Why WASH Matters
*For improved child health, nutrition & growth*

A Knowledge Sharing Event

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USAID WASHplus Project
WASH is the common acronym for WAter, Sanitation and Hygiene

WASH is:

- Necessary quantities of safe, potable drinking water
- Wide spread community sanitation with latrines that meet minimum standards
- Consistent and correct handwashing at critical times
- Food hygiene
- Behavior change, not just hardware coverage and not just education
What kills more children each year?

Causes of Mortality for Children Under 5

- Pneumonia: 18%
- Malaria: 7%
- Diarrhea: 11%
- Other Neonatal: 40%
- Other: 24%

1. What percentage of child deaths caused by diarrhea are preventable through WASH related interventions?

a. 0%–30%
b. 31%–60%
c. 61%–80%
d. over 80%
How often does a child die from a water-related illness?

A child dies every 20 seconds from water-related illness

• Since the start of this program 125 children have died!!!!!!
Focus on WASH Behaviors for Diarrhea Disease Reduction...

- **Safe Feces Disposal**: 30% ++
- **Safe Storage & Treatment of Water**: 30-50%
- **Handwashing**: 43%
- **Handwashing**: 30-50%

*USAID* from the American People
Children with diarrhea tend to eat less.
With diarrhea, nutrients from food are not well-absorbed.
Undernourished children are more susceptible to diarrhea.
Most rapid decline during 3-15 months

Most damage occurs during complementary feeding age
Prevalence of Diarrhea among children < 5 years by observed hand washing before preparing food

SHEWA-B, Rural Bangladesh

Mean diarrhea prevalence
None 12.5%
Water 8.3%
Water + Soap 6.9%

Stunting Has Lifelong Implications

**Growing Up**
A young child who does not get enough food and nutrients cannot grow properly. This condition is called 'stunting.' Stunting can already start in the womb of a malnourished mother.

**Education**
Stunted children often have irreversible developmental problems. Their potential is limited and they often do less well in school if they have access to education.

**Professional Life**
As a result, stunted children have fewer professional opportunities later in life and earn less, perpetuating poverty in their families.

**Vicious Cycle**
Low income, lack of healthcare and reduced access to proper nutrition will continue to impact the health of their children.
Reducing Diarrhea Requires Getting Feces Out of the Environment...

How can we break the cycle??
Sanitation alone explains 54% of international variation in child height - GDP only explains 29%.

Source: Each data point is a collapsed DHS survey round (country-year), proportional to population. Spears (2012) www.riceinstitute.org #13
Open defecation accounts for much of excess stunting—*Bangladesh DHS 2011*
Primary Prevention
The F-Diagram

Sanitation

Fluids

Fields

Feces

Flies

Fingers

Food

New Host

Water Quality

Water Quantity

Hand Washing

Source: Wagner and Lanois, 1958
Focus on WASH behaviors for Diarrhea Disease Reduction….

Safe Storage & Treatment of Water

Hand Washing
WASHplus Target Behaviors

- Correct hand washing at key times
- Fixed point defecation / use hygienic latrine
- Water safety
.... But there is something else going on...

What is causing all this stunting?

Cause #1: Malnourished Mother
Cause #2: Poor Diet (inadequate weaning foods)
Cause #3: Diarrhea
However:

Evidence exists that the effect of WASH interventions on linear growth is independent of its effect on diarrhea.

In several studies, WASH had a bigger effect on growth than it did on diarrhea.

.... there is something else going on...
Cause #4: The Environmental Enteropathy Hypothesis

• A subclinical condition of the small intestine, called environmental enteropathy (EE)

• Characterized by:
  – Flattening of the villi of the gut, reducing its surface area
  – Thickening of the surface through which nutrients must be absorbed
  – Increased permeability to large molecules and cells (microbes)

• Likely causes:
  – Too many microbes in the gut
  – Effects of toxins on the gut
Most frequent:
38 times in 6 hours
75% visibly dirty

Dirtiest
Soil (3 ate avg 11 bites)
chicken faeces, stones
If allowed, toddlers consume poultry feces

Peruvian shantytown families:
- Households who owned free-range poultry:
  - Average ingestion of poultry feces by toddlers per 12-hour observation period was 3.9 times
    - Marquis GM et al., Am J Public Health 1990

Rural Zimbabwe:
- Not selected for poultry ownership:
  - 3 of 7 toddlers directly ate chicken feces during a 6-hour observation period.
    - Ngure F et al., submitted, 2012
<table>
<thead>
<tr>
<th>Source</th>
<th>% HH with E coli + sample</th>
<th>E coil/Per gram</th>
<th>Average E Coli Per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant Food</td>
<td>0%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Drinking Water</td>
<td>54%</td>
<td>2</td>
<td>800</td>
</tr>
<tr>
<td>Soil in laundry area</td>
<td>60-80%</td>
<td>70</td>
<td>1,400</td>
</tr>
<tr>
<td>Chicken feces</td>
<td>100%</td>
<td>10,000,000</td>
<td>10,000,000</td>
</tr>
</tbody>
</table>

Clearly, kids must stop eating dirt and chicken poop!
Routes of fecal disease transmission and protective barriers *for babies!*

- **Sanitation**
- **Clean water supply**
- **Hygiene**

**Feces**
- Fluids
- Fingers
- Flies
- Fields/floors

**Fielding Play Space**

**Eating dirt and more**

**Laundry Water**

**Nappy Handling**
What Influences Behaviors?

Hygiene Behavior Change: More Than Messages, More than Promotion

What do we mean by behavior change?
Focus on WASH Behaviors for Diarrhea Disease Reduction...

