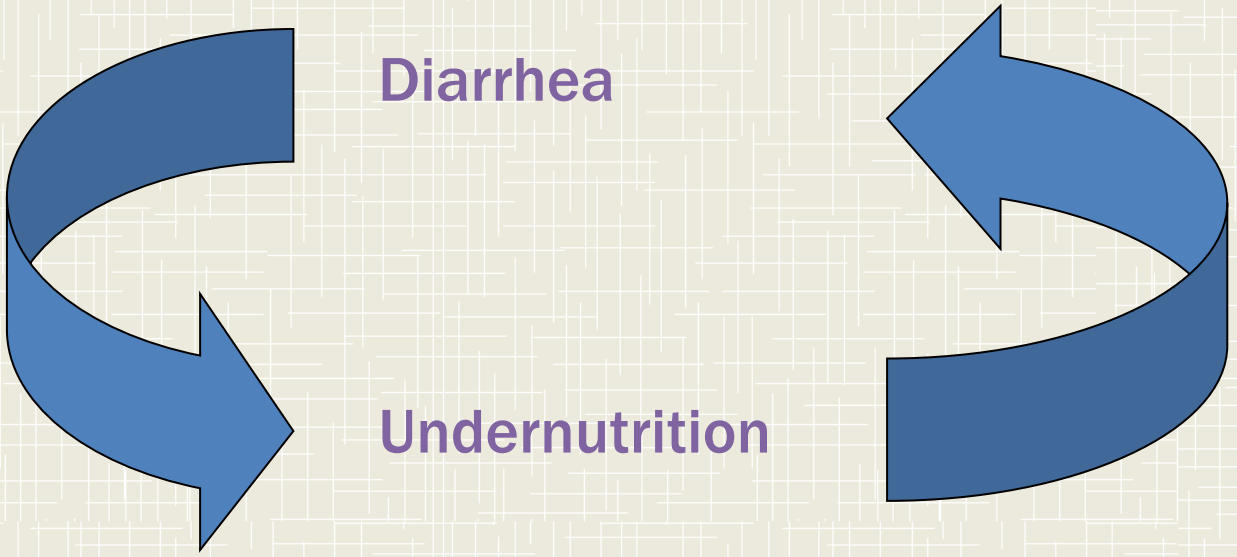
Clean, Fed & Nurtured
Building the Case for Integration: The 3 Legged Stool

Julia Rosenbaum
USAID/WASHplus Project
FHI360

What do we know about WASH + nutrition?



- Children with diarrhea tend to eat less
- With diarrhea, nutrients from food are not well-absorbed
- Undernourished children are more susceptible to diarrhea

USAID FROM THE AMERICAN PEOPLE

washplus
Supportive Environments for Healthy Communities

Review of the evidence

Focus on WASH behaviors for Diarrhea Disease Reduction....

