Multi-Sectoral Nutrition Strategy

Global Learning and Evidence Exchange

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What works in Nutrition: Nutrition Specific Actions

Rolf Klemm, Helen Keller International

FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

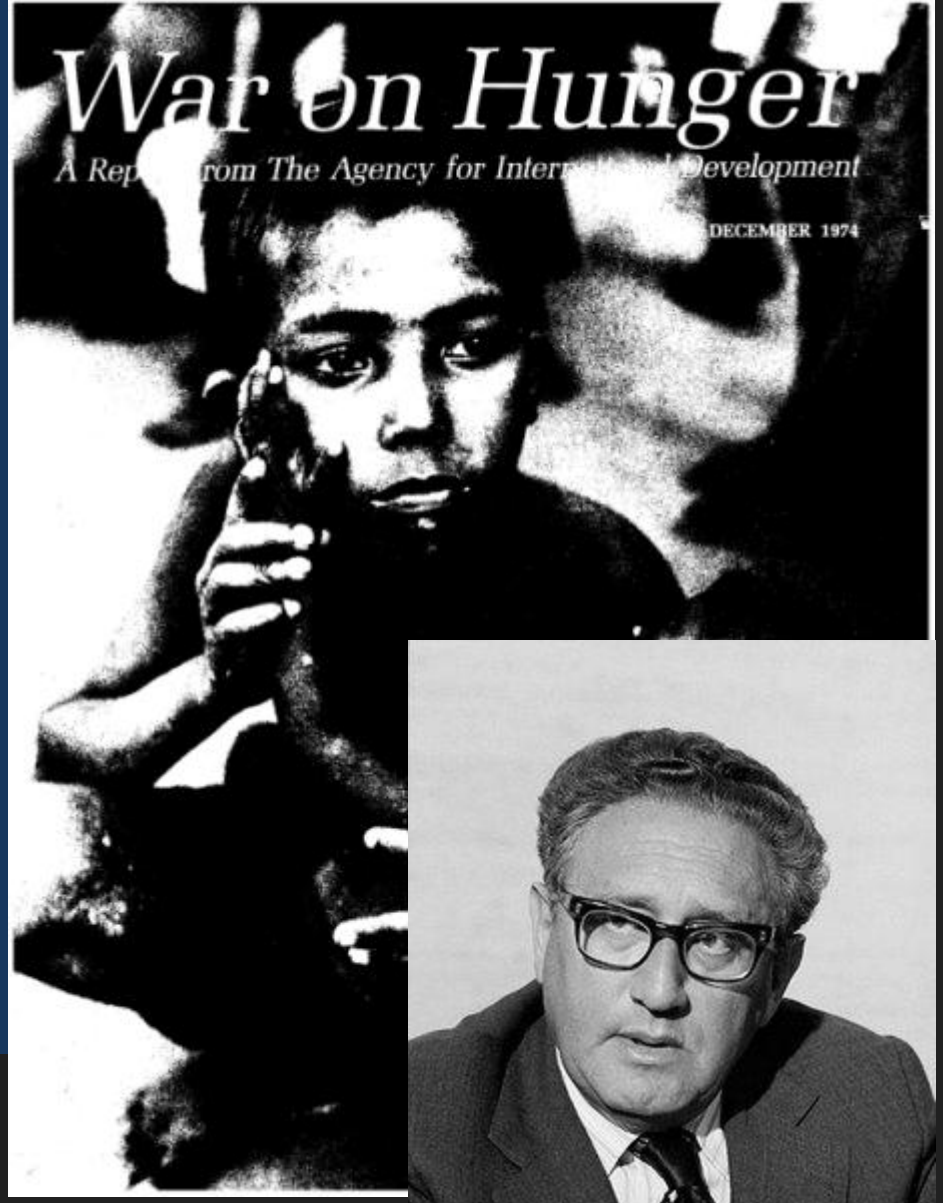
USAID
FROM THE AMERICAN PEOPLE

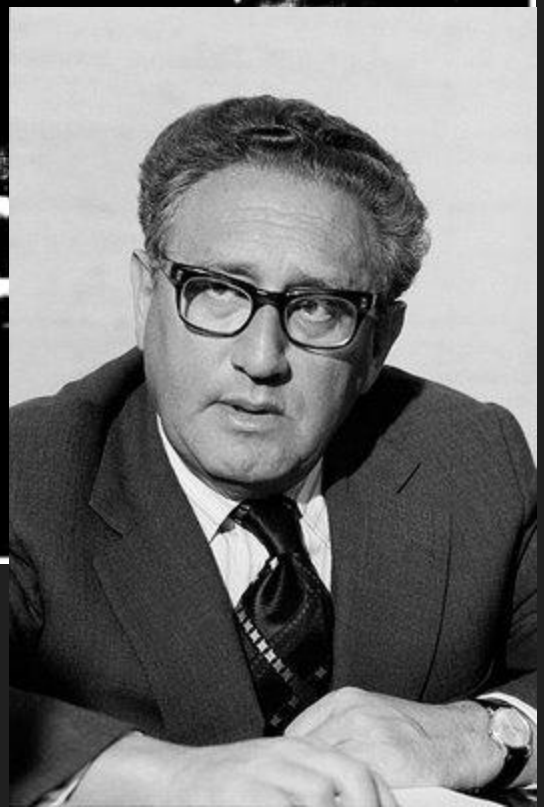
FANTA III
