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washplus
Supportive Environments
for Healthy Communities

INTEGRATING WATER, SANITATION, AND HYGIENE INTO NUTRITION PROGRAMMING

The WASHplus project supports healthy households and communities by creating and delivering interventions that lead to improvements in access, practices, and health outcomes related to water supply, sanitation, and hygiene (WASH) and indoor air pollution (IAP). This five-year project (2010-2015), funded through USAID's Bureau for Global Health (AID-OAA-A-10-00040) and led by FHI 360 in partnership with CARE and Winrock International, provides program implementation and technical assistance and uses integrated approaches to reduce diarrheal diseases and acute respiratory infections, the two top killers of children under 5 years of age globally. WASHplus can integrate WASH and IAP activities into existing education, HIV/AIDS, maternal and child health, and nutrition programs and builds strong in-country partnerships to increase impact. In addition, WASHplus is charged with promoting innovation in the WASH and IAP sectors.

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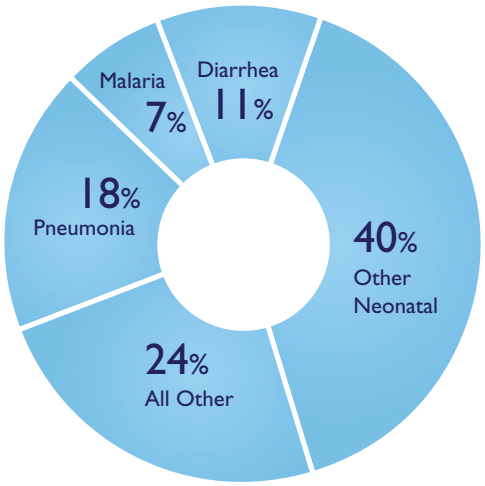
Cover photo: WASHplus

BACKGROUND

Diarrhea, pneumonia and birth complications are the top three killers of children under age 5 worldwide.[1] Each year diarrhea alone causes the death of 760,000 children under 5 (11 percent of all child mortality).[2] Diarrhea is also a leading cause of undernutrition in this age group and one-third to one-half of all child mortality cases are linked to undernutrition.[3,4] UNICEF estimates that more than 90 percent of deaths from diarrheal illnesses in young children can be attributed to unsafe or inadequate water, sanitation, and hygiene (WASH) practices.[5] If mothers and other caregivers used basic hygiene practices and had better access to safe water and adequate sanitation this could greatly reduce under 5 deaths and improve child nutrition.

Recent studies suggest that after a period of exclusive breastfeeding in the early months of life, children 6–17 months of age show an increase in the incidence of diarrhea that correlates with the introduction of complementary feeding.[7] In developing countries, children under age 2 experience an average of three episodes of diarrhea, most between 6–11 months of age.[8] Unsafe water was considered the primary cause of diarrhea in children transitioning from an exclusive breastfeeding diet, but recent evidence also points to unsafe food.[9] In 2009, the World Health Organization's (WHO) head of food safety noted that a WHO analysis determined unsafe food kills an estimated 1.2 million people over age 5 in Southeast Asia and Africa each year.[10] This statistic serves as an informal proxy of contamination levels in complementary and weaning foods ingested by young children and reinforces the issue of food hygiene as a critical practice to address.

Causes of Mortality for Children Under 5[6]



According to UNICEF, stunting—height for age—is the most reliable measure of undernutrition because it accounts for food intake, caloric or protein deficiency, and periods of ill health.[11] Undernutrition is the underlying cause of 35 percent of child deaths each year.[12] Undernutrition is not just lack of food. Three factors are important for adequate nutrition:

- Access to food
- Maternal and child care practices
- Access to WASH to prevent diarrhea

Other factors can also inhibit a child's access to food, such as poverty, discrimination, and political marginalization.

A vicious cycle exists between diarrhea and undernutrition: children with diarrhea eat less and are less able to absorb the nutrients from their food; malnourished children are more susceptible to diarrhea when exposed to fecal material from their environment. Further, often the most vulnerable children do not have access to the health services that can mean the difference between life and death in the case of acute diarrhea.

New research is underway to document the evidence base for the connection between WASH and undernutrition. Currently, USAID, with WHO and UNICEF, is collecting evidence and documenting concrete programming actions to integrate WASH and nutrition to prevent diarrheal disease and undernutrition and improve child health outcomes. Too often, low-cost, high-impact WASH interventions are overlooked. Yet these simple actions can prevent diarrhea and undernutrition even in hygiene-challenged environments. This brochure highlights some of these WASH interventions.

KEY WASH PRACTICES AND GUIDANCE*

Hygiene practices have been proven to reduce diarrhea rates by 30–40 percent.[13,14] This level of reduction can be achieved through a comprehensive approach—promoting improvements in key hygiene practices (hand washing, treatment and safe storage of drinking water, safe disposal of feces, and food hygiene); improving access to safe water and sanitation technologies and products; and facilitating or supporting an enabling environment (improved policies, community organization, institutional strengthening, and public-private partnerships).