30% ++

Handwashing 43%

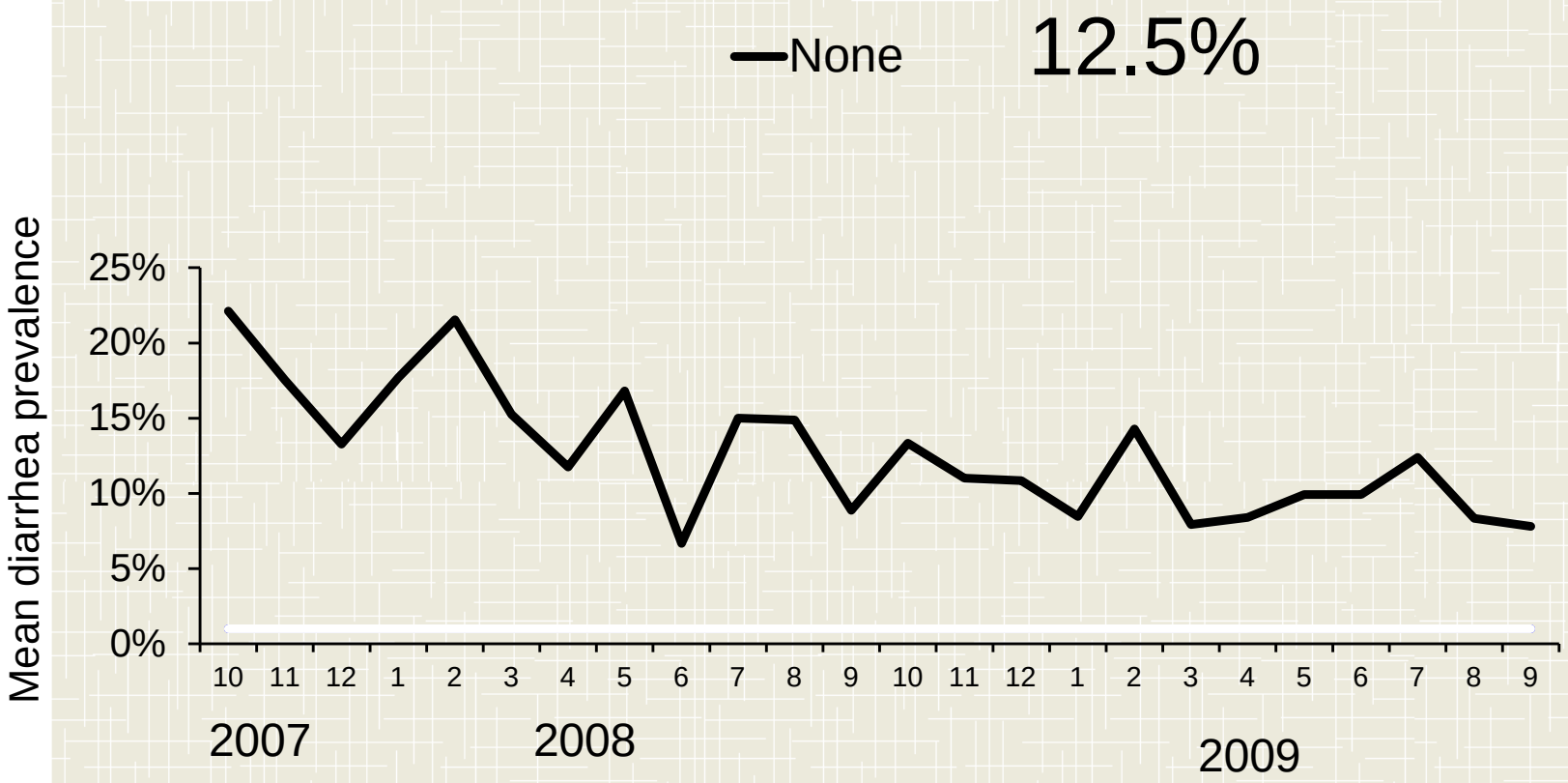
Safe Storage & Treatment of Water

30-50%

Prevalence of diarrhea among children < 5 years

by observed handwashing before preparing food

SHEWA-B, Rural Bangladesh

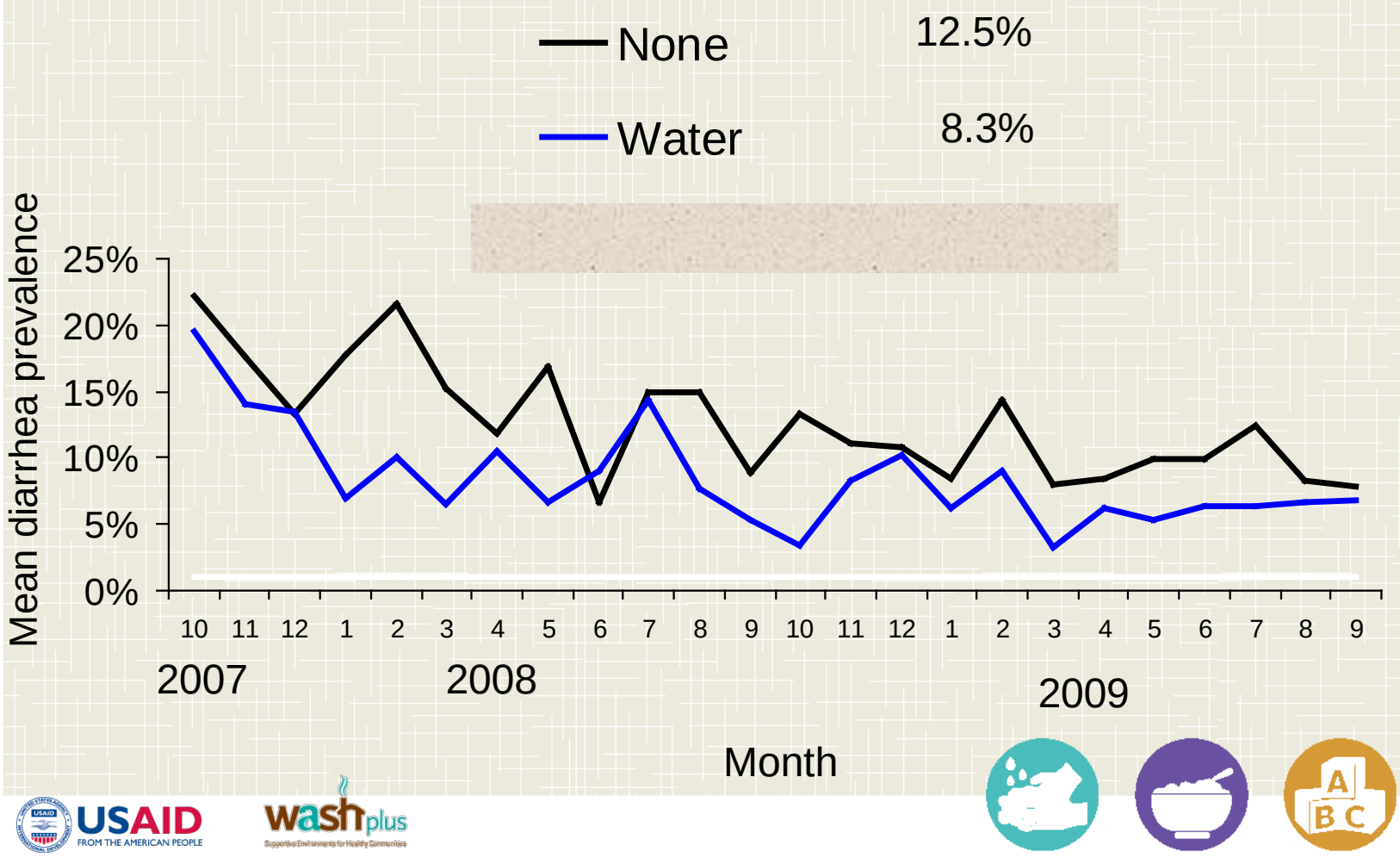


PLoS Med, 2011;8(6): e1001052.

