Clean Fed and Nurtured:

Intersectoral Collaboration Beyond Environmental Enteropathy

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What is Clean, Fed & Nurtured?

- Integrated programming
  - Water, sanitation, hygiene (WASH)
  - Nutrition
  - Early child development
- Consultative Meeting
  - To kick start a community of practice and movement to promote a **thriving** child

Objective of this session

- To advance the global conversation to different stakeholders and actors already engaged in WASH

- To engage new energy and talent in promoting flowers to bloom everywhere across the WASH-nutrition-early child development nexus

Why Integrate these Sectors?

- No sector succeeding on its own
- Dyads of integration
- Growing evidence pointing to growth and development needed for a thriving child

Review of the evidence

Review of the Evidence

30% ++

Focus on WASH behaviors for Diarrhea Disease Reduction….

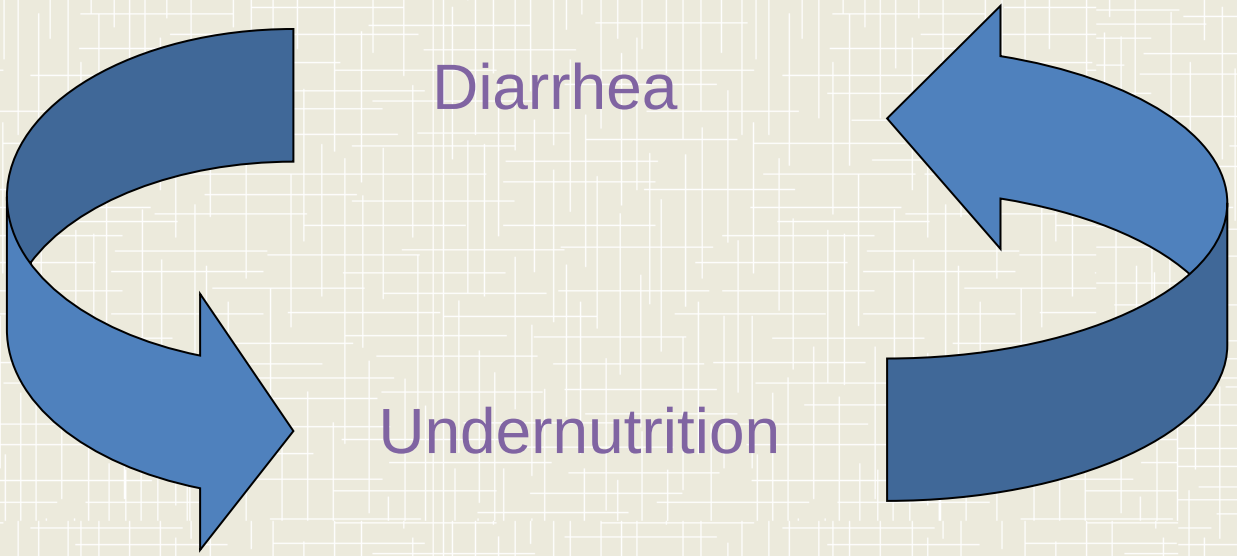
Handwashing 43%

Safe Storage & Treatment of Water

21%

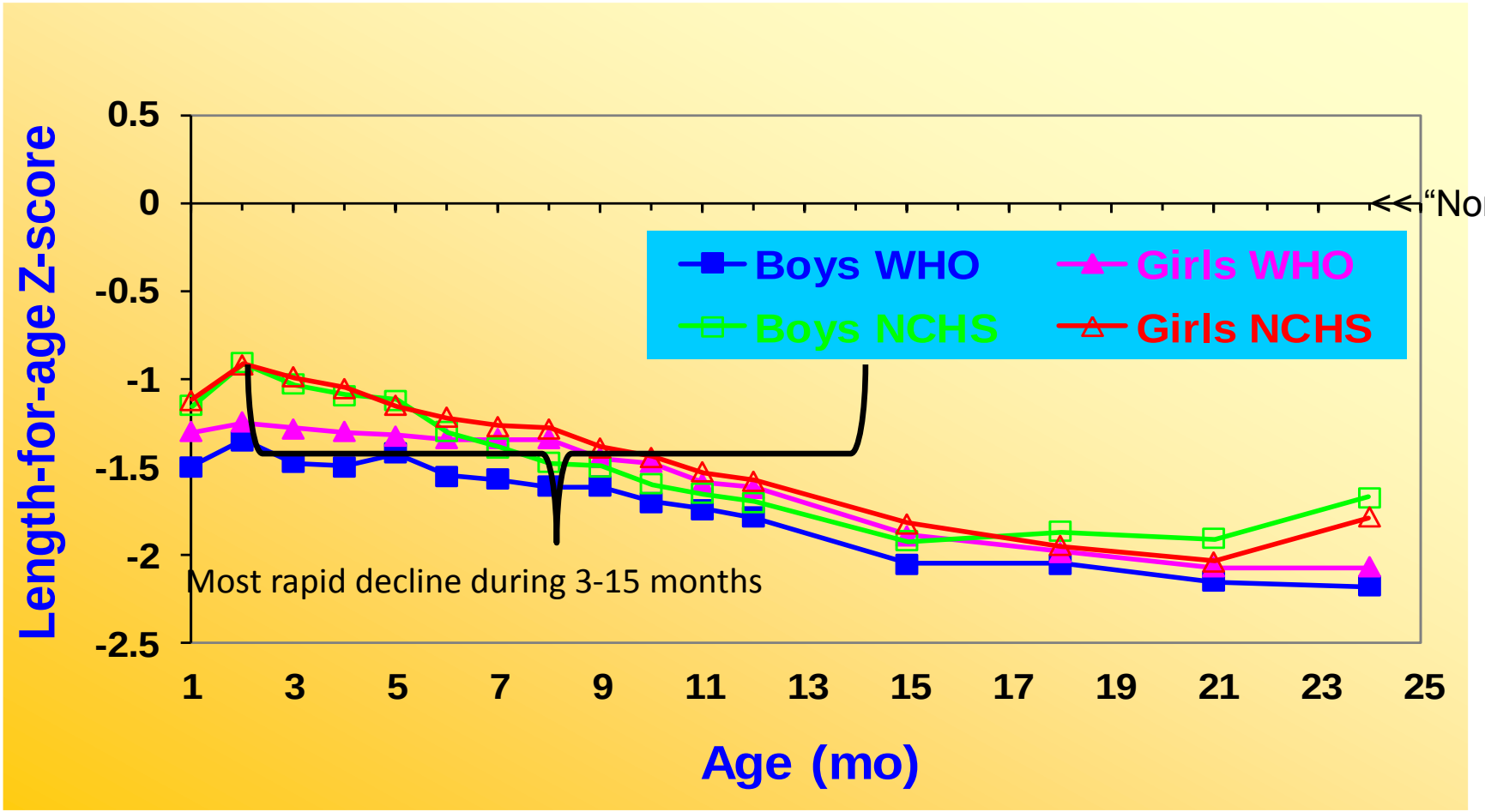
30-50%

Interrelationship of Diarrhea & Undernutrition



