Finishing the Diarrhea Business

PREVENTING MORE THAN ONE MILLION UNNECESSARY DEATHS

The 11th Annual Global Health Mini-University

Serge Raharison
The Maternal and Child Health Integrated Program (MCHIP)

- USAID Bureau for Global Health’s flagship maternal, newborn and child health program
- Working in well over 30 countries worldwide
- MCHIP supports programming and opportunities for integration in:
  - Maternal, Newborn and Child Health
  - Immunization, Family Planning, Malaria, HIV/AIDS
  - Water/Sanitation, Urban Health, Health Systems Strengthening
Diarrhoea: Why children are still dying and what can be done.
The 2\textsuperscript{nd} leading cause of under-5 death

Causes of deaths among children under age 5

2008 (percent)

Global, more than one-third of child deaths are attributable to undernutrition

Children are more vulnerable

- Life threatening dehydration in children:
  - More H₂O body-weight proportion
  - Higher metabolic rate
  - Kidney less able to conserve water

- Poor nutritional status and overall health are additional risk factors
HOW

WHY

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WHERE

WHEN

WHO

WHAT
Under-5 deaths

- Nearly 2/3 deaths worldwide occurs in just 10 countries

Number of under-five deaths, by country, 2010 (thousands)
Deaths due to diarrhea

- Nearly three quarters of child deaths due to diarrhea occur in just 15 countries

<table>
<thead>
<tr>
<th>RANK</th>
<th>COUNTRY</th>
<th>TOTAL NUMBER OF ANNUAL CHILD DEATHS DUE TO DIARRHOEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>India</td>
<td>386,600</td>
</tr>
<tr>
<td>2</td>
<td>Nigeria</td>
<td>151,700</td>
</tr>
<tr>
<td>3</td>
<td>Democratic Republic of the Congo</td>
<td>89,900</td>
</tr>
<tr>
<td>4</td>
<td>Afghanistan</td>
<td>82,100</td>
</tr>
<tr>
<td>5</td>
<td>Ethiopia</td>
<td>73,700</td>
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<tr>
<td>6</td>
<td>Pakistan</td>
<td>53,300</td>
</tr>
<tr>
<td>7</td>
<td>Bangladesh</td>
<td>50,800</td>
</tr>
<tr>
<td>8</td>
<td>China</td>
<td>40,000</td>
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<tr>
<td>9</td>
<td>Uganda</td>
<td>29,300</td>
</tr>
<tr>
<td>10</td>
<td>Kenya</td>
<td>27,400</td>
</tr>
<tr>
<td>11</td>
<td>Niger</td>
<td>26,400</td>
</tr>
<tr>
<td>12</td>
<td>Burkina Faso</td>
<td>24,300</td>
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<tr>
<td>13</td>
<td>United Republic of Tanzania</td>
<td>23,900</td>
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<tr>
<td>14</td>
<td>Mali</td>
<td>20,900</td>
</tr>
<tr>
<td>15</td>
<td>Angola</td>
<td>19,700</td>
</tr>
</tbody>
</table>
Mortality due to Rotavirus Disease

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

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Rate per 100,000

Source: WHO/IVB database, 193 WHO Member States. Data as of July 2009
Date of slide: September 2009
The seven-point plan

- **Treatment package**
  - 1. Fluid replacement to prevent dehydration

- **Prevention package**
  - 3. Rotavirus and measles vaccinations
  - 4. Promotion of early and exclusive breastfeeding & vitamin A supplementation.
  - 5. Promotion of handwashing with soap
  - 6. Improved water supply quantity and quality, including treatment and safe storage of household water
  - 7. Community-wide sanitation promotion.
Fluid replacement

Low-osmolarity ORS is more effective at replacing fluids than the previous ORS formulation and prevents the risk of hypernatremia.

