



The Baby and the Bathwater: WASH, Nutrition and Rubber Ducks

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USAID's WASHplus Project, FHI 360



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 share the evidence and the global conversation about integrated programming in WASH, nutrition and ECD
- To engage new energy and talent in promoting flowers to bloom everywhere across the WASH-nutrition-early child development nexus

Why Integrate These Sectors?

- Neither sector on its own is succeeding
- Dyads of integration
- Growing evidence pointing to growth and development needed for a thriving child

Safe Feces Disposal



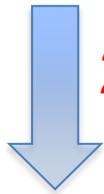
Review of the Evidence



30% ++

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

Safe Storage & Treatment of Water



21%



30-50%

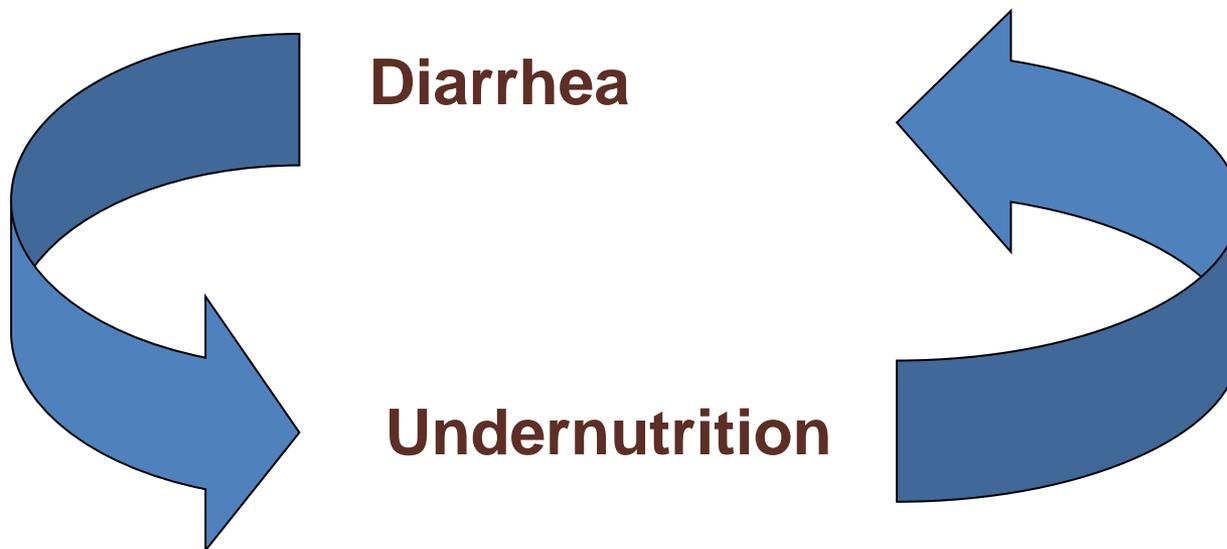


Handwashing

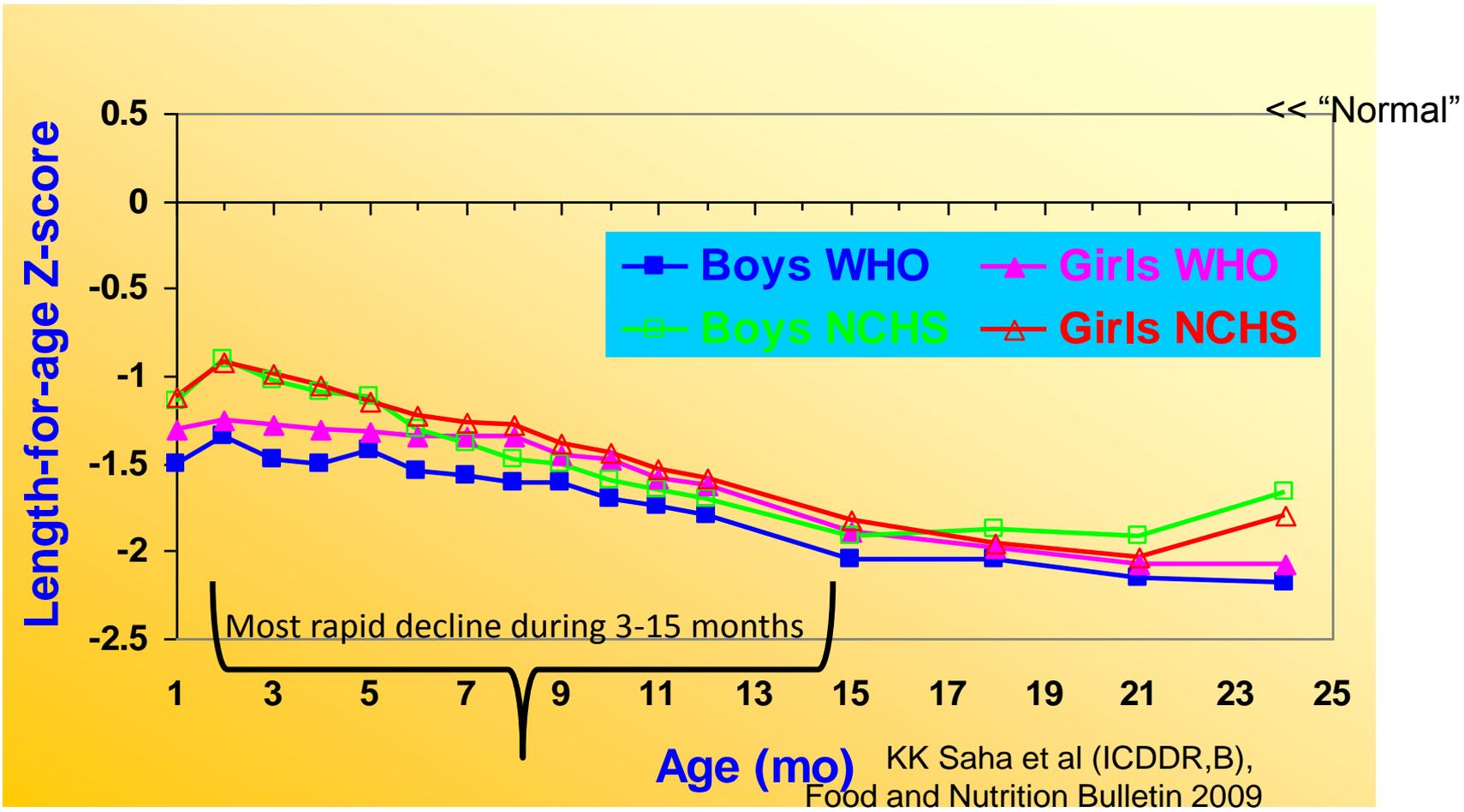


43%

Interrelationship of Diarrhea & Malnutrition



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



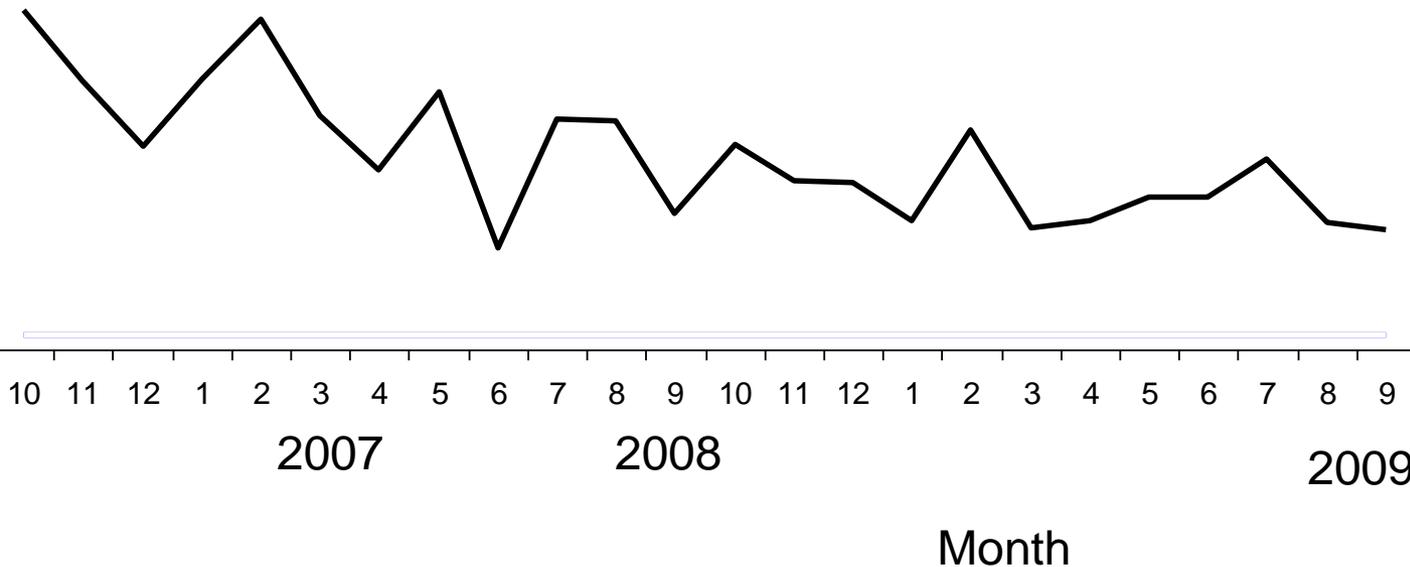
Most damage occurs during complementary feeding age