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

Most stunting damage occurs during complementary feeding age

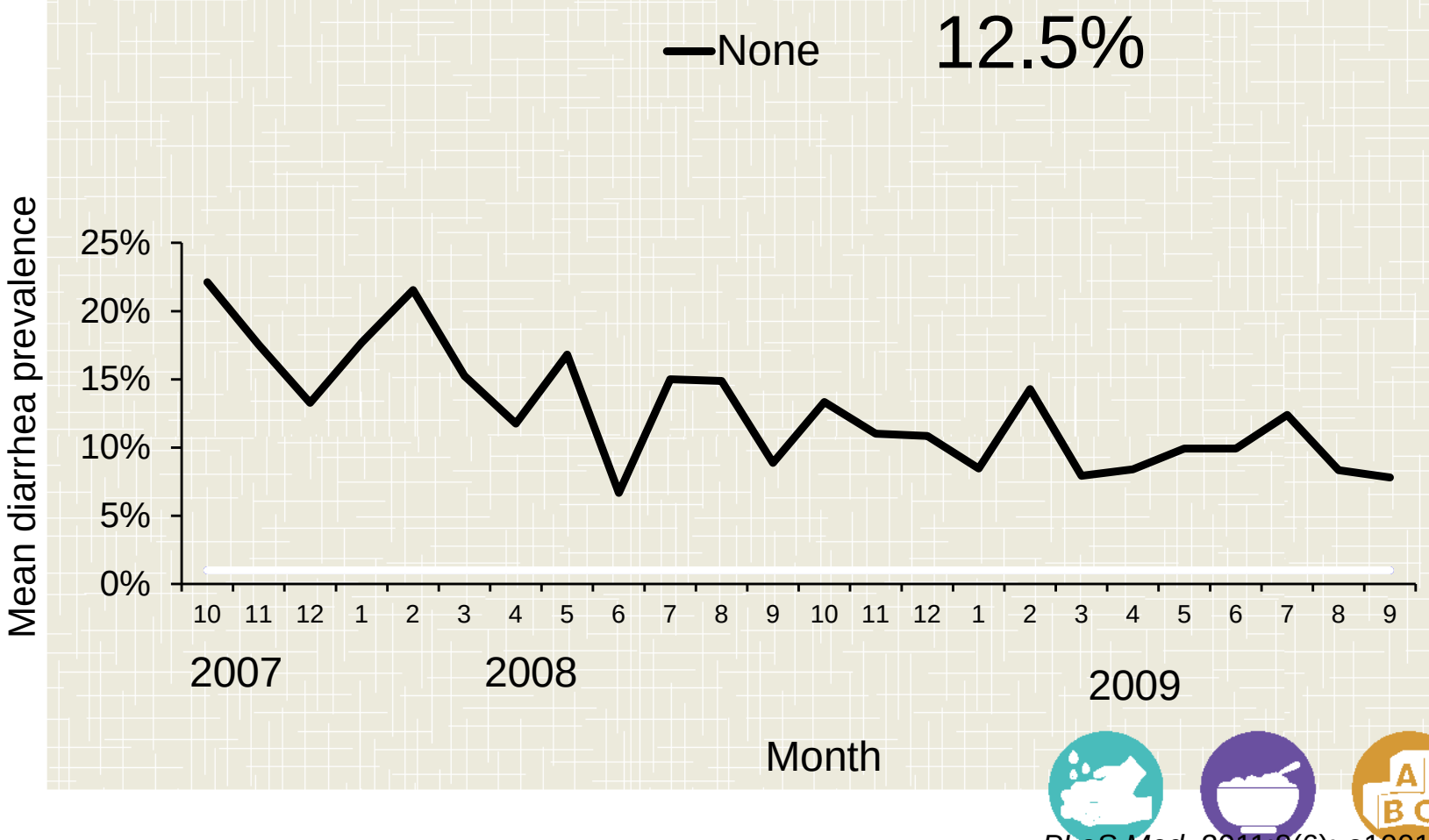


KK Saha et al (ICDDR,B),
Food and Nutrition Bulletin 2009

Prevalence of diarrhea among children < 5 years

by observed handwashing before preparing food

SHEWA-B, Rural Bangladesh



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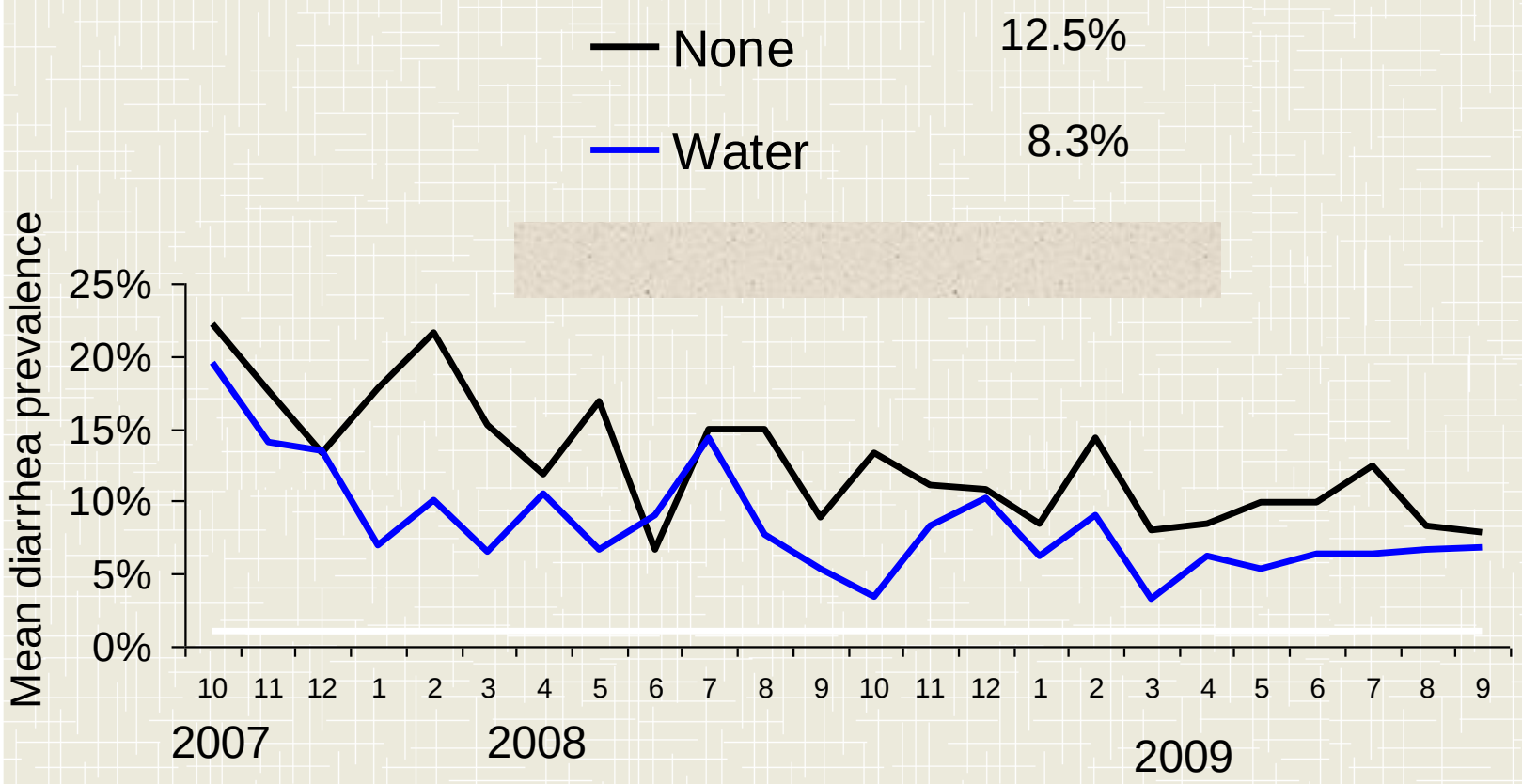

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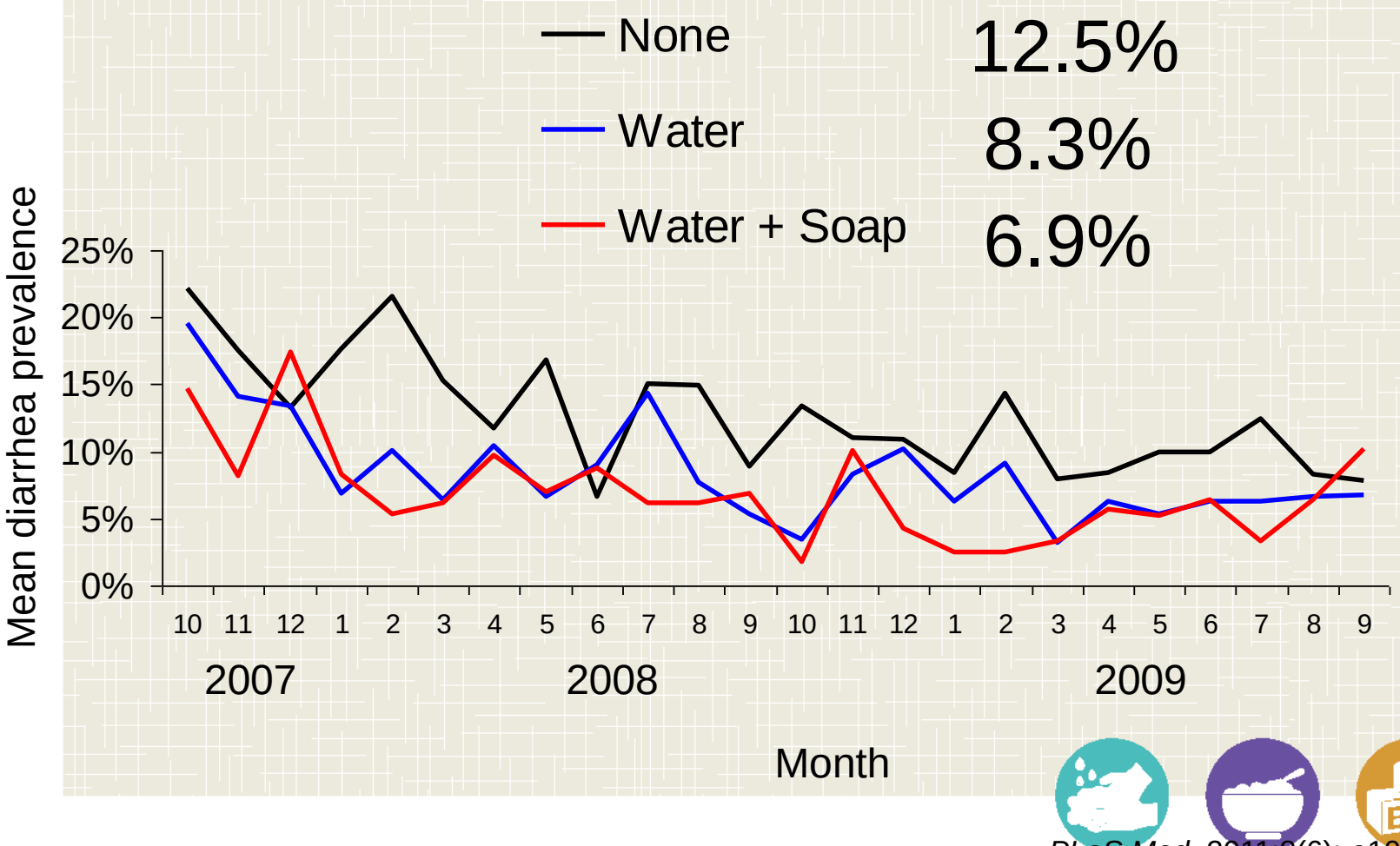

