

Evidence linking hand washing to improved child feeding outcome

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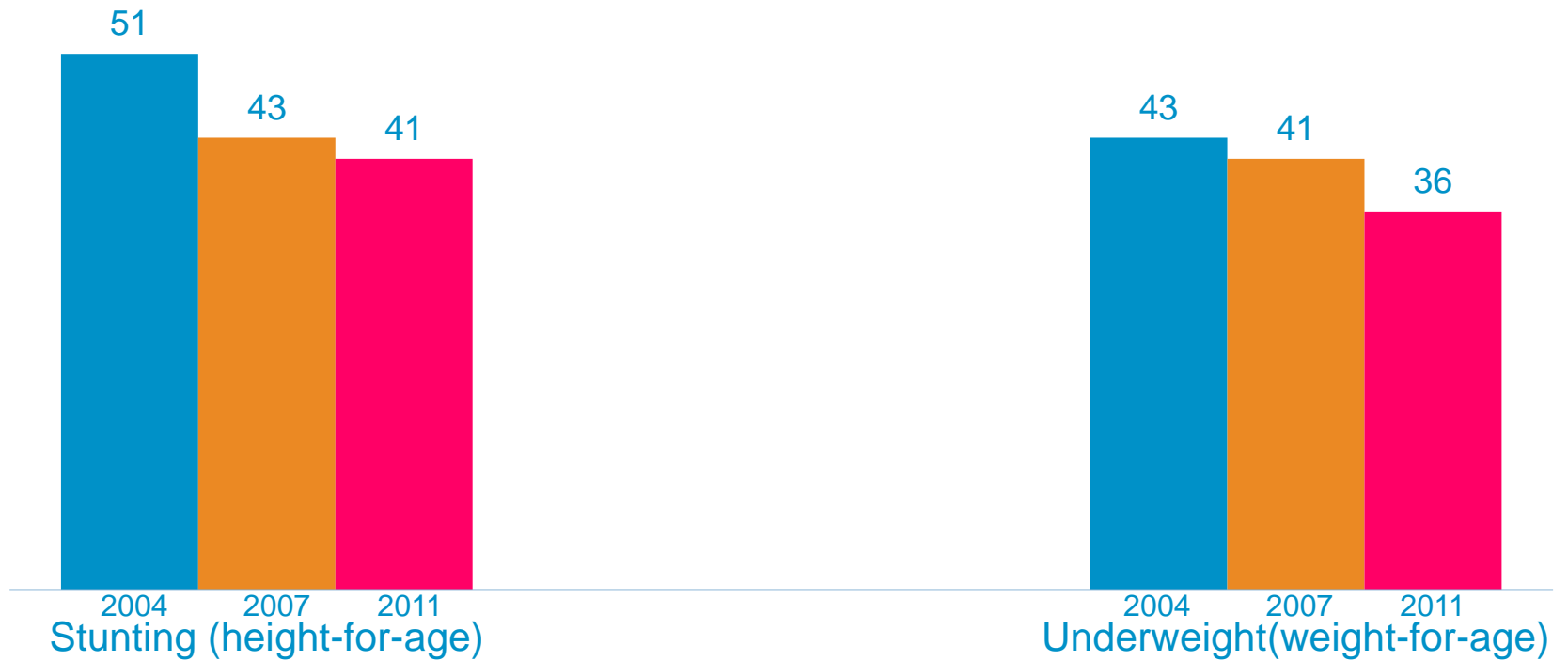
*Fosiul Nizame, Debashish Biswas, Probir Ghosh,
Stephen Luby*

Presentation overview

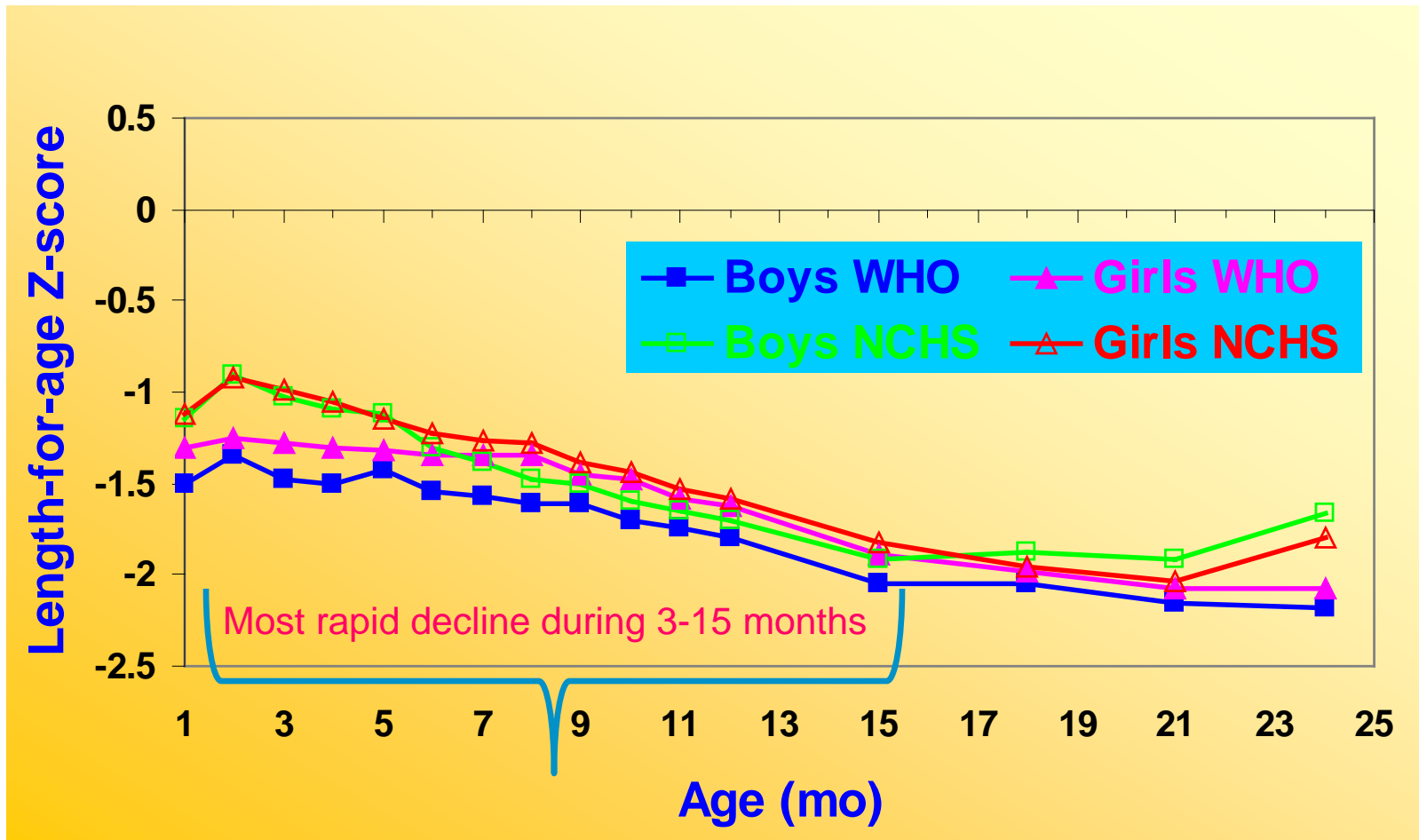
- Background, study questions
 - **Part 1:** Baseline study
 - Methods
 - Summary findings
 - Pilot intervention description
 - **Part 2:** Trials of Improved Practices (TIPs)
 - Methods
 - Findings on acceptability feasibility
 - Findings on factors associated with target behaviors
 - **Summary, conclusions**
-