Prevalence of Diarrhea among Children < 5 years

by observed handwashing before preparing food

SHEWA-B, Rural Bangladesh

— None	12.5%
— Water	8.3%
— Water + Soap	6.9%

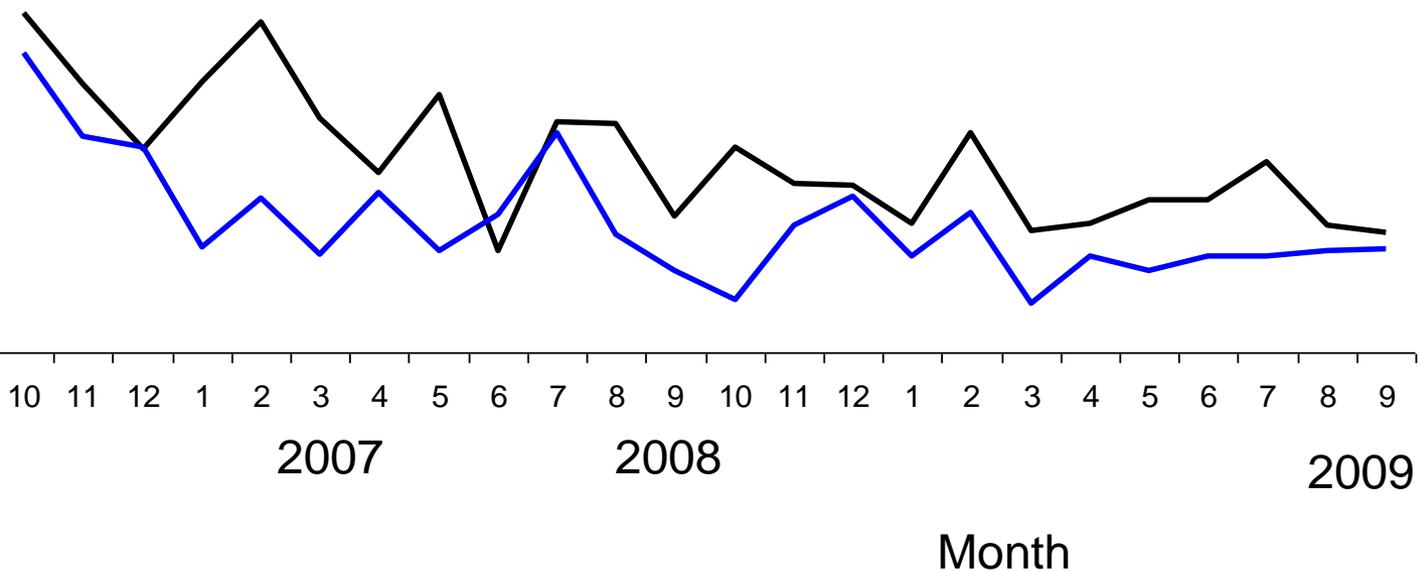


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