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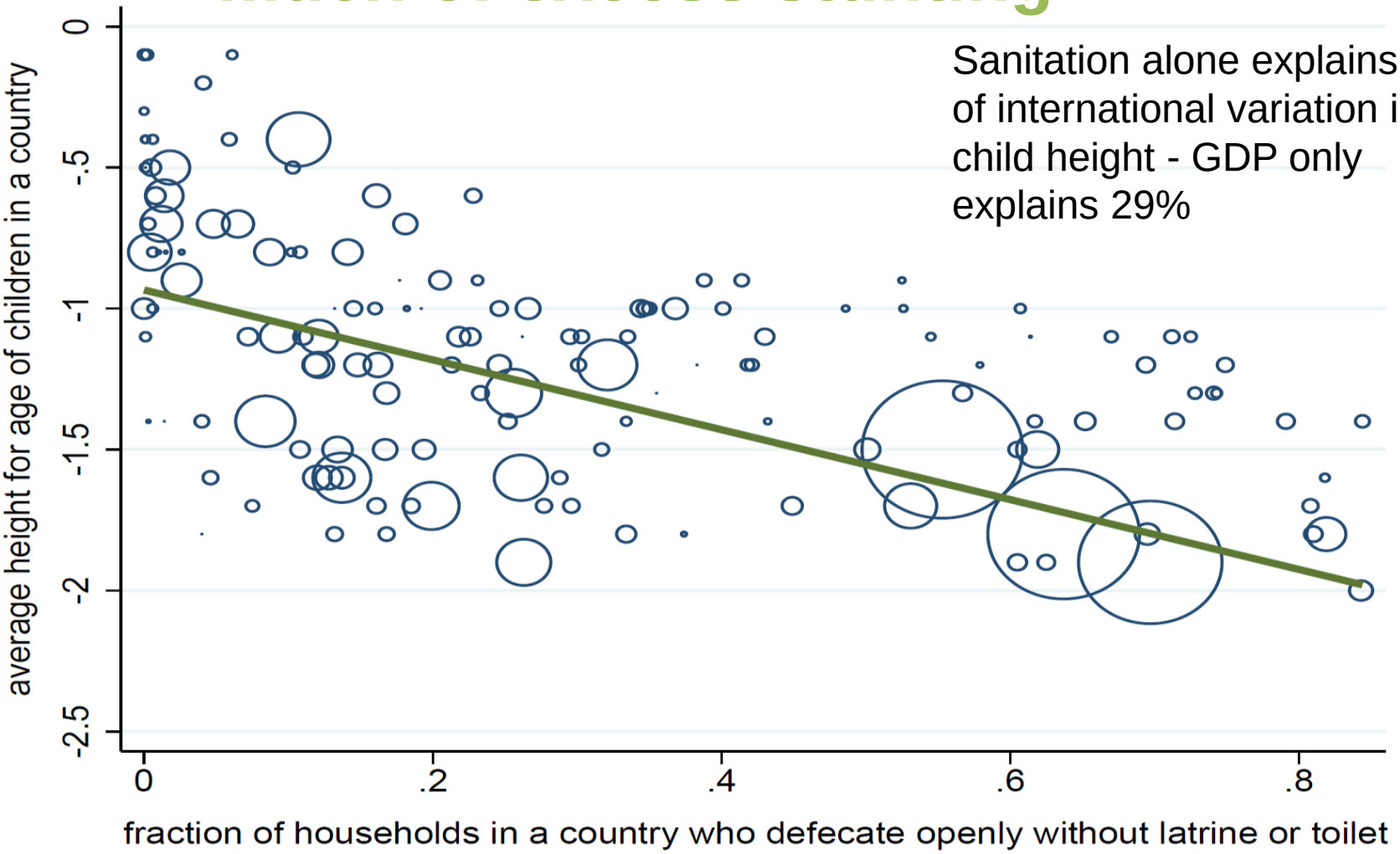
Open defecation accounts for much of excess stunting



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

Source: Spears (2012) www.riceinstitute.org #13
Each data point is a collapsed DHS survey round (country-year) proportional to population.

…. But something else is 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…

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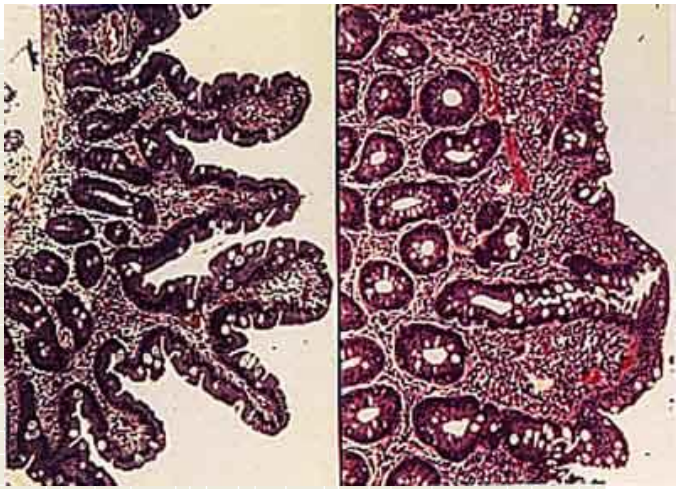
Cause #4: The Environmental Enteropathy Hypothesis