FOOD AND NUTRITION TECHNICAL ASSISTANCE

SPRING
Strengthening Partnerships, Results and Innovations in Nutrition Globally

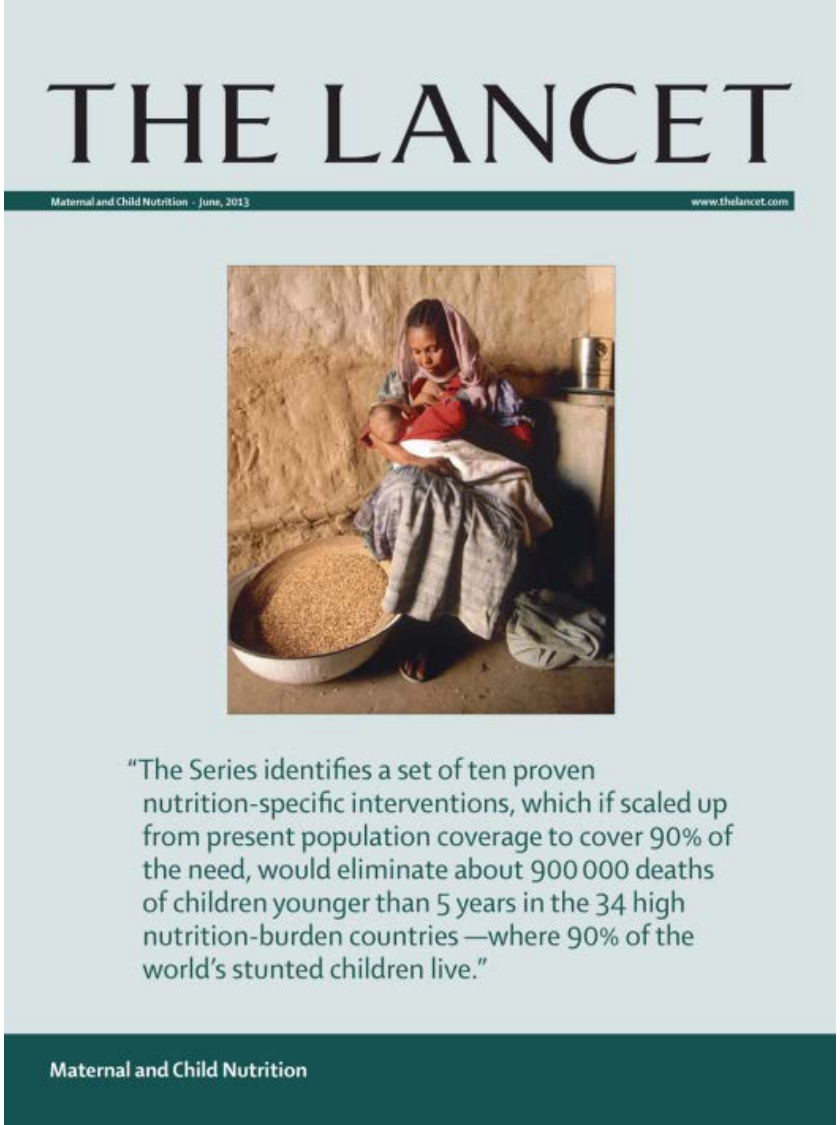
“Today we must proclaim a bold objective—that within a decade NO CHILD WILL GO TO BED HUNGRY, that no family will fear for its next day’s bread, and that no human being’s future and capacities will be stunted by malnutrition”

