

## **KILLOL Project: A Unique Intervention to fight malnutrition among children**

### **Background:**

Gujarat has high levels of child malnutrition which is 47% as compared to the national average of 21%<sup>i</sup>. There are also regional disparities within the State and in the district identified for the Lab to Land Initiative Sabarkantha, there are about 34 % children who are malnourished and out of these 3% fall under the severe malnourished category<sup>ii</sup>. Gujarat is a State noted for reforms and good governance in almost every field of development but child malnutrition still persists and is a big challenge here. A child's entire life is determined in large measures by the food given to him during his first five years. Because a childhood period is one of rapid growth and development nutrition is one of the influencing factors in this period. Malnutrition causes a great deal of physical and emotional suffering and it is a violation of a child's human rights. Malnutrition substantially raises the risk of infant and child deaths, and increases the vulnerability to a variety of diseases in later life. Children who are undernourished and underweighted are likely to be less clever than if they were well fed<sup>iii</sup>. Health of children is of great importance as rapid growth occurs during this period. Good nutrition is a basic requirement for good health and a living organism is a product of nutrition. The nutrition of a child being of vital importance in the process of nation building, there are a large number of programs and policies<sup>iv</sup> to combat this problem. In Gujarat it is seen that malnutrition is not only affecting children but adults are also suffering from many macro & micronutrient deficiencies<sup>v</sup>.

The intervention by the DDO Sabarkantha was initiated when it was realized that combatting malnutrition is one of the Millennium Development Goals (MDG)<sup>vi</sup>. Malnutrition is directly or indirectly related to the infant mortality rate and under 5 (yrs.) mortality rate. Malnutrition is an underlying cause for 50 % of the infant mortality cases. In Himatnagar taluka of Sabarkantha District almost 37 % of ICDS beneficiaries between age group of 6 months to 5 years are malnourished out of which 3 % are severely malnourished<sup>vii</sup>.



It can be seen that malnutrition is persistent all over Gujarat and Sabarkantha comes in the highest range. "India is ranked 2nd in the region of the number of children suffering from malnutrition, after Bangladesh (in 2010), and 21% of the children exhibit a degree of malnutrition." World Bank India Country Report , 2010

### **Impact of Malnutrition:**

Good nutrition is ensured by the regular intake of a balanced diet, which is capable of supporting the individual consuming it, in a state of good health by providing the desired nutrients in required amounts. It must provide the right amount of fuel to execute normal physical activity. If the total amount of nutrients provided in the diet is insufficient, a state of under nutrition will develop. Under nutrition will lead to malnutrition and ultimately to severe malnutrition. A child's entire life is determined in large measures by the food given to him during his first five years.

Malnutrition is characterized by a wide array of health problems, including extreme weight loss, stunted growth, weakened resistance to infectious disease & impairment of intellect. Severe cases of malnutrition can lead to death. The effects of malnutrition on a community are both direct (subclinical nutrition deficiency disease like kwashiorkor, PEM (Protein Energy malnutrition) & indirect (high morbidity & mortality rate among young children) and finally affect the life of the community.

Damaging effects of malnutrition can pass from one generation to the next. Giving a child a solid nutritional start has an impact his/her life, on the physical, mental and social development. It may be also noted that a child's nutritional future begins before conception with the mother's nutritional status prior to pregnancy.

Not only is nutrition important for a child but also for its mother. If a woman is not taking proper nutrition during pregnancy her child can have LBW (Low Birth Weight) and if a child is

not consuming sufficient nutrition after birth, he/she can suffer from protein energy malnutrition, nutritional anemia, night blindness, rickets and suffer adverse mental growth.

### **Factors Affecting the Nutrition:**

#### ➤ **Cultural Influences:**

1. Food habits, customs & belief
2. Religious beliefs
3. Food fads
4. Cooking practices, child rearing practices

#### ➤ **Socio-Economic Factors:**

1. Poverty
2. Awareness
3. Education
4. Knowledge

### **KILLOL- Child Malnutrition Control Project:**

The KILLOL<sup>viii</sup> project is based on the premise that if a child has sufficient nutrition then only will there be a healthy smile on his/her face. Adequate nutrition during infancy is essential for lifelong health and wellbeing. Infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Thereafter, to meet their evolving nutritional requirements, infants should receive nutritionally adequate and safe complementary foods.

To achieve the goal of MDG- to reduce malnutrition in children from 47 % to 25%<sup>ix</sup>, District Development Officer Mr Ravi Kumar Arora (IAS) has initiated this project named “KILLOL- CHILD MALNUTRITION CONTROL PROJECT” in Himatnagar block (district Sabarkantha). This project was inaugurated by our Honorable Chief Minister Shri Narendra Modi on 06-04-2011. Before starting the project it was decided to coin an effective name for the project and for that DDO invited names from his team in the health department. Thus he coined the name KILLOL for the project in participatory and democratic manner. The name has an immediate socio-cultural impact and creates an empathy and awareness in the rural areas.

The DDO then decided to identify the factors which affect the nutritional status of a child in the identified block and did this through a household survey<sup>x</sup> that identifies the socio-economic status of the family, their literacy levels, food habits, sanitation habits, habitat dwellings, electricity availability etc.

The survey identified a total of 554 children in the block aged 6 months to 5 years children. As a third step to the project all these children were then given a medical checkup and

out of this 455 were identified as being in the severe malnourished category. A further 6 of them were referred to tertiary care.

### **Objective and Methodology:**

The objective of KILLLOL is to improve the nutritional status of children in the block and give health & nutrition education to the community especially to mothers, reduce under 5 year child mortality because of malnutrition and improve the physical & mental health of this age group.

