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 diarrhea-related
- Diarrhea prevalence is 6% among children under five (ORS

2011-12)
- 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 Oralax zinc diarrhea treatment kit in Benin (2008)
- POUZN program expansion nationwide in 2009
- Oralax zinc is only zinc product on the market in Benin
- 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=352)
- T-tests and chi-squared tests used to assess statistical significance within and between years; logistic regression used to test predictors of zinc use

Key Findings

Use of Zinc and ORS is Rising Treatment (reported by caregiver) for diarrhea among children with diarrhea in the past 2 weeks

<table>
<thead>
<tr>
<th>Year</th>
<th>Treated with Zinc and ORS (% of cases of diarrhea)</th>
<th>Treated with Zinc and ORS &gt; 10 days (% of cases of diarrhea)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>10.4%</td>
<td>60%</td>
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<tr>
<td>2011</td>
<td>30.3%</td>
<td>60%</td>
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Inappropriate Treatment with Antibiotics Persists, often Given with Oralax Zinc

Diarrhea Treatment Given to Children with Uncomplicated Diarrhea

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<tr>
<th>Year</th>
<th>Treated with antibiotics (% of cases of diarrhea)</th>
<th>Given with Oralax Zinc (% of cases of diarrhea)</th>
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<tr>
<td>2009</td>
<td>40.0%</td>
<td>47.5%</td>
</tr>
<tr>
<td>2011</td>
<td>44.1%</td>
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Inappropriate Treatment with Antibiotics Persists, often Given with Oralax Zinc

Correct Treatment (ORS with Zinc for 10 days) also Increases Use of Zinc and ORS is Rising Treatment (reported by caregiver) for diarrhea among children with diarrhea in the past 2 weeks

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Health Providers Play an Important Role in Encouraging Use of Zinc

- Statistically significant increase in proportion of caregivers who spoke to someone about zinc (72% in 2009 vs. 82% in 2011)
- In both 2009 and 2011 most conversations were with a provider (community health workers, health personnel, pharmacists and shopkeepers)
- Most (62%) zinc users in 2011 treated with zinc because their provider recommended it

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

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Exposure to Oralax Zinc Messages is Associated with Zinc Use

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

- 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 diarrheas
- Caregivers who recall diarrheea treatment messages and who talk to others (especially health providers) about zinc were more likely to use it.

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 diarrheas
- Caregivers who recall diarrheea treatment messages and who talk to others (especially health providers) about zinc were more likely to use it.

Lessons Learned

- Demand generation: Need to leverage multiple channels, particularly radio, television and patient-provider interactions, in a sustained manner. Key campaign messages should emphasize the 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 diarrheea treatment practices.
- Access: Need to ensure supply and availability of quality zinc products at an appropriate price point.