Background

Bangladesh children <5 nutritional status

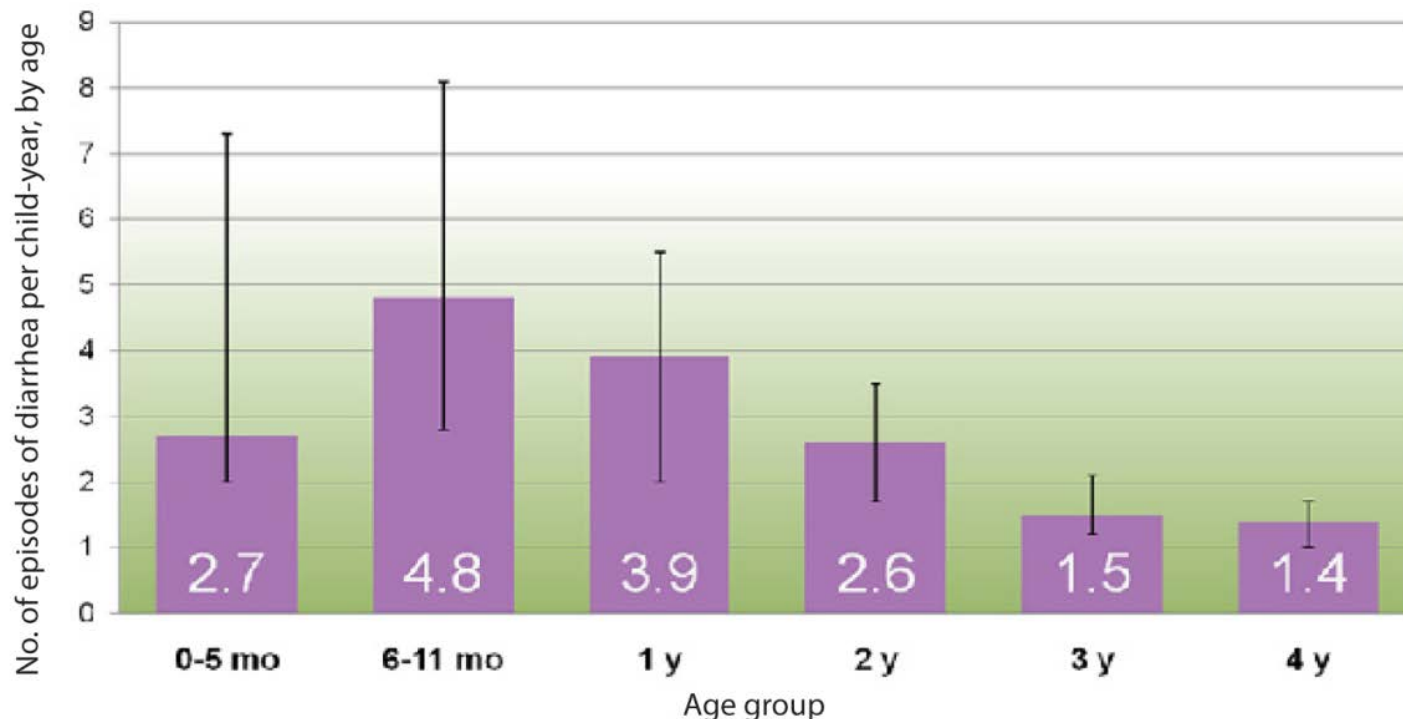


Decline during complementary feeding age



Infections in Young Children

- Children <2 experience 3-5 episodes of diarrhea annually in developing countries
- Peak is at 6-11 months of age



Source: Bulletin of the WHO 2003;81:197-204

Bars represent the 25th-75th percentiles across 20 countries (1990-2000)

