

# A Brief History of Evidence-Informed Decision Making for Nutrition in Mexico

Lynnette M Neufeld,<sup>1</sup> Rogelio Grados,<sup>2</sup> Alejandría Villa de la Vega,<sup>3</sup> Concepción Steta,<sup>4</sup> Ferdinando Regalia,<sup>5</sup> and Juan A Rivera-Dommarco<sup>6</sup>

<sup>1</sup>Global Alliance for Improved Nutrition, Geneva, Switzerland; <sup>2</sup>National Coordination of the Prospera Program of Social Inclusion, Mexico City, Mexico; <sup>3</sup>National Commission for Social Protection in Health, Secretary of Health, Mexico City, Mexico; <sup>4</sup>Department of Social Protection and Jobs, Latin America and Caribbean, The World Bank, Washington, DC, USA; <sup>5</sup>Social Protection and Health Division, Inter-American Development Bank, Washington, DC, USA; and <sup>6</sup>National Institute of Public Health of Mexico, Cuernavaca, Mexico

## ABSTRACT

The Progresa Conditional Cash Transfer program in Mexico began in 1997, with a strong evidence-based design. The program's ultimate objective was to foster the development of human capital through 3 components—education, health, and food. Rigorous impact evaluation generated evidence of impact on several outcomes, including child growth, but also aspects of program design and implementation challenges that may have limited impact. The objective of this supplement is to present research that led to the redesign of the health component, its implementation and evaluation at pilot scale, and its scale-up to national level, representing >15 y of collaboration among evaluators, program implementers, and funders. The studies used various methodologies, including process evaluation, cohort studies, ethnographic assessments, and a cluster-randomized trial, among others. The articles report previously unpublished results and citations of published literature. Article 1 uses an impact pathway to highlight gaps and bottlenecks that limited potential for greater impact, the original recognition of which was the impetus for this long collaboration. Article 2 explores the social and cultural factors that influence decisions to participate in programs and to adopt the actions proposed by them. Article 3 presents a cluster-randomized trial implemented to inform the choice of nutritional supplements for pregnant and lactating women and children 6–59 mo of age and how this and other evidence from the studies were used to redesign the health component of the program. Articles 4 and 5 present results of the development and pilot testing of the modified health component, the Integrated Strategy for Attention to Nutrition (abbreviated to EsIAN from its name in Spanish) (article 4), and the process and challenges of training and supervision in taking the EsIAN to scale (article 5). The final article provides reflections on the relevance of this body of work for implementation research in nutrition. *J Nutr* 2019;149:2277S–2280S.

**Keywords:** implementation research, impact evaluation, process evaluation, social determinants, program improvement

## Introduction: Mexico's Conditional Cash Transfer Program

Mexico has a long and strong history of evidence-informed policy making in health (1, 2). This focus was extended to social protection, food security, and nutrition with the design of the then *Progresa* conditional cash transfer program in the mid-1990s. The program was designed to incentivize investments in human capital formation through cash transfers that were conditioned upon compliance with specific services aimed at improving health, nutrition, and education. The program moved investments in social protection in Mexico from well-intentioned but poorly targeted approaches (e.g., subsidized tortillas) to a program highly effectively targeted to those most

economically in need (3) and those most at risk of malnutrition (4).

From the outset, the program provided a basic cash transfer for families that was intended to increase their purchasing power for food. Cash was provided on the condition that they comply with attendance at preventive health services (e.g., antenatal care, vaccinations, well-child clinics) and a series of health education talks. For families with school-aged children, additional cash was provided, conditioned on regular attendance of children at school, with the amount of the transfer increased for higher school grades. The transfer was larger for girls than boys, based on the evidence at the time that girls were more likely to drop out. Based on evidence of the nutritional status of women and children, and in recognition

of the importance of maternal nutrition, and nutrition during the first 2 y of life for child growth and development, the program also provided a fortified food supplement for pregnant and lactating women, and a fortified complementary food for children 6–23 mo of age and those with low weight-for-age from 2 to 5 y of age (5).

The responsibility for the program was held by the Secretary of Social Development and managed by the National Coordination of the Program. Given its multisector design, however, effective implementation was highly dependent on coordinated actions across sectors (Figure 1) (6). As originally designed, the health and food component included free health services appropriate to age and gender across the life cycle, including health promotion through a series of health education talks, and procurement and distribution through the health services of the fortified food supplements for children and pregnant and lactating women.

