

Sprinkles Plus Effectiveness Program Using The Integrated Child Development Service Scheme In Maharashtra, India

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Global Micronutrient Malnutrition

- Micronutrient deficiency affects about a third of the world's population.
- Micronutrient deficiency damages the immune system, impairs brain development and is estimated to cause the deaths of more than one million children and 50,000 women during pregnancy and childbirth each year (UNICEF/The Micronutrient Initiative).
- Iron deficiency anemia is a major problem in many countries with severe health and economic consequences



Global Micronutrient Malnutrition

- Very few successful anemia prevention programs have been implemented in poor communities anywhere in the world.
- In recent years, fortification of staple foods and condiments and home fortification of food have been widely promoted as a way to address micronutrient deficiencies.
- Home fortification entails adding inexpensive food supplements containing iron and other essential micronutrients to home-cooked foods.



Global Micronutrient Malnutrition

- Advantages of sprinkles as home fortification:
 - The Iron is encapsulated in a thin lipid layer to prevent adverse reactions (taste, color and smell).
 - Traditional family food can be fortified after cooking in the home.
 - Community health posts/ Anganwadi Centers are potential distribution points that are regularly used by mothers and care givers.



Sprinkles Plus

- ❖ New formula Containing 1 RDA of 15 Vitamin and Minerals (V&M) following UNICEF, WFP and WHO recommendations
- ❖ Shelf-life: 24 months

Do not use if the sachet is torn or damaged
Store in a dry place at room temperature

Each 1.0g contains:

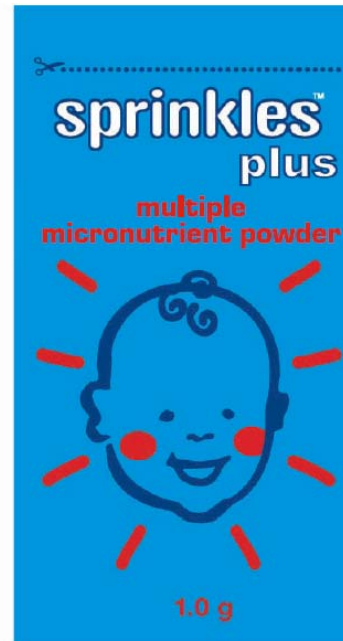
Vitamin A (Vitamin A Acetate)	400 µg	EXP.
Vitamin B1 (Thiamine Mononitrate)	0.5 mg	
Vitamin B2 (Riboflavin)	0.5 mg	MFG.
Vitamin B6 (Pyridoxine)	0.5 mg	
Vitamin B12 (Cyanocobalamin)	0.9 µg	
Vitamin C (Ascorbic Acid)	30 mg	
Vitamin D3 (Cholecalciferol)	5 µg	
Vitamin E (Vitamin E Acetate)	5.0 mg	
Folic Acid	150 µg	
Niacin (Niacinamide)	6.0 mg	
Copper (Cupric Gluconate)	0.56 mg	
Iodine (Potassium Iodide)	90 µg	
Iron (Ferrous Fumarate)	10 mg	
Zinc (Zinc Gluconate)	4.1 mg	
Selenium (Sodium Selenite)	17 µg	
Non-Medicinal Ingredients:	Maltodextrin, Silicon Dioxide	

Dose: Use 1 sachet daily.
Mix the contents of
1 sachet into a small
portion of food,
just before serving.



LOT NO.

Manufactured Under license by: Manisha Pharms Plast Pvt. Ltd.,
India for Sprinkles Global Health Initiative FOR EXPORT



Previous Sprinkles Studies

- HKI in Indonesia (2004) - showed that *Vitalita* Sprinkles containing 10 mg iron and other 13 vitamin and minerals can reduce anemia prevalence among children aged 6-30 months by 41-54% and iron-deficiency prevalence by 30-54%.
- KEMHRC and HSC Canada (2005) - demonstrated that Sprinkles with 12.5 mg iron effectively treated anemic children aged 6-18 months within a brief two-month period. During this period, mean hemoglobin increased from 88 g/L to 101 g/L and anemia prevalence decreased to 47%.



Goal & Objectives

Goal: To significantly reduce anemia and iron deficiency among young children through the sustainable, large-scale distribution of Sprinkles Plus in India.

