

## Dear Readers,

The 'Scaling Up Zinc for Young Children with Diarrhoea in Bangladesh (SUZY)' Project is a new initiative of ICDDR,B: Centre for Health and Population Research. The project aims to provide zinc as a treatment to all preschool-aged children in Bangladesh when they suffer from diarrhoea. The goal is to reach all children regardless of their gender, where they live, the income status of their parent, or the circumstances under which they grow up.

Zinc has been proven to be an effective treatment for childhood diarrhoea. Zinc treatment reduces the severity and duration of diarrhoea as well as the likelihood of future episodes of diarrhoea and the need for hospitalisation. Most important, zinc treatment can save a child's life. It has been estimated that zinc treatment could save between 30,000 and 70,000 lives of young children only in Bangladesh each year. Worldwide, the lives of more than 400,000 children could be saved each year if zinc was available to them as a treatment at times when they suffer from diarrhoea. Diarrhoea is still one of the worst diseases in developing countries, killing about 2 million children each year.

Zinc has never been scaled up in a large population or a country as a whole before. With this new project new challenges come:

- The scaling up process requires a well-designed marketing campaign to inform the target population about this new treatment, its advantages and the availability of zinc;
- We want to produce the tablets in Bangladesh. Square Pharmaceuticals, a local company already helped us producing and packaging the tablets needed for the research phase (at cost). Together with Nutriset, the french Company, that developed our zinc premix formula, we are now look-

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## First International Conference on Scaling Up Zinc Treatment for Young Children with Diarrhoea

Date: 19-20 April 2004

Venue: ICDDR,B: Centre for Health and Population Research  
Dhaka, Bangladesh

On 19 April, presentations will focus on results of research undertaken under the SUZY project and an update on the project implementation process. In addition, guest speakers will inform about zinc treatment projects in other parts of the world.

Presentations on 19 April are open to the public. There is no attendance fee. However, registration is required and only a limited number of visitors can be accepted. If you wish to attend this event, please register per e-mail or fax to:

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## Initial findings of the formative research project

Lauren Blum, Medical Anthropologist, Social and Behavioural Sciences Unit, ICDDR,B

As part of the project entitled "Scaling Up Zinc Treatment for Young Children with Diarrhoea in Bangladesh", formative research is presently being carried out in one urban and one rural research site. The overall aim is to gain an understanding of key issues affecting the treatment of diarrhoeal diseases in children under 5 years of age. Primary topics that are being explored include the identification of local categories of diarrhoeal illnesses, the differentiation of signs and symptoms and causal explanations associated with these illnesses, home management of diarrhoea, perceptions of appropriate care providers for diarrhoeal cases, treatment expectations, barriers to treat-

ment compliance and concepts related to prevention and treatment. We are also examining perceptions of vitamins and minerals, with a focus on zinc and the acceptability of zinc during diarrhoeal episodes. The findings will be used to develop culturally relevant and appropriate messages promoting the use of zinc for treatment of diarrhoeal disease in children under five years of age.

The study design encompasses a mix of methods such as key informant interviews, household observations of management of diarrhoeal cases, narratives of recent diarrhoeal cases, semi-structured interviews with mothers and other childcare providers and a variety of health

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ing for a partner for the next phases.

- We are developing distribution systems in cooperation with government organizations, with the help of NGOs and in cooperation with the private sector to reach out with our zinc campaign even in the remotest areas of Bangladesh;
- Comprehensive training programs are required to spread the message about zinc among health professionals, e.g. doctors, pharmacists, drug sellers and sales people and all others involved in the distribution process.

This newsletter is intended to keep interested people informed about the scaling up process and the research that accompanies and supports this process. This first issue will, in fact, focus on the formative research that is being conducted to inform the marketing campaign which is under preparation.

The newsletter will only provide brief updates and overviews of our work. For more information we would like you to visit our homepage at:

<http://www.icddrb.org/activity/SUZY>. There we will provide all the detail about the SUZY project.

Another purpose of this first issue of SUZY NEWS is to inform you about the conference that will be held in Dhaka on 19th and 20th of April, 2004. The conference will present the official starting point of the SUZY project.

I hope you'll enjoy this first edition of SUZY NEWS.

**Ralf Ernst**

Information Dissemination Advisor  
SUZY Project

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practitioners, cognitive mapping procedures involving free listing and rating exercises, and group discussions. Two research teams are carrying out data collection and all interviewers have extensive training in qualitative data collection techniques.

One of the first exercises was to collect free listing exercises, carried out with the goal of generating a preliminary inventory of the cultural domain of diarrhoeal disease and a working vocabulary of the terminology related to diarrhoeal illnesses commonly used in the community. Through free listing, we have identified 29 local illnesses in each of our research sites. Each illness has different terminology, associated signs and symptoms and perceived causes and appropriate treatment. Interestingly, while the sites differ considerably in size and are located at opposite ends of the country, only four diarrhoeal illnesses differed on the lists generated from each research community.