- 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

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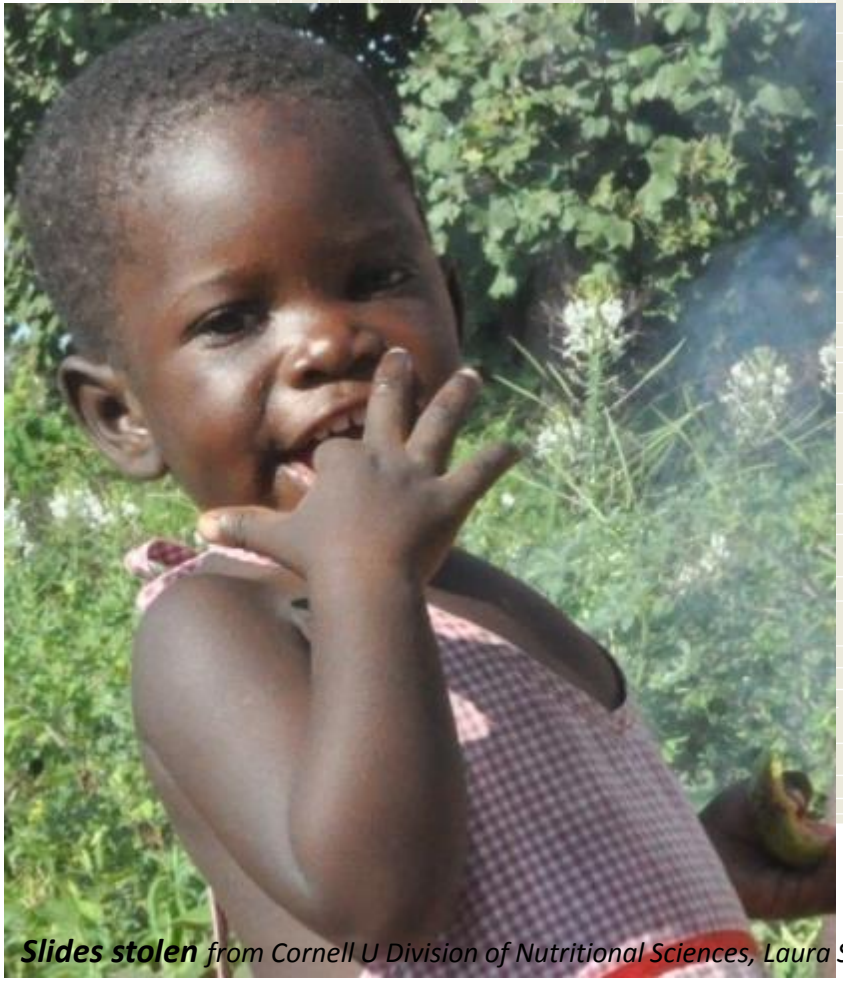
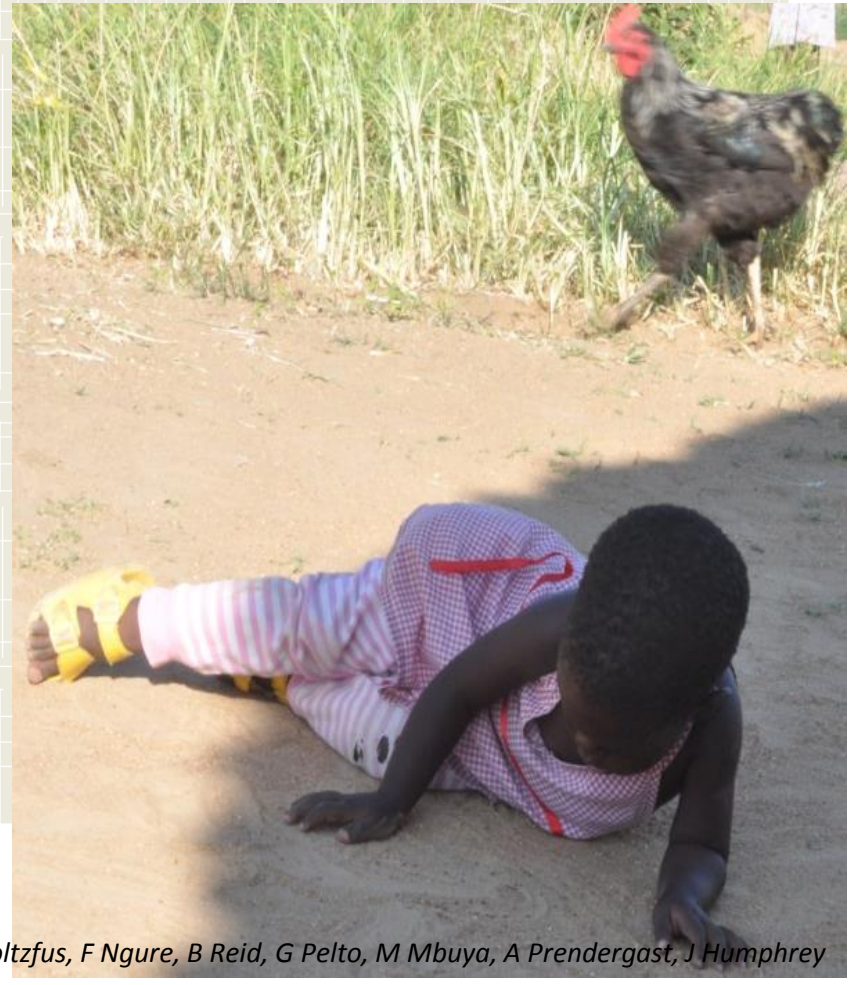
What else might be happening?
Household observations shed light…

Most frequent:
38 times in 6 hours
75% visibly dirty



Dirtiest
Soil (3 ate average 11 bites)
chicken faeces, stones



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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