New solution: sodium 75 mEq/l, osmolarity to 245 mOsm/l
Original solution: sodium 90 mEq/l, osmolarity of 311 mOsm/l
“appropriate homemade fluids” are different from one country to another and are not always clearly defined.
Zinc Treatment

- the duration and severity of treated episodes
- the incidence of diarrhea and pneumonia in the subsequent 2-3 months
Rotavirus gastro-enteritis kills children when hospitalization and intravenous rehydration are not readily available
Promotion of early and exclusive breastfeeding and Vitamin A supplementation are proven to strengthen the immune system.
Handwashing with soap

- The single-most cost-effective health intervention

Investment to gain one DALY associated with diarrheal diseases:

- $3.35 Handwashing with soap
- $11.00 Latrine promotion
- $200.00 Household water connection
Water supply

- In quantity
- In quality, including treatment and safe storage of household water
Sanitation

- Community-wide sanitation promotion
Develop enabling policies
Develop enabling policies

MAP 2: Which countries have a national policy on the use of zinc for treating childhood diarrhoea (as of May 2009)

Countries with a national policy on the use of zinc for treating childhood diarrhoea (as of May 2009)


The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.
Expand access to proper case management

Integrated Management of Childhood Illnesses (IMCI)

- Accurate identification of childhood illnesses
- Systematic combined treatment of all major illnesses
- Appropriate counseling of caretakers
- Quick referral for severely ill children
Expand access to proper case management

Integrated Community Case Management (iCCM)

- Well-trained, supervised and supported community health workers (CHWs) can successfully diagnose child pneumonia, malaria, or diarrhea and provide effective treatment.
Community mobilization

The CLTS example

- “Diarrhea, 90 percent of which is caused by food and water contaminated by excrement, kills a child every fifteen seconds

- That's more than AIDS, malaria, or measles, combined. Human feces are an impressive weapon of mass destruction”

http://www.huffingtonpost.com/rose-george/how-to-save-the-world-wit_b_334223.html
Families and communities

- Priority to promotion of breastfeeding, handwashing, sanitation and treatment of household water
- Working with government to built, operate and maintain water supply systems
- Involve every community member: adolescents, schoolteachers, religious leaders and local business people
The public sector

- Advance comprehensive prevention and treatment programs at both the national and local levels
- Intersectoral collaboration: health, education, commerce, water and sanitation, nutrition, women’s affairs and urban and rural development
The private sector

- Promote innovation in the supply and delivery of key interventions in partnership with public institutions.
Global partnerships and networks

- Forge new links across initiatives, leading to strong and effective advocacy
- Reduce the risk of competing priorities
MDG targets

- **4A:** by 2/3, between 1990 and 2015, the under-5 mortality rate
- **7C:** 1/2 by 2015, the proportion of the pop. without sustainable access to safe drinking water and basic sanitation
- **8E:** Provide access to affordable, essential drugs in developing countries

2015 is tomorrow…
Little progress was made

Trends in the percentage of children under five with diarrhoea receiving at least one ORS packet during the illness, by region, 2000 and 2007

Source: UNICEF global diarrhoea databases, 2009. Trend analysis is based on data for a subset of developing countries with two or more comparable data points for around 2000 and 2007. Data are insufficient for Latin America & Caribbean and CEE/CIS.

* Excludes China
Little progress was made

- There are major gaps between policy change and effective program implementation
- Over the past two decades
  - Mortality has declined from 5 to 1.5 million in 2004
  - Incidence remained stable: ~ 2.5 billion cases/year
HOW

WHY

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WHERE

WHEN

WHO

WHAT
Whose business is this?
Where are the resources?

Competing priorities

- AIDS
- TB
- Malaria
- Chronic disease
Rotavirus vaccine roll-out

- GAVI plans to immunize 50 million children against rotavirus in 40 countries by 2015
Is this a matter of an overall development?

<table>
<thead>
<tr>
<th>Region</th>
<th>Improved</th>
<th>Sharing Improved</th>
<th>UnImproved</th>
<th>Open defecation</th>
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<td>33</td>
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<td>Sub-Saharan Africa</td>
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<td>East Asia &amp; Pacific</td>
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<table>
<thead>
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<th>Category</th>
<th>Improved</th>
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0% 20% 40% 60% 80% 100%
Thank you!

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