

# **Fortification of Complementary Foods: A Review of Products and Program Delivery**

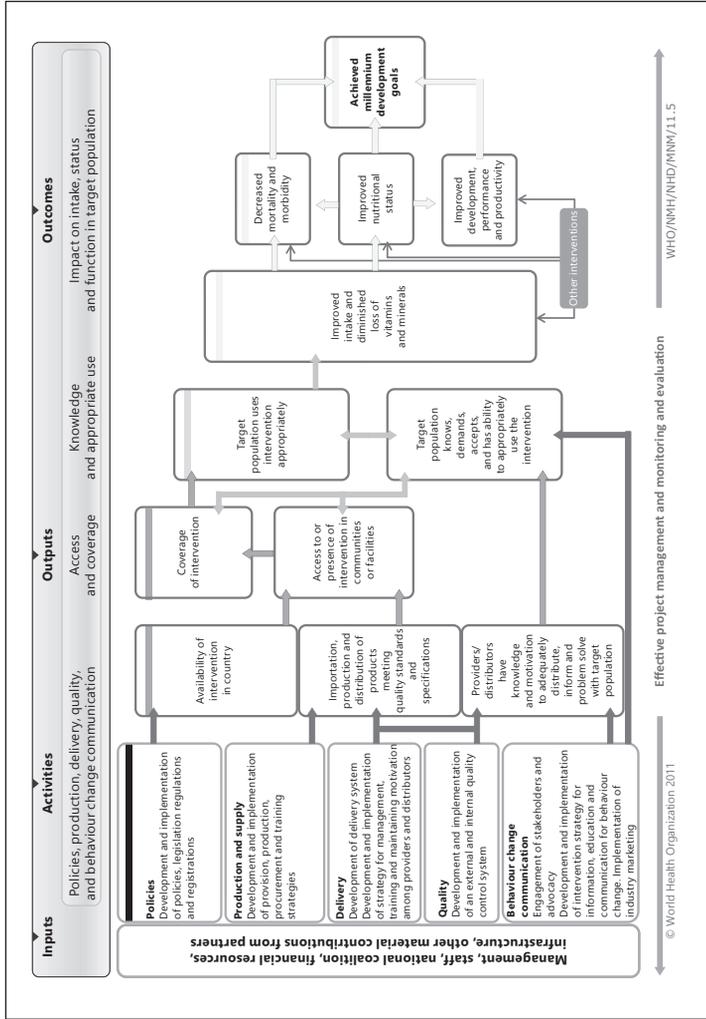
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Although there is great potential to improve the quality of complementary foods through the use of local ingredients, there are many populations in which limitations of availability and/or affordability of diverse nutrient-rich foods, particularly foods of animal source, may be a barrier to this. Fortified complementary foods (FCF) and home fortification – single-sachet micronutrient powders (MNP) or small-quantity lipid-based nutrient supplements (SQ-LNS) to be added to a child's food immediately before consumption – have been shown to be efficacious to improve the micronutrient status and some functional outcomes in children 6–23 months of age. A number of programs have sought to increase their availability and/or affordability in the market by working directly with industry (from small to large scale) or public-private partnerships, but a number of challenges remain to create viable business models for the production and marketing of complementary feeding products [1].

Many public programs target populations at high risk of inadequate dietary nutrient intake in infants with free or subsidized distribution of complementary feeding products. The free distribution of FCF is common across Latin America, and many countries around the world are now distributing MNP. At this time, the use of SQ-LNS in programs is still very limited.

There is ample guidance to ensure that products can be produced safely and aligned with recommended nutrient intakes, such as recommendations on product composition [2], CODEX Alimentarius and guidelines from the World Health Organization. The Home Fortification Technical Advisory Group (HFTAG; [www.hftag.org](http://www.hftag.org)) has developed guidance for MNP formulation and production, as well as for the implementation and monitoring of programs. The latter two guidance documents can be easily applied to programs distributing any complementary feeding product.

The selection and development of the product itself is critical, but impact on nutritional status and functional outcomes will be achieved



**Fig. 1.** WHO/CDC logic model for micronutrient interventions in public health (reproduced with permission from De-Regil et al. [3]).

only if adequate attention is paid to program design and implementation. In this chapter, we use the WHO/CDC generic logic model for programs (fig. 1) [3] to guide a review of critical program components, particularly the choice of the delivery platform, availability, accessibility, acceptability, coverage and utilization by the target population with illustrations from published literature. Well-targeted programs such as social protection programs, community health workers and sales forces, health facilities, child health weeks, and rations in emergency settings and refugee camps have all been used as delivery platforms for FCF or MNP.

For FCF and MNP, there are a number of demand-related challenges that must be overcome, including lack of the perceived need for the products and sharing of products in the home that limit utilization by the child. Ensuring that there is an in-depth understanding of the local context and culture and the design and implementation of program components including behavior change interventions that respond to those can increase program coverage and product utilization. This highlights the need for formative research to be used to guide the design of all programs [4].

Process evaluation and implementation research are tools that should also be used in all programs to track performance, i.e. the quality of implementation in comparison to design, and provide specific recommendations to improve the quality of study design and implementation [5]. Using rigorous designs and ensuring high-quality research would strengthen the evidence related to how programs work and permit the development of improved program guidance to increase effective implementation.

## References

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