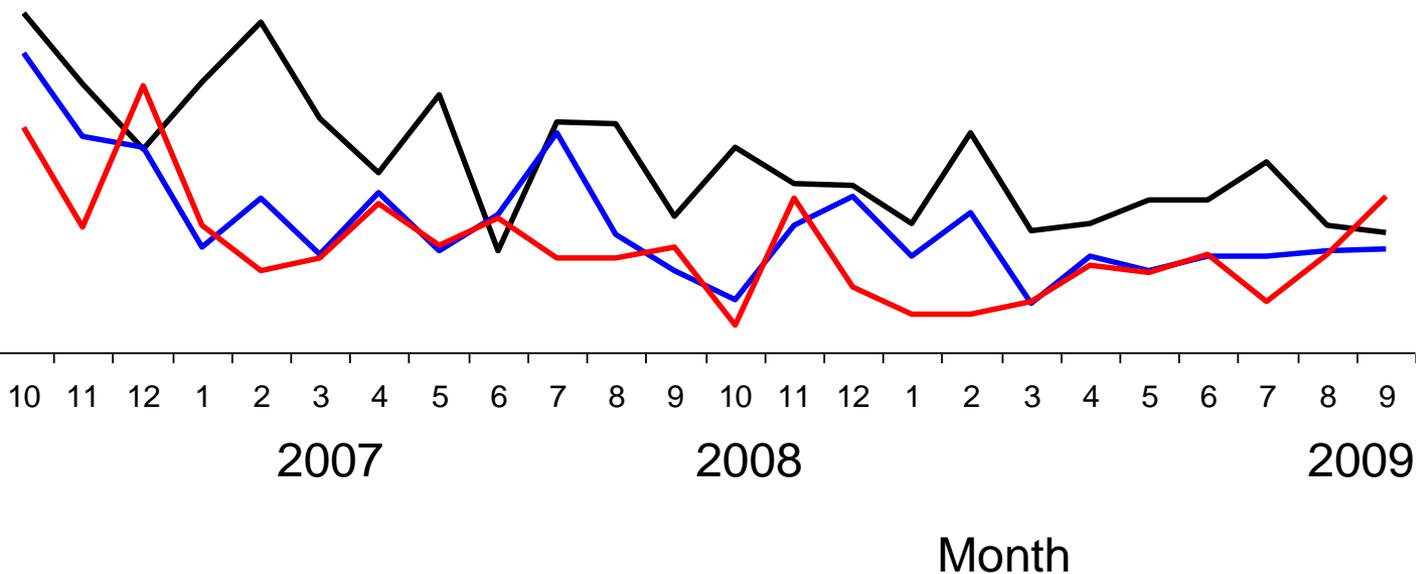


Prevalence of Diarrhea among Children < 5 years

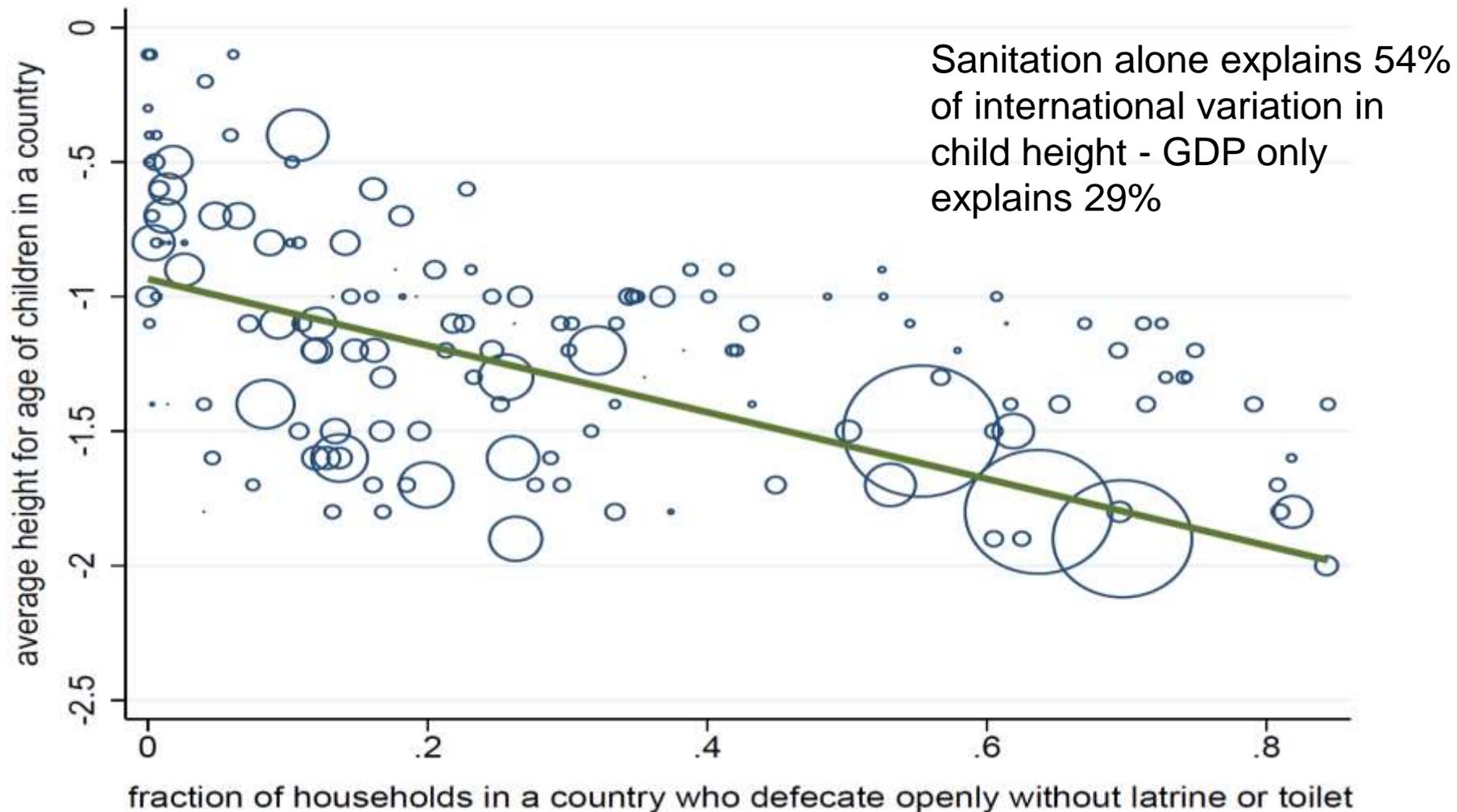
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Open Defecation Accounts for Much of Excess Stunting