Objectives:

- To assess the effectiveness of Sprinkles Plus pilot distribution to young children through the Anganwadi system in India
- To assess the effectiveness of the flexible administration of Sprinkles Plus in combating anemia among a sub-sample of the beneficiaries.

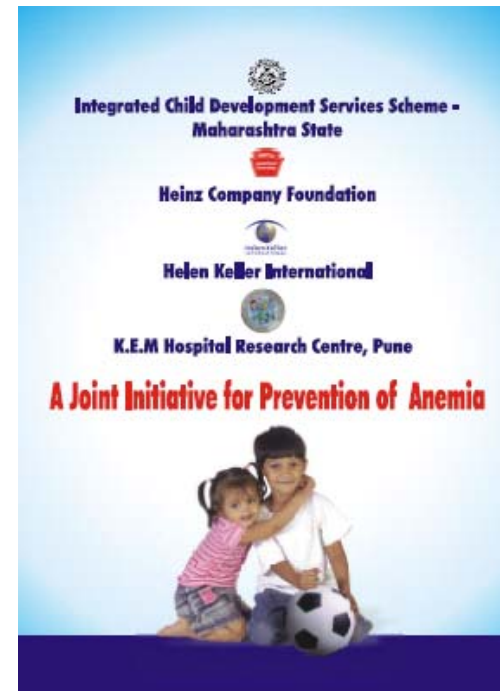


Public – Private Partnership

- Integrated Child Development Services
- KEM Hospital Research Centre Pune
- Helen Keller International
- HJ Heinz Company Foundation
- Heinz India
- Families with children from ages 6mo – 6yr years in 5 districts of Maharashtra state

Project areas: 5 Blocks in Maharashtra, India
(Haveli, Pune Urban, Junner, Indrapur in Pune District and Karjat in Raigard District)

- The Anganwadi Centers are managed by ICDS, and they provide families with children 6 months to 6 years with daily child care, meals, basic medical care and pre-school education.



Training The *Anganwadi* Workers

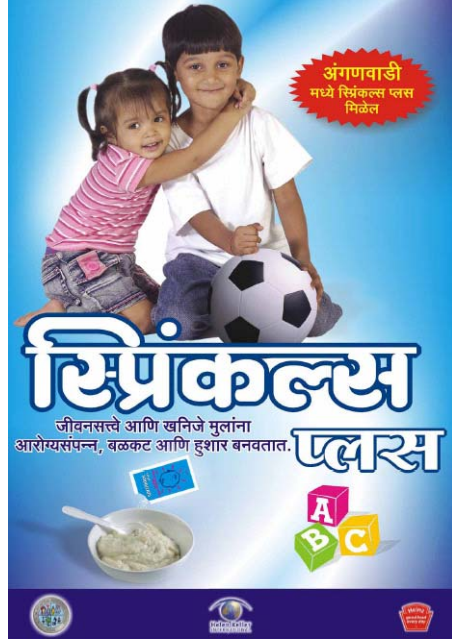
- A two-day training of trainers (TOT) workshop was conducted on 29-30 October 2007 and attended by 27 participants (Anganwadi supervisors, ICDS program officers from five districts).
- The TOT was followed by cascade training of Anganwadi workers in all five implementation pilot distribution sites. Number trained by block/site:
 - Haveli: 16; Pune urban: 22; Junnar: 41; Karjat: 52; Indapur: 46
- Assessment on the effectiveness of the training showed that the knowledge of the trainers had improved.
 - Knowledge about anemia improved from 65% to 83%.
 - Knowledge about *Sprinkles Plus* also improved, with the participants answering 83% of the questions correctly.

Program Launching

- The Sprinkles Plus program officially launched on the 14th of November 2007 which corresponded with India's National Children's Day.
- The Minister for Parliamentary Affairs and Women and Child Development officially launched the program
- The launching was well attended by the Indian media including TV and radio reporters.



Promotion and Training Materials



Promotion and Training Materials



What is Sprinkles Plus ?

- All parents want their children to grow up healthy, strong, energetic and smart.