Henry Kissinger,
World Food Conference, 1974





Lancet Key Message 1



Undernutrition responsible for 45% (~3.1 m) of all <5 yr child deaths annually

A lethal combination—Stunting ↑ hazard of death in children

More severe stunting, higher risk of death

Height--for-Age Z-Score	All	Pneu-monia	Diarr-hea	Measles	Other Infect-ions
<-3	5.5	6.4	6.3	6.0	3.0
<-2 to <-3	2.3	2·2	2.4	2.8	1.9
<-1 to <-2	1.5	1.6	1.7	1.3	0.9
> -1	1.0	1.0	1.0	1.0	1.0

Black R et al, Lancet, 2013

Lancet Key Message 2:
10 efficacious nutrition interventions to reduce <5 y child mortality

Pre-conception

1. Pre-conception folic acid supplementation or fortification

Pregnancy

2. Maternal multiple micronutrient supplementation
3. Maternal balanced energy & protein supplementation
4. Maternal calcium supplementation

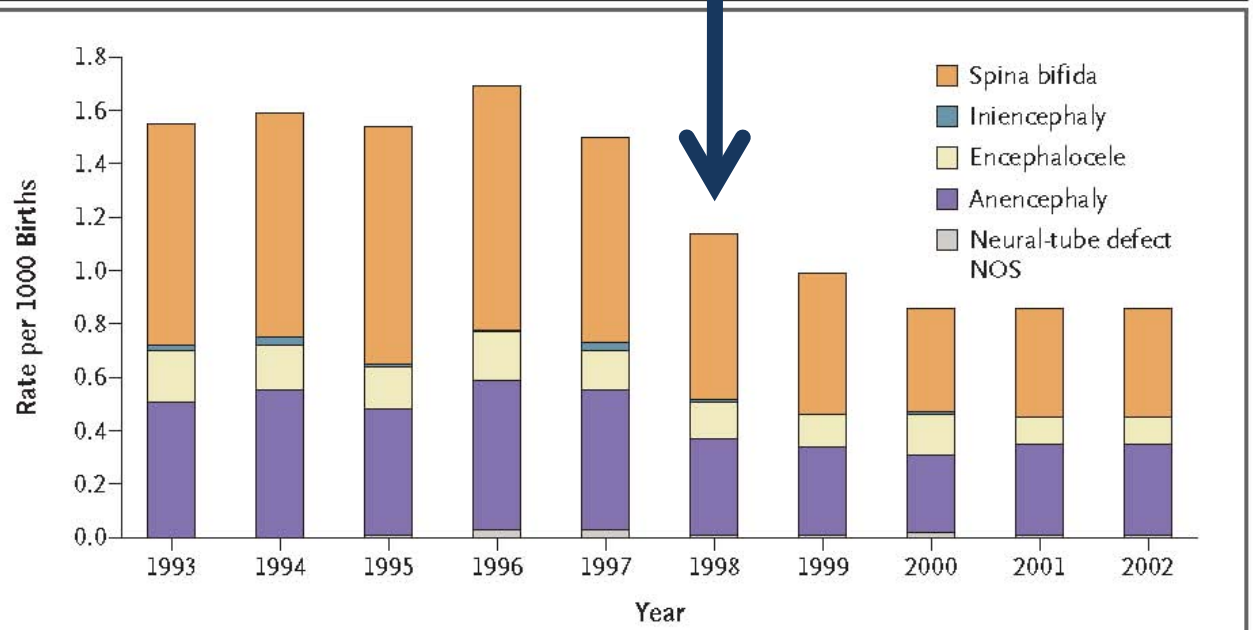
Early Infancy and Young Childhood

5. Promotion of breastfeeding
6. Appropriate complementary feeding
7. Vitamin A supplementation
8. Preventative zinc supplementation
9. Management of SAM
10. Management of MAM

46% Reduction in Neural-Tube Defects after Folic Acid Fortification in Canada

Mandatory fortification of cereals with folic acid

Spina Bifida



cts	1.55	1.59	1.55	1.69	1.50	1.14	0.99	0.86	0.86	0.86
Spina bifida	0.83	0.84	0.89	0.91	0.77	0.62	0.53	0.39	0.41	0.41
Iniencephaly	0.02	0.03	0.01	0.01	0.03	0.01	0.00	0.01	0.00	0.00
Encephalocele	0.19	0.17	0.16	0.18	0.15	0.14	0.12	0.15	0.10	0.10
Anencephaly	0.51	0.55	0.47	0.56	0.52	0.36	0.33	0.29	0.34	0.34
Neural-tube defect NOS	0.00	0.00	0.01	0.03	0.03	0.01	0.01	0.02	0.01	0.01

Figure 1. Prevalence of Neural-Tube Defects, According to Diagnostic Category, in Seven Canadian Provinces from 1993 through 2002.