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

What is causing all this stunting?

Cause #1: Malnourished Mother

Cause #2: Poor Diet (inadequate weaning foods)

Cause #3: Diarrhea



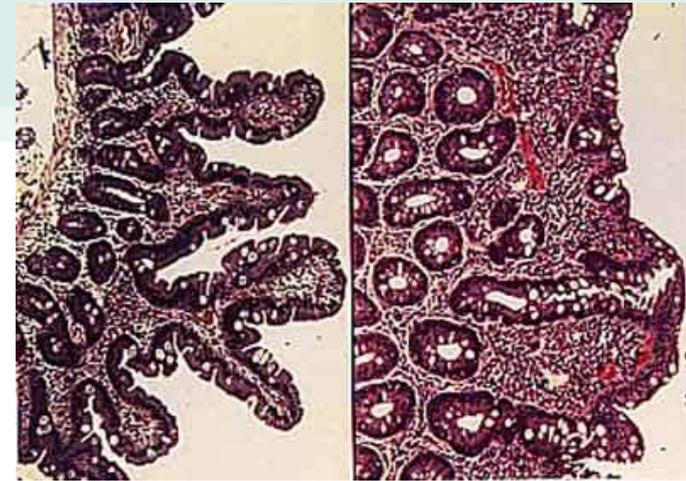
However:

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...

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

Most frequent

38 times in 6 hours

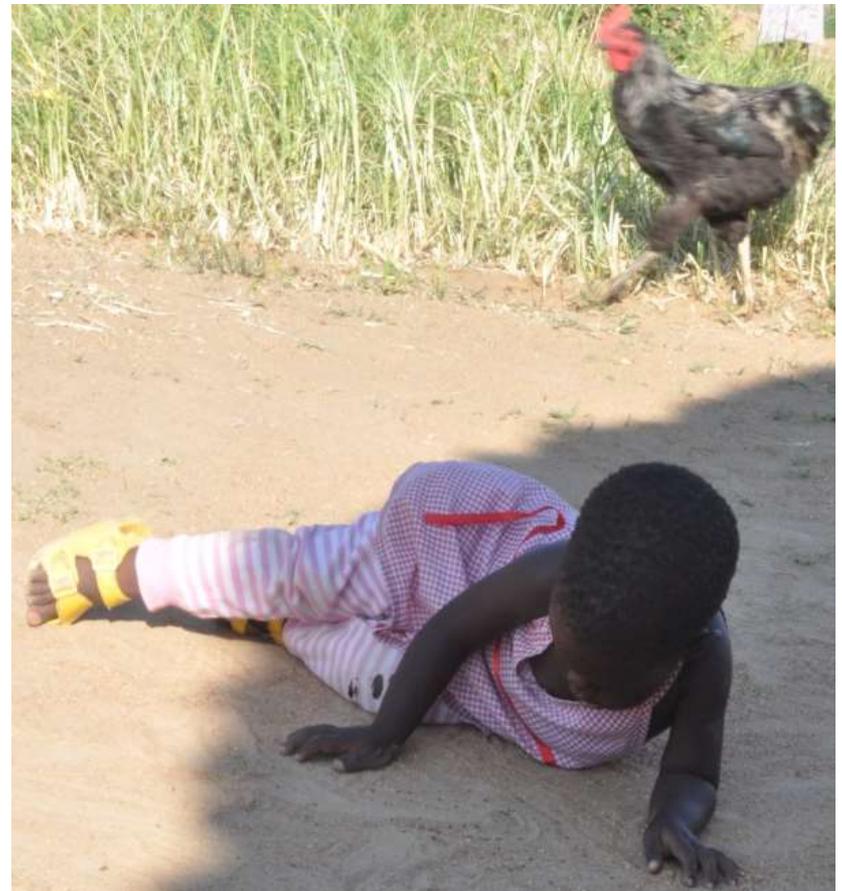
75% visibly dirty



Dirtiest

Soil (3 ate avg 11 bites)

chicken faeces, stones



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:

