

# A Review of Evidence-Based Interventions in Indian Nutrition Programs

## OBJECTIVES

The persistence of undernutrition in the face of India's impressive economic growth continues to be of enormous concern. Though there are recognized essential inputs for child and maternal nutrition, less than 55 percent of mothers and children receive any of these inputs in India (Menon and Aguayo 2011).

To better clarify the extent to which current nutrition programs in India incorporate essential inputs for nutrition, a team from POSHAN reviewed nutrition programs in India for the inclusion of such inputs and examined how these inputs are implemented and delivered.

## METHODOLOGY

The team compiled a list of the essential inputs for maternal and child nutrition and survival featured in *The Lancet* series on maternal health (Bhutta et al. 2008). The team then compared these with the inputs featured in the *Leadership Agenda for Action* (Coalition for Sustainable Nutrition Security in India 2008) and the *Scaling Up Nutrition Framework for Action* (2010) to generate a final list of 14 essential inputs for nutrition (Exhibit 1).

The team then searched the Cochrane Library, the World Health Organization's Electronic Library of Evidence for Nutrition Actions, the International

### EXHIBIT 1 14 essential inputs for child nutrition

1. Timely initiation of breastfeeding within 1 hour of birth
2. Exclusive breastfeeding during the first 6 months of life
3. Timely introduction of complementary foods at 6 months
4. Age-appropriate complementary feeding, adequate in terms of quality, quantity, and frequency for children 6-24 months
5. Prevention of anemia
6. Safe handling of complementary foods and hygienic complementary feeding practices
7. Full immunization
8. Reducing vitamin A deficiency
9. Reducing burden of intestinal parasites
10. Prevention and treatment of diarrhea
11. Timely and quality therapeutic feeding and care for all children with severe acute malnutrition
12. Improved food and nutrition intake for adolescent girls, particularly to prevent anemia
13. Improved food and nutrients intake for adult women, including during pregnancy and lactation
14. Prevention and treatment of malaria

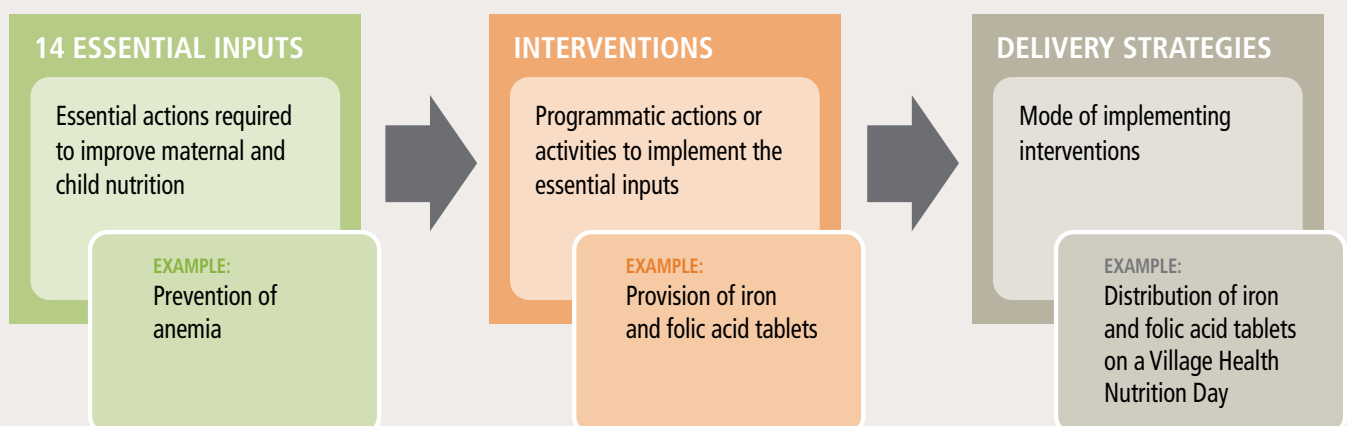
Initiative for Impact Evaluation website, and *The Lancet* series on maternal health (Bhutta et al. 2008) to identify which evidence-based interventions have a demonstrated impact on addressing each of the 14 essential inputs. These included counseling-based and product-based interventions. For example, counseling is the recommended intervention for a majority of essential inputs related to infant and young child feeding, immunization, and improving maternal food intake, whereas iron and folic acid supplements and deworming tablets are recommended to address adolescent and pediatric anemia and to reduce parasitic burden.

To assess the extent to which each of the essential inputs and evidence-based interventions are featured in Indian nutrition programs and how they are delivered, the team then examined documents published between 2000-2012 on the two largest government programs for nutrition in India, the Integrated Child Development Services Scheme (ICDS) and the National Rural Health Mission (NRHM). The team also reviewed documents on 22 nutrition programs led by non-government organizations (NGOs) that were recognized as best practices. The team examined the types of delivery strategies used to implement the recommended interventions in each of the national and NGO-led programs (Exhibit 2).