Prevalence of diarrhea among children < 5 years

by observed handwashing before preparing food

SHEWA-B, Rural Bangladesh



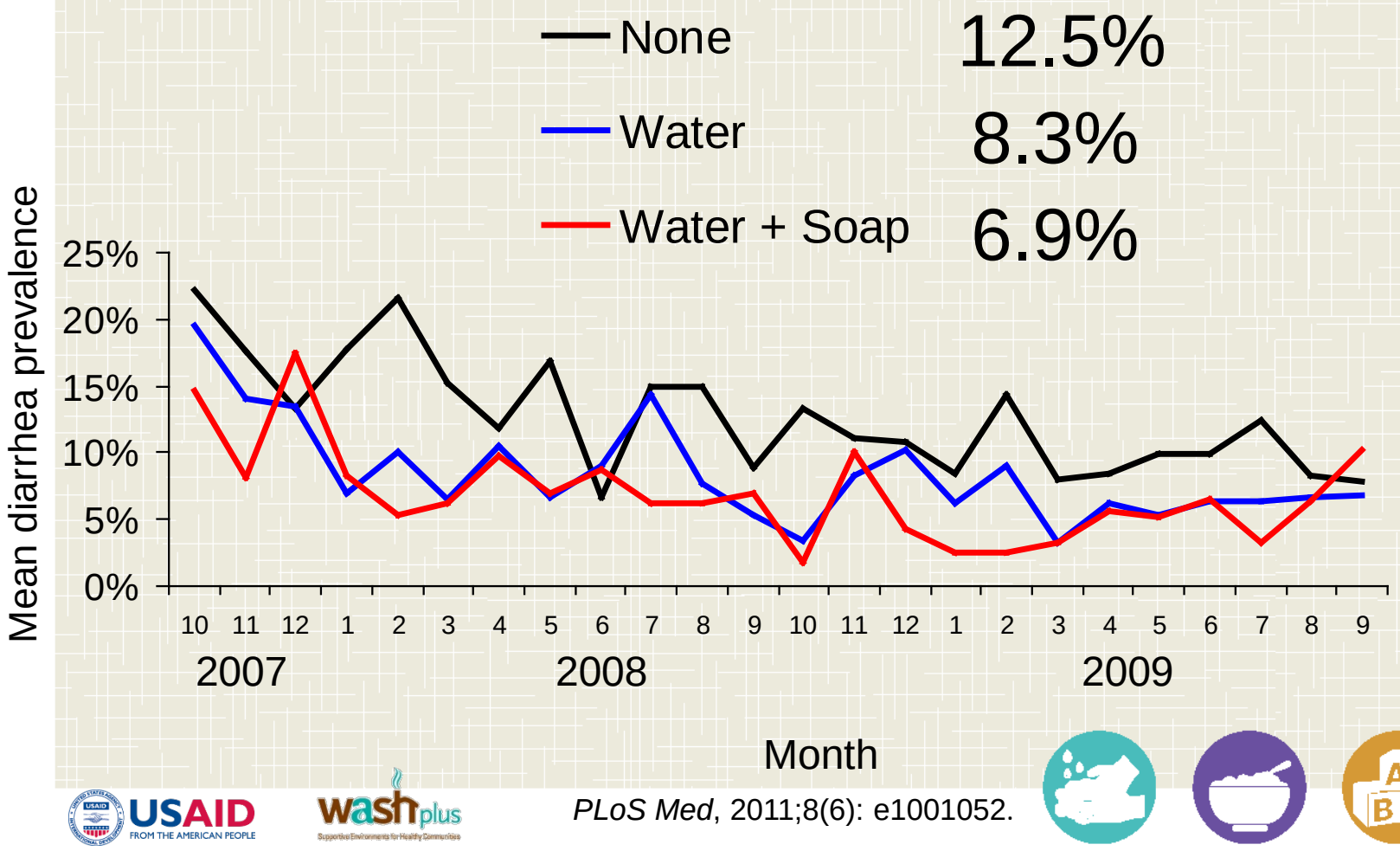
USAID FROM THE AMERICAN PEOPLE

