Moving towards Evidence-Based Policy and Program Planning in Multiple Micronutrient Interventions for Children: Symposium Summary

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Abstract
This article provides a summary of the symposium "Multiple Micronutrient Interventions during Early Childhood: Moving towards Evidence-Based Policy and Program Planning." The symposium reviewed the strength of evidence of multiple micronutrient interventions on child health, growth, and development, case examples demonstrating how information from program evaluations and the local context can be used to improve program design and performance, and the process by which evidence evolves, resulting in guidelines for policy-makers and program managers. The presentations highlighted the importance of an interactive platform at the country level where the scientific community and country stakeholders exchange ideas, develop a priority implementation research agenda, and clarify key issues to generate and modify policy and programs based on the best evidence available and the ability to deliver results in real time. J. Nutr. 141: 2092–2094, 2011.

The 2008 Lancet series on maternal and child undernutrition demonstrated the unacceptable burden of micronutrient deficiencies as well as a set of proven effective interventions in developing countries (1). The need to implement micronutrient interventions at scale was reiterated in the 2008 Copenhagen Consensus (2) and the 2009 Micronutrient Forum (3). Although there appears to be a consensus of what to do, the gap in how to translate the scientific findings into effective, large-scale programs is evident. This symposium attempted to review how we as the scientific community can contribute to the process of improving program design and performance based on the best available evidence. The symposium reviewed the strength of evidence of multiple micronutrient interventions on child health, growth, and development; case examples highlighting how information from program evaluations and the local context can be used to improve program design and performance; and the process by which evidence evolves, resulting in guidelines for policy-makers and program managers.

The first presentation (4) reviewed existing scientific data on the effects of multiple micronutrient interventions in young children as the basis for program justification. Relatively strong evidence was shown for the benefits on linear growth, but the effect size varied depending on settings and type of intervention. The improvement of hemoglobin was not very different from that observed when only iron or iron and folic acid was given. Data from fewer trials on child development were presented with a promising reduction of delays in motor development. In this review, gaps in knowledge were identified on the effects of multiple micronutrients on child morbidity and mortality, micronutrient status, mental development, and longer term outcome. In addition, more data are required to explain differences of impact by maternal nutrition during pregnancy and lactation; infant and young child feeding practices; dose, duration, frequency, and type of supplement, as well as interaction with other micronutrients. The review highlighted a number of contextual factors that might influence the appropriateness of certain interventions and the impacts that we might expect from them. A clear example of this scenario is the case of iron supplementation in malaria areas.

The controversy surrounding provision of iron in the malaria endemic area of Zanzibar (5) led to the WHO recommendation that children <2 y of age should not receive iron supplements without appropriate screening for iron deficiencies, resulting in a halt of iron supplementation in malaria areas worldwide. A critical review (6) proposed consecutive approaches for policy makers to use evidence for their program decision. First, to examine the strength of the evidence, a Cochrane Collaboration (7) challenged the WHO recommendation by showing that iron supplementation does not increase the risk of clinical malaria or death where regular malaria surveillance and appropriate treatment are provided. The next inquiry concerns the feasibility of widespread screening in developing countries, which is neither practical nor affordable, and raised the demand for...
noninvasive screening methods. Regarding the alternate ways to deliver iron, in-home fortificants in the form of micronutrient powders or sprinkles, when mixed with foods, are absorbed differently and may yield lower peak of iron concentrations. Finally, to make policy decision, policy makers have to weigh the risk that lack of iron supplementation may lead to a 49% increase in preventable iron deficiency anemia (7) against the benefit of withholding iron supplementation in young children to prevent hospitalizations and mortality due to malaria (3). A number of studies are currently underway that will help to understand the relationship between iron deficiency, iron supplementation, and malaria morbidity and mortality. In addition, the new WHO Nutrition Guideline Development Process combines the analysis of evidence, the Grading of Recommendations Assessment, Development and Evaluation, or GRADE (8), the public views, and expert consultation to reach the consensus. Once the analysis of the evidence is completed, the public health policy makers must be as willing to intervene as it is to refrain from intervening. On this basis, the updated recommendations for iron supplementation and in-home fortification in malaria endemic areas could be expected in the near future.

The case experience to utilize research results for improving the design and performance of the Progresa-Oportunidades Conditional Cash Transfer Program in Mexico to improve nutritional outcomes in the population was presented (9). The program began in 1997 and fostered collaboration between the Mexican government and the research community in Mexico. The primary objective of the program aims for human capital development through improved health, nutrition, and education. The program design was based on the best evidence available at the time and was housed under social development but was implemented across the health and education sectors as well. There was a long-term commitment and sufficient investment for a comprehensive and independent process of program impact evaluation. For the nutrition component, the whole milk-based, fortified foods were provided for pregnant and lactating mothers as well as infants and young children from 6 mo to 5 y old. The evidence generated from evaluation research was used to improve the program design and performance. Based on the experiences, 4 key factors were identified that could increase the probability that program evaluation can be used for improving design and performance, likely applicable beyond the context of the Oportunidades program: adequate budget allocation for process and impact evaluation, prioritization of evaluation research to meet program needs, willingness to be subjected to external evaluation, and the priority given by the research community to document their results and hold dialogue with program counterparts to modify program design and implementation accordingly.

The difficulties to scale up intervention was attributed to the limited evidence on how to transform interventions of known efficacy in controlled settings into programs delivered at scale in a variety of country-specific contexts (3). This led to the development of the Program Assessment Guide (PAG) as presented in this symposium (10). PAG was developed to assist the country team with the analysis and decision-making process through a structured and participatory workshop so that they can modify respective interventions to suit their context and strengthen large-scale delivery systems. Whereas the design and testing of the efficacy of micronutrient interventions depends upon high-quality scientific evidence, the delivery of these interventions through diverse country contexts depends upon the systematic integration of contextual knowledge, such as that possessed by country implementers from national through district and local levels. The PAG provides a structural process for eliciting this contextual knowledge in the program planning and evaluation process. There are altogether 9 steps in PAG: 1) clarifying the problem and proposed solution; 2) visions and goals; 3) reaching the most vulnerable; 4) the delivery system; 5) people, roles and responsibilities; 6) meeting the 5 needs; 7) action planning; 8) monitoring, evaluation, and quality improvement; and 9) organizing, leading, and managing the follow-through. PAG has been introduced in 2 national workshops in Kyrgyzstan and Bolivia, regarding the scale-up of micronutrient powder delivery program. The workshop participants found PAG very useful for the detailed analysis of program design and implementation. They also identified challenges and ways to further improve the method. To further strengthen the development of PAG, a research agenda to design and implement improved approaches and assess their immediate and long-term outcomes has been proposed.

Based on the symposium presentations, the evidence for policy decision-making to implement programs at scale is a combination of scientific, administrative, logistic, political, and social aspects. Moving from efficacy of controlled trials to effectiveness of large-scale interventions requires a systematic approach and guidance such as the PAG process to strengthen the program design and implementation that suits the local context. Multiple micronutrient interventions to improve maternal and child health are increasingly of research and program importance. The case study of nutrition in the Oportunidades program and the example presented here of iron and malaria demonstrate the importance of weighing the strength of the evidence, the risk and benefits of policy decisions, as well as streamlined research priorities that fit the program needs. The presentations highlighted the importance of an interactive platform at the country level where the scientific community and country stakeholders at all levels of government involved exchange ideas, develop a priority implementation research agenda, and clarify key issues to generate and modify policy and programs based on the best evidence available and the ability to deliver results in real time.

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Literature Cited