Our preliminary findings suggest that management of diarrhoeal illnesses first involves home remedies or dietary modifications designed to counteract the internal heat associated with most diarrhoeal illnesses. Diarrhoeal illnesses are commonly linked to the excessive intake of "hot" foods, referring to the hot/cold humoral theories that are followed in many regions of Asia. In this context, hot foods include spices, particularly chilli, as well as foods high in fat such as oil, meats and milk. These humoral traditions still influence causal interpretations and often guide therapeutic interventions during times of illness.

Care seeking outside the household occurs in the case of perceived severe symptoms, particularly increased stool frequency, vomiting or weakness. While first treatment is commonly sought with allopathic practitioners such as shopkeepers or village "doctors", young infants under six months of age are believed to be unable to tolerate the perceived harsh effects of allopathic medicines.

As a result, they are first taken to homeopaths who offer slow acting, less "powerful" medicines. Although our respondents are highly aware of the importance of ORS, application during childhood diarrhoea appears to be infrequent and often inappropriate. For instance, in this culture where people believe that all items consumed by the breastfeeding mother are transmitted directly to the breastfed child, a common practice is for the breastfeeding mother rather than the young child suffering from a diarrhoeal illness to take ORS.

Although respondents are familiar with the term vitamin, they have limited knowledge of zinc. Our findings suggest that vitamins are given post diarrhoeal episodes to provide strength to the young child who was "weakened" by the illness. Vitamins are believed to increase the frequency of stool output and therefore avoided during diarrhoeal episodes. The findings also show that care providers prefer to give syrup rather than tablets to young children.

Our interviews with health practitioners reveal that village "doctors" or shopkeepers commonly distribute zinc, which is generally prescribed by a trained physician, in a syrup form. In fact, in the urban research setting we have identified 12 brands of zinc, while in rural site 22 brands are presently on the market. At present, practitioners prescribe zinc to increase growth, reverse weakness, increase appetite, and improve digestion. We have also learned through interviews and observations that allopathic providers prefer tablets to syrup; this is because in tablet form practitioners can sell single doses of medicines.



**Contact details**

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## Qualitative Research: A Case Study

Nazmun Nahar, Senior Research Officer, Social and Behavioural Sciences Unit, ICDDR,B

The formative research for "Scaling up Zinc as a Treatment for Childhood Diarrhoea in Bangladesh: Monitoring the Impact of Public, Private and NGO Delivery Strategies" began in July 2003. Research is being carried out in one urban and one rural setting. The following description comes from the urban research community.

From the year 1997 to 2000 the population has doubled in Kamalapur, a densely populated hub of Dhaka, because of the rapid growth and migration from rural areas. The result of this rapid growth is a chaotic mix of permanent structures and clusters of temporary squatter settlements that reflects the socio-economic condition of the inhabitants, most of whom are very poor. The study is going on intensively in the communities of Manda and Manik Nagar, predominantly slums, and both of these areas are densely populated, consisting of housing structures made of tin and bamboo with mud floors. The room rent is Tk.700 to Tk.1200 (\$ 12-20) per month. Around 20 different families in one compound share all the accommodations together; kitchen, bathroom, toilet and water sources. Most of the families rely on daily wage earnings ranging from Tk.80 to Tk.120 (\$1.20- \$2) per day; common male occupations include rickshaw puller and small business, while most women remain at home taking care of their small children and fulfilling other household responsibilities. Due to the congestion and extreme poverty it is hard to maintain a clean environment and the result is dirty drains and canals with odours constantly permeating the air.

### A Case Study

An example of the living conditions and behaviours associated with diarrhoeal management is illustrated through the following case study.

Ayeisha (25 yrs) is a mother of three children and works as a daily labourer in the road construction. She left her job temporarily to take care of her newborn. Her husband is a rickshaw puller.

The room in the slum she lives in is dirty and has a foul smell. Her daughter, Bina (2 yrs), has been suffering from acute diarrhoea for 3 days. During our visit, Ayeisha was continually talking about her maladies; specifically, she complained that she feels very weak and asked for medicine to strengthen her. She also talked about her children who suffer from "ill-health" and are "thin". During the five-hour period that we spent in her home, Ayeisha did not eat or even cook food for herself or her children. Her two daughters had nothing but plain rice with salt that was prepared the night before. As we were leaving her house, Ayeisha did go to the communal kitchen to cook rice but, due to the high demand, did not get access to the kitchen to cook rice but, due to the high demand, did not get access to the kitchen. The cause of Ayeisha's weakness was easily understood from the above observation.

*Ayeisha and the rest of her family, who from an economic standpoint are living on the bare minimum, are simply hungry.*

Some observations of disease transmission are:

- During the visit, her youngest child defecated several times. Ayesha cleaned the baby by wiping him with a piece of cloth and when the baby defecated in her lap she used the same cloth to wipe her shari. While she washed the baby with her hand after he defecated, she never washed herself with soap.
- In regard to Bina, who was suffering from diarrhoea and showed signs of dehydration, her mother never offered her even water during the five hours of our visit. Rather, it was observed that Bina was frequently helping herself to water. We did learn that the previous night Bina, who had been passing stool frequently, was given rice saline that her father purchased in a local medicine shop, which was the only treatment given

to the child.