1. The project mainly focused on improving nutritional status of all the grade 3 children aged 6 months to 5 years of age.
2. All the grade 3 children as per ICDS data were screened in respective PHCs by the Medical officer and underwent lab tests like hemoglobin examination, blood grouping, urine/stool test for detecting the presence of any other existing disease/ condition.
3. All the screened grade 3 children were then provided supplementary nutrition at the respective anganwadi center for 3 months (up to 24.7.2011)
4. The supplementary nutrition was given in the form of AMUL milk powder (2tsp) +Horlicks (1 tsp) in lukewarm water every day.
5. De-worming & IFA tablets and vitamin A were given in a syrup form.
6. Thereafter in the case of the children suffering from disease and some medical complication, this supplementary food was stopped immediately and the child was referred to nearest PHC immediately.
7. Three follow up medical examinations<sup>xi</sup> were carried out including Lab test and weight along with general health check up by medical officer and treated if required was given. Some serious cases are being referred to a pre-defined private pediatrician on a convenient date.

A photo ID card for the project has been developed specially, which includes 1. General information of the child. 2. General medical checkup details of the child. 3. Progressive chart for all stages. 4. Requirement of daily nutritious elements and availability of nutritious elements related information. The photo ID card is kept with the child's mother or guardian and the basic data has been entered by the survey staff of the health dept. Thereafter data has been recorded and entered by the doctors who have carried out the medical examinations.

### **Human Resources:**

The officers and workers<sup>xii</sup> involved in the project KILLLOL over and above their regular duties are as shown here.

No.	Name of Officer	Designation.
1	Mr.RaviAroraIAS	DDO SK
2	Dr.SatishK.Makvana	RCHO SK
3	Mrs.Bhagavatiben	PO ICDS SK

No.	Officer/worker	Nos.
1	Block Health Officer Himatnagar	1
2	Medical Officers&Ayush,DPA	10 (Mos) 6 (Ayush),1
3	CDPO Himatnagar	1
4	BIECO,HV,MPHS,Pharmacist	2,5,2,3
5	FHW,MPW	34,14
6	Lab Technician, FA	12,6
7	MS,AW	13,216

#### **Referral Analysis of the Killol Project:**

As informed earlier in the case study, the identified age group for this project is children of the block who are below six years of age. Out of the total children 455 were examined as they were seen to be weak and listless. Out of the 455 during baseline survey, 127 were found malnourished after medical examination and 6 were found to be suffering from various diseases and infections. These were treated by specialists after referral services were initiated. 121 children were provided nutritive food at the nearest identified anganvadi till the first follow up medical checkup. At the time of first checkup (7.5.2011) it was seen that the number of malnourished children was reduced from 121 to 43 and it was further reduced to 11 at the time of 2<sup>nd</sup> follow up checkup (24.5.2011). Later on at the time of third medical checkup (23.6.2011) there were no malnourished children.

**Outcome:** During the 1st follow up 357 children recorded an increased weight, 266 an increased Hb% & 86 children had a nutrition grade change<sup>xiii</sup>.

At the times of 4th followup (25.7.2011) out of 455;  
 Weight improvement – 440  
 Hb% improvement - 406  
 Grade change-217

And those 6 children who have been referred to tertiary care as they are suffering from severe disease like heart disease, urinary tract infection or retinal problems are also getting treatment in bigger hospitals of Ahmedabad. The status of six children referred to specialists for tertiary care is shown as under:

The key observations: child mortality because of malnutrition can be reduced if;

- A balanced diet is provided, that includes the consumption of milk & milk products (which are a good source of protein) green vegetables(source of vitamin A & iron) c
- Regular & continuous monitoring & health checkups
- Community awareness & health education
- Cooperation within different sections of the health department and between the health department and other related departments.

The results so far have been encouraging for the project. As a pilot project the DDO had selected Himatnagar block and now this project has been initiated in the Moyad village of the Lab to Land block of Prantij which falls in the same district. The survey work has already been initiated by the BNV of the village and the results will be brought to the National Colloquim.

i Malnourishment among children in India; a regional analysis – Indian Rank, World Bank Report 2005

ii As per local survey conducted by District Health Department, Sabarkantha District in 2011.

iii WHO Report Life in the 21st century – A vision for all. Geneva:

iv Various nutritious programs in the State are covered under the ICDS, and cover children, the nursing mothers, pregnant women and school going children

v The major deficiencies are anemia, goiter, calcium deficiency and these are referred to in the “Adult macro & micro malnutrition” chapter of the NFHS III, 2005

vi Millennium Development Goals, UN, 2000, adopted by India and published by the Directorate of Eco & Stats, Govt. of India IMR and MMR are Goal 6.

vii As per local survey conducted by District Health Department, Sabarkantha District in 2011.

viii Killol is a Gujarati word loosely translated to mean the joy and gay abandonment of a child or group of children playing

ix Millennium Development Goals, UN, 2000, adopted by India and published by the Directorate of Eco & Stats, Govt. of India

x District level Household Survey 2002-04, an independent agency

xi Anthropometry is the most useful tool for assessing the nutritional status of children. There are many anthropometric indicators in use, such as mid upper arm circumference (MUAC), weight for age, height for age, weight for height, and body mass index of Quetlet.

xii Abbreviations in the table are RCHO-Reproductive Child Health Officer, DPA-District Programme Associate, BIECO-Block Health Information & Education & Communication Officer, HV-Health Visitor  
MPHS-Multi Purpose Health Supervisor, FHW-Female Health Worker, MPW- Multi Purpose Worker  
FA-Financial Assistant, MS-Mukhya Sevika, AW-Anganwadi Worker

xiii The Grade formulae first introduced by Weech, using age as variable and is a tool developed by the National Center for Health Statistics (NCHS), New Delhi

Dr. Gauri Trivedi  
Director  
SIRD-SPIPA, Gujarat