**Assessment of a Zinc Promotion Program in Nepal: Implications for Introducing Zinc Treatment in Developing Countries**

Wenjuan Wang, PhD, Vicki M. MacDonald, MPH, Susan Mitchell, MBA, Abt Associates Inc.

### Background
- **Global burden of childhood diarrhea**
  - Diarrhea remains the second leading cause of death in children under five (2.5 billion cases of diarrhea and 1.5 million deaths per year)
- **Diarrhea prevention and treatment**
  - More than half of cases are in Africa and South Asia
- **Clinical trials** showed using zinc along with Oral Rehydration Salts (ORS) reduced duration and severity of childhood diarrhea
- **In 2004**, WHO/UNICEF recommended using zinc and ORS together as an effective treatment for diarrhea in developing countries

### Program Objectives and Areas of Focus
- **Sustained provision and use of pediatric Zinc in addition to ORS/ORT for 10 days as the first line treatment for uncomplicated diarrhea for children under 5**
- **Supported local manufacturers to produce and market zinc products**
- **Implemented a behavior change communication campaign** to create awareness of and demand for zinc products to ensure caregivers have appropriate knowledge and practice with zinc treatment
- **Educated and trained providers to improve their knowledge of appropriate diarrhea case management**

### Project Districts (approx. 50% of the population)

#### Program Evaluation
- A population-based household survey was conducted in August 2008, covering 26 program districts
- 3550 households were selected through a multi-stage probability sampling approach.
- The caregiver of the children under five in each household was interviewed

#### Program Results: Knowledge on Zinc Treatment and Source

<table>
<thead>
<tr>
<th>Source of Care</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector sources (ORS)</td>
<td>56.7%</td>
</tr>
<tr>
<td>Private sector sources</td>
<td>43.3%</td>
</tr>
</tbody>
</table>

#### Treatment/Advice Received by Source of Care

<table>
<thead>
<tr>
<th>Source of Care</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector sources (ORS)</td>
<td>80.4%</td>
</tr>
<tr>
<td>Private sector sources</td>
<td>19.6%</td>
</tr>
</tbody>
</table>

#### Diarrhea Treatment Practices

- **Knows that need to give zinc for 10 days**
- **Knows that zinc is an effective treatment for diarrhea** (reference: disagree)
- **Live in richest household (reference: poorest quintile)**
- **Caregiver obtained education higher than secondary level (reference: no education)**
- **Caregiver agreed that zinc is an effective treatment for diarrhea (reference: disagree)**

#### Predictors of Zinc Use

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Use zinc (Odds Ratio)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caregiver obtained education higher than secondary level (reference: no education)</td>
<td>1.76**</td>
</tr>
<tr>
<td>Caregiver exposed to relevant mass media message about zinc (reference: unexposed)</td>
<td>2.13**</td>
</tr>
<tr>
<td>Caregiver perceived zinc is easy to obtain</td>
<td>2.10**</td>
</tr>
</tbody>
</table>

#### Conclusions and Implications
- **Zinc promotion through mass media is essential** to increasing knowledge and use
- **Knowledge (0 to 52%) and use (0.4% to 15.4%)** of zinc can change in a short period of time
- **Continuing provider behavior remains an ongoing challenge**
- **Greater attention needs to be paid to promoting use among poorer, less educated populations**