### Common Perceptions and Practices during Diarrhoea

- It is found that diarrhoeal illnesses are considered serious for both young children and adults. However, the perceived cause of diarrhoeal illnesses is different for breastfeeding children and adults. For the breastfeeding child, a common interpretation is that the child gets diarrhoea by taking mother's milk, which is contaminated by batash laga ("evil air") or nozor laga ("evil eye"), and subsequently infects the breastfeeding child. Another explanation is that a worm located in the child's stomach is causing the diarrhoea. It is interesting to note that people also associate it with un-cleanliness, or the consumption of stale or rotten food.
- Cures for breastfeeding children with diarrhoea are also believed to be transmitted through the mother's milk. In our study area, mothers know about ORS and the importance of giving it to children with persistent diarrhoea. However, there is a common belief that breastfeeding children suffering from acute diarrhoea do not need to drink ORS themselves. Therefore, as all the food and drinks taken by the mother are perceived to be received directly by the baby, the mother often consumes the ORS rather than the baby.
- Another practice is to mix the ORS in suji (a local porridge) and give it to the baby. Mothers of breastfeeding children with diarrhoea also commonly take traditional home remedies such as green banana and pressed rice water for treatment.

### Conclusion

These examples illustrate how the mix of biomedical knowledge and tradition-

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al beliefs and practices can interact. In all social groups today the construction of understandings about illnesses involves a combination of local cultural ideas and new kinds of information from the wider world. In Kamalapur, the vast majority of people know about ORS from media like television and radio and door-to-door campaigns. They also know about proper hygiene and sanitation. However, it appears that biomedical messages are frequently filtered through and combined with cultural knowledge and, as a result, may be misinterpreted. Ultimately, actual household practices may not always be ideal.

### **Our Purpose**

In regard to zinc, our findings suggest that people do not know about zinc. Our goal is to develop communication efforts that will transmit culturally relevant and appropriate information to encourage the use of zinc during diarrhoeal episodes. For example, through our formative findings we have uncovered the belief that "vitamins" increase stool output and therefore are viewed as inappropriate during diarrhoeal episodes. Therefore, we know that we should not refer to zinc as a vitamin. We also have learned that compliance to medications is often poor. Therefore, we have to be innovative in framing our messages to encourage people to take the full zinc dose. Our research also illuminates that community members prioritize treatment rather than prevention. We will therefore need to be strategic in first emphasizing the curative effects of zinc.

## **FAQs: Frequently Asked Questions About Zinc**

Sumona Liza, Information Dissemination Manager, SUZY Project

### **1. What is Zinc? What does it do?**

Zinc is not a vitamin. It is an essential mineral found in almost every cell in the body. It stimulates the activity of approximately 100 enzymes that help in the biochemical reaction in the body. It supports a healthy immune system and is needed for wound healing. It also helps to maintain taste and smell, and is needed for DNA synthesis.

### **2. What are the natural sources of zinc?**

The natural sources of zinc are: red meat, poultry, beans, nuts, whole grain, dairy products, and certain seafood like oysters.

### **3. What happens in chronic zinc deficiency?**

Chronic and severe zinc deficiency causes growth retardation, hair loss, diarrhoea, delayed sexual maturation and impotence, eye and skin lesions, loss of appetite, delayed wound healing, taste abnormality and mental lethargy.

### **4. What does zinc do during diarrhoea?**

Zinc strengthens the immune system and helps the patient to recover faster during diarrhoea. By using zinc there is a reduction of stool volume and the child reaches faster the stage of recovery. There is also less chance of being attacked by diarrhoea for a second time. The use of zinc during

episodes of diarrhoea reduces the death rates of children under 5. It also assists in the development of physical growth.

### **5. What is the dose and duration of zinc treatment in diarrhoea? Is there any side effect of the above dose?**

For the treatment of diarrhoea 1 20mg tablet per day is prescribed for 10 days. The 20 mg dose is perfect for children from 6 months to under 5 years and there are no proven side effects. Like vitamin-B zinc is not stored in the body so only the required amount is absorbed in the body.

### **6. Why tablets and not syrup?**

There are several zinc syrups available in the market and they are as effective as the tablets during diarrhoea. However, tablets have a number of advantages over syrup:

- They are easier to store and more convenient for the drug sellers to sell
- It is easier to deliver the prescribed amount (20mg per day)
- The days of treatment can be counted easily by the caretakers (as there are 10 tablets)
- Tablets are less costly (the syrup costs around Tk.28-32 where as the blister pack cost Tk.12-15)

### **7. How to give the tablet?**

Take a tablespoon, put the tablet in it and add a few drops of water. Within 10-20 seconds it will dissolve into syrup and then give it to the child.

### **8. Is it an alternative to ORS?**

Zinc is not an alternative to ORS but an adjunct to it. While ORS helps in rehydration, zinc helps in reducing frequency of loose motion and duration of diarrhoeal attack.