Optimal Hand Washing

Hand washing prevents diarrhea effectively when done properly and at critical times. A meta-analysis of hand washing studies conducted in developing countries concluded that hand washing can reduce the risk of diarrhea in the general population by 42–44 percent.[15] A recent observational study in Bangladesh found that diarrhea occurred less often in households where residents washed at least one hand after defecation and before preparing food. The study suggested that washing hands before preparing food is particularly important to prevent diarrhea in children.[16]

How and When to Wash Hands

- Use soap or ash every time you wash your hands.
- Wash hands under poured or flowing water. This removes the dirt and germs. A washbasin in which many people wash their hands in the same water does not prevent infection.
- Wash hands before handling, preparing, or eating food; before feeding someone or giving medicines; and wash hands often during food preparation.
- Wash hands after going to the toilet, cleaning a person who has defecated, blowing your nose, coughing, sneezing, or handling an animal or animal waste, and both before and after tending to someone who is sick.

Treatment and Safe Storage of Household Drinking Water

Treatment and safe storage of drinking water in the household have been shown to reduce the risk of diarrheal disease by 30–40 percent.[17] Conclusive evidence shows that simple, low-cost strategies can greatly improve the microbial quality of water and result in diarrheal disease morbidity reductions comparable to those achieved by hand washing and sanitation.

* The content of this section was adapted from: USAID Hygiene Improvement Project. *Programming Guidance for Integrating Water, Sanitation and Hygiene Improvement into HIV/AIDS Programs*. Washington, DC: HIP/AED.

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Water Treatment Methods[18]

Households should first separate drinking water from other household water. Treat all drinking water using an effective treatment method as listed below, and then store safely (see storage details that follow).

- Chlorination
- Boiling
- Solar disinfection (SODIS) using heat and UV radiation
- Filtration using different types of filters
- Combined chemical coagulation, flocculation, and disinfection [19]

Water Storage Methods

- Store treated water in an appropriate vessel preferably with a narrow neck and a tap.
- If the container does not have a tap, pour the water into a clean pitcher to serve or use a ladle to dispense water.
- Hang the ladle on the wall.
- Do not touch the inside of the container with hands.

Sanitation/Feces Management

Safe disposal of feces reduces the risk of diarrheal disease by 30 percent or more.[20] Best practices for latrine use are listed below. All household members should handle and dispose of feces safely by defecating in a hygienic latrine. Children and people with limited mobility should use adaptive technologies.

- Ensure a latrine meets minimum standards, including a cleanable platform, a cover over the pit, housing that provides privacy, and a hand washing station nearby (ideally located next to the latrine and/or cooking area). If a latrine is not available, sharing with others in the community should be considered, or, in the interim, burying feces away from the house or facility.

- Maintain latrines properly by clearing the path to the latrine, removing obstacles such as stones and branches, and filling holes in the path to facilitate easier access. The platform, seat, walls, or other surface of the latrine should be feces free. All anal cleansing materials should be placed in the latrine itself. A scoop of lime or ash in the latrine after defecation can reduce odors and deter flies.

- Modify latrines for children and people with limited mobility. The modifications may require building supports (poles, ropes, stools) to make children or weak household members comfortable using the latrine or providing simple commodes to place over the latrine pit or bedpans/potties.

Food Hygiene

Relatively little evidence currently exists about the importance and benefits of good food hygiene practices. WHO published a document called *Five Keys to Safer Food*[21] that describes actions families should take in the kitchen to maintain food safety.

1. Keep food preparation areas clean.

- Wash all surfaces and equipment used to prepare or serve food with soap and water and if possible, with bleach.
- Protect food from insects, pests, and other animals by covering food with netting, a cloth, or keeping it in containers.

2. Separate raw and cooked food.

- Raw eggs, meat, poultry, fish, and seafood can easily contaminate other foods with illness-causing bacteria. Keep them away from other foods.
- Use separate equipment and utensils such as knives and cutting boards to handle raw foods.
- Store foods in covered containers to avoid contact between raw and cooked foods.

3. Cook food thoroughly.

- Cook food thoroughly, especially meat, poultry, eggs, fish, and seafood. For meat and poultry, make sure juices are clear, not pink.
- Bring soups and stews to the boiling point until the first big bubble is seen.
- Reheat cooked food thoroughly; bring it to a boil or heat it until it is too hot to touch. Stir while reheating.

4. Keep foods at safe temperatures.

- Do not leave cooked food at room temperature for more than two hours.
- Reheat cooked food that has been stored before reserving.
- Do not thaw frozen food at room temperature.
- Prepare fresh food for infants and young children and other people with compromised immune systems and do not store it after cooking.

5. Use safe water and raw materials.

- Choose fresh and nutrient-rich foods.
- Do not use food beyond its expiry date.
- Use pasteurized milk or boil milk before use.
- Wash raw vegetables/fruits with treated water or peel the skin before eating.

An upcoming USAID/WHO/UNICEF publication on integrated WASH and nutrition programming will suggest feasible, effective actions related to these practices. The section that follows provides information on integrating WASH into various aspects of nutrition programming.