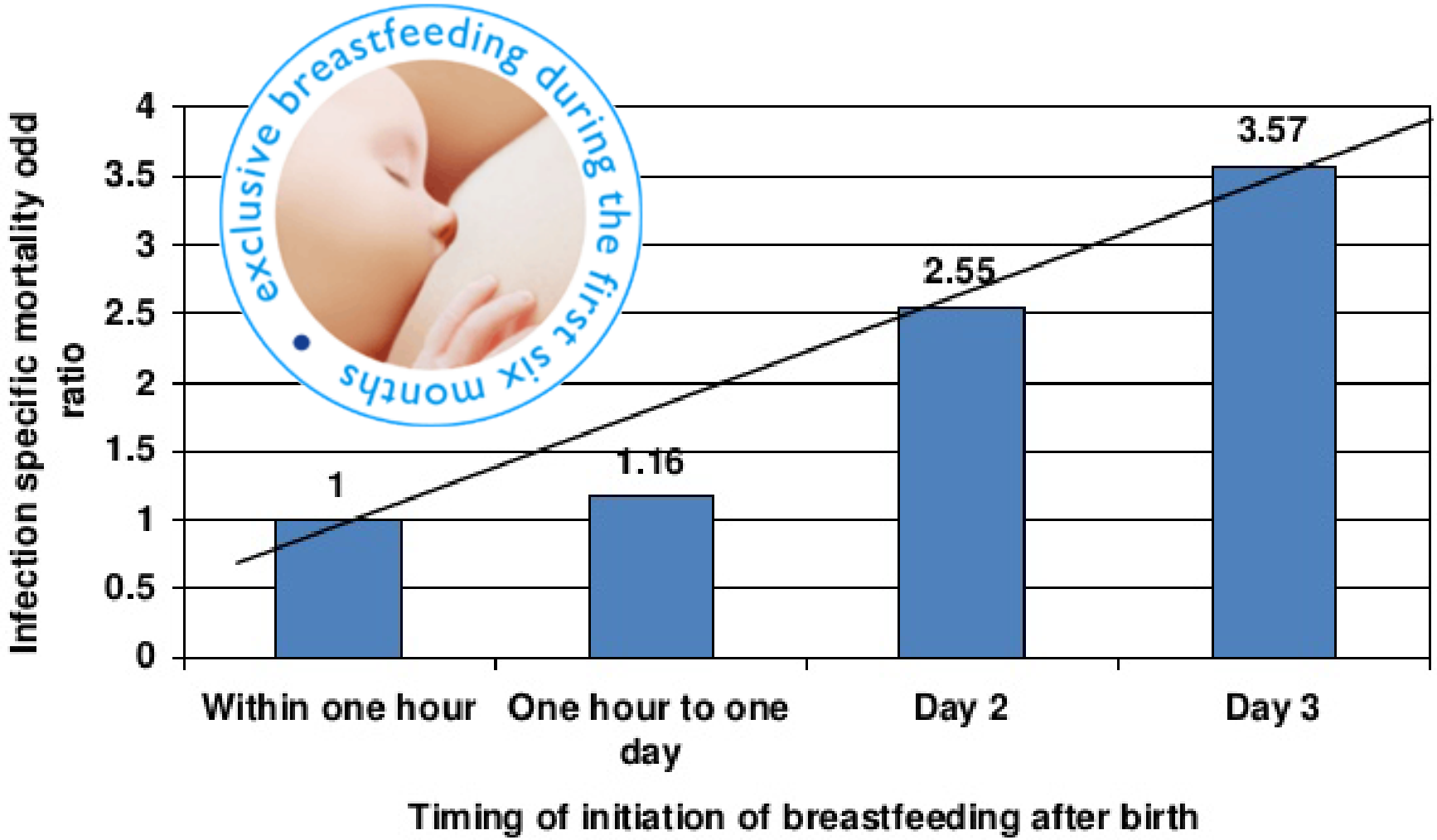
NOS denotes not otherwise specified.

