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Micronutrient sprinkles to control childhood anaemia: Addressing an unresolved global public health problem through international research and partnership development

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Iron deficiency (ID) is the most common preventable nutritional deficiency in the world despite global goals for its reduction. In the developing countries it is estimated that more than 50% of children younger than 4 years of age are anaemic primarily due to a diet inadequate in bioavailable iron. Studies in both developed and developing countries have consistently shown cognitive, intellectual, and social-emotional impairments that may not be reversible in anaemic children less than 2 years of age compared to those without it. Despite UNICEF's goal to reduce the prevalence of anaemia (including ID) by one third by 2010, attempts to achieve this goal have been dismally unsuccessful. The root cause of the ineffectiveness of many programs is their inability to reach the most vulnerable populations with appropriate, sustainable and cost-effective solutions. This paper describes a new intervention, home fortification of weaning foods with microencapsulated iron and other micronutrients to address ID among infants and young children. Over the past six years, our program (called the Sprinkles Program because the micronutrients are sprinkled onto food) has progressed from an ambitious idea to a sustainable operational reality. The two most important determinants of success have been the dedicated focus and advocacy for Sprinkles as a solution to the problem of ID by its founding research group and the formal route it has followed in terms of evidence based research and international partnership development. The development of Sprinkles has followed a pathway which includes three discrete components: (i) demonstrating proof of its efficacy and effectiveness; (ii) obtaining a sustainable, inexpensive supply; and (iii) scaling-up to country-wide distribution programs. Over the past five years, we have completed randomized controlled trials in eight different countries involving over 2000 anaemic and non-anaemic infants and children. Overall, the anaemia cure rate ranged from 55% to 90%, depending on the presence or absence of malaria. Acceptability of this intervention has been appreciably high among mothers and children in particular and the community at large in all these country settings. This paper specifically describes the process which took the intervention from an idea to research and finally to the implementation stage. It exemplifies the use of partnerships among academia, United Nations and international agencies, national governments, non-governmental organizations and the private sector to begin to solve the global problem of iron and other micronutrient deficiencies in infants and young children.