For children to be healthy, strong, energetic and smart, they do not need only an intake of adequate and quality nutrients, but proper care and attention as well

- Children under six are very vulnerable to undernutrition, particularly to vitamin and mineral deficiencies. This is because the quantity and quality of nutrient intake from foods commonly fed to Children under six is not sufficient to meet their daily requirements.
- In India, the prevalence of anemia in children aged 6 months - 6 years reaches 75% or 3 out of 4 children under five, and the most common cause is lack of iron in their diet.
- Foods commonly fed to children under six tend to have a low iron content, and usually have a low content of other micronutrients
- A vitamin and mineral supplement is required, and in-home fortification offers one feasible alternative
- To help parents make sure that their children under six get an adequate nutrient intake, there is a new product called Sprinkles Plus
- Sprinkles Plus is a nutrient or food supplement for children under five years old that contains 15 essential vitamins and minerals, which can be mixed into their regular food
- Sprinkles Plus offers one way for a parent to fortify food in the home.

Promotion and Training Materials



सिप्रिंकलस

प्लस तुमच्या मुलांना
बनविते आरोग्यसंपन्न, मजबूत आणि हुशार

ह्यात १५ आवश्यक व्हिटॅमिन्स (जीवनसत्वे) व खनिजे आहेत
६ महिने ते ६ वर्ष वयाच्या मुलांसाठी

अंगणवाडी
मध्ये सिप्रिंकलस प्लस मिळेल



Promotion and Training Materials



स्प्रिंकलर्स प्लस



**झिंटिमन्स (जीवनरास्ते) व खगिजे जी बालकांना
बनवितात आरोग्यसांपन्न, मजबूत आणि हुशार**

झिंटिमन्स प्लस हे पाचवें वर्षासाठी ६ खगिजे ते राहू वर्षासाठी आवडीत
बालकांसाठी असलेले, जीवनसाथी आणि खनिजांनी परिपूर्ण आहे, हे लहान
मुलांसाठी पचत बनविजेलेल्या खाण्यावर सजवणे पसराता येते. लहान
मुलांने खाणे जीवजलसोखणे आणि खनिजांनी अधिक वैश्विक कल्पनासाठी
पसरेल आहे, झिंटिमन्स प्लस वाचू शकते. झिंटिमन्स प्लसमध्ये १५
अवसाधक जीवनसत्त्वे आणि खगिजे आहे:

- जीवशास्त्र ● जीवशास्त्र ४१, ४२, ४६, ४१२ ● जीवशास्त्र क, ड३, ६ ● जैविक उद्दिष्ट,
निर्देशित, कार्य ● आयोडिन, डिक, आयर्न, सेलेनियम

सिप्रिक्वस प्लसले कोणकोणो कायदे आउँछ?

मुलांही चांगली काळजी, सारेलख जगत केलेले अन्न आणि पोषण या बरोबरच, चिंतेकडून पलायन निश्चित वाचने :

- મુત્તાંબી મુશોમ વાઝ અને વિકાસ હોતો
- મુત્તાંબી પ્રતિકલનમત વાઝો
- મુત્તાંબી મુક વાઝો
- ૬ મહિને તે સગા વર્ગમાં આવીને મુત્તાંમણીને
હોવામાં કમળાનેમુકે હોવામાં સરકચવાલ વડેવ
લોકતામને અને ધાંતોને વેંમપાઠી સંભળીતા
હોવામાં ફરર સગાવતમાં પ્રતિબંધ હોતો.

निम्नलिखित प्रश्नों को ध्यानपूर्वक पढ़िए।

- સાચામાં પહોંત થત કથા તારત નથી.
- જાનવાળી જલ, શલ, મધમલ-કલકલના યાત થત હોત નથી.
- નિરિકલત પલત વાલતે કાવૈ મોપે સારે.

निम्नलिखित पदों का कौनो वाक्य में?