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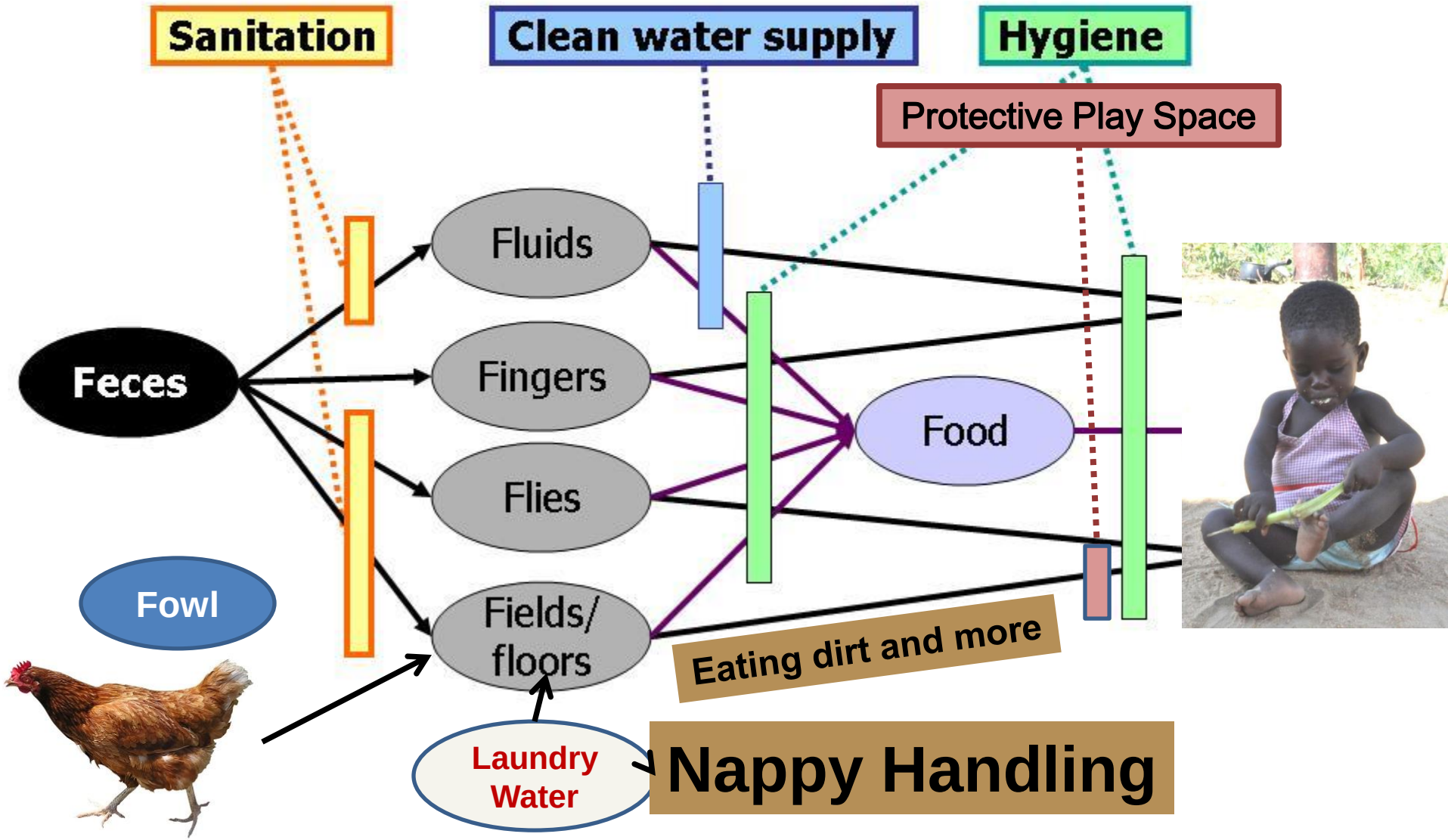
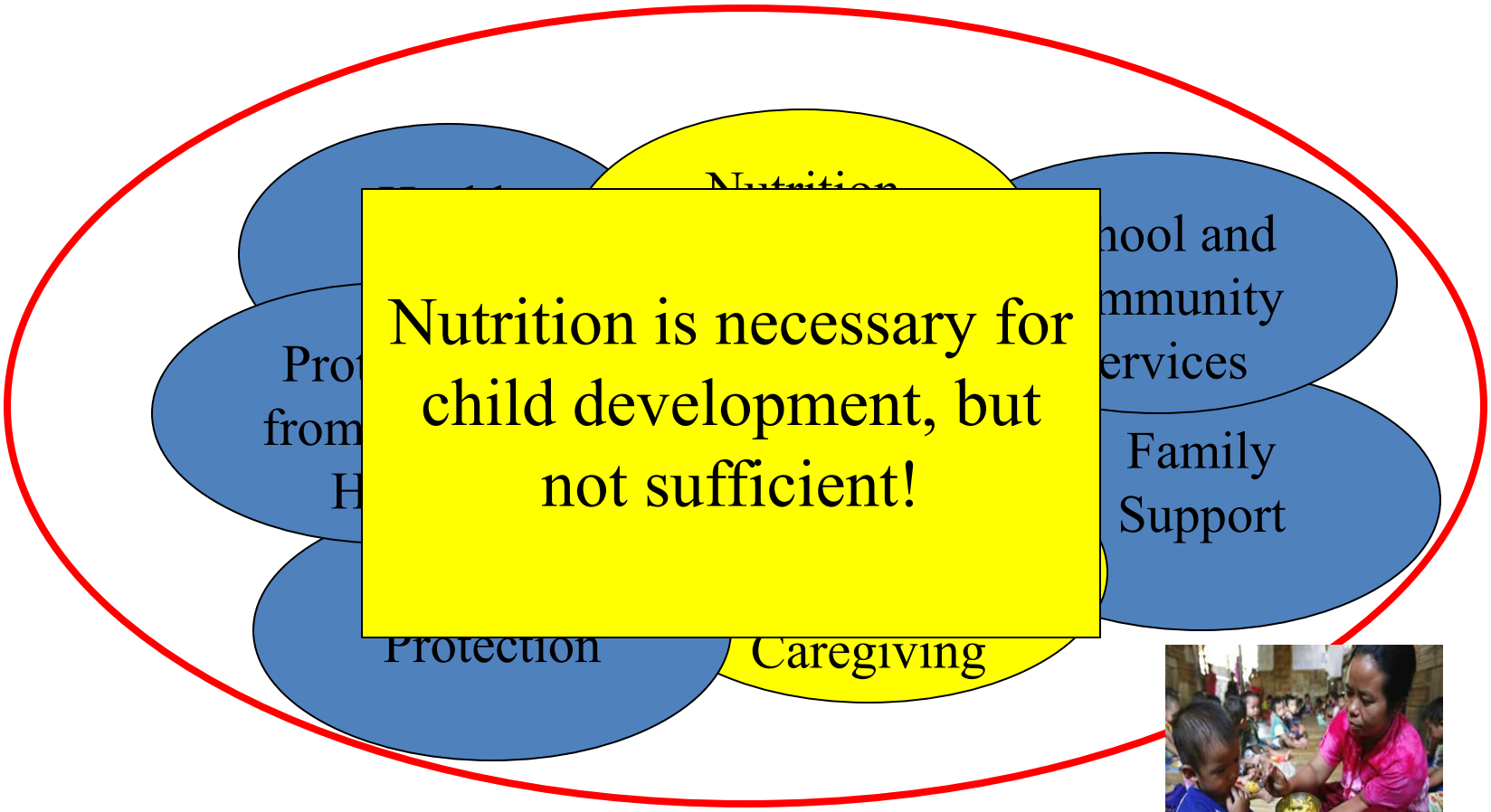
	% HH with E coli + sample	E coil/ Per gram	Average E Coli Per Day
Infant Food	0%	0	0
Drinking Water	54%	2	**800**
Soil in laundry area	60-80%	70	**1,400**
Chicken feces	100%	10,000,000	**10,000,000**

Clearly, kids must stop eating dirt and chicken poop!

