You are what you eat: Why food hygiene matters for child growth

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USAID WASHplus Project
food hygiene
Diarrhea: 9% of all child deaths

Undernutrition contributed to 73% of these deaths

... underlying cause of 45% of child deaths each year (Lancet, 2013).

Shaded area indicates contribution of undernutrition to each cause of death.
Connecting Diarrhea and Nutrition

- Children with diarrhea tend to eat less
- With diarrhea, nutrients from food are not well-absorbed
- Undernourished children are more susceptible to diarrhea
Stunting –
*low height (or length) for age*

- Sign of chronic under-nutrition

165 million stunted children ....
¼ of ALL under-five children!!!

Over 90% stunted children live in Africa and Asia

36% African children
56% Asian children affected
Stunting has lifelong implications...
A stunted child will never learn or earn as much as if they’d been properly nourished...
And the damage can’t be un-done...

**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.
What is causing all this stunting?

Cause #1: Malnourished Mother
Cause #2: Poor Diet *(inadequate complementary feeding)*
Cause #3: Diarrhea
Cause #4: ??Enteric Dysfunction???

Diarrhea is the most important infectious determinant of stunting *(Black et al. 2013).*
Focus on WASH behaviors for Diarrhea Disease Reduction....

Safe Storage & Treatment of Water
30-50%

Safe Feces Disposal
30% ++

Handwashing
43%

Add some?? Namely food hygiene, safe disposal of INFANT feces, ANIMAL/poultry feces, ‘diaper’ handling”,?animal corralling?, protective play spaces?
Most rapid decline during 3-15 months

Most damage occurs during complementary feeding period

KK Saha et al (ICDDR,B), Food and Nutrition Bulletin 2009
What do we know about linkage between food hygiene, diarrhea, health and growth??

Not much
Emerging Evidence and Renewed Focus on Food Hygiene

• Food is among the most important factors in transmitting pathogens that cause diarrheal illness (Motarjemi et al. 2012)

• An estimated 15%-70% of DD among young children could be due to pathogens transmitted through food (Motarjemi et al. 1993; Esrey and Feachem 1989)

• Appropriate food hygiene practices have been shown to reduce the risk of diarrhea by 33% (Sheth et al. 2006).
There is some evidence identifying risk factors and associated behaviors.

However, little is known about practices
* in low income settings,
* of relative risk of practices or
* about interventions that could mitigate the risks.

Biological plausibility and expert opinion.
What Causes Foodborne Diseases?

- A host of bacterial, viral and parasitic organisms
- Many pathogens causing diarrhea have human, domestic animal and household pests as RESERVOIRS
- Most are spread through fecal >> oral contamination
- For parasites and viruses, food serves as a vehicle for transmission to a new host
- For bacteria, food offers an opportunity to grow exponentially to infectious levels
- With parasites and some bacteria (e.g. salmonella) pathogen is present w/i food
- Water can also contaminate food during irrigation and food preparation
Lit Review on Food Hygiene Interventions

http://www.fantaproject.org/research/literature-review-on-effective-food-hygiene
Peer-reviewed research demonstrates that food hygiene interventions can...

• improve knowledge regarding the relationship between food hygiene practices and diarrhea,
• increase the practice of key prioritized food hygiene behaviors,
• decrease levels of contamination of prepared food (including complementary food for children), and
• reduce the prevalence of diarrheal disease.

Several social and behavior change studies have shown that improved knowledge, attitude, and practices around food hygiene was associated with fewer child diarrheal episodes (Sheth et al.)
Food Hygiene Interventions: Key Methods and Approaches

- **Formative research** for program design
- **HACCP approach** to identify key problems and critical actions and test the application of the critical actions
- **Pretesting and monitoring/follow up**
- **SBC messages and/or materials** for the targeted audiences to influence behavior change
- **Repeated and/or intensive exposure** to messages and key practices
- **Interpersonal communication** with respected, influential change agents

Critical Food Hygiene Actions

- Cooking at adequate temperature and time
- Decreasing the time food is stored at ambient temperature
- Reheating at adequate temperature and time
- Use of clean utensils to avoid contamination
- Storage of food at sufficiently low or high temperatures to prevent bacterial multiplication
- Adequate handwashing to avoid contamination

*Improving Household Food Hygiene in a Development Context*, Monica Woldt, Gerald G. Moy, and Rebecca Egan, FANTA Project, 2015
Recommendations: Immediate

- Put into programming practice what is already known about food hygiene
- Use quality improvement approaches and operations research to build upon what is known in food hygiene and fill programming gaps
- Promote effective linkages between existing curative and preventive programs when diarrheal disease does occur

