Improving Sanitation for All: Safe Child Feces Disposal

Presentation for UNICEF WASH Staff

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Diarrheal disease is a leading cause of mortality for children under 5

- 690,000 children under five die due to diarrheal disease each year
- Early childhood diarrheal disease harms cognitive development and growth
- Over 80% of these deaths are preventable through access to safe water and adequate sanitation and hygiene
- 9% of the world population is under 5 years of age

Development of children under five

- Through crawling and toddling behavior, children are more likely to be in contact with the ground.
- Mouthing behavior of young children exposes them to contamination on toys, other objects, and hands.

Data Sources: Developmental Stages of Infants and Children, Wisconsin Child Welfare Training System.
One child defecates 6.89 times a week

That’s 596 g of stool per week for one child

With over 200 million children under 5, that’s 300 million kg of feces a week

Most children under 5 years are too young to safely use a toilet

So where is all that stool going?

Data Sources: U.S. Census Bureau. *International Data Base* and Myo-Khin “A prospective study on defecation frequency, stool weight and consistency” *Archives of Disease in Childhood* 1994; 71: 311-314
Perception Influences Practice

- In many areas there is the perception that children’s feces are less contaminated than that of adults
- Children’s feces may be disposed of differently than adult feces
- Children’s feces carry as many if not more pathogens as adult feces do
- Children’s feces likely contribute more to household environmental contamination than adult feces

Parents are desensitized to children’s stool

Children under five are often unable to use a toilet or latrine, regardless of household access.

Coverage of improved sanitation facilities is not necessarily a good indicator of how children’s feces are disposed.
Data sources used to estimate drinking water and sanitation coverage

- Multiple Indicator Cluster Survey (MICS)
- Demographic and Health Survey (DHS)
- World Health Survey (WHS)
- Living Standards Measurement Survey (LSMS)
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MICS and DHS Surveys have been used to estimate drinking water and sanitation coverage and associated health impact

- In households without access to drinking water, children under five are 1.03-1.29 times more likely to have diarrhea than those residing in households with easy access (DHS Cameroon, Senegal, Chad)

- Only 33% of household report practicing household water treatment (HWT). Rural and African households are less likely to practice HWT. Boiling is the most common method worldwide. (DHS, MICS, LSMS, WHS from 67 countries)

- Access to improved sanitation and improved water were both associated with lower risk of child diarrhea and lower risk of mild or severe stunting, while only improved sanitation was associated with lower mortality (DHS in 70 countries)

MICS Indicator 4.4 assesses disposal of children’s feces

Survey Question
The last time [name] passed stools, what was done to dispose of the stools?

About the Indicator

- **MICS indicator:**
  - Safe disposal of children’s feces

- **Numerator:**
  - Number of children under the age of three years whose last stools were disposed of safely

- **Denominator:**
  - Total number of children under the age of three years
Standard responses to the MICS survey question on feces disposal

<table>
<thead>
<tr>
<th>CA14. Check AG2: Child aged under 3?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Yes ⇒ Continue with CA15</td>
</tr>
<tr>
<td>☐ No ⇒ Go to Next Module</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CA15. The last time (name) passed stools, what was done to dispose of the stools?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child used toilet / latrine ... 01</td>
</tr>
<tr>
<td>Put / Rinsed into toilet or latrine ... 02</td>
</tr>
<tr>
<td>Put / Rinsed into drain or ditch ... 03</td>
</tr>
<tr>
<td>Thrown into garbage (solid waste) ... 04</td>
</tr>
<tr>
<td>Buried ... 05</td>
</tr>
<tr>
<td>Left in the open ... 06</td>
</tr>
<tr>
<td>Other (specify) ... 96</td>
</tr>
<tr>
<td>DK ... 98</td>
</tr>
</tbody>
</table>
Rationale for standard responses

• Harmonized questions and a standard set of responses allows for easier comparison between datasets

• Use of diapers or potties may be common in some countries but are only an intermediary step in the disposal process

• The final disposal location best determines the safety of the feces disposal practice
Using MICS data

Gives the ability to assess disposal methods at:

• The worldwide level
• The regional level
• The country level
• The municipal level
Improved child feces disposal is partially dependent on access to an improved toilet.

**Type of household toilet/latrine**
- Flush/pour-flush to sewer/septic pit/pit latrine
- Ventilated improved pit latrine (VIP)
- Pit latrine with slab/closed pit
- Composting toilet
- Shared (but otherwise improved) facilities
- Flush/pour-flush to all other locations, including to open water and yard
- Pit latrine without slab/open pit
- Bucket
- Hanging toilet/hanging latrine
- No facilities/field/bush [river/ocean]
- Other

**Child Feces Disposal Methods**
- Child used toilet/latrine
- Put/rinsed into toilet/latrine
- Put/rinsed into drain/ditch
- Thrown into garbage/solid waste [burned /used disposable diapers]
- Buried
  - Used washable diapers/ thrown in washing area/rinsed away
- Left in open [thrown outside (household/yard)/left in river/ocean/not disposed of]
- Other/don’t know
Child feces disposal is considered improved only if the child always uses or the stools are put into an improved toilet/latrine.

