

Some Success Stories:

- **Zinc Dispersible tablets for diarrhoea management**
 - BIBCOLD team developed simple, easily dispersible & cheap Zinc tablets for the National Public Health Programmes
 - Ministry of Health & Family Welfare, GOI recommendation: 20 mg of Zinc dispersible tablets for use in childhood diarrhea for 14 days. On the other hand, 10 mg per day recommended for infants 2-6 months.
 - As on date Department of Biotechnology has supplied approximately 1600 lakhs Zinc-D tablets to diarrhoea prone Indian States.

Severe Acute Malnutrition (SAM):

- Severe acute malnutrition (excessive thinness) is listed as a priority condition for reducing childhood mortality through product based nutrition intervention (Ready to Use Therapeutic Food or RUTF). However, this recommendation is primarily based on African data and the profile of malnutrition in South Asia is somewhat different. In collaboration with the Ministry of Health and Family Welfare and Indian Council of Medical Research, DBT led a National Alliance on SAM to generate scientific evidence to inform public health policy.
- Among a series of supported studies, the optimal diagnostic (cut-off of mid-arm circumference) for defining SAM in India was higher. In an intervention randomized controlled trial, efficacy and safety of commercially available RUTF was compared with locally produced RUTF equivalent and augmented home foods. Only ~1.1% of over 1,00,000 screened children between 6 months and 5 years of age had SAM. At the end of 4 months of free therapeutic foods (the longest duration for any SAM feeding trial), only half of the ~850 subjects had complete recovery (~40% without local woman support in initial phase). The locally created ready to use therapeutic food (RUTF) product had ~13% greater success while recovery rates with factory produced RUTF were similar to augmented home based foods. It is noteworthy that for four months (or till recovery), RUTF was the sole or predominant dietary intake for the selected children.
- Five indigenous Therapeutic Food Formulations in Ready-to-Eat form were developed as per WHO/UNICEF standards for “medical nutrition therapy” for rehabilitation of severe acute malnourished child. A pilot scale demonstration unit with 100 kg/day capacity, was designed and developed according to GMP and GLP norms by IIT Kharagpur. The developed Therapeutic Food Formulations in Ready-to-Eat form and their process technology was formally transferred to an industry for commercialization
- BIBCOLD (Bharat Immunologicals and Biologicals) through Department of Biotechnology’s programme support has developed a formulation consisting of a mix of seven minerals & thirteen vitamins in a sachet aimed for treatment of severely malnourished children.

- **Iron deficiency anemia:**

- Sodium-Iron-EDTA fortified wheat flour has been developed and its efficacy established in school children through clinical studies. The prevalence of iron deficiency and iron deficiency anemia reduced significantly in school children (n = 401) fed with iron fortified wheat flour over a period of 7 months compared to the control group.
- Technology has been developed on Iron , Vit B₁₂, folate fortified rice premix from broken rice kernels through extrusion process. An indigenously designed and fabricated pilot scale demonstration facility with a production capacity of producing 100 kg/day iron fortified rice premix has been established at IIT Kharagpur with the financial support from the Department of Biotechnology.

Outcome of last 5 years: Publications-102; Patents filed/granted-9; No. of technologies developed/licensed/commercialized/Start-up created-13; Manpower trained-409