De Wals, NEJM, 2007

Daily iron-folic acid supplementation in pregnancy (Cochrane Review, 2015)

- Decreased risk of anemia at term by 70%; iron deficiency at term by 57%; and risk of low birth weight newborns by 16%

Delayed initiation of breastfeeding increases neonatal mortality risk



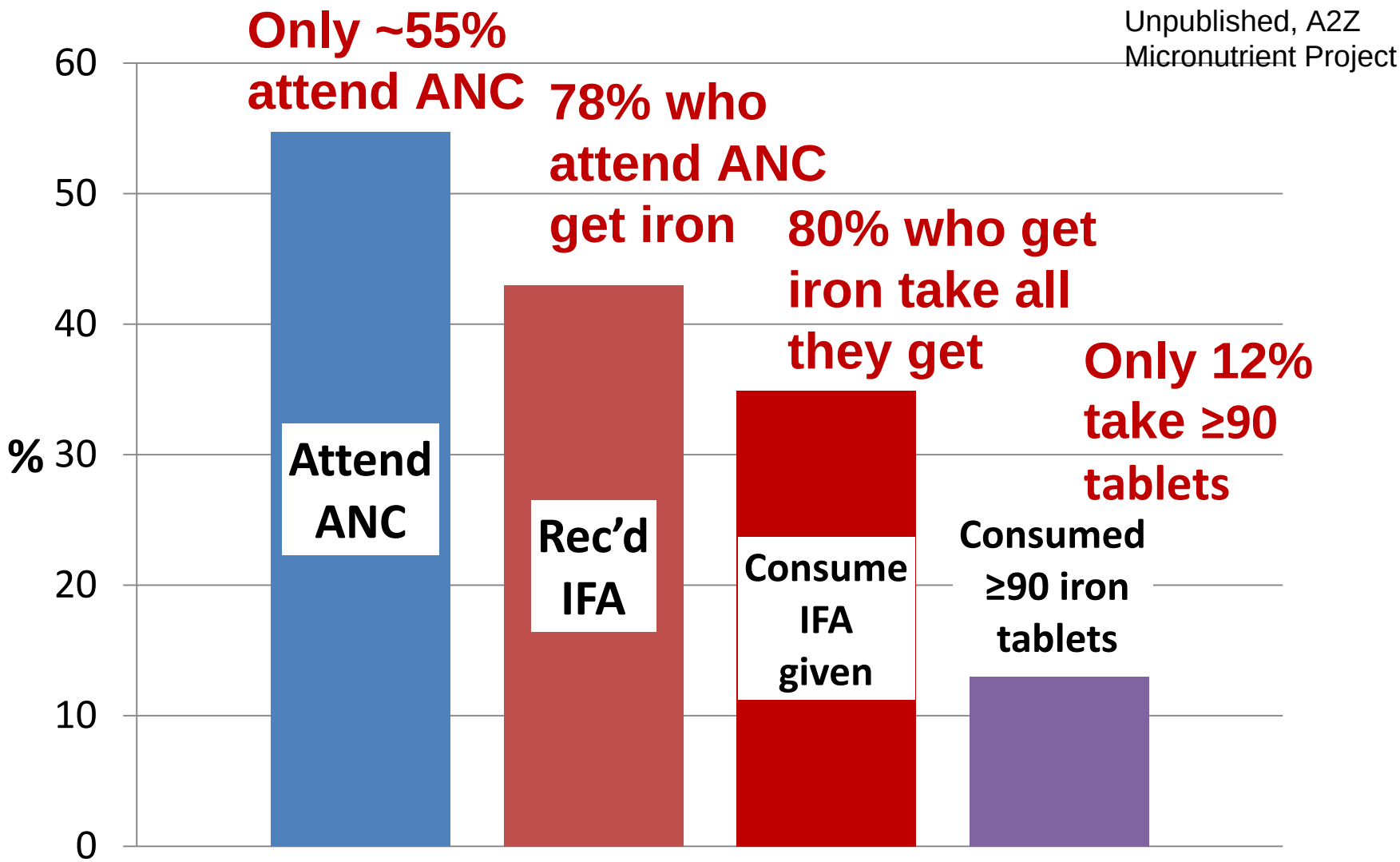
Key Message 3

Current evidence & ***modeling*** impacts of 10 interventions @ 90% coverage can reduce stunting by at least 20% (range 11%-29%).