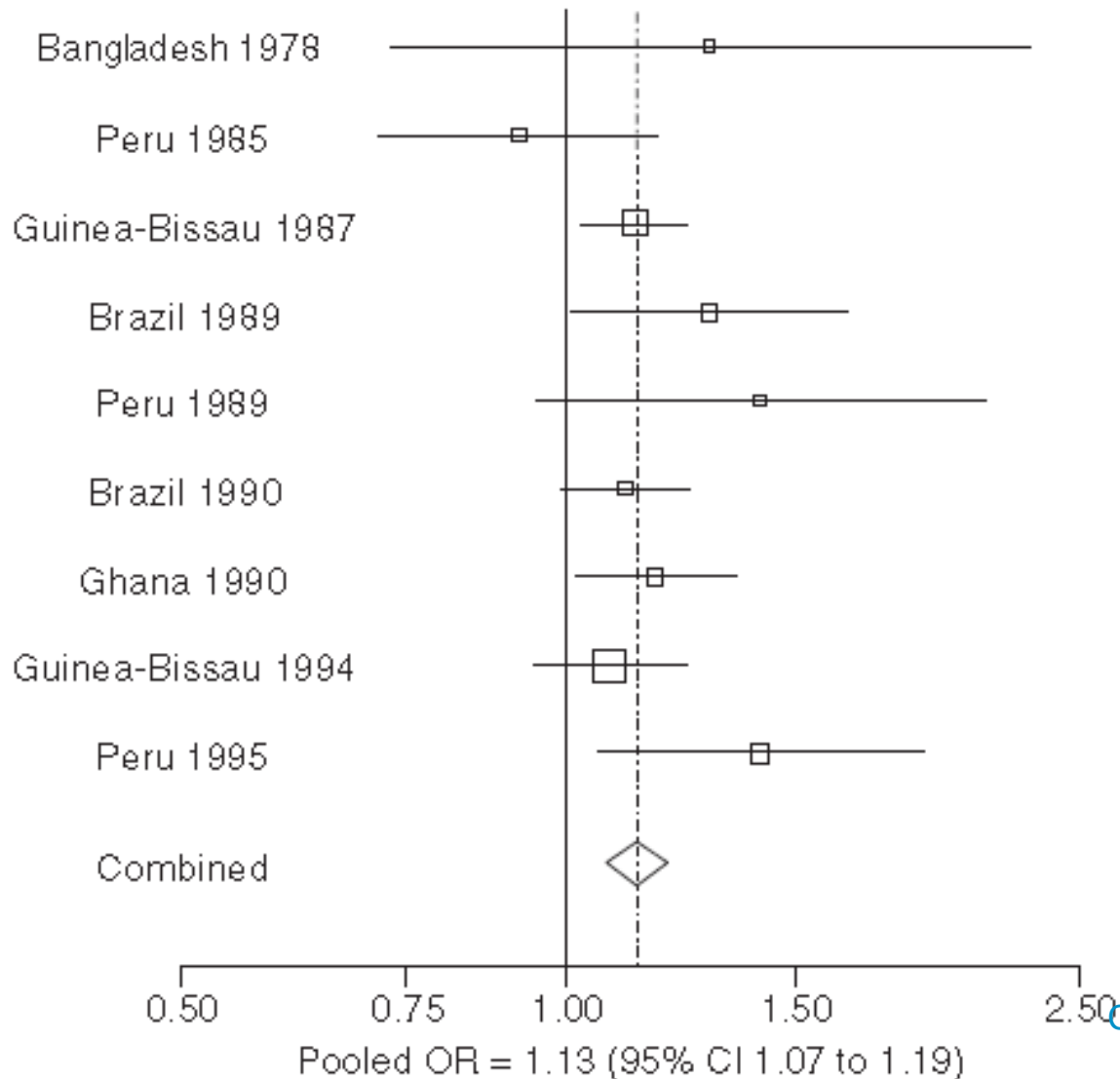
Infection

- ↓ food intake (appetite)
- Impaired nutrient absorption
- ↑ metabolic requirements
- Impaired transport to target tissues
- ↑ nutrient losses

- ↓ barrier protection
- ↓ gastric acid production
- ↓ intestinal renewal
- Impaired immune function

Malnutrition

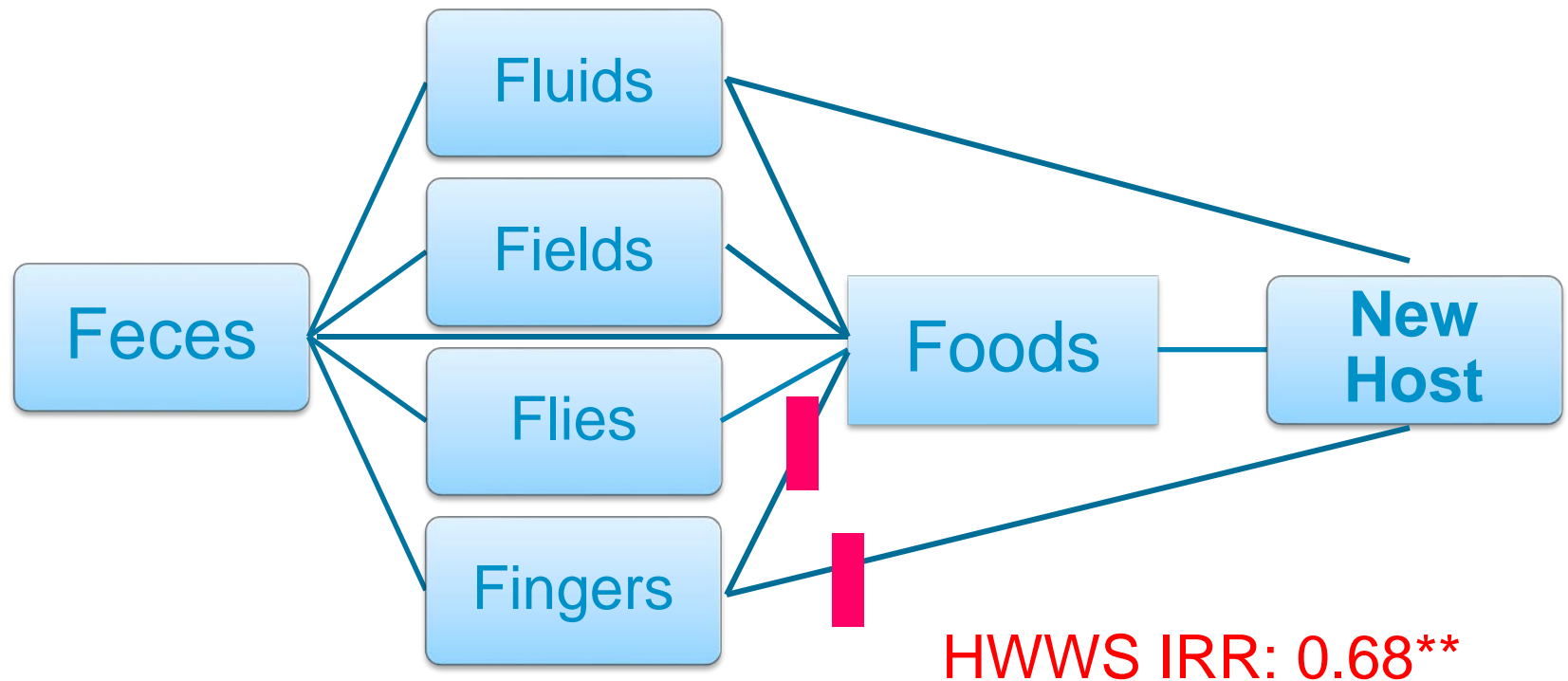
Impact of diarrhea on stunting at 24 months



25% of growth faltering attributable to >5 episodes of diarrhea in first 24 months of life

Checkley W, et al. Int J Epidemiol, 2008;37:816-830

Hand washing reduces disease transmission*



*F Diagram; A Almedon et al et al 1997; Hygiene Evaluation Procedures: Approaches and Methods for assessing Water and Sanitation Related Hygiene Practices.

