Comprehensive diarrhoea control in Zambia

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Round Table Discussion
30 April 2013
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Why Target Diarrhea? A neglected childhood killer...

- Diarrhoea is one of the leading causes of deaths in the developing world, particularly for children, approximately 1.5 million related child deaths each year.

- Among infectious diseases, diarrhoea ranks as the third leading cause of both mortality and morbidity after respiratory infections and HIV/AIDS.

- Rotavirus is responsible for approximately 1/3 of U5 mortality due to diarrhea. This is entirely preventable.

Diarrhoea causes 14% of under-5 child deaths

MDGs & Diarrhoea

 Millennium Development Goals & Diarrhoea

**MDG 4** pledges to reduce child mortality, which includes the urgent need to tackle diarrhoea.

**MDG 7** focuses on halving the proportion of the population without access to safe drinking water and basic sanitation.

Source: WHO/Child Health Epidemiology Reference Group (CHERG) estimates presented in The Lancet, June 2011-08-04
...that has a devastating effect on Zambia’s 2.4m children

- Diarrhoea is the third biggest killer of children under-5 in Zambia
- Every day, 2000 children die from diarrhoea related causes in Africa, 40 in Zambia.

10.5 million episodes of diarrhea in Zambia

840,000 visit a health facility at least once for diarrhoea

63,000 are hospitalised

15,000 die from diarrhoea related causes

25% of this burden is attributable to the rotavirus infection

Source: ARK International Analysis (2012)
Combating Diarrhoea

Key Actions to reduce the burden of childhood diarrhea

TREATMENT
- Oral rehydration therapy
- Zinc and ORS
- Continued feeding

REDUCE RISK FACTORS
- Prevent malnutrition
- Prevent stunting

PREVENTION
- Primary prevention (to reduce transmission)
  - Rotavirus and other childhood vaccines
  - Hand washing with soap
  - Improve drinking water supply
  - Community-wide sanitation

- Secondary prevention (to reduce severity)
  - Promote breastfeeding
  - Vitamin A supplementation
  - Early detection and appropriate treatment
  - Zinc & ORS

Source: Adapted from the Child Health Epidemiology Reference Group, 2009.
Our intervention focuses on key prevention and treatment methods...

### Key Interventions to Reduce the Burden of Childhood Diarrhea

**Prevention – Supply and Demand**

1. **Primary Prevention** (to reduce transmission)
   - Rotavirus and other childhood vaccines
   - Handwashing with soap
   - Improve drinking water supply
   - Community-wide sanitation

2. **Secondary Prevention** (to reduce severity)
   - Promote breastfeeding
   - Zinc and ORS supply
   - Vitamin A supplementation
   - Early detection and appropriate treatment

3. **Case Management**
   - Oral Hydration Therapy
   - Zinc
   - Continued Feeding
   - Parental therapy (NG/IV)

### Efficacy

<table>
<thead>
<tr>
<th>Product</th>
<th>Efficacy</th>
<th>Suppliers</th>
<th>Retail price</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORS</td>
<td>ORS can avert estimated 93% of diarrhea deaths</td>
<td>Extensive: ~57, including local manufacturers</td>
<td>~US$ 0.08-0.13/ sachet</td>
</tr>
<tr>
<td>Zinc</td>
<td>40% reduction in treatment failure/death; 25% reduction in episode duration</td>
<td>Extensive: ~36, including local manufacturers and producers of syrups</td>
<td>~US$ 0.25/10 tablets (high end; price varies strongly)</td>
</tr>
<tr>
<td>Rotavirus Vaccine</td>
<td>74% reduction in diarrhoea deaths</td>
<td>Extensive – led by GSK</td>
<td>~US$ 1 per course</td>
</tr>
</tbody>
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• ARK has developed its strategy for targeting Childhood Diarrhea by analysing the effectiveness of intervention and current coverage rates, and will currently administer four of the most impactful interventions for diarrhea in its Zambia programme.

