Exposure to Orasel Zinc Messages is Associated with Zinc Use

Zinc use, by recall of Orasel Zinc messages, 2009 and 2011



** Statistically significant difference within year (2009 or 2011) between groups that heard/did not hear message at p<0.01 level Note: Statistically significant difference between years (2009 and 2011) among "did not hear orasel zinc message" group at p<0.01 level.

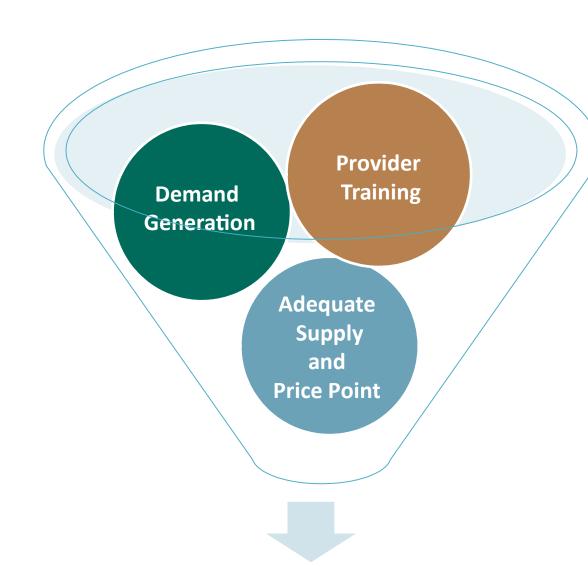
Exposure to Zinc Messages and Availability of Zinc Are **Predictors of Zinc Use**

Predictors to Test	Odds ratio for Zinc Use Among Caregivers who Treated Diarrhea (95% Confidence Limits), 2009 n=252	Odds ratio for Zind Use Among Caregivers who Treated Diarrhea (95% Confidence Limits), 2011 n=259
Caregiver's exposure	e to mass media mess	sage:
Recalled exposure to message about Orasel Zinc in past 3 months	12.6**	3.3**
Recalled exposure to general diarrhea message in past 3 months	4.0**	n.s.
Spoke to Health personnel/pharmacist/shop keeper about zinc as treatment	24.2**	14.6**
Caregiver's knowledge	and perception abou	t zinc:
Agree zinc tablets are effective for the treatment of diarrhea	n.s.	50.1**
Agree there is a place nearby where I can obtain Orasel-Zinc kits when my child needs them	n.s.	9.3**
Child(ren) with diarrhea taken to a professional health provider (health clinic or pharmacy) for advice or treatment	3.6*	6.9**

Conclusions

- Use of ORS and zinc increased during the 2-year period, but many zinc users did not use zinc for the full recommended 10 days and continued to give antibiotics in addition to ORS and zinc.
- Health providers in the public and private sectors play an important role in encouraging use of ORS and zinc.
- Health providers may also play a role in continued inappropriate use of antibiotics for uncomplicated diarrhea.
- Caregivers who recall diarrhea treatment messages and who talk to others (especially health providers) about zinc were more likely to use it.

Lessons Learned



Use of ORS+zinc among caregivers of children under 5

- Demand generation: Need to leverage multiple channels, particularly radio, television and patient-provider interactions, in a sustained manner. Key campaign messages should emphasize protective importance of treatment for 10 days as well as the negative consequences of inappropriate treatment with antibiotics.
- Provider Training: Need to leverage multiple channels to change health provider knowledge about the effectiveness of zinc and alter inappropriate diarrhea treatment practices.
- Access: Need to ensure supply and availability of quality zinc products at an appropriate price point.