### The impact evaluation and findings

*Progresa* included from the outset a rigorous external impact evaluation, implemented as a randomized effectiveness trial in rural areas, with several primary outcomes including the economic well-being of households, education and health indicators, and the nutritional status of young children. Before implementation and taking advantage of the plans for gradual program roll-out, eligible localities in rural areas were randomly allocated to receive *Progresa* immediately (intervention group) or 2 y later (control group). This design permitted direct causal inferences for primary outcomes (7). In 1997, a baseline survey was carried out, with program implementation for intervention communities immediately afterwards. Impact was assessed in additional semiannual surveys between 1998 and 2000, with follow-up surveys for longer-term outcomes in 2003, 2007 and 2017. Although the original design foresaw 2 y of differential implementation between intervention and control communities, for several political and other reasons, the program was rolled out in control communities 18 mo after baseline. In terms of nutritional outcomes, the program improved child growth

among those who were exposed from early life (8–10) and reduced the prevalence of anemia in children (8).

Rigorous impact evaluation continued to be a cornerstone of the program as it was scaled up, but randomization became increasingly complex for both political and logistical reasons. In urban Mexico, therefore, intervention localities were selected using criteria defined by the program (11), and appropriate control localities were identified through matching techniques that minimized potential systematic differences between groups (12). Using this quasi-experimental design, impact was assessed by comparison of baseline (2002) and after 1 and 2 y (2003 and 2004) of implementation, and for longer-term outcomes in 2009. Analytic methodologies appropriate for quasi-experimental designs, such as propensity score matching, were used to assess nutrition and other outcomes (13). Like in rural areas, the evaluation demonstrated positive impacts of the program for several outcomes, including improved child linear growth (14).

### Evidence-informed program improvement

The program was in operation for almost 21 y, undergoing several name changes, first from *Progresa* to the *Oportunidades Human Development Program*, and later the *Prospera Program of Social Inclusion*. For simplicity, in this supplement the program is referred to using a single name to capture these 3 phases: the Conditional Cash Transfer program—*Progresa-Oportunidades-Prospera* or CCT-POP. Although the essence as a conditional cash transfer program remained, several components underwent modifications over the years, based on evaluation results, the changing social and economic conditions in Mexico, and, in some cases, the policy priorities of government (15, 16). The positive evaluation results were critical in securing its continuity across multiple changes of government, breaking a cycle of continual change in social protection policy, and its eventual scale-up to national level (3, 17). But the evaluation also identified several implementation challenges and raised several questions related to the magnitude of impact and what might be needed to accelerate progress. Much has been published about these results for health, education, and poverty alleviation (see, e.g., 18–21). Over the years, the emphasis of the nutrition evaluation evolved from demonstrating rigorous evidence of impact, to exploring the contribution of different program components, identifying and addressing barriers to program coverage and utilization, and testing potential modifications to design and implementation to increase the potential for impact. The ultimate outcome of this body of work was the redesign of the health component of the program, the Integrated Strategy for Attention to Nutrition (abbreviated to EsIAN from its name in Spanish), informed by the evidence generated and responsive to the changing nutrition situation in Mexico.

### Overview of Supplement Content

The objective of this supplement is to present the original research that led to the development of the EsIAN, the results of the implementation of the EsIAN at pilot scale, and its scale-up to national level. The work presented in this supplement represents >15 y of close collaboration between the National Institute of Public Health of Mexico (INSP) who led the nutrition evaluation, the National Coordination of Prospera (formerly National Coordination of the Human Development Program *Oportunidades*), the National Commission for Social

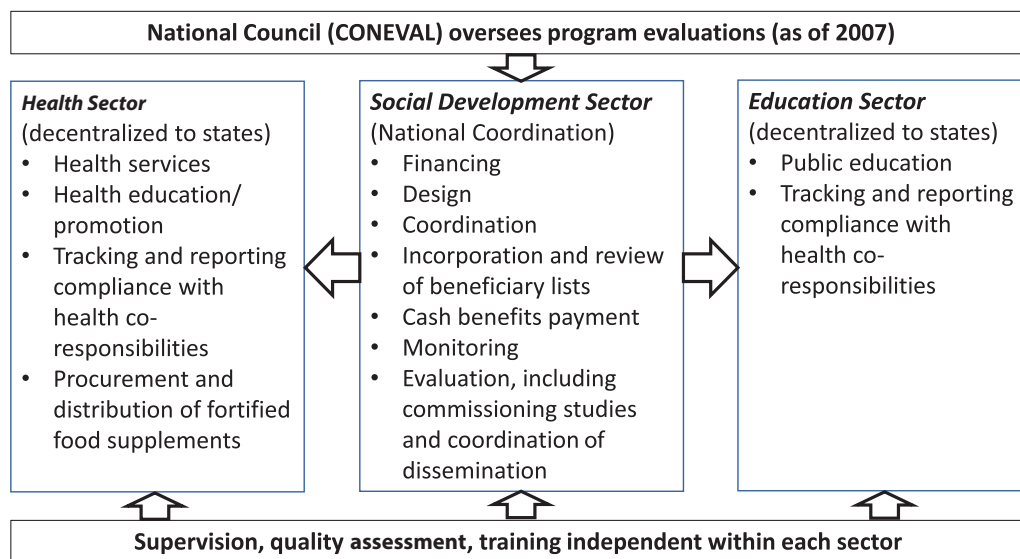
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Address correspondence to LMN (e-mail: [lneufeld@gainhealth.org](mailto:lneufeld@gainhealth.org)).