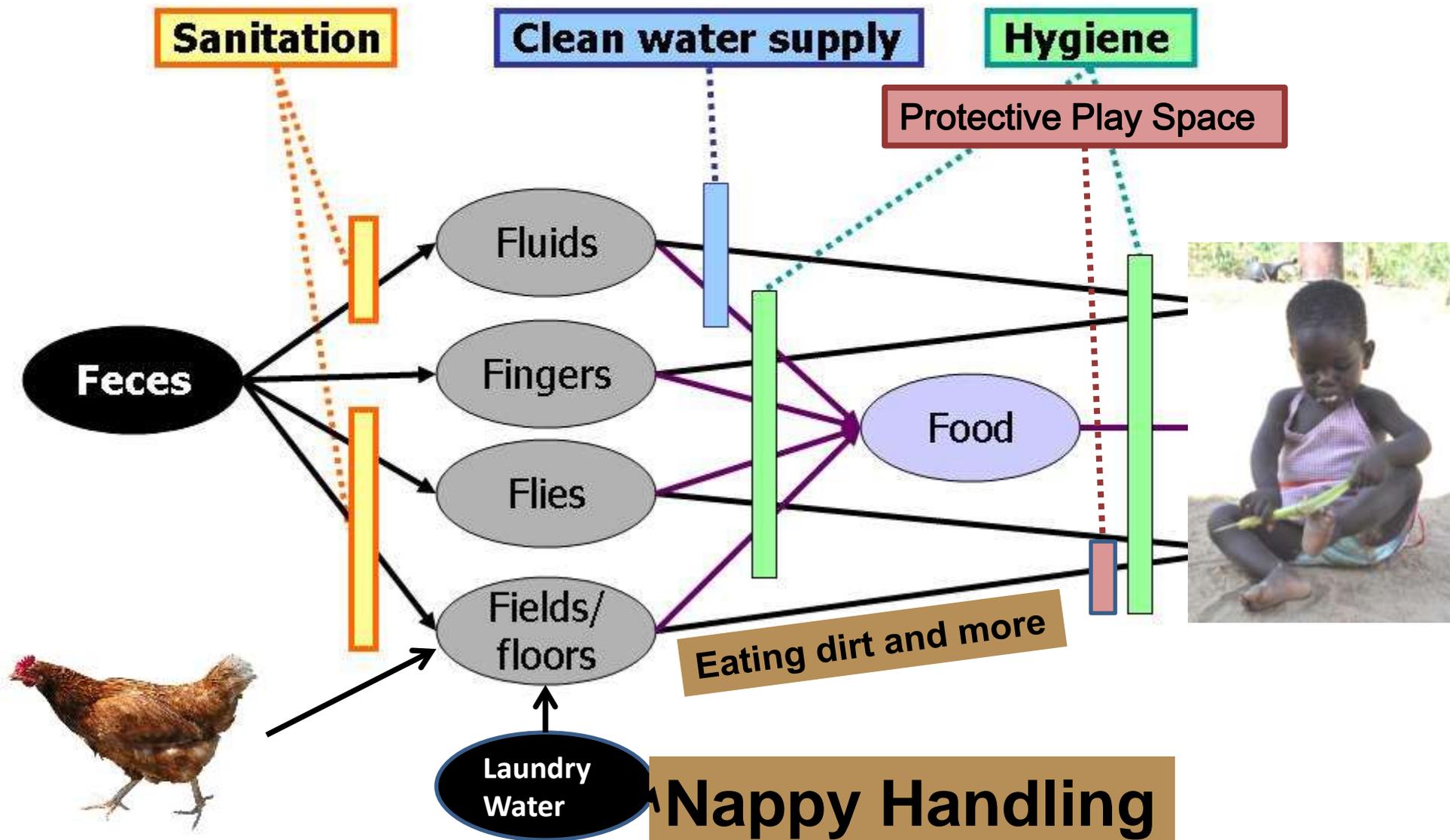
- Not selected for poultry ownership:
 - **3 of 7 toddlers directly ate chicken feces during a 6-hour observation period.**
 - Ngure F et al., submitted, 2012