Improved Disposal (46%) (if an improved or shared but otherwise improved toilet/latrine is used)

<table>
<thead>
<tr>
<th>Method</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always use toilet/latrine</td>
<td>19%</td>
</tr>
<tr>
<td>Put in garbage</td>
<td>36%</td>
</tr>
<tr>
<td>Left on ground</td>
<td>10%</td>
</tr>
<tr>
<td>Rinse away</td>
<td>1%</td>
</tr>
<tr>
<td>Other/DK</td>
<td>3%</td>
</tr>
<tr>
<td>Buried</td>
<td>7%</td>
</tr>
<tr>
<td>Put in drain or ditch</td>
<td>4%</td>
</tr>
</tbody>
</table>

Proportion of the under five population in 79 developing countries, by child feces disposal method

Data Sources: DHS/MICS
Most of those using improved child feces disposal also use an improved toilet

- 42% Improved Disposal and Improved Toilet
- 27% Improved Toilet Only
- 27% Neither
- 4% Improved Disposal Only
  (Disposed in a shared but otherwise improved toilet)

Proportion of the under five population in 78 developing countries with both household access to an improved toilet and using improved child feces disposal

Data Sources: DHS/MICS
In Africa and the Middle East, most use neither improved disposal nor an improved toilet.

- **71%** Neither
- **16%** Improved Disposal and Improved Toilet
- **7%** Improved Toilet Only
- **7%** Improved Disposal Only (Disposed in a shared but otherwise improved toilet)

Proportion of the under five population in Africa and the Middle East with both household access to an improved toilet and using improved child feces disposal.

Data Sources: DHS/MICS
Improved disposal increases with increasing wealth, except in Southern Asia.
Regional and national averages mask large disparities in improved feces disposal

Improved child feces disposal coverage in selected countries in Africa and poorest and richest households in Cameroon

Data Sources: DHS/MICS, and Cameroon MICS3, 2006
Improved feces disposal increases with age.

The chart shows the percentage of improved disposal and exclusive latrine use for different world regions across various age groups.

- **Improved Disposal (%):** The chart illustrates the percentage of improved disposal for different age groups across various world regions.
  - **Exclusive Latrine Use (%):** The chart shows the percentage of exclusive latrine use for different age groups across various world regions.

**World Region:**
- CEE
- Middle East and Northern Africa
- Western and Central Africa
- Eastern and Southern Africa
- Latin America and the Caribbean
- Eastern and the Pacific
- Southern Asia

**Age Groups:**
- 0-11 months
- 12-23 months
- 24-35 months
- 36-47 months
- 48-59 months
Worldwide, urban areas report slightly higher improved feces disposal than rural areas

- Rural dwellers are less likely to have access to an improved sanitation facility
- Of those with an improved toilet/latrine, rural dwellers were slightly more likely than urban dwellers to use safe child feces disposal
In Africa and the Middle East, the percent of improved disposal is over twice as high in urban as in rural areas.

![Bar chart showing improved disposal percentages in urban and rural areas](image)

Proportion of reported families using safe disposal practices in urban and rural areas
Data Sources: DHS/MICS
Worldwide improved child feces disposal
Improved child feces disposal in Africa and the Middle East
Improved child feces disposal and access to an improved toilet/latrine in Africa and the Middle East
# Child focused sanitation initiatives

**Promote modified tools:** In rural Bangladesh a modified hoe called a “mini-hoe” was preferred to aid in the proper disposal of children’s feces.

**Promote tools to potty train children:** The “safe squat” and other latrine training tools allow children to more easily use a pit latrine.

**Promote portable sanitation:** While not improved by JMP standards, portable sanitation is still safer than open defecation.

**Promote consideration of children during latrine construction:** Child-friendly designs can improve use of sanitation infrastructure.

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Moving forward

Interrupt fecal transmission at two points:

- Sanitary disposal of child’s feces
- Caregiver contact with child’s feces (HHWS)

Increasing improved disposal of feces can be incorporated into many existing initiatives:

- CLTS/CATS: emphasize that a community is not open defecation free unless everyone, including young children, are defecating in a safe location or their feces are disposed of safely
- Encourage the use of potties for young children, placement of potty in latrine, and subsequent feces disposal in an improved toilet/latrine
- If washable diapers are used, encourage that the wash water be disposed of safely (and not in the household yard)
Conclusions

• Children’s feces disposal is a substantial problem that is not addressed by household access to (and adult use of) an improved toilet/latrine

• There are wide disparities in improved disposal: country level, urban/rural, wealth quintiles

• Child feces disposal practices are strongly influenced by age
• The data to assess safe child feces disposal is available in the MICS and DHS datasets

• Along with adequate sanitation for adults, safe child feces disposal could substantially reduce household environmental contamination and childhood diarrhea
Discussion

Awareness:

• To what extent do caregivers/municipal governments/NGOs/Ministry officers believe that safe child feces disposal is an issue?
• Is safe child feces disposal included in the national ODF criteria?

Practices and perceptions:

• How is children’s sanitation addressed at a national and/or local level?
• Are there national or municipal guidelines related to the disposal of children’s feces, the disposal of diapers/nappies with solid waste, etc.?

Facilities vs. behavior:

• Is there adequate coverage of sanitation facilities to ensure sanitary behavior is possible?
• Timing/order of sanitation initiatives