Burden of Micronutrient Deficiencies by Socio-economic Strata in Children aged 6 Months to 5 years in the Philippines

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ABSTRACT

Objectives: Micronutrient deficiencies (MNDs) have severe health consequences and are particularly harmful during early childhood. We estimate the burden of iron deficiency (IDA), vitamin A deficiency (VAD) and zinc deficiency (ZnD) in 2 age groups (6-23 and 24-59 months) of Filipino children by socio-economic strata in 2008.

Methods: We build a health economic model simulating the consequences of MNDs in childhood over the entire lifetime. The model is based on a health survey and a nutrition survey carried out in 2008. Direct medical costs, production losses and intangible costs are computed and long term costs are discounted to present value.

Results: Total lifetime costs of IDA, VAD and ZnD amounted to direct medical costs of 30 million dollars, production losses of 618 million dollars and intangible costs of 122,138 disability adjusted life years (DALYs). Direct medical costs are dominated by costs due to ZnD (89% of total), production losses due to losses in present lifetime (90% of total) and intangible costs by premature death (47% of total DALY losses) and losses in future lifetime (43%). Costs of MNDs differ considerably between socio-economic strata (SES) as costs in the poorest third of the households are 5 times higher than in the wealthiest third.

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Conclusions: MNDs lead to substantial costs in 6-59-month-old children in the Philippines. Costs are highly concentrated in the lower SES and in children 6-23 months old. These results may have important implications for the design, evaluation and choice of the most effective and cost-effective policies aimed at the reduction of MNDs.