Safe Storage & Treatment of Water

Hand Washing

Safe Feces Disposal
Small Doable Actions for Behavior Change

• Identify, promote and facilitate improved behaviors that....
  o Have significant **positive impact** on health
  o Are **feasible** to achieve, (people both willing and able to make changes)
Small Doable Action Approach

• Construct a continuum

• Identify feasible incremental steps that move people from a current hygiene practice toward the ideal practice

• Identify existing hygiene and sanitation good practices to be reinforced or modified

• Identify practices to be improved and negotiate the options with family member
Hand Washing

Current Practices Needing Improvement

- Hand washing without soap when soap is not available
- “Dip” hand washing from communal bowl
- No systematic hand washing after cleaning baby, the potty or after defecation
- No systematic hand washing before eating/cooking
Hand Washing (continued)

Small Doable Actions

• Use tippy tap to conserve water

• Create hand washing station next to cooking and eating area

• When soap is not available, use ash for hand washing—rub hands together, rinse, and air drying.

Using a hand washing station
Small Doable Actions for Safely Disposing of Child Feces

• Document CURRENT household practices for handling child feces by age cohort.
• Prioritize riskiest of practices
• Work with mothers to identify a few ‘small doable actions’ for each of these risky behaviors that will make it easier for mothers to manage child feces, but that still get them out of the environment.
• Test these with mothers, over time, for effectiveness and feasibility
### Small Doable Actions for Safe Feces Disposal

**e.g. Using Potties/Emptying/ Cleaning Potties**
- *Put ash in bottom of potty*
- *Rinsing/cleaning potties – disposal of waste water AWAY from well*

<table>
<thead>
<tr>
<th>CLEANING</th>
<th>SMALL DOABLE ACTION TO IMPROVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFANT</td>
<td></td>
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<tr>
<td>Katha (old sari quilt)</td>
<td></td>
</tr>
<tr>
<td>Cleaned the baby</td>
<td></td>
</tr>
<tr>
<td>Diaper/ Pamper/ Cloth</td>
<td></td>
</tr>
<tr>
<td>Used the cloth</td>
<td></td>
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<tr>
<td>Use the trowel/hoe, take it to the toilet</td>
<td></td>
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<tr>
<td>Rubber/ Plastic sheet (under katha)</td>
<td></td>
</tr>
<tr>
<td>Water to clean him completely</td>
<td></td>
</tr>
<tr>
<td>Plastic sheeting</td>
<td></td>
</tr>
<tr>
<td>Soap</td>
<td></td>
</tr>
<tr>
<td>Plastic pants</td>
<td></td>
</tr>
<tr>
<td><strong>When they know, they stand them up</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Use the trowel/hoe, take it to the toilet</strong></td>
<td></td>
</tr>
<tr>
<td>Soap</td>
<td></td>
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<tr>
<td>Anticeptic (savlon) just one</td>
<td></td>
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<tr>
<td>Put the baby</td>
<td></td>
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<tr>
<td>Clean themselves/sari/camis</td>
<td></td>
</tr>
<tr>
<td>Then took feces toilet</td>
<td></td>
</tr>
<tr>
<td>Few admitted toss in ditch, bush, garbage pit</td>
<td></td>
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<tr>
<td>Really insistent NOT in pond, not in garden</td>
<td></td>
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<tr>
<td>Throw into water body that they don’t drink (e.g. canal)</td>
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| TODDLER (but we need a name)                  |                                                                     |
| **SOme said as of 6 months ... start using potty** |                                                   |
| Take it to the latrine                        |                                                                     |
| Like the potty, use it like a toy             |                                                                     |
| Put water                                     |                                                                     |
| They just know.... When kid has to go         |                                                                     |
| Dump it                                       |                                                                     |
| They talk to them                             |                                                                     |
| Brush                                         |                                                                     |
| They make noises... they tell stories         |                                                                     |
| Detergent powder, clean it, dry it            |                                                                     |
| Some were duck, some weren’t                  |                                                                     |
| Others... Tube well, clean it with soap       |                                                                     |
• Just getting started with field assessment

• Invite your organizational participation

• Resources, capacity building materials, job aids available from WASHplus to help integrate WASH into nutrition programming and more!

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