INTEGRATING WASH INTO A NUTRITION ASSESSMENT

This list of questions may be too exhaustive to include in a nutrition assessment, but it is important to ask some questions for each WASH practice to get people to think about different areas of WASH. The questions highlighted in bold are the highest priority for use if time is limited. Validated survey instruments for the WASH questions can be found online at: www.measuredhs.com/publications/publication-DHSQ6-DHS-Questionnaires-and-Manuals.cfm (questions 102–109 for water and sanitation; questions 138–139 for hand washing).

Household Drinking Water

1. Where do you get your drinking water?
2. **Do you treat your drinking water? If so, how?**
3. **Where do you store treated drinking water?**
4. How do you serve/give people water to drink (pour from jug, dipper, etc.)?

Sanitation

1. **Do you have a latrine?** Can you show it to me?
2. **Who uses the latrine?**
3. **How often do family members use this latrine?**
4. Does anyone in your house need help to use the latrine?
5. Do your children use the latrine? If not, where do they defecate?

Hand Washing

1. **Where do you wash your hands? Can you show me?**
2. **When do you wash your hands?**
3. How do you wash your hands?

Food Hygiene

1. Where do you prepare food for cooking?
2. **Do you wash the food preparation surfaces? When do you wash them? How do you wash them?**
3. Do you wash your food before cooking? Which foods do you wash before cooking?
4. **Where do you store (cooked/prepared) food? For how long?**
5. Do you reheat stored food?

INTEGRATING WASH INTO NUTRITION COUNSELING AND PROMOTION

Make hand washing an "essential nutrition action" and incorporate the practice into all counseling and promotional materials. Counselors need to work with mothers and others being counseled to negotiate actions for families to take to improve drinking water, hand washing, sanitation, and food hygiene. Through an assessment of the current WASH practices of the family, counselors can reinforce existing good practices and help identify a few improvements (small doable actions) that can be made that are feasible and effective incremental steps toward reaching an ideal WASH practice. Counselors can discuss with caregivers what might make it easier or more difficult to try a new practice and help them to find possible solutions. Counselors should choose one or two focus areas that families feel they could improve upon successfully.

INTEGRATING WASH INTO TARGETED HEALTH ACTIVITIES (e.g., distribute point-of-use water (POU) treatment or vouchers for POU water treatment)

Distributing a safe water kit to women during health facility visits has proven to be an effective incentive to increase use of antenatal care (ANC) services, HIV testing services, and facility delivery. Households given safe water kits that include a water treatment product, a water storage container, and soap were also more likely to purchase hypochlorite solution one year after receiving the free kit and use water treatment products regularly; their neighbors were more likely to use them as well. Studies show women who received kits had more ANC visits (10–15 percent). Such incentives have proven to be effective in bringing new clients into preventing mother-to-child transmission programs, bringing clients in earlier for ANC visits, and sustaining attendance through assisted delivery and post-partum care.[22]

Some countries distribute a basic care package to people living with HIV. This basic care package includes a water container, hypochlorite solution, information on hand washing, a treated bednet for malaria prevention, and sometimes a bar of soap. This package could also include materials on how and when to wash hands, how to build a water-saving hand washing device called a tippy tap, how to build a latrine, how to manage feces in the home safely, and how to prepare foods safely.

INTEGRATING WASH INTO COMMUNITY SERVICES

Countries have different types of community service workers who can reinforce improved WASH practices during caregiving, help families learn more about improved WASH, and connect families with support or services to improve their WASH practices. These community workers include the following: health workers who are often trained to identify health problems and treatment options and to promote improved health practices; early child development workers who may take care of young children while parents work; and home-based care workers who work in communities with clients who are too sick to care for themselves.

INTEGRATING WASH INTO MATERNAL AND NEONATAL PROGRAMS

A study in Nepal[23] found that mortality was significantly lower among newborns whose birth attendant or mother washed her hands with soap. Similarly, the Alive & Thrive project in Bangladesh found that hand washing with soap before handling children's food supports normal growth in infants and young children.[24,25]

USAID supports effective program approaches—such as essential newborn care, linking maternal and newborn programs in a continuum of care, and early postnatal visits. Increased emphasis on hand washing is an easy and cost-effective way to complement and strengthen these activities. The objective is to ensure birth attendants wash hands with soap before delivery, and mothers and caregivers wash hands with soap before handling the newborn. Specific suggestions include:

Birthing Kits

- Ensure that soap is included in the clean birthing kit.
- Design a card on proper hand washing techniques for new mothers, caregivers, and birth attendants for inclusion in the kit.

Antenatal Care

- Incorporate hand washing as an "essential ANC action."
- Develop a session on hand washing to include in all birth counseling courses.

Hand Washing

- Address barriers to hand washing, such as water scarcity, by demonstrating how to build simple water-saving devices (such as a tippy tap) from locally available materials. A tippy tap should be placed in the clinic or household in an easily accessible location to facilitate hand washing among birth attendants and new mothers in water-scarce settings.
- Include hand washing information and education in all community approaches to newborn health.
- Include newborn care messaging in existing WASH programs, including public-private partnerships.

ENDNOTES

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