washplus

Prevalence of diarrhea among children < 5 years

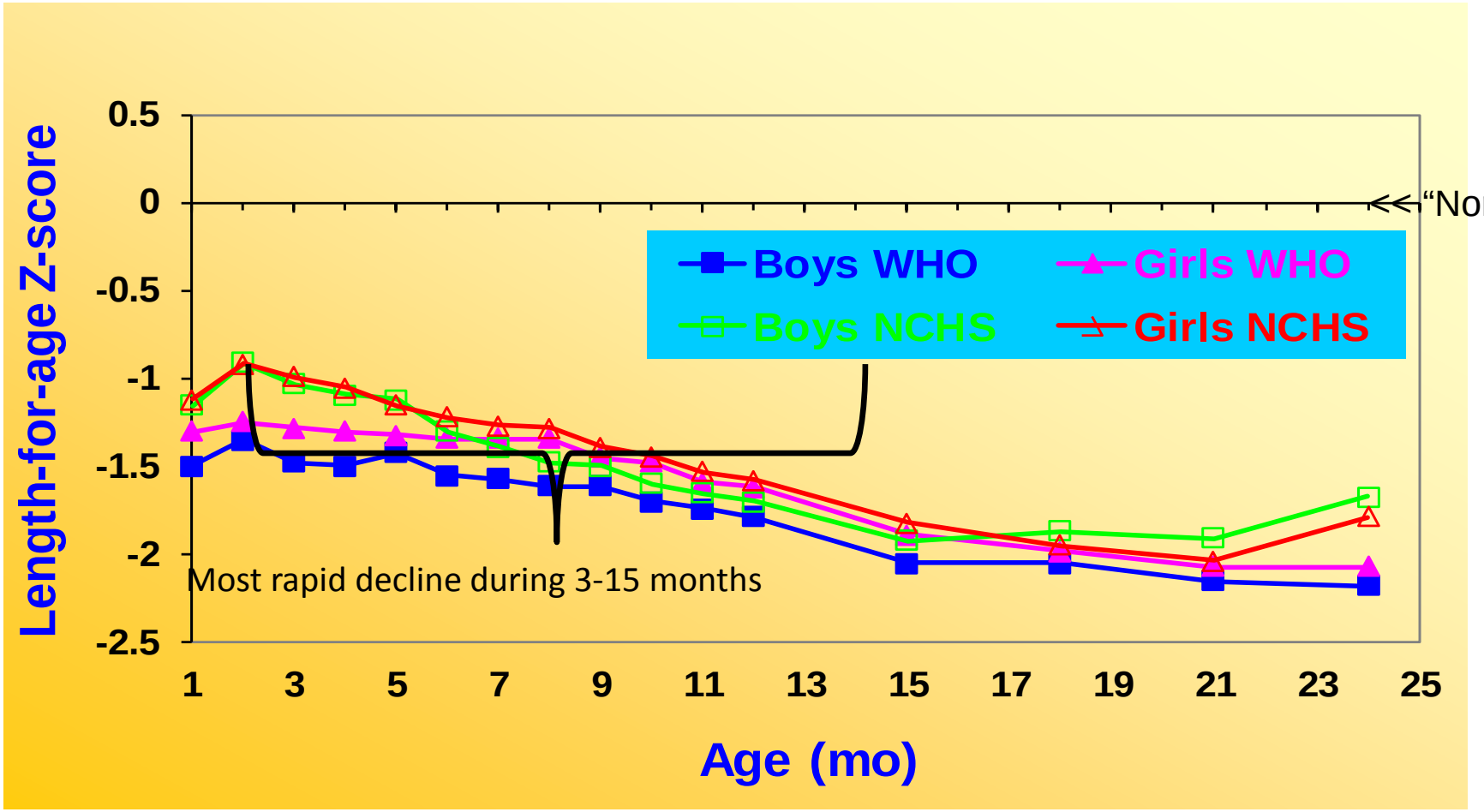
by observed handwashing before preparing food

SHEWA-B, Rural Bangladesh



PLoS Med, 2011;8(6): e1001052.