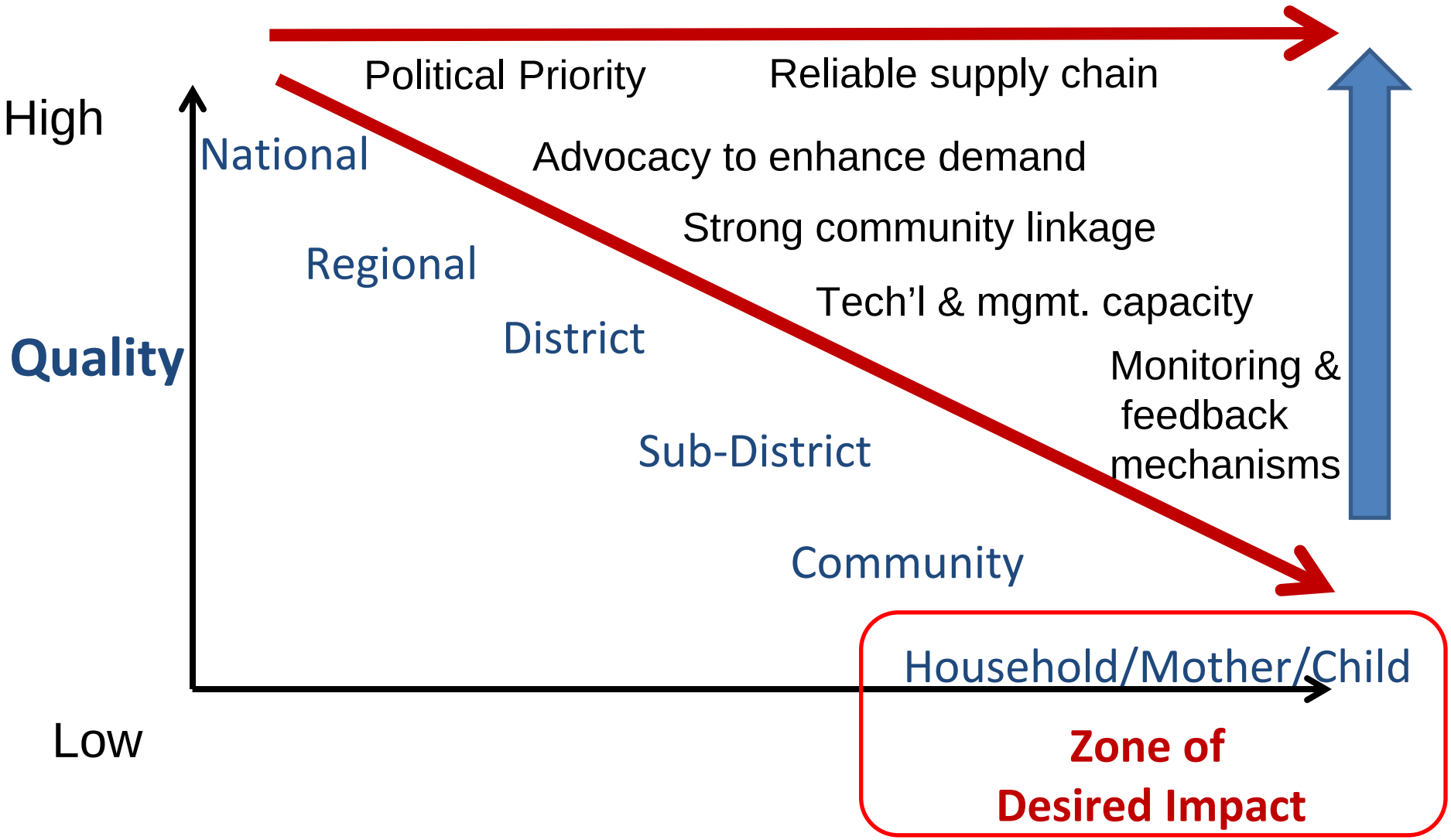
What the efficacy evidence does not tell is …….

How to close the “Know-Do” gap and implement nutrition-specific interventions at scale

"Voltage Drop" points
Iron supplementation in pregnancy, Jharkhand, India, 2008 n=955



Preventing "Voltage Drop"

