

Roll out of Micronutrient powders children 6-23 months in Bhutan

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Bhutan

Area 38,394 sq km

Total Population 777,224

MMR 53 deaths per 100,000 live births.

IMR 15.2 deaths per 1000 live births

Institutional delivery 98%

4 ANC visit 87.2%

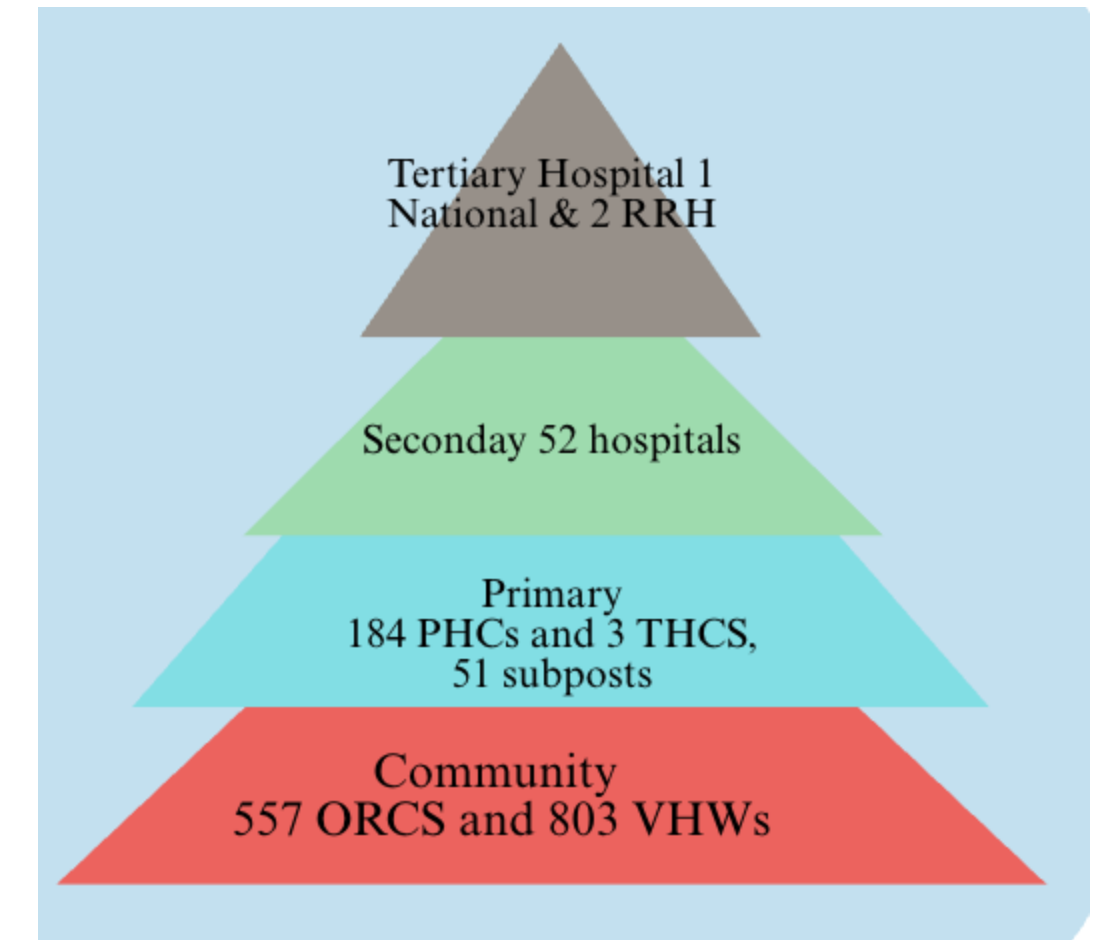
4 PNC in 88.1%



Bhutan

The constitution of Kingdom of Bhutan mandates that **“the state shall provide free access to basic health services on both modern and traditional medicines”**

3 tier services delivery system supported by community engagement at basic levels and government sponsored referral abroad.