**FIGURE 1** Coordination and responsibilities within the Progres-a-Oportunidades-Prospera Program in Mexico. Adapted from Neufeld et al. (6). CONEVAL, National Council for the Evaluation of Social Development Policy.

Protection in Health of the Mexican Secretary of Health, and the financers of the program—the Inter-American Development Bank and the World Bank. The supplement describes the principles, approaches, frameworks, methods, and generalizable results that addressed the multitude of scientific and practical challenges of designing and implementing the large-scale nutrition component of EsIAN. This experience can inform and streamline future program development in Mexico and elsewhere.

The articles present the results of >10 studies carried out between 2000 and 2017. The information is presented essentially chronologically in 5 articles, each combining reference/review of some previously published results and several studies/evaluations that have not previously been published. As part of the impact evaluations, several barriers to further impact were identified and prompted a number of complementary studies to further understand design, implementation barriers and opportunities (e.g., quality of communication strategy), and to measure impact on several intermediate outcomes (e.g., supplement consumption in women and children; infant and young child feeding practices) as well as impact on nutritional outcomes not included as part of the larger evaluation (e.g., micronutrient status). In the first article, Garcia-Guerra et al. (22) use an impact pathway analysis to highlight several of the findings, and gaps in both knowledge and impact. These findings formed the basis for the many studies and the long collaboration that followed.

Moving from identifying such barriers to overcoming them required a more profound understanding of the social, cultural, and other factors that influence decisions to participate in programs and to adopt the diverse actions proposed by them. In the second article, Théodore et al. (23) present findings based on formative research results, conducted using ethnographic methodologies to understand these contextual factors. The results highlight how the social context (poverty, traditions, and social norms) contributes to poor nutrition among vulnerable populations and shaped acceptance and utilization of the program. Although information exists for several topics and age/gender groups, given space constraints, this article focuses

only on evidence related to infant and young child feeding practices.

The nutritional supplements were a central component of the program, yet evaluation results illustrated clearly that their utilization was not aligned with program recommendations, limiting their potential for impact. Furthermore, particularly in the case of women, the supplements (a whole milk-based, sugar-containing supplementary food) may not have been appropriate considering the nutritional problems faced by the population, specifically very high prevalence of overweight and obesity in addition to micronutrient deficiencies and anemia. In article 3, Neufeld et al. (24) present the methods and results of a cluster-randomized trial in which 3 supplements (the program's fortified food supplements, micronutrient powders, and tablets for women/syrup for children) were assessed for nutritional impact (primary outcomes) and acceptance, utilization pattern, and cost (secondary outcomes). The article also describes how this information was used, together with the results presented in the first 2 articles of this supplement, to develop the EsIAN.

The EsIAN strategy had 3 interventions: 1) supplying health units with equipment needed for nutritional assessment; 2) a modified supplementation scheme for pregnant and lactating women, and children 6–59 mo of age, differential for urban and rural regions; and 3) a behaviour change communication strategy and training for health providers and community volunteers to prevent growth faltering, micronutrient deficiencies, and overweight and obesity. Article 4 by Bonvecchio et al. (25) begins with an overview of the strategy, then describes the iterative process of design of the EsIAN and the methods and results of several studies that informed that process, including a situational analysis, formative research, and pilot testing in 4 states of Mexico evaluated using a mixed-methods approach.

In the fifth article, Gonzalez et al. (26) present the process, challenges, and opportunities for training and supervision during scale-up and ongoing implementation by reporting on several small-scale studies used to support scale-up and discuss the implications for planning for implementation at scale. Finally, Habicht and Pelto (27) in article 6 present insights into

the effective design and utilization of implementation research in nutrition, and the lessons learnt from this body of work for contexts beyond Mexico.

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