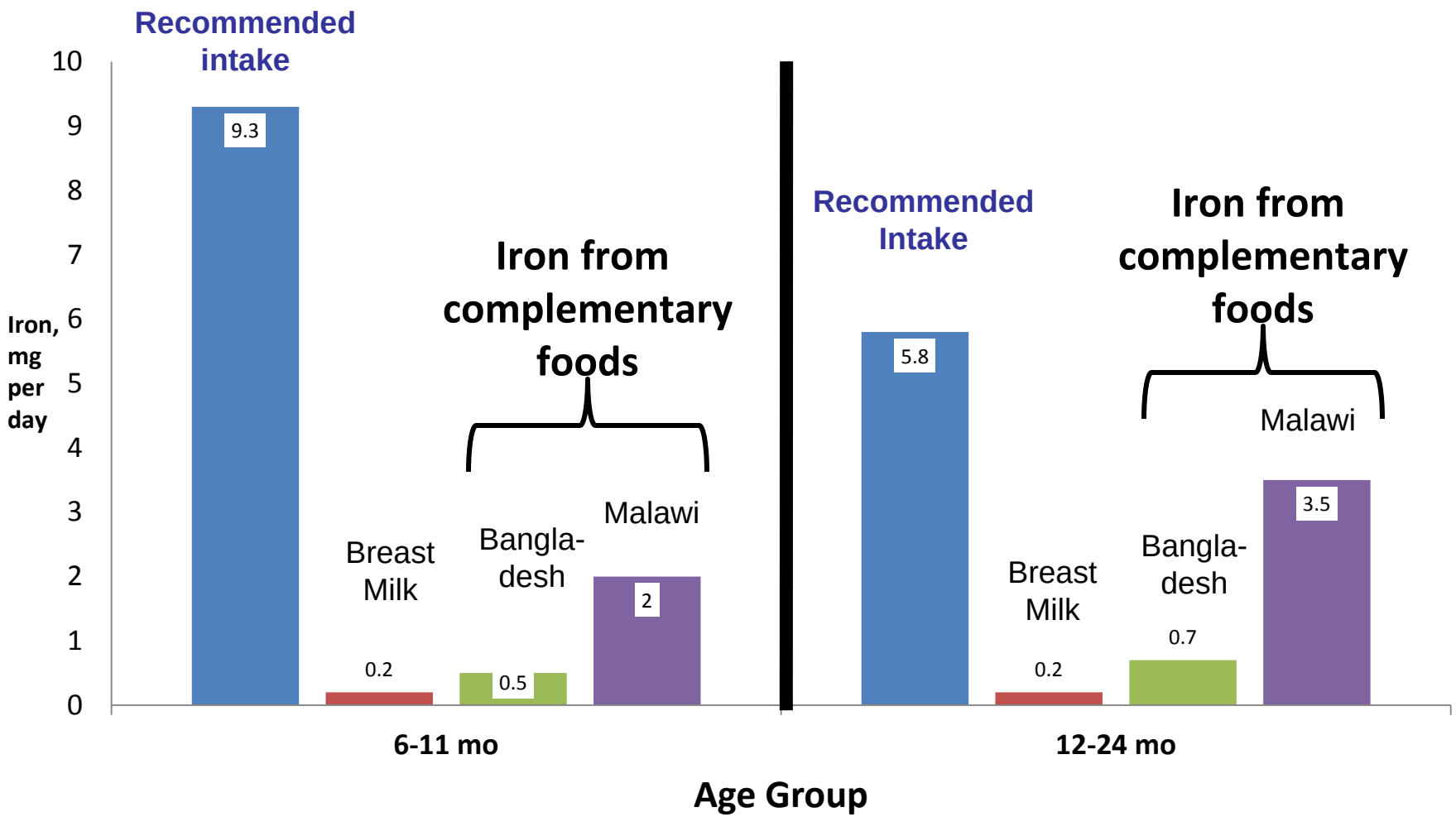


Challenges to improving nutrient density of diets

- **High nutrient requirements**
  - **Pregnancy & lactation**: 13%-25%↑ energy; 54% ↑ protein
  - **Early infancy:** 6-8 mo old infant needs 9 times as much iron and 4 times as much zine as a male adult

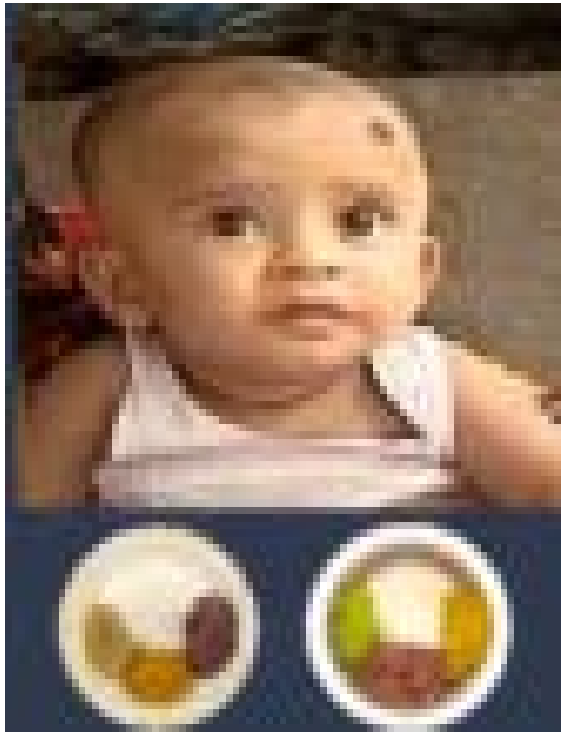
- Diets dominated by staple foods with low nutrient density & poor mineral bioavailability
- Limited access to & high cost of nutrient dense foods
- Lack of immediate perceived benefit
- Gender inequity

