Health Economic Perspectives on Pediatric Malnutrition: Determinants of Innovative Progress

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Despite some improvements in recent years, extreme poverty and malnutrition remain problems of great magnitude for developing countries. Principally in Asia and sub-Saharan Africa, 146 million children under the age of 5 are underweight (one in 4 children) and 60 million children under the age of 5 are wasted (almost one in 10 children). Beyond its ethical aspect, pediatric malnutrition has a number of negative effects on economic growth: it leads to higher mortality, morbidity, and health care costs, lower levels of education for children, causing a loss of economic output and an overall lower productivity. Furthermore, the impact of nutrition on economic growth appears to operate directly, through nutrition’s effect on labor productivity, as well as indirectly, through improvements in life expectancy.

Two main public institutions lead the efforts to understand, organize and measure the effects of interventions on malnutrition throughout the world: the UN with the UN Millennium Development Goal project [1], and the Copenhagen Consensus [2]. Two of the eight Millennium Development Goals target pediatric malnutrition and mortality.

Malnutrition initiatives typically address macrodeficiencies, also called protein-energy malnutrition (PEM), referring to lack of caloric intake, or microdeficiencies, which are a lack of vitamins and minerals such as vitamin A, iodine, zinc, iron and folate. Although interventions that address PEM are more complex to implement and to evaluate than those targeting microdeficiencies, health economics data clearly demonstrate that interventions addressing malnutrition, in particular micronutrient deficiencies are effective [3].

Iodine is often used as best practice example, and lessons can be learned from it. Fortification of salt with iodine has been one of the longest-standing and most successful micronutrient interventions. The proportion of people consuming iodized salt rose from less than 20% in
1990 to about 70% in 2000. However, currently still 38 million children are born every year at risk of lifelong brain damage associated with iodine deficiency. In order to reach those 31% of households not consuming iodized salt, a different approach is called for. Public-private partnerships could leverage the long-term experience of public institutions in malnutrition interventions with the industry’s competencies in market understanding, techniques in micronutrient fortification of food, distribution power, and manufacturing. Such partnerships could increase the efficiency of malnutrition intervention programs.

Areas of high potential for public-private partnerships are double- and triple-fortified products as well as biofortification. Fortification tends to have a lower unit cost than supplementation and hence is preferable if feasible, particularly if the deficiency is of importance across a wide range of populations. Furthermore, fortification can sometimes be more effective in reaching hard to reach populations, especially if using staple foods with high penetration rates. This model may well be valid as well for addressing PEM via breastfeeding promotion in order to achieve highest public health benefit and best possible cost-benefit results.

Recent studies show that in the medium to long run, non-nutritional interventions, such as improving agricultural productivity, expanding female schooling, and bringing piped water and electricity to rural areas, have larger effects on the reduction of child malnutrition than nutritional supplementation or fortification programs. That being said, there is a danger of losing sight of explicit nutrition goals by steering towards broader economic goals, whose effects on malnutrition are complex to measure. The resources allocated for malnutrition remain insufficient, e.g. the direct nutrition allocations in the global funds account for less than 1% of other global funds. The disproportion between the magnitude of the malnutrition problem and the allocated resources indicates that more consolidated data are needed for malnutrition to demonstrate the effectiveness of interventions.

In conclusion, more coordinated research needs to be undertaken in the area, in particular on the effectiveness of interventions, their outcome, costs and the impact on the health burden in a given region and country [4].
References