Routes of fecal disease transmission and protective barriers *for babies!*



Child Development: Multiple Contributing Factors



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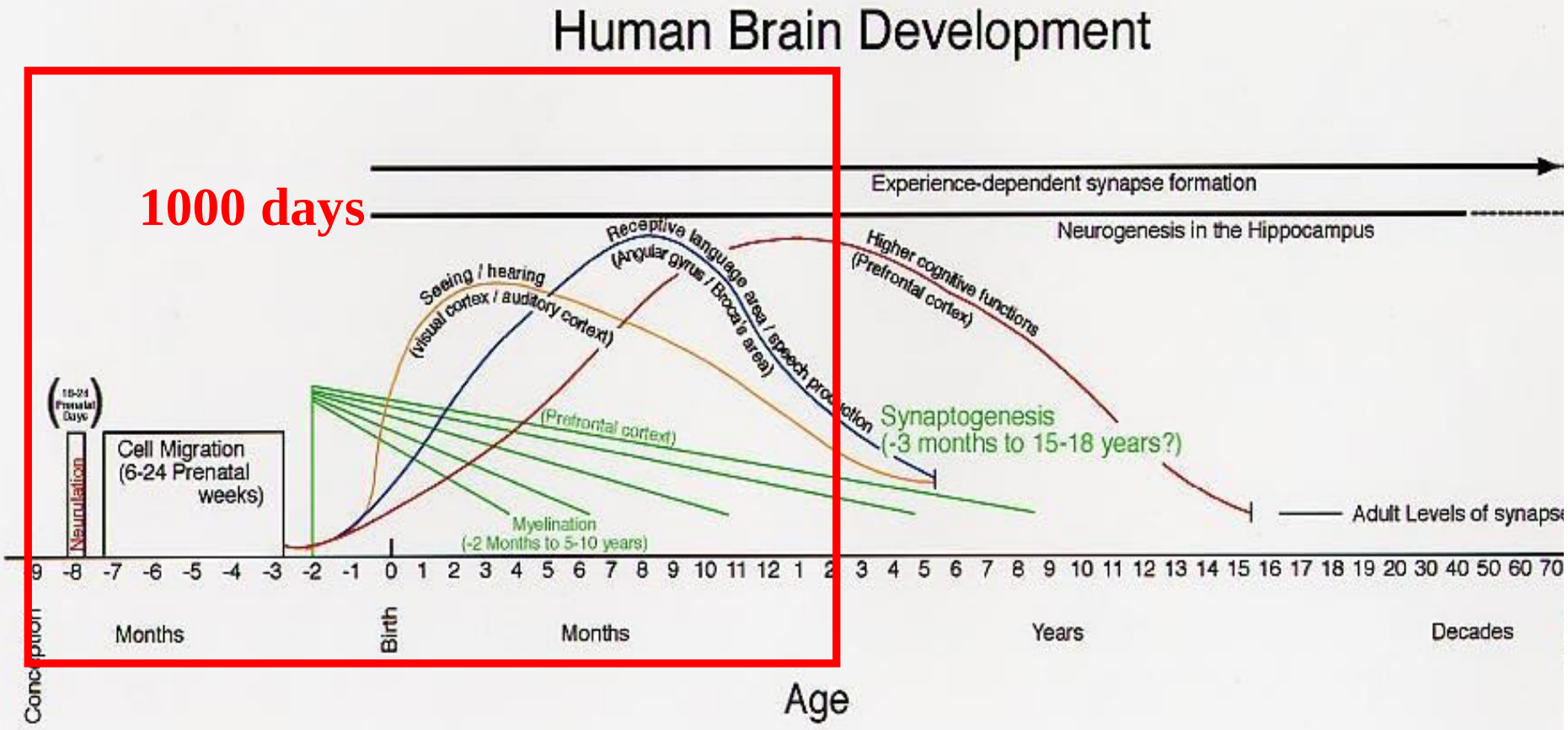
Developmental Perspective



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

Thompson & Nelson, 2000

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2007 & 2011
Lancet Series on Child Development

- Over **200 million children** < age 5 y in low & middle income countries do not reach developmental potential
  - Nutrition: Chronic undernutrition, micronutrient deficiencies
  - Lack of early learning opportunities
  - Extended to social & environmental risks
- Efficacy of early interventions
  - Early childhood policies & programs to reduce inequalities
  - Cost of not investing in child dev programs
  - Need for policies/procedures to scale up

www.globalchilddevelopment.org

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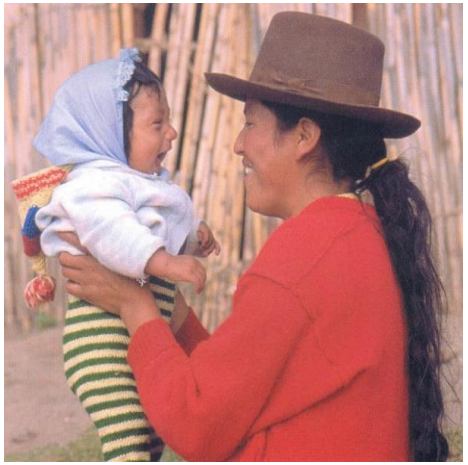
Target of Interventions

- Prenatal
  - Prevent Toxic stress/LBW/Prematurity
- Infancy
  - Breastfeeding, complementary feeding
  - Responsive Parenting
  - Opportunities for early learning
  - Routines to promote regulation
  - Family support



