

Presented at the FASEB Experimental Biology conference in Washington D.C, USA, April 2004:

Quantifying economic gains of supplementing Pakistani infants living in urban slums with micronutrient ' sprinkles ': a cost-benefit analysis using computer simulation techniques

Sharieff W, Zlotkin S, Feldman B, Tomlinson G, Ungar W and Krahn M
University of Toronto, Canada

Objective To quantify economic gains of supplementing micronutrients to Pakistani infants living in peri-urban slums. **Background** It has been estimated that diarrheal illnesses account for about 2 million infant deaths annually. To further decrease this burden, immunity and nutritional status need to be targeted, in addition to oral rehydration. Sprinkles Plus is an innovative approach in this direction. It contains nutrients such as iron, zinc, Vitamin A and C, and also a probiotic to prevent diarrhea through modulation of immunity. **Methods** A 3-arm randomized, double blind, placebo-controlled community-based trial for a period of 12 months was simulated. Infants were recruited between 6 - 12 months of age and followed for an additional 55 years. Hemoglobin, general morbidity measures (fever, diarrhea) and cognitive scores were computed during the first year of life to predict adult IQ scores and subsequent impact on earnings and work participation. Uncertainty was quantified using 95% probability intervals. **Results** The per capita projected lifetime economic gain of intervening against infant diseases with Sprinkles was calculated to be 18% of the country's GDP. **Conclusion** Supplementing infants with multi-micronutrients may translate into higher work productivity to impact a country's economy. (Support: HJ Heinz Co. Foundation and the Canadian Institutes of Health Research).