Recommendations: Longer-term

- Conduct formative studies to inform program design
- Develop guidance on practical, feasible ways to ASSESS and ADDRESS food hygiene in developing country contexts
  - Be Comprehensive!
  - Include food hygiene components in policies, strategies, and programs
  - Address needed supplies, products and services

Recommendations: Longer-term

• Integrate an appropriate package of water, sanitation, and hygiene interventions into programs
• Target food hygiene interventions for vulnerable populations (Pregnant/Lactating Women, children < 2 years, PLHIV, TB patients, etc.)
• Develop and test indicators to assess the outcomes and impact of food hygiene interventions

Source: Improving Household Food Hygiene in a Development Context, Monica Woldt, Gerald G. Moy, and Rebecca Egan, FANTA Project, 2015
The core messages of the WHO Five Keys to Safer Food are:

- keep clean;
- separate raw and cooked;
- cook thoroughly;
- keep food at safe temperatures; and
- use safe water and raw materials.
use safe water and raw materials
keep clean!

cook thoroughly!!
Small Doable Actions for WASH Behavior Change

- People rarely move from current to ideal practices
- Make it possible!!
- Identify, promote and facilitate improved behaviors that...
  - Have significant **positive impact** on health
  - Are **feasible** from ‘actor’ point of view in resource constrained settings
- Construct a continuum
- Integrate!!
ASSESSMENT AND NEGOTIATION

Father’s/Mother’s Name: __________________ Name of the Village Health Team: __________________
Village: __________________ Dates of Visits: __________________

1. Assess with the householder what they are doing now for each of the key behaviors and mark a check in the corner of the current practice.
2. Based on the current behavior, discuss the improved behaviors to the right of the current practice. During your discussion, ask...
   - What problem the family will face to change the current practice to the improved behavior?
   - Discuss if there is any one in the family who opposes to change the current behavior due to culture or other reason.
3. Circle one, two or three behavior/s that you agreed upon to practice.
4. Seal the agreement as a commitment and make an appointment to see the improvement behavior.
5. Finally, hand this card to them to put it security on a wall or store in the family health card.

“IT IS ALL OUR RESPONSIBILITY TO END OPEN DEFECATION, UNHYGIENIC PRACTICES AND THE DISEASES THEY BRING!”

Disposal of feaces

1. Keep water source clean
2. Safe water handling
3. Cleaning your house and compound
4. Keeping latrine clean
5. Essential times for hand washing

Washing hands with soap/ash after defecation

Disposal of waste

USAID
washplus
Using Hazard Analysis to Identify Critical Control Points
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Small Doable Actions For Keeping Food Safe: Food Handling & Preparation

It is especially important to wash hands and food containers with soap and flowing water before handling food to minimise the risk of germs. Adhere to all personal hygiene practices like keeping fingernails short while handling food.

- Construct a tippy tap close to the kitchen to ensure hand washing with soap.
- Wash hands with soap before preparing food.
- Keep fingernails short and clean.
- Prepare raw meat or fish away from other raw foods. Don’t allow juices to touch other foods.
- Wash area where food is prepared at least daily, with water and Jik, if available, otherwise soap.
- Wash raw vegetables and fruits under running water to remove germs, insects, and chemicals.
- Keep animals (such as chickens) away from food preparation area.
- Wash all the knives, cutting boards, and plates used after cutting fresh meat with soap and water.
- For utensils used to handle cooked and ready-to-eat food, wash with soap and water and store on shelf or wall.
RAINWATER HARVESTING OPTIONS

Rainwater harvesting is a supplementary water source. It is a free and cheaper option and enables households to increase access to water. It reduces distance to the collection point. It is friendly to conservation of our environment.

1. Plan everything before you start. Measure once, then measure again.
2. Dig a large wide and 100cm deep pit. The size of the pit will depend upon your household size and the size of your tarpaulin.
3. Line the pit with tarpaulin. Make sure you cut the tarpaulin to size and fit it around the pit.
4. Make a cover for the pit by using iron sheets.
5. Cut out iron sheets to make gutters and delivery pipe. Use wires to mount gutters onto the roof.
6. Make a DIPPER from a used 5 litre Jerry can, a stick and strong nylon twine or nails.
7. Finally fix the delivery pipe from the gutter to the cistern to have a complete rainwater harvesting cistern.
8. Always contain water from the pit. Make certain that children cannot get access to play in the water, to dirty it OR TO FALL IN!! Make certain no chickens or other animals' faeces can contaminate the tank!

HOW TO MAKE

REQUIRED MATERIALS
Corrugated sheeting | 1 or safe closure to protect...