Zambia Diarrhea Interventions - Ranked by High Effectiveness, Low Coverage (HELC) Score

- Antibiotics
- Rotavirus vaccine
- Zinc
- Hand-washing with soap
- ORS
- Improved sanitation
- Access to safe water
- Home purification of water
- Vitamin A

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Baseline</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2011</td>
<td>2012</td>
</tr>
<tr>
<td>Pre-intervention</td>
<td>YR1</td>
<td>YR2</td>
</tr>
<tr>
<td>Hand washing</td>
<td>20%</td>
<td>23%</td>
</tr>
<tr>
<td>Rotavirus Vaccine</td>
<td>0%</td>
<td>84%</td>
</tr>
<tr>
<td>Exclusive Breast Feeding</td>
<td>35%</td>
<td>37%</td>
</tr>
<tr>
<td>ORS</td>
<td>53%</td>
<td>64%</td>
</tr>
<tr>
<td>Zinc for treatment</td>
<td>0%</td>
<td>20%</td>
</tr>
</tbody>
</table>
1. Training Clinicians.
2. Expanding access to ORS/Zinc.

Accelerated introduction of rotavirus vaccine through Lusaka demonstration project.

Community behaviour change with a focus on exclusive breastfeeding and hand washing.
Expected PAED impact

We have input these estimates into the Lives Saved Tool (LiST Model) assuming a 3 year coverage and output yield is 15% reduction in all cause *post-neonatal* under 5 mortality.
Targets: to reduce U5 diarrhoea related mortality by 50% and overall U5 mortality by 15%, averting over 2,850 deaths

PAED will significantly reduce infant mortality

Diarrhoea Cases Averted:
- Year 1: 10,000
- Year 2: 150,000
- Year 3: 200,000

Clinic Visits Averted:
- Year 1: 5,000
- Year 2: 10,000
- Year 3: 15,000

Hospitalisations Averted:
- Year 1: 500
- Year 2: 1,000
- Year 3: 1,500

Deaths Averted:
- Year 1: 250
- Year 2: 500
- Year 3: 750

Diarrhoea Cases Averted: 399,486
Clinic Visits Averted: 35,292
Hospitalizations Averted: 4,072
Deaths Averted: 2,851

Source: ARK International Analysis (2012)
Programme progress

• 82000 children vaccinated with first dose, 60000 fully immunised – coverage rates
• 281/560 health workers trained on IMCI but over 400 trained on rotavirus vaccine
• Over 200 000 caregivers/families reached
• Unlocking value from the ORS/Zn supply chain
• Formative research for behavioural change interventions:
  – Awareness and subsequent increased uptake of Zn /ORS
  – Exclusive breastfeeding
  – Hand-washing with soap
PAED clinic and training facility

Housing a public paediatric clinic with 4 consulting rooms, an observation bay, satellite lab, ultrasonography, offices, a board room and a training hall
Lessons learnt and questions that need answers
Programme lessons

- **Government commitment** may be slow to come in, but don’t move without their buy in.
- **Measuring** what you are doing is a must if you are to scale up – separate program Academic which is measuring program impact.
- **Behavioural change components** hard to program and therefore often an afterthought - may lag behind – and yet we need evidence of what behavioural interventions need to be part of an optimal package.
- **Partnerships** key in driving such projects – beyond the program partners one needs a community of practice around an intervention.
- **Continuous improvement** is needed. We have completed a mid term program review and are adjusting some program elements accordingly.
Questions than still need answers

• What have we learned about training of health care workers to treat and vaccinate?
  – Training is costly we need innovative ways for high quality training

• How does pneumo vaccine / amoxicillin compare with rota vaccine/ORS and zinc?
  – Perhaps it does, but bearing in mind the other is an antibiotic with different issues on resistance. ORS/Zn bundling is a challenge that needs separate

• What benefits does a comprehensive disease focused approach have? Is this the best way of addressing other health issues?
  – We are yet to see the results

• We have a complex partnership in place in Zambia – has the diversity of players contributed to success or does it add management cost/time? How do you get the right people around the table?
  – You cant go it alone, but boundary analysis is crucial
Concluding Reflections

We choose not to wait and see what happens, rather we take courage in making decisions today that will positively influence what happens tomorrow. We are aware of the risks From such commitments; but staying back is simply not an option.
THANK YOU
ZIKOMO