## FINDINGS

- ▶ The two national programs, ICDS and NRHM, together address all the essential inputs and use a number of evidence-based interventions to do so. The ICDS program includes interventions to address 12 of the 14 essential inputs while the NRHM program includes interventions to address 13 of the 14 essential inputs. However, ICDS does not include interventions to reduce the burden of intestinal parasites and prevent and treat malaria, and the NRHM does not include interventions to prevent adolescent anemia.
- ▶ Both national programs use frontline workers to deliver nutrition interventions in a complementary manner. For example, anganwadi workers are expected to identify children with severe acute malnutrition, give them special supplementary food, and refer them to nutrition rehabilitation centers. Accredited social health activists are then expected to accompany children with severe acute malnutrition to the nutrition rehabilitation centers and motivate mothers to stay for at least 7 days at the centers until their children are stabilized. Accredited social health activists are then expected to follow up with the children and their families after their discharge from the nutrition rehabilitation centers.
- ▶ The majority of NGO-led programs include the essential inputs pertaining to breastfeeding and complementary feeding. However, only a few include inputs related to vitamin A deficiency, pediatric anemia, and severe acute malnutrition. None of the NGO programs includes inputs related

## EXHIBIT 2 Review framework



Source: Authors 2013.

to reducing intestinal parasitic burden and the prevention of malaria.

- ▶ The most commonly used delivery strategy is home visits that involve individual or group counseling by community health workers or self-help groups.
- ▶ Activities such as health worker recruitment, training and mentoring of program personnel, provision of job aids, and strengthening of monitoring and supervision are common in NGO-led programs to strengthen the delivery of nutrition interventions.
- ▶ There are very few studies on how best to deliver evidence-based nutrition interventions in the Indian context.
- ▶ Convergence between ICDS and NRHM is required to ensure effective service delivery, but there is little understanding about how convergence can be achieved efficiently and effectively.

## CONCLUSION AND RECOMMENDATIONS

The following recommendations emerged from the review:

- ▶ **Generate evidence on how best to deliver nutrition interventions.** More evidence is needed on how best to deliver interventions for the essential inputs pertaining to pediatric anemia, severe and acute malnutrition, reducing the burden of intestinal parasites, and integration of the prevention and treatment of malaria into nutrition-focused programs. Although slow to emerge, different community-based approaches to manage severe and acute malnutrition to complement facility-based approaches are now being tested.
- ▶ **Build evidence on how to strengthen delivery systems.** The key operational considerations integral to the implementation of evidence-based interventions in India are convergence and systems strengthening. Although convergence between ICDS and NHMS is critical for effective service delivery, evidence is needed to understand how convergence can be efficiently and effectively achieved. Furthermore, research is needed on the conditions under which systems strengthening is feasible and the extent to which such strengthening influences service delivery.

- ▶ **Strengthen and support the national programs.** Given that the ICDS and NHMS together address all essential nutrition inputs, a priority for both governmental and non-governmental actors should be to identify mechanisms to strengthen and support these national programs. This is of particular importance, given the resourcing, reach, and untapped potential that ICDS and NHMS offer to improve maternal and child nutrition and health.
- ▶ **Incorporate evaluation mechanisms in programs.** Implementers and development partners in India must routinely invest in building the operational evidence to identify and strengthen optimal delivery mechanisms. This requires consistently documenting the types and results of implementation strategies used in programs and incorporating process, outcome, and impact evaluations in program design.

The scale up of all the 14 essential inputs for nutrition in India is needed given that the coverage of these is recognized as critical to achieving rapid reductions in undernutrition. Given the potential of ICDS and NHRM to attain maximum coverage and impact of the 14 essential inputs, now is an opportune time to test different interventions and delivery strategies using the platforms of these two programs to ensure the best possible future for India's children.

## REFERENCES

- Bhutta, Z. A., T. Ahmed, R. E. Black, S. Cousens, K. Dewey, E. Giugliani, B. A. Haider, B. Kirkwood, S.S. Morris, H. P. S. Sachdev, and M. Shekar. 2008. "What Works? Interventions for Maternal and Child Undernutrition and Survival." *The Lancet* 371 (9610): 417–440.
- Coalition for Sustainable Nutrition Security in India. 2010. *Sustainable Nutrition Security in India: A Leadership Agenda for Action*. New Delhi.
- Menon, P., and V. Aguayo. 2011. "The 1,000-Day Window of Opportunity for Improving Child Nutrition in India: Insights from National-Level Data." *India Health Beat* 5 (3): 1–4.
- Scaling Up Nutrition: Framework for Action. 2011. [http://scalingupnutrition.org/wp-content/uploads/2013/05/SUN\\_Framework.pdf](http://scalingupnutrition.org/wp-content/uploads/2013/05/SUN_Framework.pdf).

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### ABOUT POSHAN

Partnerships and Opportunities to Strengthen and Harmonize Actions for Nutrition in India (POSHAN) is a 4-year initiative that aims to build evidence on effective actions for nutrition and support the use of evidence in decisionmaking. It is supported by the Bill & Melinda Gates Foundation and led by IFPRI in India.

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Research Notes summarize the latest findings from POSHAN-led studies.

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