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

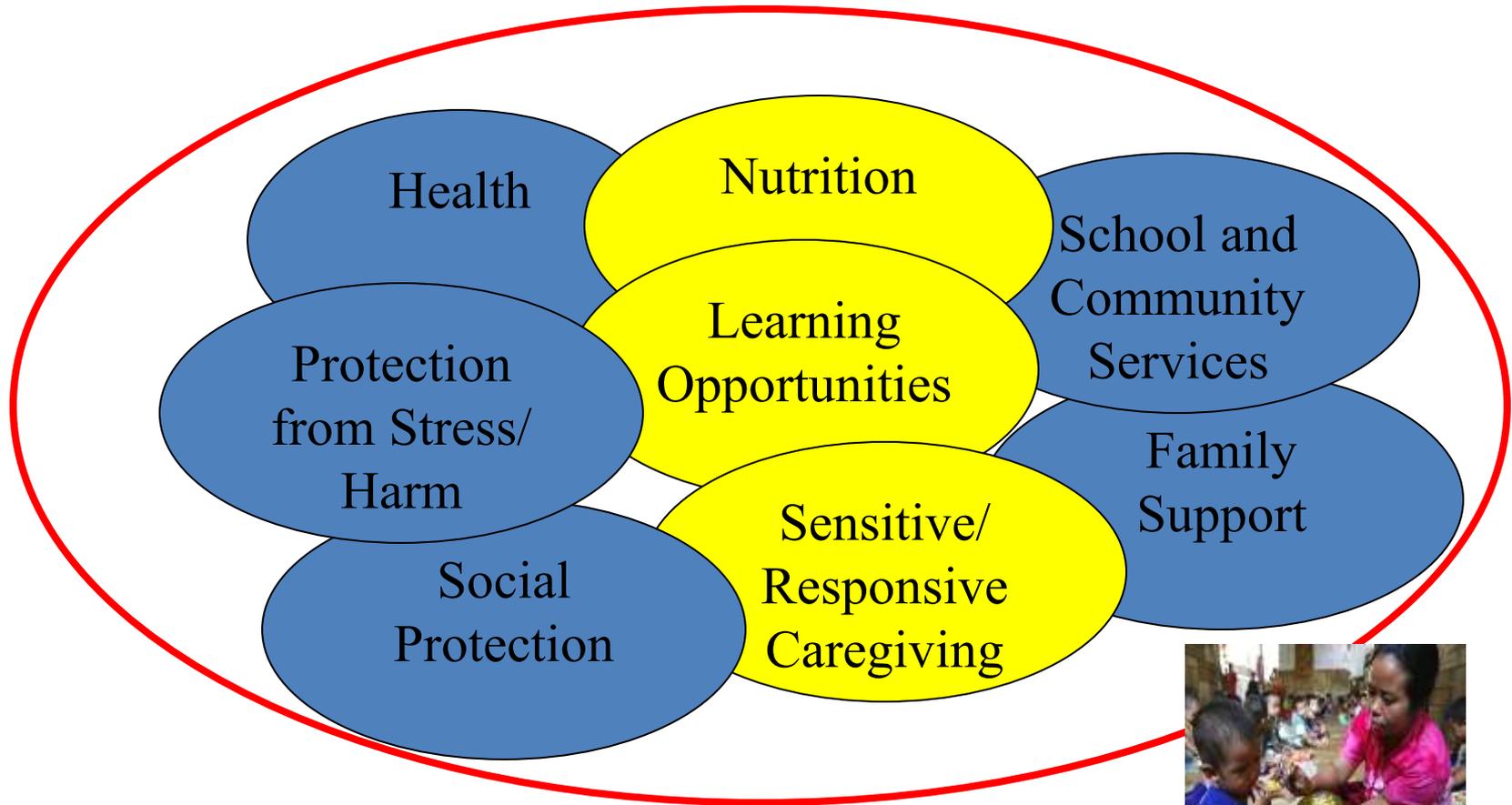
	% HH with E coli + sample	E coil/ Per gram	Average E Coli Per Day
Infant Food	0%	0	0
Drinking Water	54%	2	800
Soil in laundry area	60-80%	70	1,400
Chicken feces	100%	10,000,000	10,000,000

Clearly, kids must stop eating dirt and chicken poop!

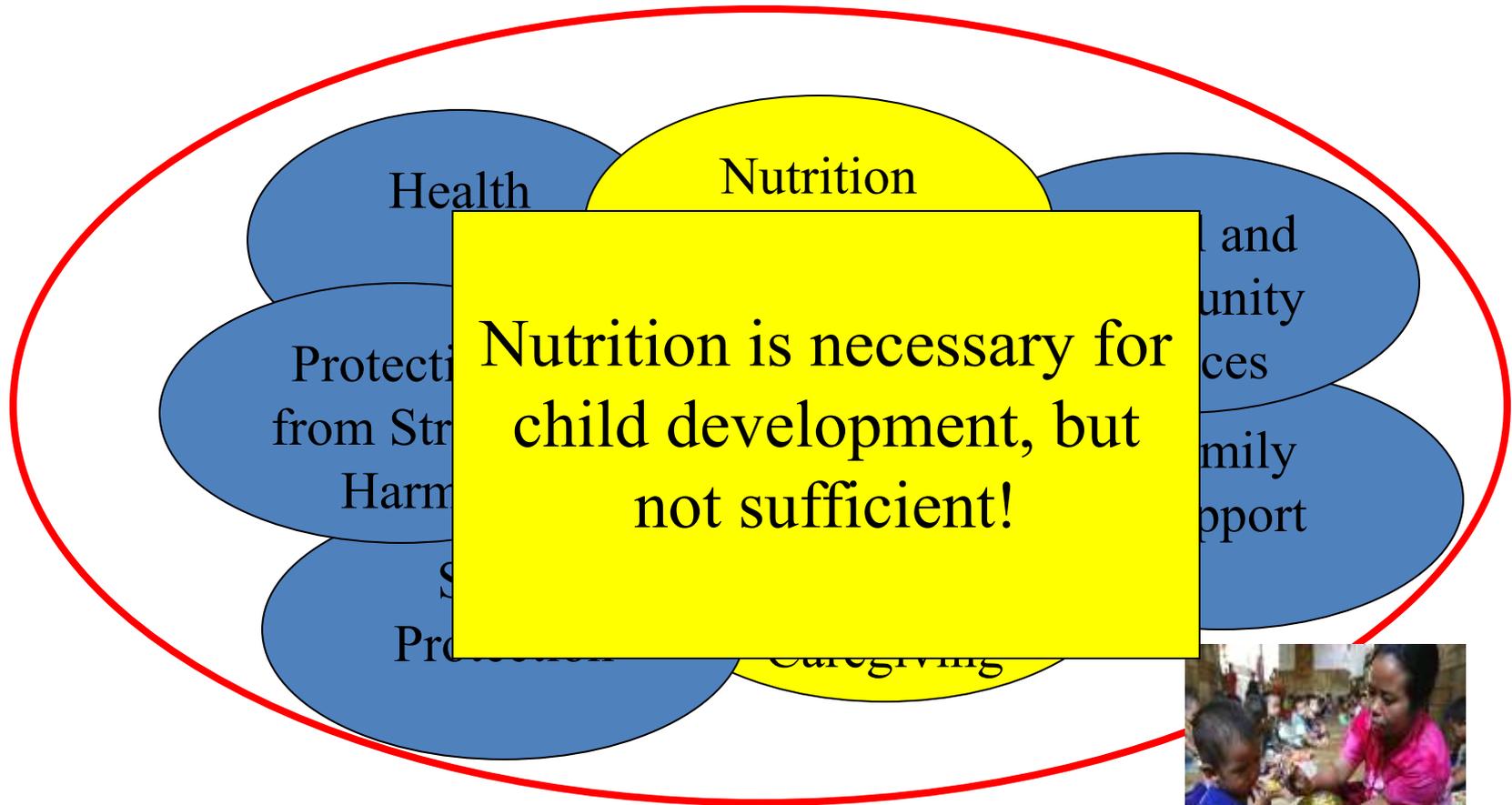
Routes of fecal disease transmission and protective barriers *for babies!*