**RI Ejemot et al, 2009, Handwashing for preventing diarrhea (Review). Cochrane Library

Common use of bare hands



খাবার আগে



Pictures; Fosiul Nizame

Common use of bare hands



Observed
HWWS; 1-4%



খাবার আগে



Pictures; Fosiul Nizame

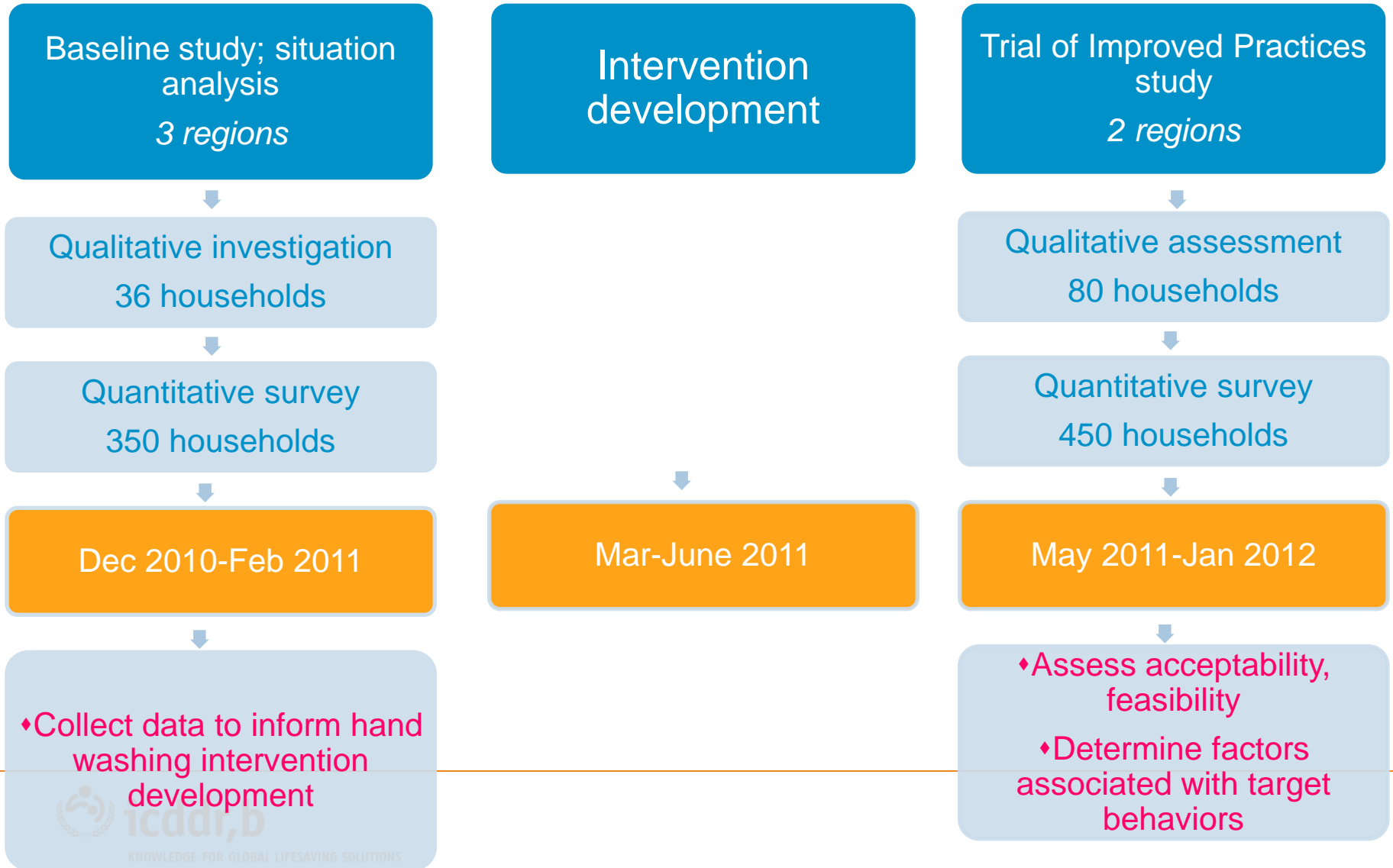
Research question

How can a hand washing intervention be incorporated into a nutrition intervention?

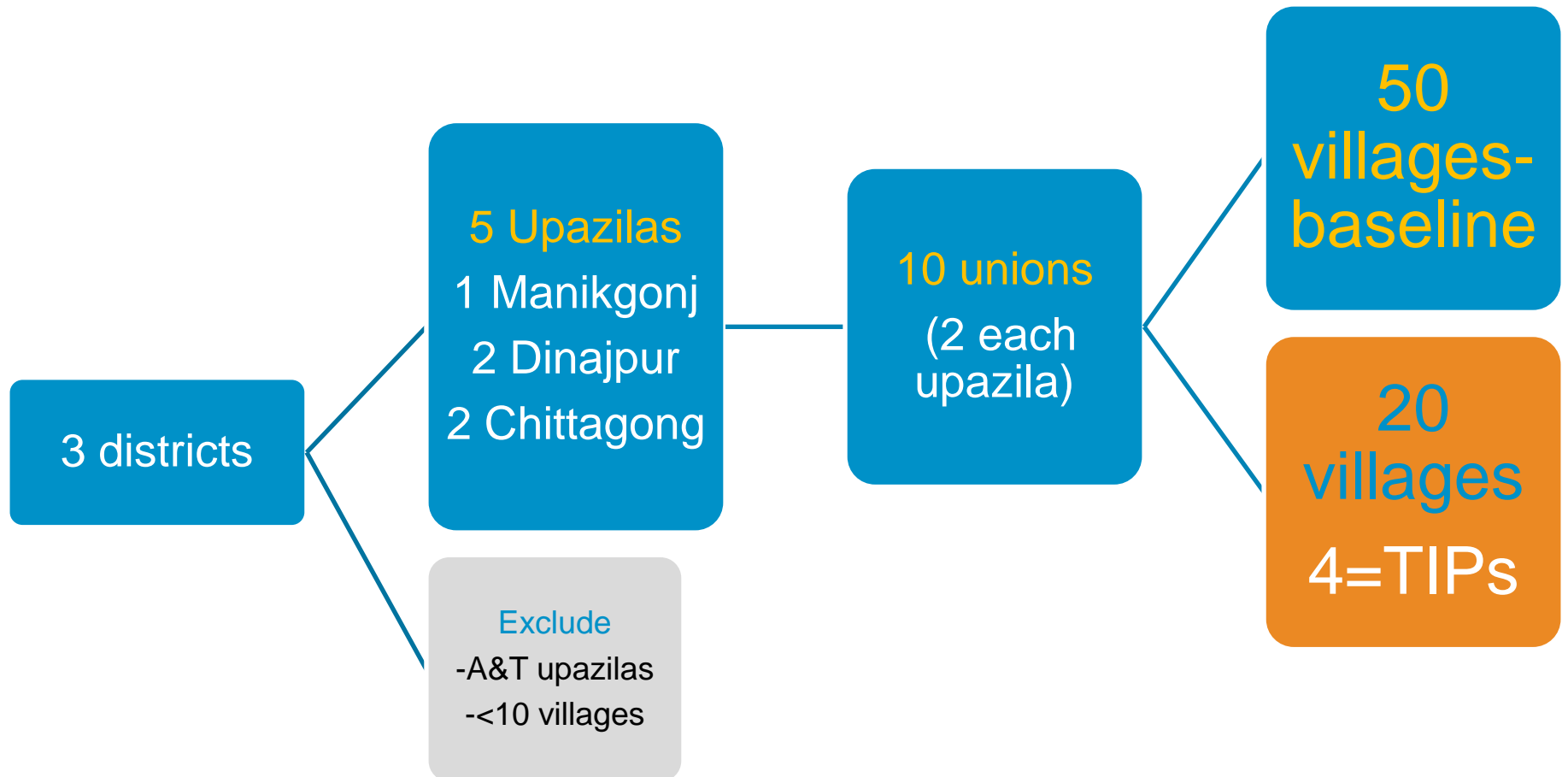
1. Need data on knowledge, practice, facilities (infrastructure important)
2. Need assessment of acceptability, feasibility