Rationale

The "Hidden Hunger" Problem

In 2015 National nutrition survey (NNS 2015) reported

- 4% prevalence of wasting in CU5
- 21% stunting rate in CU5
- 43 % of children 6-59 months were anemic.
- only one in eight children (12%) are fed a minimum acceptable diet
- only 17% have iron-rich foods in their diets

IMPACT EVIDENCES

17 studies in this review.

- MNPs significantly reduced the prevalence of anemia by 34%
- Iron deficiency anemia by 57%

Salam RA, MacPhail C, Das JK, Bhutta ZA. Effectiveness of Micronutrient Powders (MNP) in women and children. BMC Public Health. 2013;13(3):S22

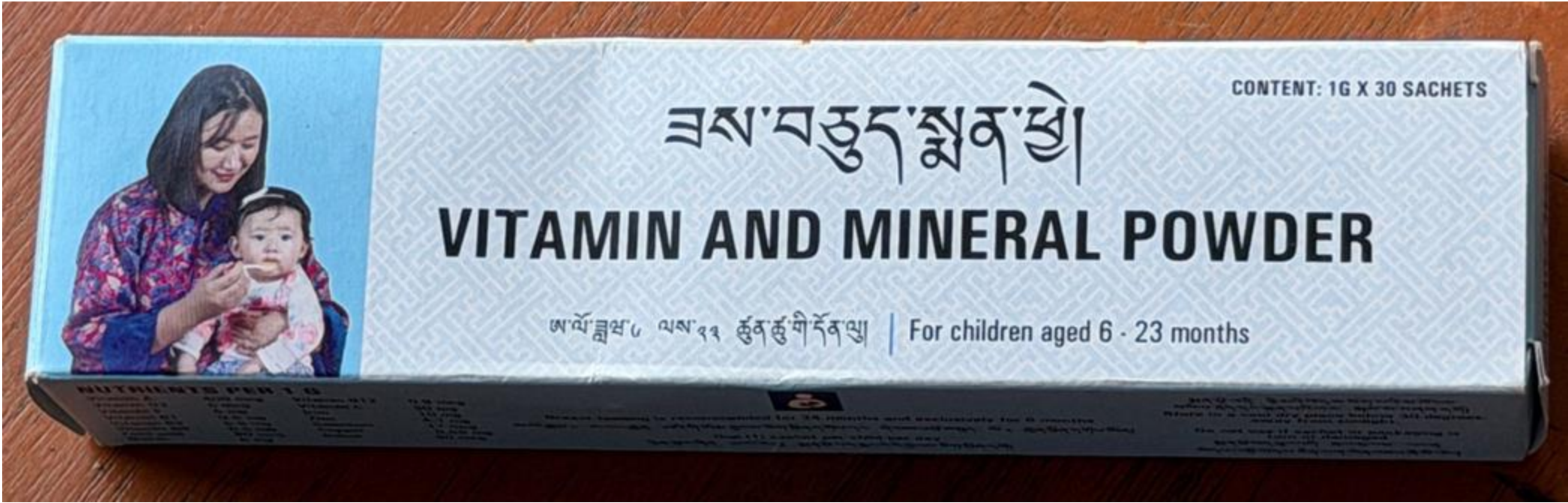
13 studies involving 5810 participants from Latin America, Africa and Asia.

- MNP for point-of-use fortification of foods had lower risk of anaemia prevalence ratio
- Mortality, morbidity, and adverse effects minimal

De-Regil LM, Jefferds MED, Peña-Rosas JP. Point-of-use fortification of foods with micronutrient powders containing iron in children of preschool and school-age. Cochrane Database of Systematic Reviews 2017, Issue 11. Art. No.: CD009666. DOI: 10.1002/14651858.CD009666.pub2.

MNP/Sprinkles

Vitamin A (400 µg)	Vitamin B6 (0.5mg)
Vitamin B1 (0.5mg)	Folic Acid (90.0 µg)
Vitamin B2 (0.5mg)	Vitamin B12 (0.9µg)
Niacin (6.0 mg)	Vitamin C (30.0mg)
Vitamin D (5.0 µg)	Iron (10.0 mg)
Vitamin E (5.0 mg)	Selenium (17.0 µg)
Copper (0.56 mg)	Zinc (4.1 mg)
Iodine (90.0 µg)	



Objective

Reduce Key Deficiencies: To reduce the prevalence of anemia and other micronutrient deficiencies

Improve Nutrition Quality: To improve the overall micronutrient status in complementary foods and dietary diversity for all children in the target age group.