Child Development: Multiple Contributing Factors

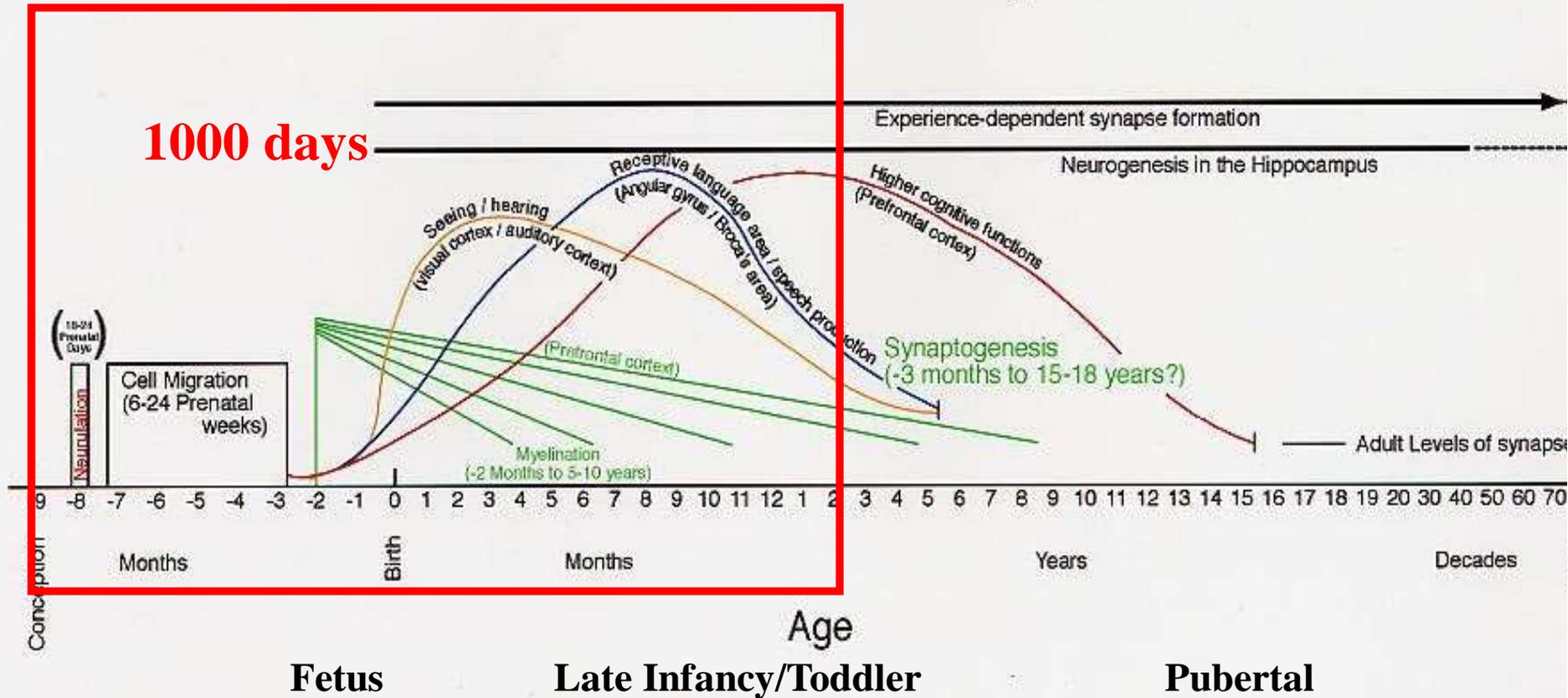


Child Development: Multiple Contributing Factors



Developmental Perspective

Human Brain Development



Thompson & Nelson, 2000

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

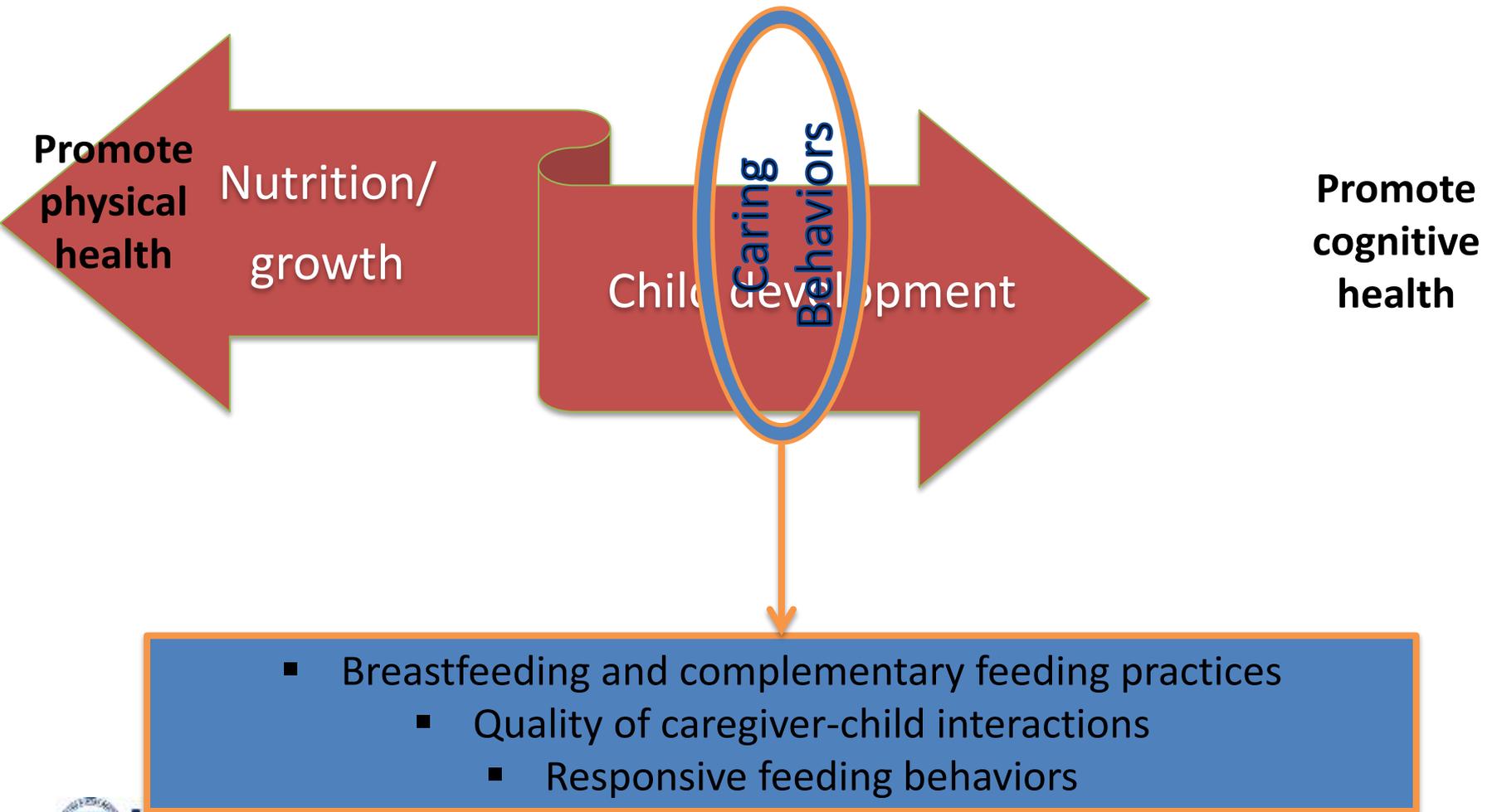
Target of Interventions

- 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

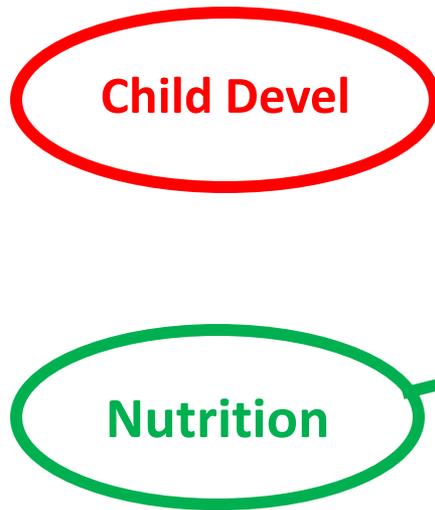


Two Separate Arms of Intervention Research

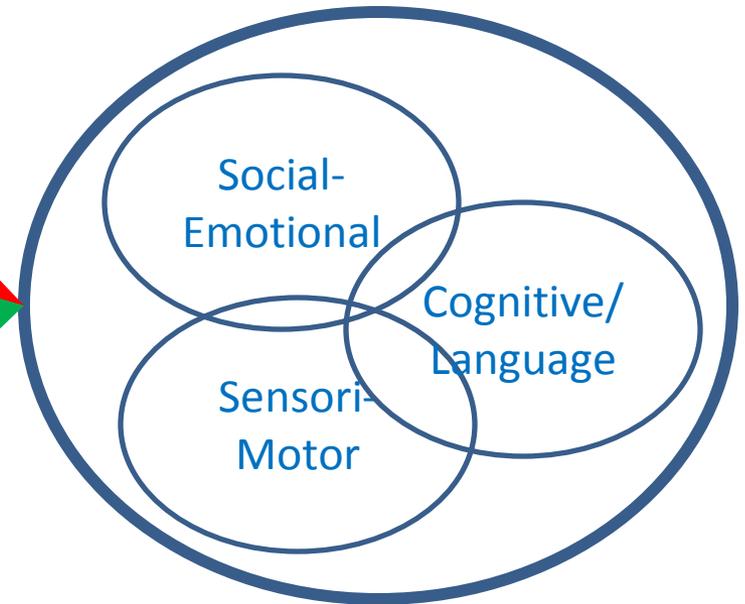


How Do Integrated Programs Work?

Intervention



Child Development



Additive effect of child development & nutrition intervention

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



The Case for the 3 Legged Stool

Integrating WASH, Nutrition & ECD

- Recognition of the synchronicity of the dyads
 - WASH and nutrition
 - Nutrition and ECD
 - Abundant research has demonstrated that nurturing and responsive interactions between caregivers and infants promote optimal growth and development
- Maybe a handful of efficacy trials for even the ‘pairs’, none?? for the triad
- Limited intervention experience
- Little though promising programming guidance



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
- 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

Co-sponsors