Poor iron bioavailable from complementary foods



Dewey KG Food and Nutrition Bulletin, 2007, 28:S595-S609

Strategies to improve complementary feeding



- Dietary diversity to include animal-source foods (flesh, organs, eggs, dairy products); fruits & veggies
- Large-scale food fortification(?)
- Processed, fortified complementary foods (CF)
- Point-of-use fortification (adding MNs to CFs; e.g., powders, pastes, tablets)
- Food supplementation

Interventions across key life stages

Adolescent

WRA & Pregnant

Neonates

Infants & children

- ↑ iron intake
- Deworming
- Bednets for malaria
- Delayed age at first pregnancy
- Prolonged inter-pregnancy interval

- Iron+folic acid (or Multiple MN) supplementation
- Deworming
- Treatment & bed nets for malaria
- Ca+ supplementation
- Balanced Protein-energy supplementation

- Delayed cord clamping
- Early & exclusive breast feeding

- Breastfeeding
- Improved complementary feeding
- Treatment of illness
- Mgmt SAM & MAM
- Vitamin A, iron, iodine, zinc

Homestead Food Production

Gender Equity, Water Sanitation and Hygiene

WRA-Women of Reproductive Age, LLINS-long-lasting insecticide nets, IPT-Intermittent preventive treatment, MNPs-Micronutrient powders, Dx-diagnosis, Rx-Treatment, ENA-Essential Nutrition Actions, EHA-Essential Hygiene Actions

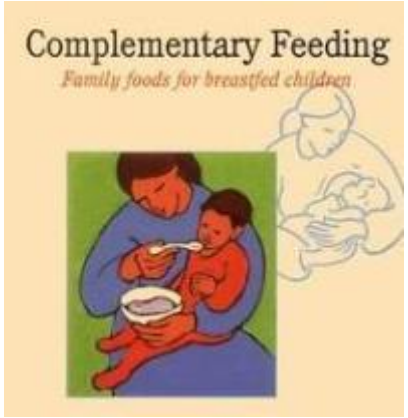
Nutrition-specific interventions only become solutions if & when they reach & are used by risk groups, where & when needed, with adequate quality

Iron & Folic Acid Tablets during pregnancy

Early initiation & exclusive breast feeding

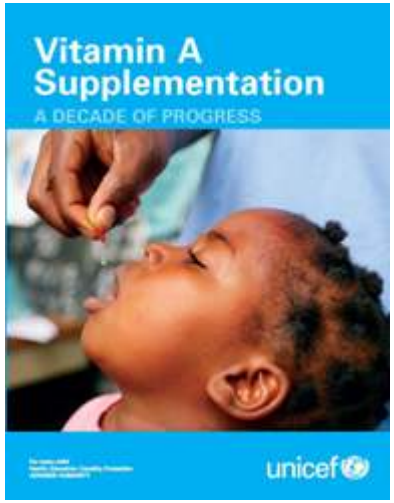
Micronutrient Powders

Zinc tx for diarrhea



Behavior change for improved complementary feeding

Ready-to-Use Foods Tx, Prevention



Scaling-up Impact on Nutrition- What will it take?

- Understand drivers of undernutrition
- Select proven interventions that address major drivers across critical life stages
- Nurture gov't leadership & championship
- Establish clear public policy
- Focus—Appropriately targeted public programs
- Design and act at scale
- Develop partnerships
- Set up incentives & penalties (private sector)
- Build operational & tech'l capacity
- Make multi-year resource commitment
- Invest in learning—monitoring, feedback, evidence

Key Take Homes

- Nutrition-specific interventions will reduce child mortality & (some) child stunting if they adequately address the key drivers of these outcomes during the relevant life stage
- But magnitude of effects will depend on the potential to benefit (i.e. is the population undernourished?) and potential to respond (are there other factors constraining linear growth?)
- We have to better understand the underlying causes— *adolescent marriage and pregnancy, food availability and prices, malfunctioning markets, women's status, illiteracy and poor decision-making power, and household poverty and social exclusion*— AND address these with **NUTRITION-SENSITIVE** solutions