Most stunting damage occurs during complementary feeding age



KK Saha et al (ICDDR,B),
Food and Nutrition Bulletin 2009

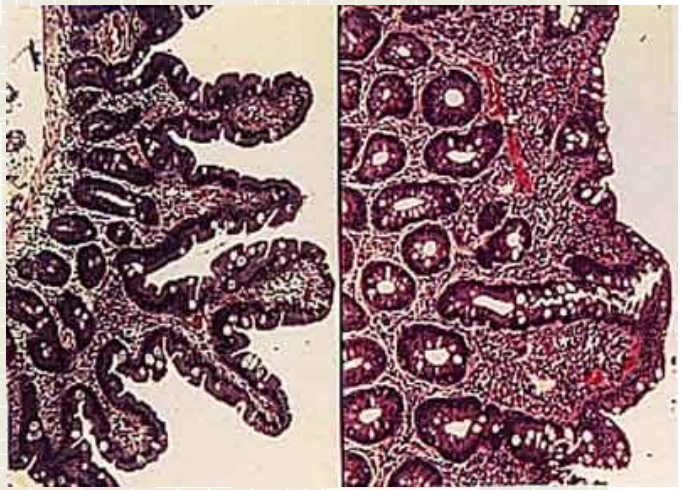
Evidence exists that the effect of WASH interventions on linear growth is independent of its effect on diarrhea

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

…. there is something else going on…

Slides stolen *from Cornell U Division of Nutritional Sciences, Laura Smith . R Stoltzfus, F Ngure, B Reid, G Pelto, M Mbuya, A Prendergast, J Humphrey*

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

***Slide** from Cornell U Division of Nutritional Sciences, Laura Smith . R Stoltzfus, F Ngure, B Reid, G Pelto, M Mbuya, A Prendergast, J Humphrey*

Open defecation accounts for much of excess stunting

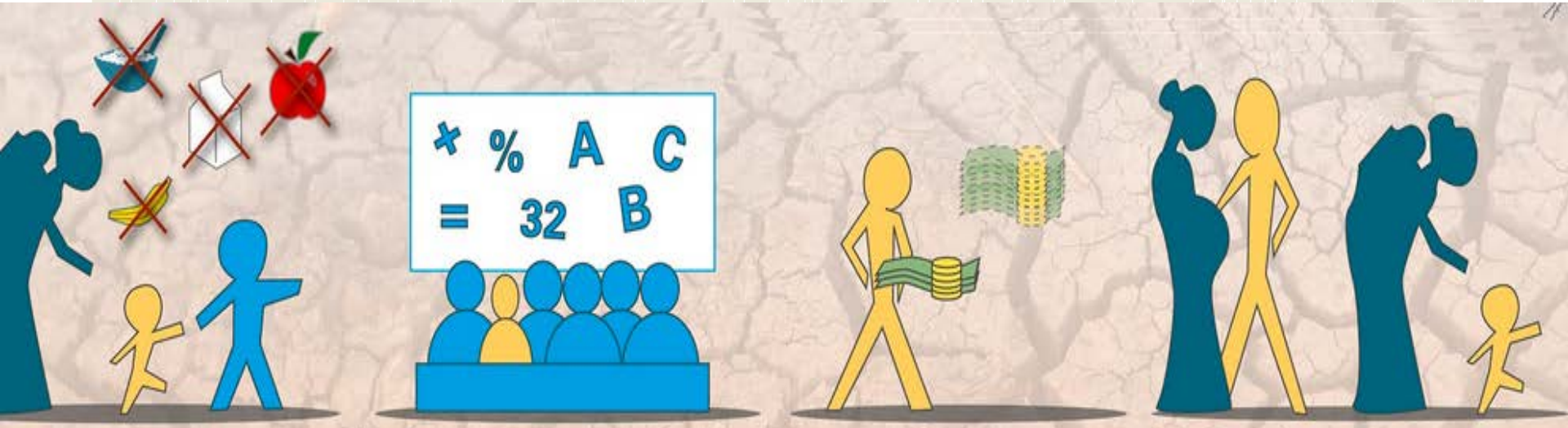
Sanitation alone explains 54% of international variation in child height - GDP only explains 29%

Source: Each data point is a collapsed DHS survey round (country-year), proportional to population. Spears (2012)

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.