Assess Feasibility & Acceptance: To evaluate caregiver acceptance, adherence, and the operational feasibility of MNP distribution through existing health systems.

Methods & Analysis

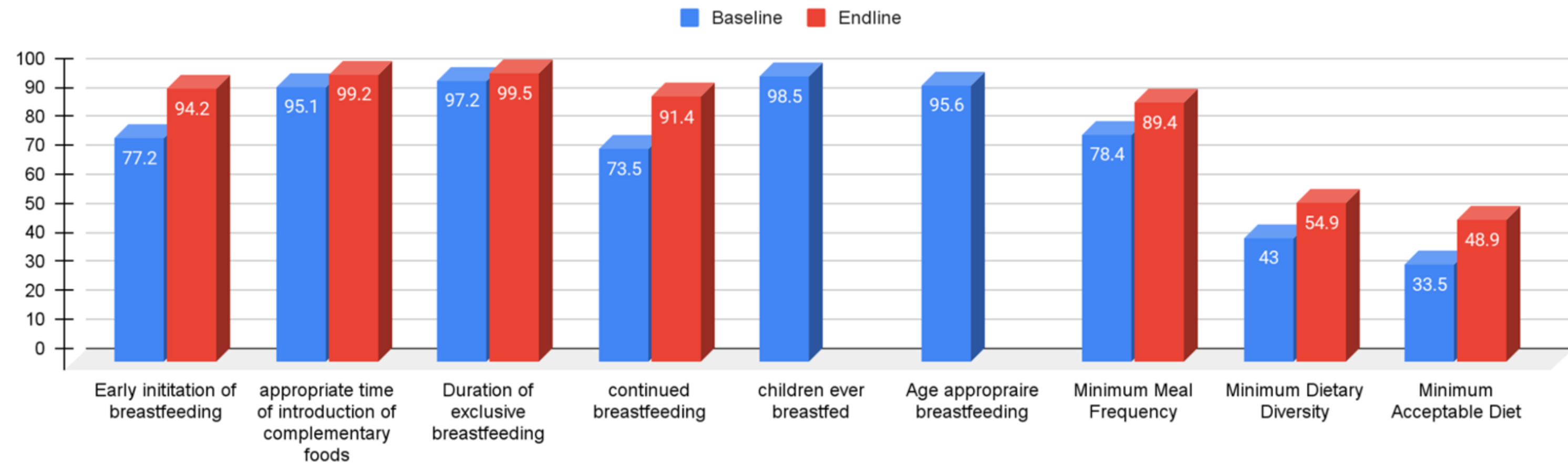
- 1) Intervention study conducted among mothers and their children aged 6-23 months
- 2) 3 poorest districts indicated from Bhutan Living Standard Survey 2017.
- 3) Baseline data collected on the day intervention was assigned.
- 4) Endline data collected after 3 months.
- 5) Exclusion criteria: Children with SAM/Illnesses/ children coming from other areas (chances of non-follow up)