Kramer et al., 2008; 2007 & 2011 Lancet series on Child Development

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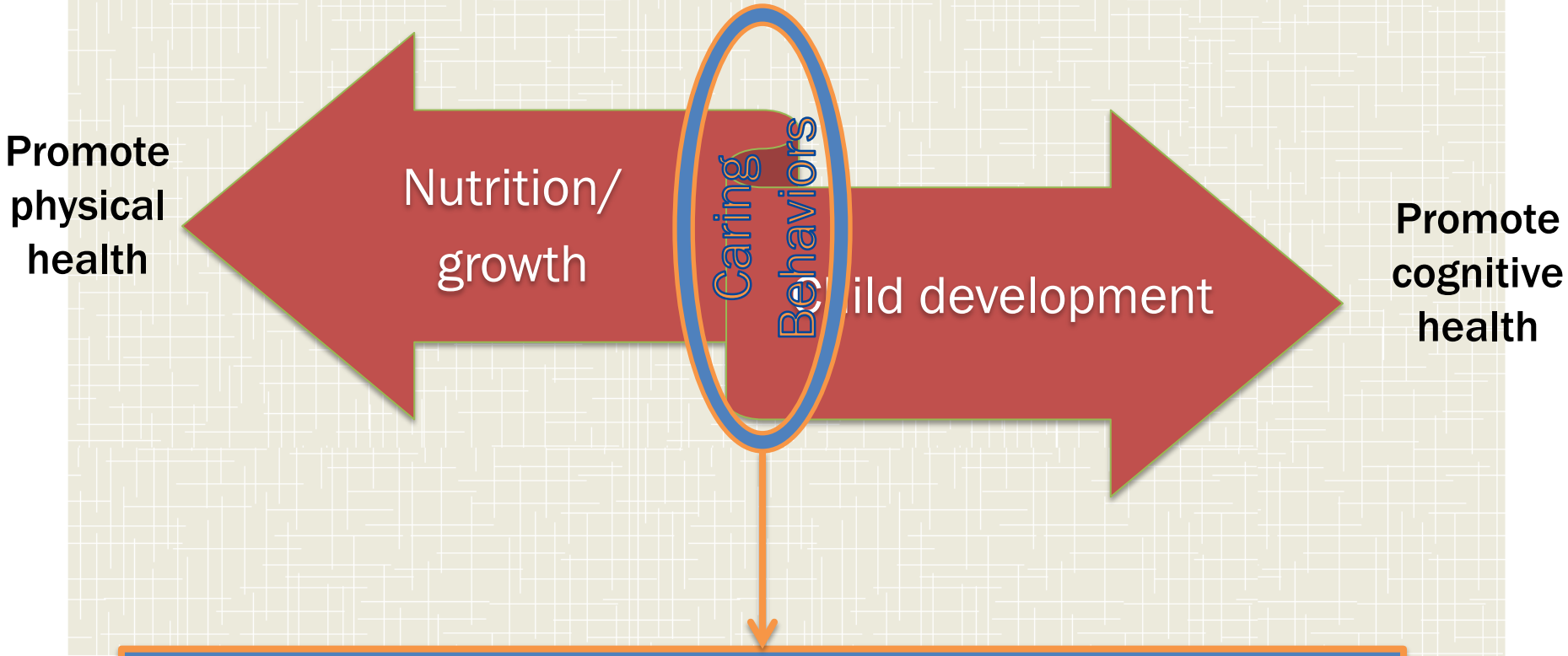
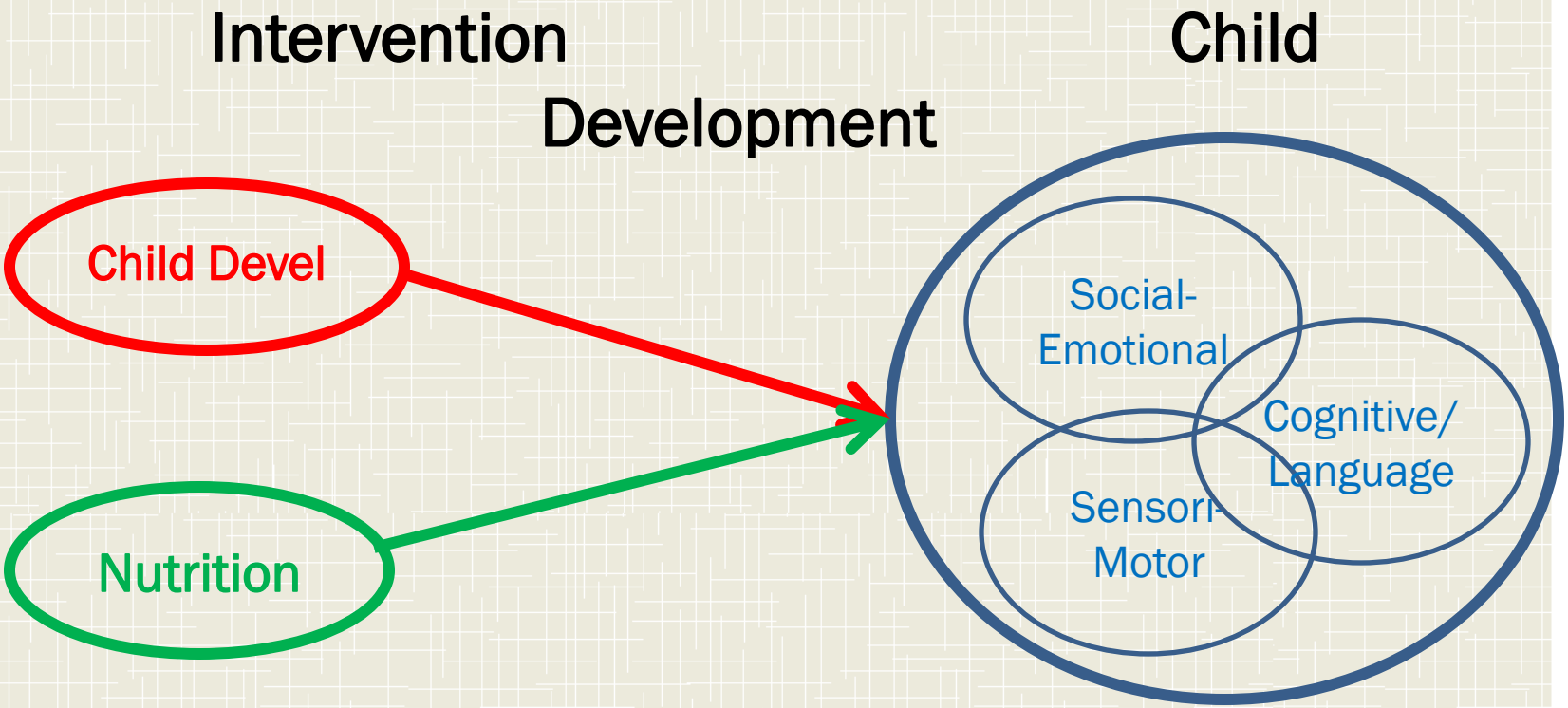
Two separate arms of intervention research



How do Integrated Programs Work?



Additive effect of child development & nutrition intervention

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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

Building the Case for Integration: The 3 Legged Stool

Objectives of CFN Meeting

- Develop a shared understanding of the impacts on child growth and development of WASH, nutrition, and ECD, alone or in synergy
- Reflect on existing and potential programs that integrate two or three of the sectors
- Begin a global conversation that will identify future concrete actions

CFN Meeting Participants

- Academics and Researchers
- Practitioners
- Private Sector
- Donors

CFN Topics

- Session 1: Panel on Evidence
- Session 2: Field Program Examples
- Session 3: Shared Indicators
- Session 4: Priority Household Practices
- Session 5: Future Actions

Challenges to consider

Monitoring and Evaluation

- How can we develop common indicators?

Overload of messaging

- The same people become responsible for sharing multiple behavior change messages and approaches…how do we prioritize

Commitments and Actions

What types of commitments did participants make?

- To gain a deeper understanding of the household practices each sector currently promotes related to child growth and/or development
- To identify household practices that could be promoted across sectors
- To identify opportunities for integration, promoting household practices from each sector

Commitments + Actions = Progress

What has happened in the past four months?

- Development of hygiene actions by age cohort guidelines
- Organizational integration
- Sharing knowledge & continuing the conversation

Get involved!

Discussion topics

- What are you already doing that contributes to this area?
- What could you do?
- What barriers do you see to doing them?
- What would help you to do them?

Commitment

- Get involved in Clean, Fed, and Nurtured

http://www.washplus.org/wash-nutrition

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