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A cost effectiveness analysis of maternal multiple micronutrient supplementation in South Africa

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Abstract

Objectives

Recent evidence has demonstrated that multiple micronutrient supplementation in pregnancy has greater benefits than iron and folate supplementation with recommendations being made to the South African government to consider switching from the current iron and folate regimen to multiple micronutrients. The objective of the study was to evaluate the cost-effectiveness of replacing iron and folate supplementation with multiple micronutrient supplementation in antenatal care in the South African public health care system.

Methods

A cost-utility analysis was conducted using a decision analytical model from a public healthcare payers perspective. The target population for the analysis was pregnant women attending antenatal clinics in the public health sector. Health outcomes considered in the analysis were obtained from a systematic review and include low birth weight, small for gestational age, still births and diarrhoea in children under 1 year. Direct medical costs considered in the analysis were incurred in one year and benefits accrued over a person's lifetime. Resource utilisation, cost estimates, length of hospitalisation, probabilities of health outcomes, and measures of effectiveness were sourced from literature. Costs were expressed in South African rand and effectiveness was measured in DALYs. One way and probabilistic sensitivity analysis were conducted to explore key model assumptions and parameters.

Results

Multiple micronutrient supplementation was the dominant strategy being more effective and less costly than iron and folate supplementation. Sensitivity analysis showed that base-case results were robust to variations of key model parameters. The South African government should consider replacing iron and folate supplementation with multiple micronutrient supplementation in South African public health facilities.