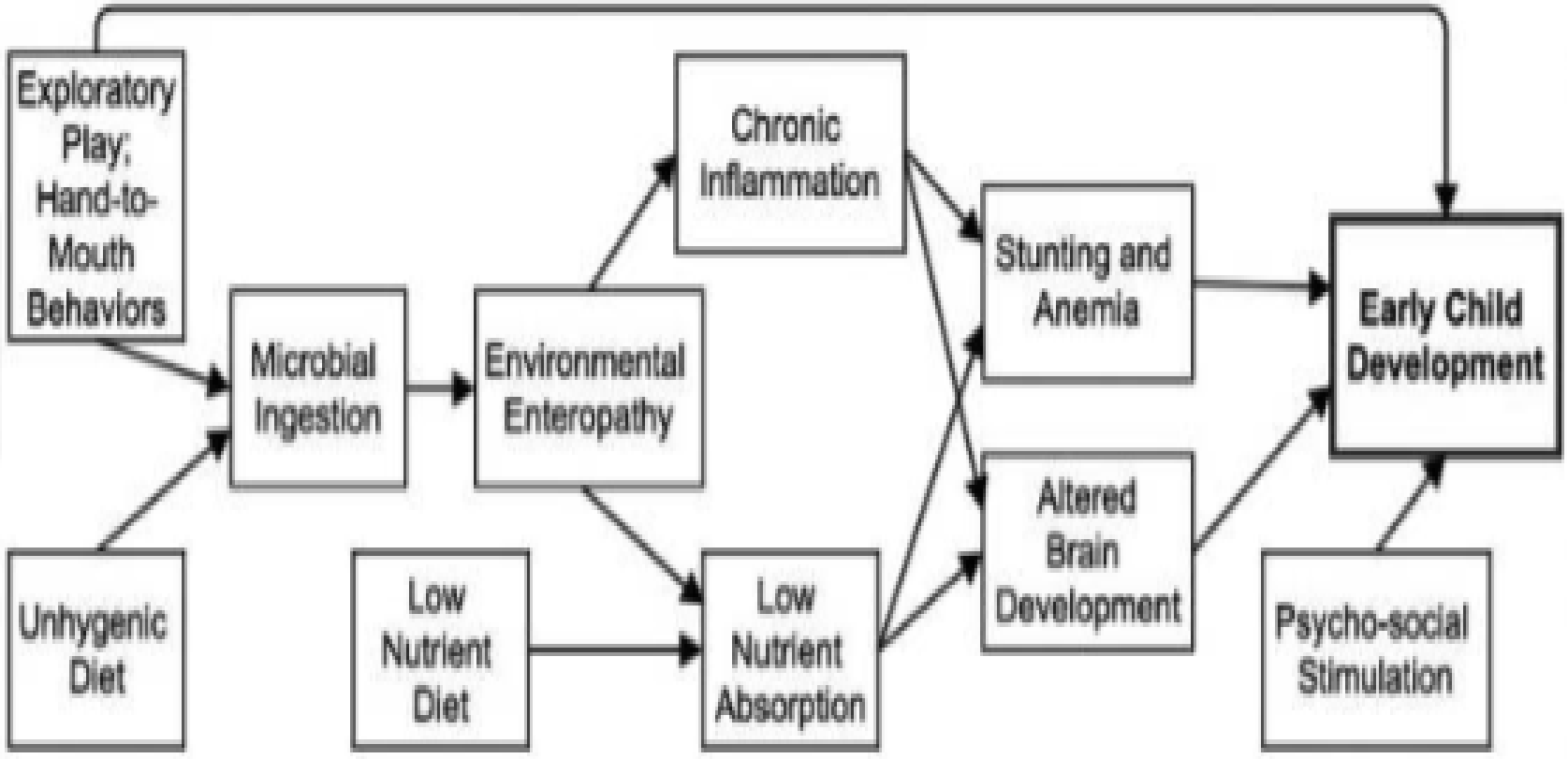
PROFESSIONAL LIFE

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.

Poor hygiene links to ECD



Ngure, F. et al. (2014). Water, sanitation and hygiene (WASH), environmental enteropathy, nutrition, and early child development: making the links. Annals of the N.Y. Academy of Sciences. 1308, 118-128. http://onlinelibrary.wiley.com/doi/10.1111/nyas.12330/abstract