Methods

Study overview



Selecting communities



Baseline study

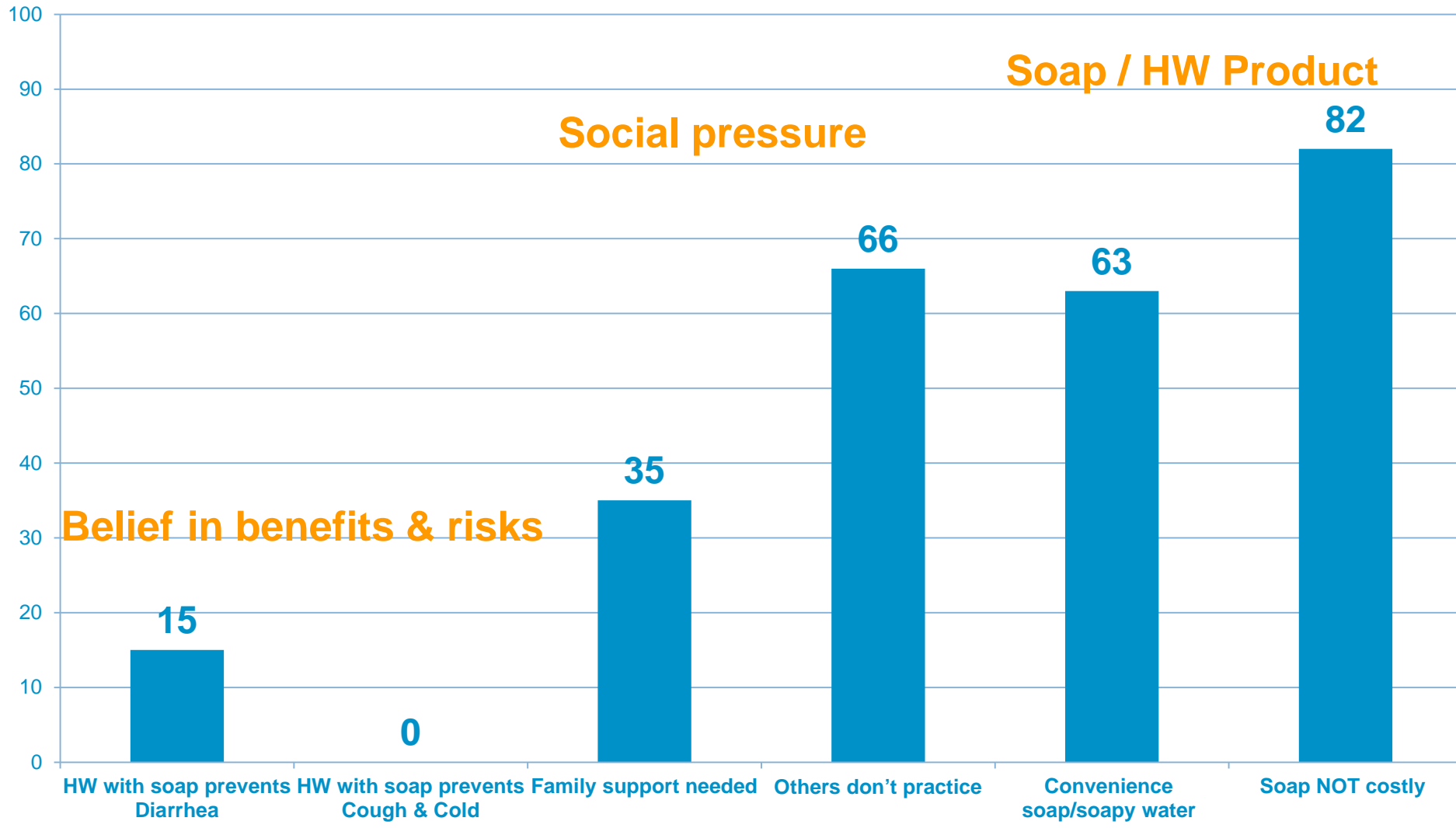
Baseline methods

- Quantitative survey, using standardized questionnaire (n=350)
- Qualitative
 - In-depth interview (n=24)
 - Focus group discussion (n=6)
 - Motivational exercise (n=6)



Key baseline results

Factors influencing hand washing behavior



Summary baseline hand washing findings

- Limited knowledge of the link to childhood disease prevention.
- Soap available but not conveniently located
 - Soap in 96% homes
 - Soap at 10% of HW location
 - Distant location of soap and water from the child feeding place = BARRIER
 - Social norm to wash hands with water only

Intervention

Front line workers

Targeted primary audience
(Mothers of 6-24
month old children) through

- Household visits
 - Counseling & Demo of complementary feeding
- Mothers' group meetings
- Video show at village meeting



Social mobilization

Targeted secondary
audience

(Community leaders, father & grandparents)
through

- Orientation of Promoters, Religious leaders, village doctors, school teachers, Union chairman & member
- Video show at village meeting



Mass media

TV & radio

Enabling environment

Hand wash station near child feeding area



Key messages

- Wash hands with soap
 - Before child food preparation
 - Before child feeding
- Complementary food for children 6 months and above
 - Adequate quantity (dependent on age)
 - Adequate variety (at least four food groups)
 - Adequate feeding frequency
 - Continue breast feeding

Trial

TIPs trial sites and sampling

◆ Two districts

◆ Quantitative:

450 households
(pre and post)

Qualitative:

Two villages each

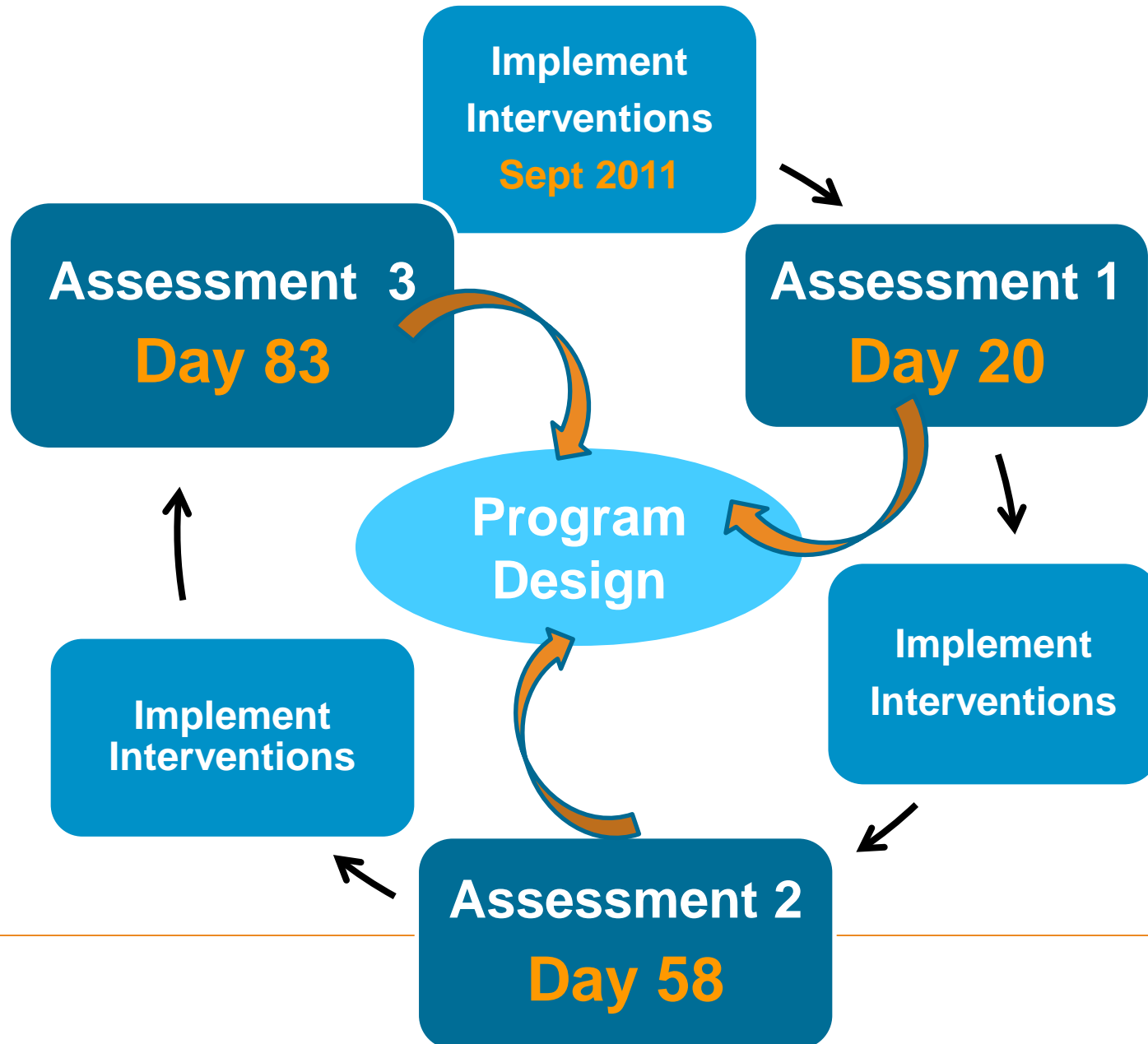
◆ 20 households/village
= 80 households

Bangladesh
District Map



*Households with child aged 6-23 months

Qualitative assessments N=80





Informal Discussion



Group Discussion



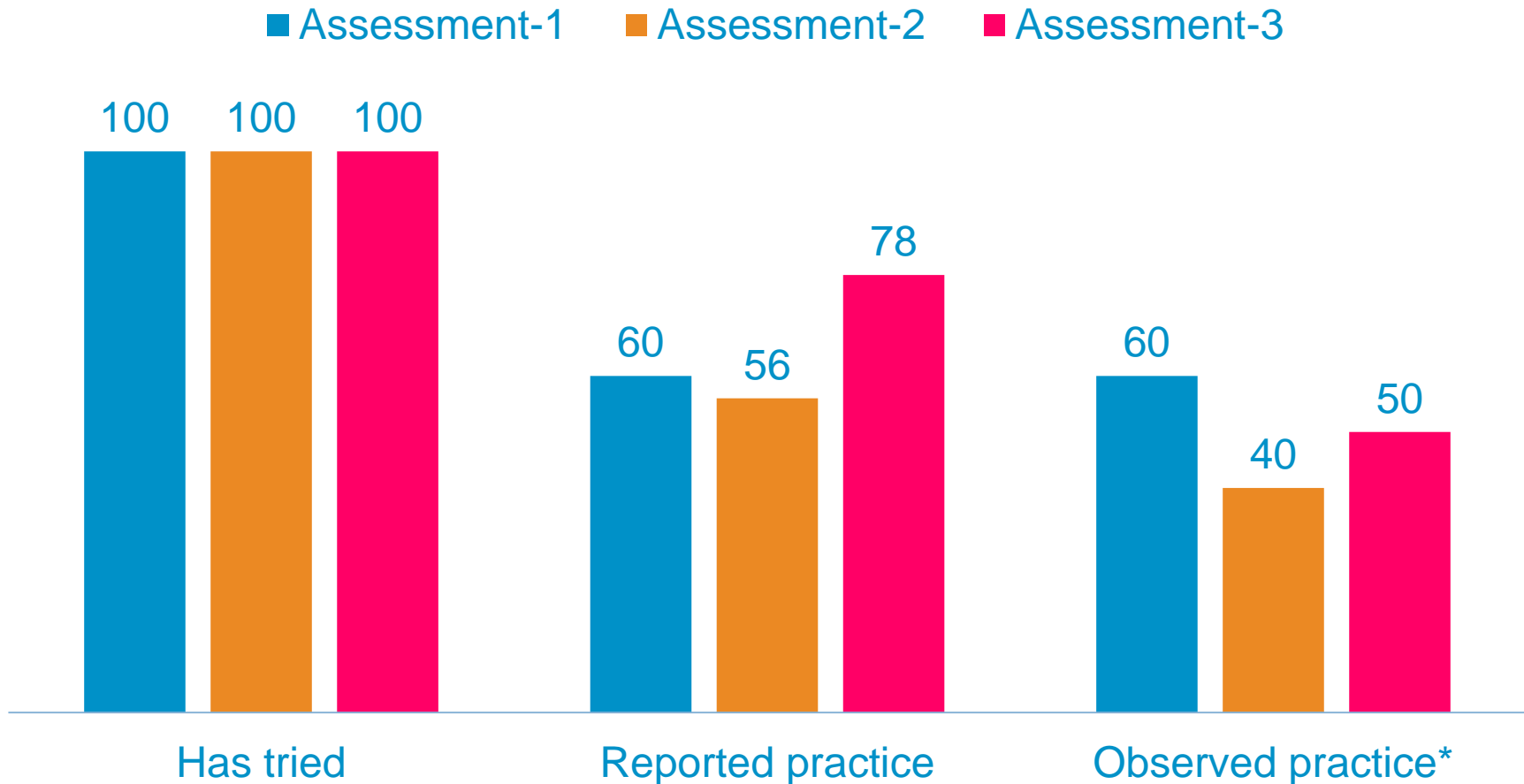
Unstructured Observation



Video Observation

Trial findings

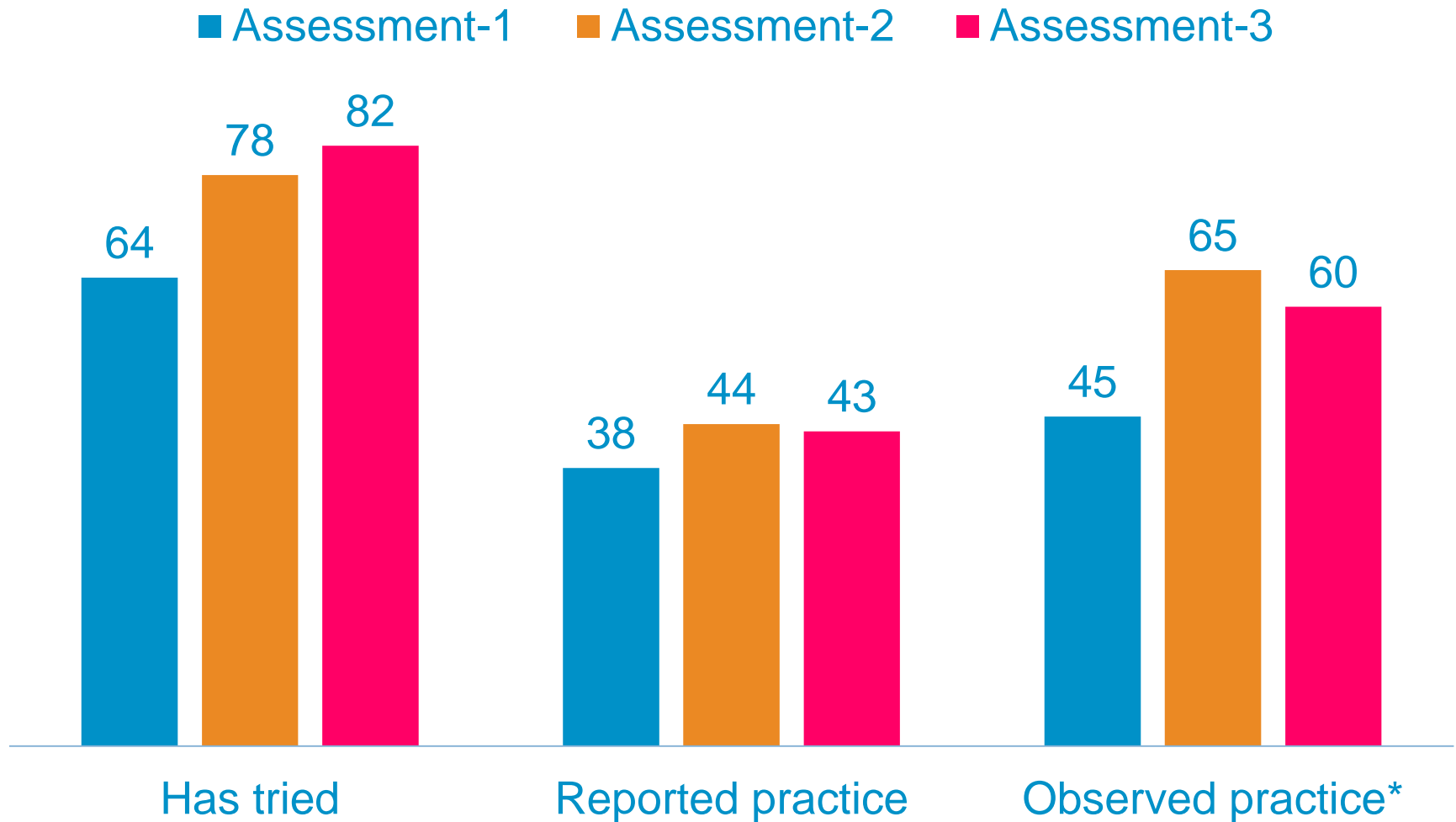
Hand washing with soap before child food preparation & feeding child (%)



Graph; Debashish Biswas

* N=20

Quantity & frequency of complementary food (%)



* Only quantity of complementary food

*N=20

Graph; Debashish Biswas

What affects reported hand washing with soap at *both* key times?

Determinants	Risk ratio [†] Before (N=454)	Risk ratio [†] After (N=444)
Socio demographic characteristic		
Mother's education (above primary)	2.28*	1.00
Wealth (High)	2.10*	1.01
Exposure to the intervention		
Health workers home visit	-	1.89*
Mothers group meeting	-	1.11*
Hand wash station/soap near cooking/feeding area	-	1.29*

[†] adjusted for all variables shown ; * statistically significant

What affects acceptable complementary feeding?