Study Implementation

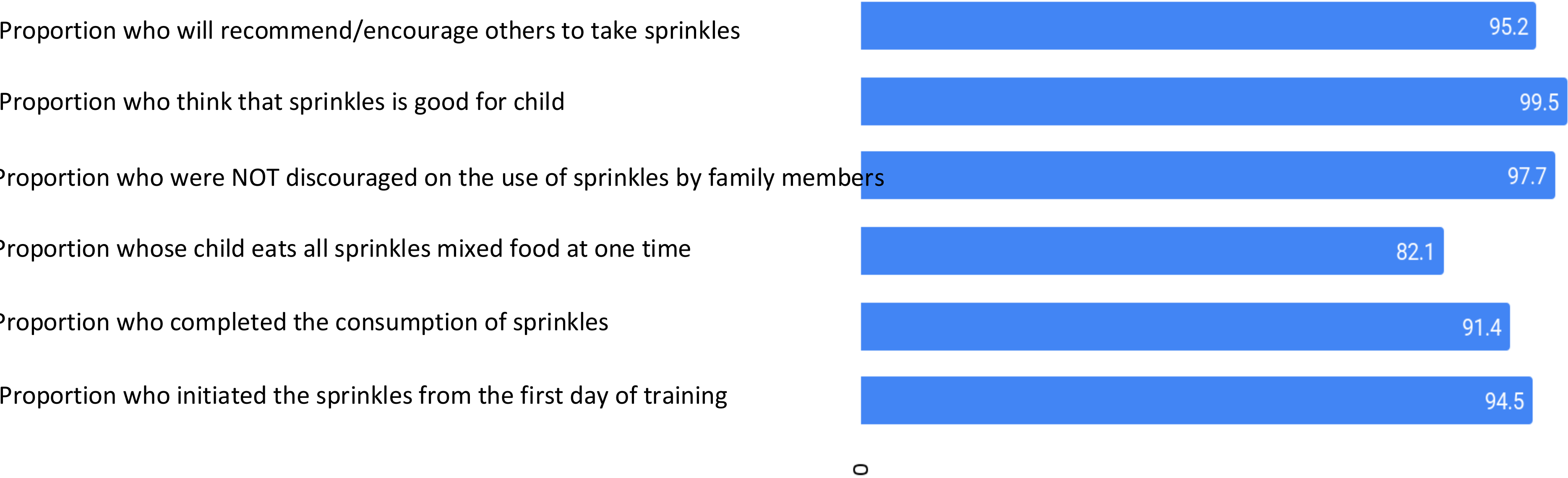
- 1) Study implementation: 2 Health Workers from each study sites were trained
- 2) 1 district Nutritionist trained as supervisor.