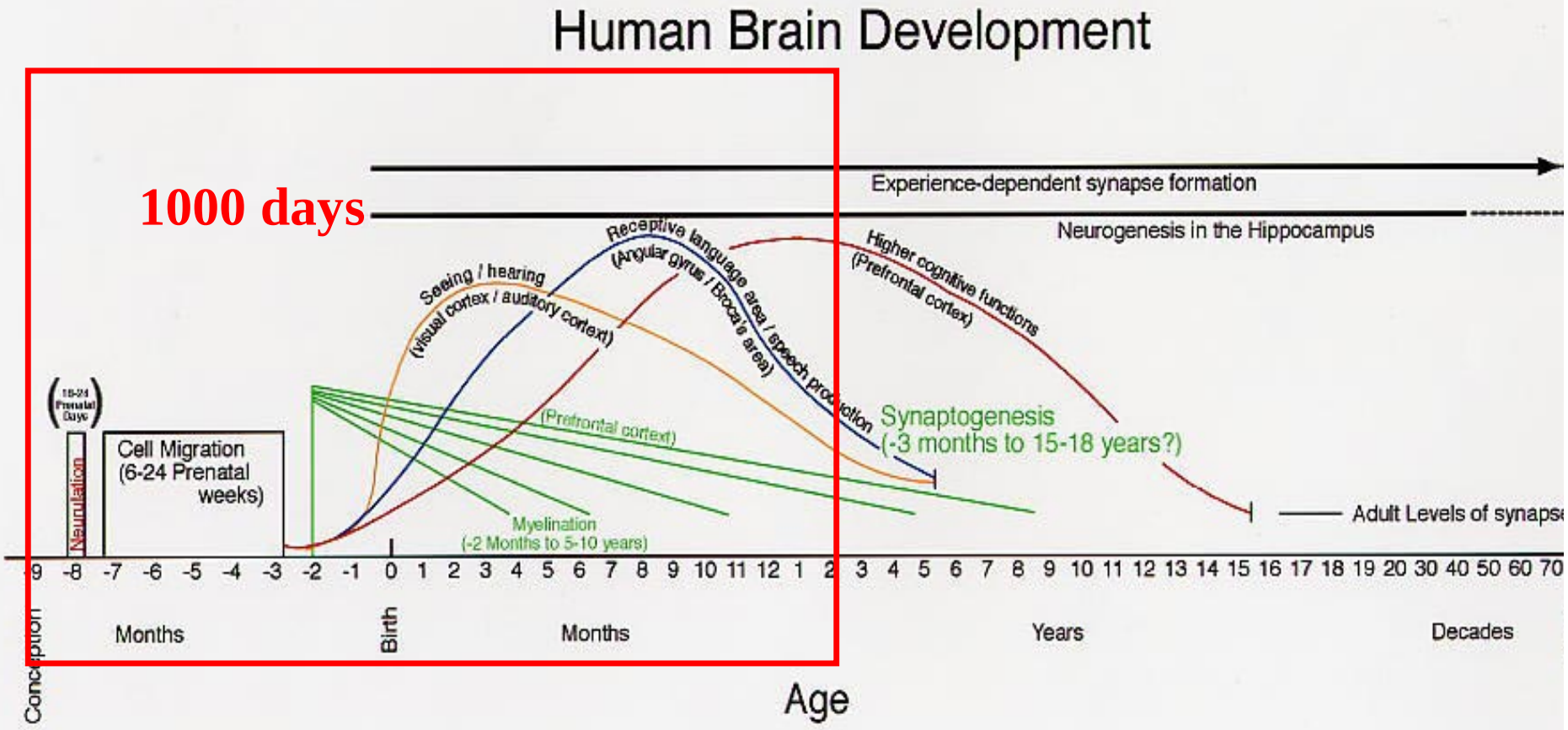
USAID FROM THE AMERICAN PEOPLE

washplus

Not just about child survival
… and not just about more / better food

- Key period for formation of the brain, laying the foundation for development of cognitive, motor and socio-emotional skills
- Adequate nutrition for pregnant women and infants is necessary for 'normal' brain development
- Lack of micronutrients especially critical to optimal infant cognitive and motor development.
- Children with restricted development in early life are at risk
  - later neuropsychological problems,
  - poor school achievement,
  - early school drop out,
  - low-skilled employment and lower wage earnings,
  - poor care of their own children
- Some of damage is irreparable if not addressed before age 2**
- Contributes to the intergenerational transmission of poverty

Developmental Perspective



Fetus **Late Infancy/Toddler** **Pubertal**

Thompson & Nelson, 2000

Slides taken from Maureen Black's CFN Presentation

Links between WASH and MNCH

- Women who gave birth in homes with poor sanitation
  - 3.14 x the odds of maternal mortality
- women who gave birth in situations with poor water supply
  - 1.75 x the odds of maternal mortality
- Newborns whose birth attendant washed his or her hands prior to assisting with delivery
  - 19% lower risk of newborn death
- Newborns whose mother washed her hands before handling their infants
  - 44% lower risk of newborn death

USAID FROM THE AMERICAN PEOPLE

washplus

Stay connected!

contact@cleanfednurtured.org

www.cleanfednurtured.org

USAID
FROM THE AMERICAN PEOPLE

Save the Children

HEALTH IN YOUR HANDS
A PUBLIC - PRIVATE PARTNERSHIP

FANTA III
FOOD AND NUTRITION TECHNICAL ASSISTANCE

washplus
Supportive Environments for Healthy Communities

alive&thrive
nourish. nurture. grow.

fhi360
THE SCIENCE OF IMPROVING LIVES



An example from Bangladesh

Health inputs

- Antenatal care
- Basic health education (moms with children <5)
- Referrals
- Immunizations
- Prevention and treatment

Nutrition inputs

- Screening for malnutrition
- Infant Young Child Feeding counseling
- Specific breastfeeding counseling
- Micro-nutrient supplementation
- Referrals
- Treatment of malnutrition at home
- Follow-up home visits

ECD inputs

- Age appropriate Talk & Play Guidance
- Quality Interaction and responsive care
- Support for young mothers
- Responsive feeding