- ધર્મી સમપ્રત્યેલ્યા આગિ શ્રાવણવાદી સ્વાધર કાસેલેલ્યા અન્નાપાદે ધિવિવન્ના પ્લાસેલે ફક પાલીત ધિવસાનુન ઇલ્લા રાકા, ગમે લી માત લાગલો, પહે, રૂ, ગમે.
- ધિવિવન્ના પ્લાસ ધિવિવનુ નકા.
- જે કામે અનુદાની રવા આલે ત્વાત ધિવિવન્ના પ્લાસ ધિવિવનુ ત્વાત કલવા ત્વાનુમે ત્વાતીત ધેવકલ્લાલોધી પેવિત્તકાલ્લાલો નાત લોલેલ.
- અગી ધિવિવનુસે કેલો ગાલે લી ધિવિવન્ના પ્લાસ રૂપ, કાત, કિલા મુત અજાતારાલ્લા પેવિત્તકે ધિવિવનુ ફક, કાલ્લા ધિવિવન્ના પ્લાસ પાપ્પાત વિલ્લાલ માલી.



Distribution

- For children 3-6 years attending the Anganwadi Center, 1`sachet of Sprinkles Plus were administered daily by AWs to the individual meals served to these children.
- To reach younger children 6 months to 3 years, the mothers and caregivers of such children were trained by Aws to administered daily at home



Distribution

Sites	At Anganwadi	At Home	Total	Refusal	Start Date 2008
Karjat	5419	26	5445	0	16-Jan
Indapur	1606	2724	4330	37	21-Jan
Junner	1605	1410	3015	17	18-Jan
Haveli	835	1064	1899	0	24-Jan
Pune Slums	921	1514	2435	122	18-Jan
Total	10,386 (61%)	6738 (39%)	17,124	176	

Distribution



Distribution



Distribution



Monitoring & Evaluation

- Routine monitoring and supervisions (compliance card, etc)
- Pre-intervention and Post intervention assessment
 - Anemia assessed by HemoCue (Sweden)
 - Socioeconomic status, Knowledge Attitude and Practice of mothers, compliance, etc
 - Maternal exposure to IEC materials



Key Findings (preliminary)

- The prevalence of anemia in the total sub-sample of children was significantly reduced (Chi^2 , $P < 0.001$) from 50.8% to 33.7%, representing nearly a 34% reduction.
- The prevalence of illness (occurrences of coughing, fever, diarrhea, cold, headache, and stomach-ache) as reported by the mothers of the children was significantly decreased
- 73% of mothers had seen the media campaigns as compared to pre-intervention (17%) (Chi^2 , $p < 0.001$)
- Proportion of children who consumed 60 sachets/more was quite high (nearly 83%)
- Project monitoring indicated that the consumptions of Sprinkles Plus at Anganwadi Centers was going well; almost all the children ate the food that had been mixed with Sprinkles Plus.
- AWs and mothers also reported their subjective accounts (anecdotal Information) of the tangible benefits they felt the children gained from consuming Sprinkles Plus, including increases in weight, greater appetite and improved physical energy levels.

Conclusions

- Sprinkles Plus distribution through the Anganwadi system is effective in reducing anemia among children 6 months–6 years as shown by the decrease in the prevalence of anemia among children who consumed Sprinkles Plus through this project.
- Distribution through the Anganwadi system and at home is feasible. In order to ensure continued demand for and proper administration of Sprinkles Plus, the product must be promoted to Anganwadi workers and mothers as a way to keep children healthy rather than as a medicine or a cure for anemia.

Challenges

- AWs had difficulty maintaining compliance cards for all children because they are extremely busy and involved in many different programs. However this may only be the case in the unique situation of a pilot distribution study such as this.
- Because Sprinkles Plus, including its concept, is new, appropriate information and adequate training is required to ensure sufficient introduction is given to mothers and AWs to ensure acceptance and proper use.

Recommendations

- Training and refresher training are critical elements of a successful Sprinkles Plus distribution program and must be included in all future endeavors.
- The Training manual, IEC materials and messages based on all data collected during the pilot (both anecdotal and survey) should be reviewed and revised further in order to improve the strategy.
- In order to ensure compliance and rectify problems, a standard monitoring and evaluation system that regularly collects key information should be included.
- Results and lessons learned from this pilot distribution should be shared formally with decision makers at the various government levels to build support for scaling up elsewhere.
- To ensure sustainability, ICDS will need to take ownership of the program

Acknowledgement

- The Integrated Child Development Service Scheme
In Maharashtra, India
- Anganwadi Workers and helpers
- Mothers of Children under six years of age in the
program areas

Thank you!