Determinants	Risk ratio [†] Before (N=454)	Risk ratio [†] After (N=444)
Socio demographic characteristic		
Wealth (richest)	1.51*	1.24*
Age of child		
9-11 months	1.15	3.21*
12-23 months	1.68*	3.26*
Exposure to the intervention		
Health workers home visit	-	1.62*
Mothers group meeting	-	1.30*
Recalled TV message	1.59*	1.00

[†] adjusted for all variables shown ; * statistically significant

Results summary

After ≥ 80 days;

- 65% household maintained hand wash station near child feeding area
- Hand washing with soap before food preparation & feeding
 - *Reported* increased to 78%
 - Observed ~50%
- Appropriate food quantity and frequency for child's age
 - *Reported* ~40%
 - Observed ~60% (quantity)

Trial summary

- Improving **both** hand washing and complementary feeding practices is possible when barriers are systematically addressed
- Hand washing practices of mothers can improve by addressing **convenience** and improving awareness of health risk

Study conclusions

- Including hand washing in a nutrition intervention makes sense
 - Food preparation and feeding involves bare hands
 - Improved hygiene can reduce infection
- Incorporating hand washing component was successful in the small scale trial
 - Acceptable and feasible
 - Improved reported and observed practices
 - Location of hand washing facilities increases convenience and facilitates hand washing

Translating research to practice

- Multi-sectoral collaboration
- Advocacy resulted in adoption by multiple stakeholders
- National campaign adopted hand washing with soap with the infant and young child feeding intervention
- National strategy has been developed by relevant government departments
 - Department of Public Health Engineering
 - Department of Public Health Nutrition

Acknowledgements

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icddr,b

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- Nirnita Khisa
- Shрила Sarkar
- Shewly Akter

For more information

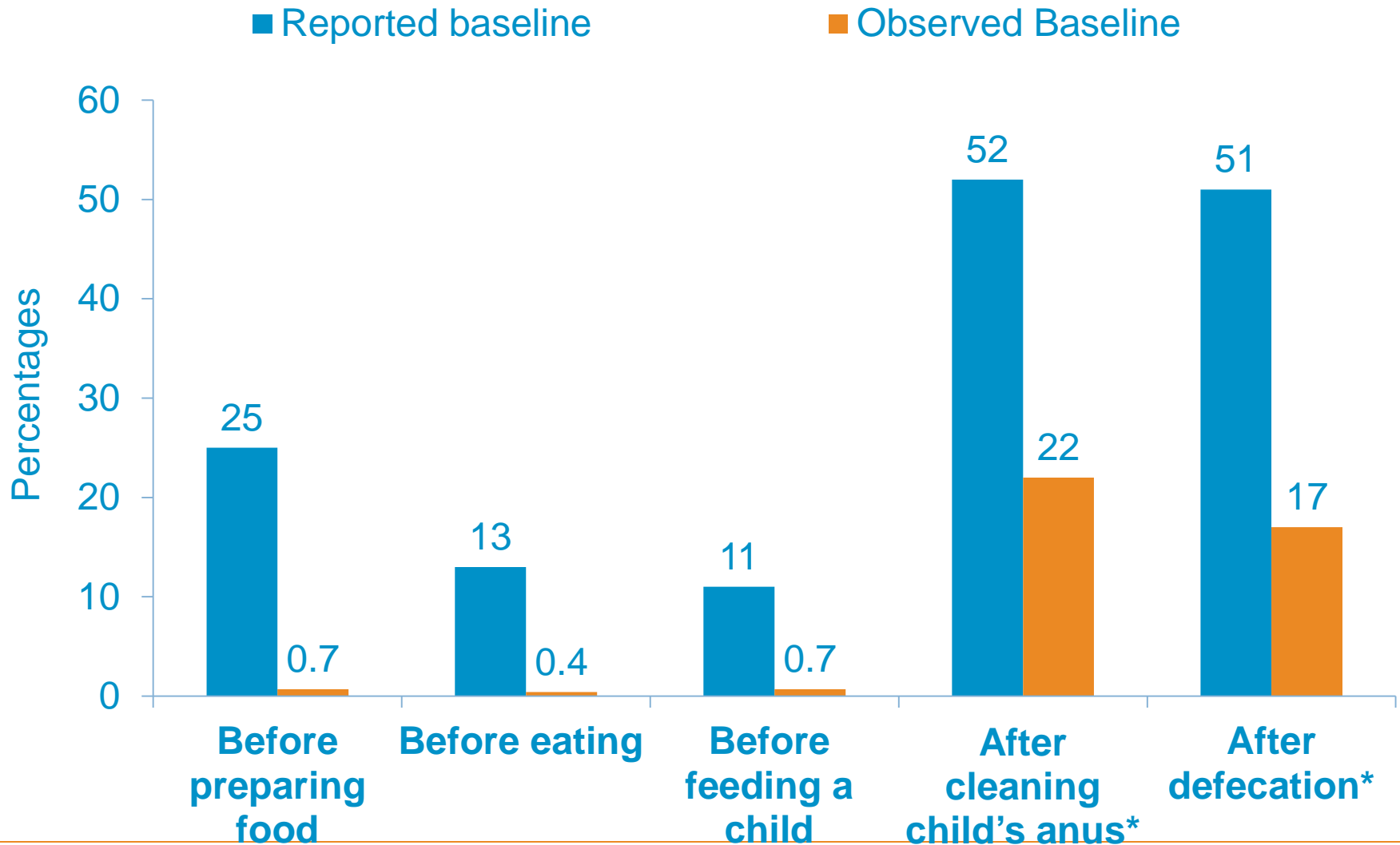
Visit

www.aliveandthrive.org



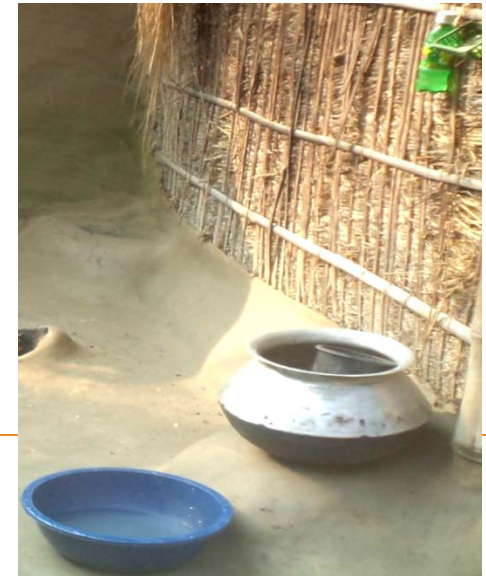
Extra slides

Reported hand washing with soap is not a credible indicator; reported v observed for same households



Sub- Study; use of own v study provided hand wash station

- 80 HHs received Behavior Change Communication (BCC) about handwashing with soap/soapy water and CF.
- Only 40 HHs received a handwashing station with free detergent powder.
- The remaining 40 HHs were motivated to put their own soap/soapy water and a water vessel near the food preparation area and the area of feeding.



Study v own hand wash station

At endline;

- Observed handwashing with soap
 - Study HWS group; among 80%
 - own HWS group; 50%
- Observed handwashing stations convenient to the cooking and child feeding places
 - Study HWS group 90%
 - own HWS group 40%
- Reported recommended quantity and frequency of the complementary food
 - Study HWS group 50%
 - own HWS group 32%