Results/finding

Baseline and Endline

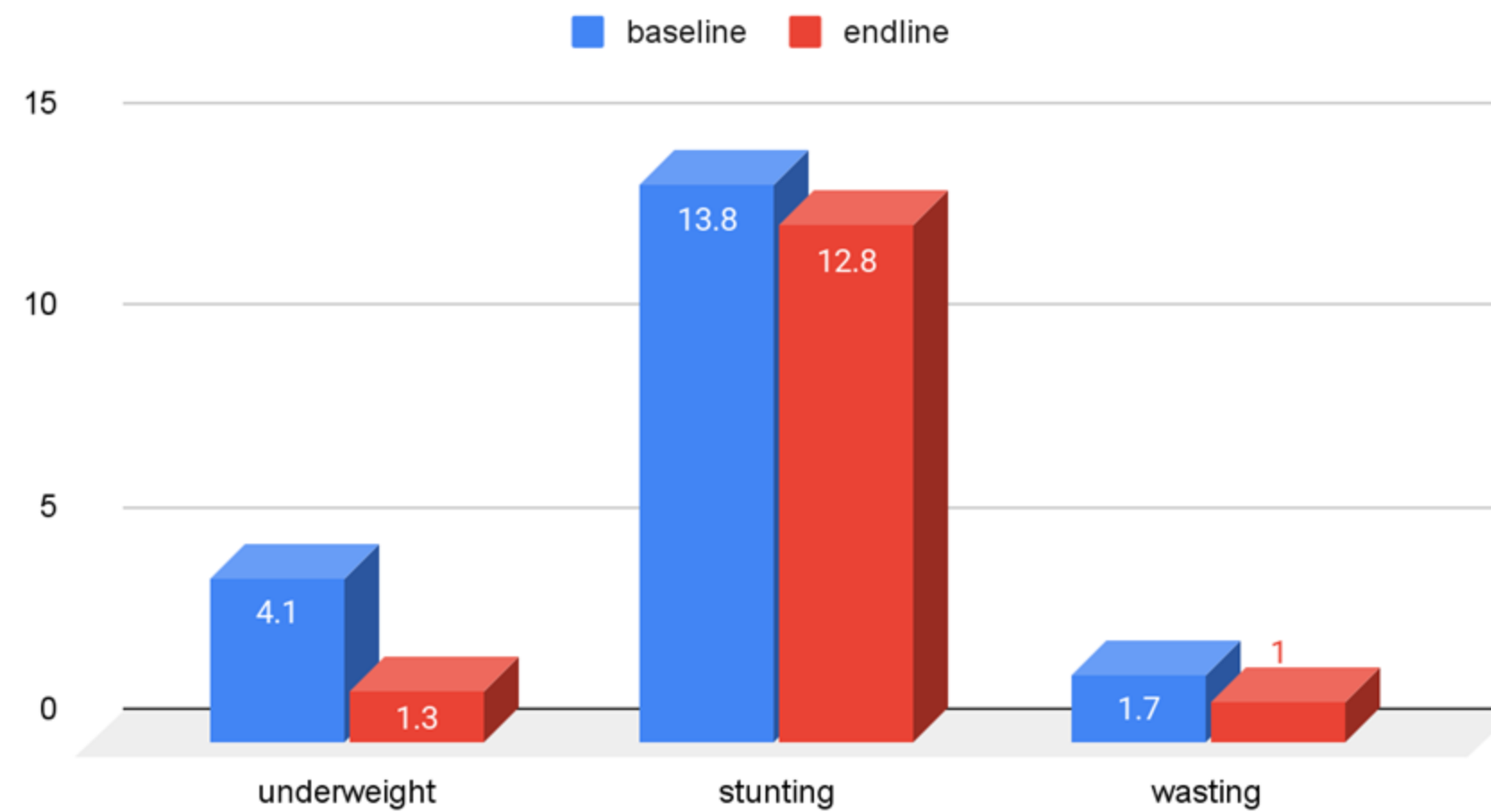


Results/finding



Results/finding

Nutrition Status



Results/Finding

MNP pilot achieved over 95% compliance, with notable gains in caregiver knowledge and child feeding.

- 1) Meal frequency rose from 78% to 89% and dietary diversity from 43% to 55%.
- 2) 90% of caregivers knew contents of MNP
- 3) 90% of caregivers correctly explained the dosage and schedule of MNP.

Implementation Challenges

Key barriers included caregiver concerns about side effects (e.g., dark stools) highlighting a need for better communication.

NATIONWIDE ROLLOUT

Nationwide roll out of MNP achieved by June 2020

MNP integrated into Mother and Child Health (MCH) services

Synced with GM schedule

Continuous Refresher training and monitoring of MNP

MNP schedule

Synced with GM schedule

Age of child in Months	Distribution quantity	Advise to caregiver	Counselling	Growth Monitoring schedule
6 months	Distribute 1 box of sprinkle	Ask to give on Monday, Wednesday and Thursday (3 times a week). Ask them to continue to consume for next 2months	Counsel on sprinkles and IYCF	Check height/length and weight
8 months	Distribute 1 box of sprinkle	Ask to give on Monday, Wednesday and Thursday (3 times a week). Ask them to continue to consume for next 2months	Counsel on sprinkles and IYCF	Check height/length and weight
10 months	Distribute 1 box of sprinkle	Ask to give on Monday, Wednesday and Thursday (3 times a week). Ask them to continue to consume for next 2months	Counsel on sprinkles and IYCF	Check height/length and weight

MNP schedule

Synced with GM schedule

Age of child in Months	Distribution quantity	Advise to caregiver	Counselling	Growth Monitoring schedule
15 months	Distribute 1 box of sprinkle	Ask to give on Monday, and Thursday (2 times a week). Ask them to continue consume for next 3 months	Counsel on sprinkles and IYCF	Check height/length and weight
18 months	Distribute 1 box of sprinkle	Ask to give on Monday, and Thursday (2 times a week). Ask them to continue consume for next 3 months	Counsel on sprinkles and IYCF	Check height/length and weight
21 months	Distribute 1 box of sprinkle	Ask to give on Monday, and Thursday (2 times a week). Ask them to continue consume for next 3 months	Counsel on sprinkles and IYCF	Check height/length and weight

Implications for scaling and policy

- **Policy:** Advocate for the inclusion of MNPs in the national essential nutrition action plan.
- **Systems:** Integrate MNP distribution fully into existing health systems (e.g., IYCF counseling, CHW visits).
- **Supply Chain:** Strengthen supply chain management to prevent stock-outs and ensure last-mile delivery.
- Sustain behavior change communication (BCC) to manage side-effect concerns and reinforce adherence.

Thank you