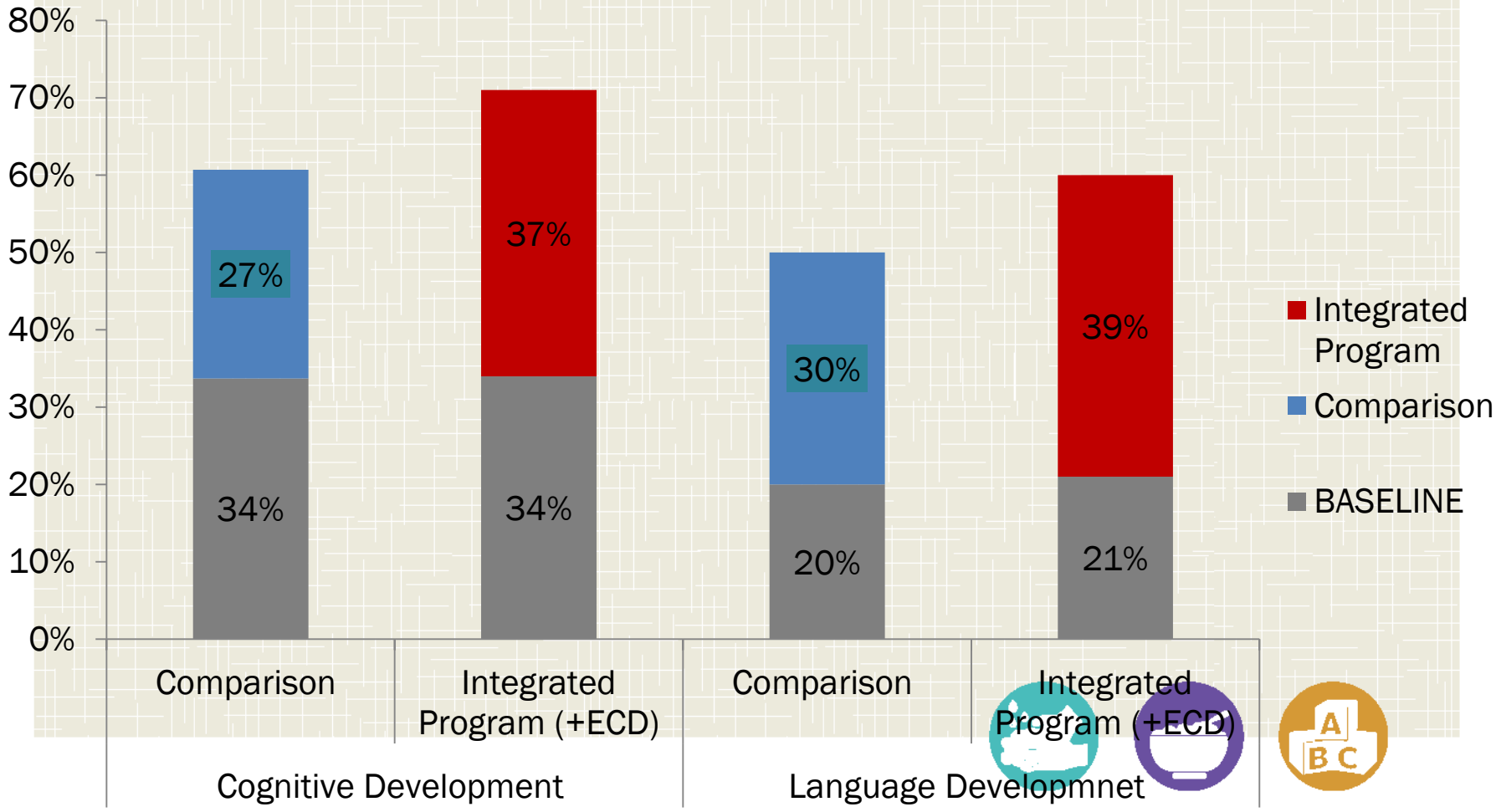
Save Bangladesh

Health, Nutrition, Handwashing, ECD

- Feed your child with patience and good humor
- Talk and interact with your child during a family meal.

Significant impact on child outcomes in the pilot phase of the program; results from the scale up expected later this year

Effect size *d*= 1.52, *d*= 1.04



Additional examples of combined interventions

In Malawi

- A randomized trial, promoting ECD along with optimal feeding and care practices through community-based childcare centers (CBCCs) and parenting groups.
- Activities include direct supplementation through preschool meals, planning and preparation of meals for children within CBCCs; improving agricultural production of nutritious foods and food diversification by using CBCC gardens as a learning site for communities; and other strategies.

In Mali

- Funding from World Bank SIEF
- Three elements: seasonal malaria chemoprevention, micronutrient powders, and parenting education
- Delivered through cross-sectoral village committees
- Aims to evaluate the longer term impact and cost effectiveness of the interventions in the first 1000 days of life on physical, cognitive, socio-emotional and language development.

SHINE: Sanitation, Hygiene, Infant Nutrition Efficacy Project

- Clinical trial
  - Hypothesis: A major cause of child stunting and anemia is environmental enteropathy
    - WASH
    - Nutrition
    - Combined
- Playpens
  - Open door to addressing early stimulation
  - Vector of disease

MAMA

Mobile Alliance for Maternal Action