OPERATIONAL GUIDELINES

CONTROL OF CHILDHOOD DIARRHOEA THROUGH SCALING-UP ZINC and ORS

Child Health Division,
Ministry of Health & Family Welfare
Government of India, 2013
The National Rural Health Mission and Millennium Development Goals aim towards reduction of child mortality in the country. Among the major causes of Under Five Mortality in the country is Diarrhoea, to which around 2 lakh children each year are lost. Diarrhoea is an easily preventable and treatable cause of childhood illness contributing towards child mortality. Diarrhoeal diseases contribute to malnutrition in children as in a large number of undernourished children, leads to a life-threatening condition. ORS treatment has been advocated by Ministry of Health & Family Welfare, GoI for treatment and control of diarrhoea. The present guidelines have been introduced for combined use of ORS and Zinc in diarrhoeal cases in children Under Five Years of age as Oral Rehydration Salts (ORS) and Zinc, can avert nearly 90 per cent of Under Five Diarrhoeal deaths.

The purpose of the guidelines is to assist the States and UTs in understanding technical and managerial details for successful planning, implementation and monitoring of ORS-Zinc therapy for diarrhoea in under-five children. I am hopeful that these guidelines would be useful for Medical officers and managers at State, District, Block and PHC level for roll out of interventions for management of diarrhoeal diseases.

I earnestly hope that States and UTs would place due emphasis on management of diarrhoeal diseases under the National Rural Health Mission and find these guidelines promising towards reducing child mortality in the country through these simple and cost effective interventions.

Ms. Anuradha Gupta
February 2013
New Delhi
Additional Secretary & Mission Director-NRHM
With only three years left to achieve the Millennium Development Goals, there is a need to substantially accelerate progress to reduce child mortality by two-thirds by 2015. In pursuit of this, Government of India has been strengthening and expanding access to immunizations and child health services more extensively. However, diarrhoea is one of the most common childhood illnesses that impose a heavy disease burden with a major share of mortality in children. Over 200,000 children lose their lives every year to this easily manageable condition that call for urgent implementation of interventions to effectively manage this condition in order to achieve MDG 4.

Two advances in managing diarrhoeal diseases – use of low osmolality oral rehydration salts (ORS) as well as use of Zinc can drastically reduce the number of diarrhoeal deaths along with reduction in the duration and severity of diarrhoeal episodes. Treatment of dehydration with appropriate use of ORS and Zinc, breastfeeding and continued feeding leads to faster recovery from diarrhoeal illness. While the management of diarrhoea seemingly appears to be simple, the challenge has been non-adherence to the treatment protocols both by public and private health service providers and availability of essential commodities like ORS and Zinc at all levels of public health system and in the open market.

The current guidelines have been developed with the perspective of bringing the focus back on the basics and facilitating the State health programme managers for successful planning for scaling up of ORS and Zinc use for reduction in childhood deaths resulting from diarrhoea. I hope that the States would utilise these guidelines to the fullest for saving lives of children from this easily preventable cause of childhood deaths.

Dr. Rakesh Kumar

February 2013
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### Purpose of the Guidelines

- Assist the State and District level managers in planning and implementing the ORS Zinc scale up for Childhood diarrhoea management
- Provide guidance to overcome issues of procurement and availability of supplies of zinc and ORS
- Inform technical facts related to ORS Zinc administration for Childhood diarrhoea
- Define the roles and responsibilities of various officials
- Detail the monitoring & evaluation mechanism and training strategy for ORS Zinc Scale up
- Assist States and UTs for using the media and face-to-face communication, promote and refine messages on diarrhea prevention, home management of diarrhoea and appropriate care-seeking
I. Introduction

Diarrhoea is one of the major causes of mortality among under five population as it contributes for 11 per cent of deaths in the age group beyond neonatal period. Over 200,000 children lose their lives every year to this easily manageable condition. Despite improving trends, the persistently high mortality and disease burden resulting from diarrhoea call for urgent implementation of interventions to effectively manage this condition in order to achieve MDG 4.

Acute diarrhoea still is a major cause of under five deaths in the country. Defined as passage of three of more loosened stools per day, diarrhoea is classified as acute (few hours to days), acute bloody diarrhoea or dysentery and persistent diarrhoea (14 days). Diarrhoea is a leading cause of child mortality and morbidity, on an average a child suffers from 1.7 episodes per year. Death can follow severe dehydration if body fluids and electrolytes are not replenished. Thus immediate hydration with ORS and Zinc should start at the earliest with onset of diarrhoea.

Infection is predominant cause for diarrhoea majorly through contaminated water and unhygienic behaviour. Children who die from diarrhoea often suffer from underlying malnutrition, which increases susceptibility to diarrhoea and other acute infections of childhood, like ARI. Each diarrhoeal episode, in turn, makes their malnutrition even worse..

Two advances in managing diarrhoeal disease – oral rehydration salts (ORS) containing lower concentrations of glucose and salt, and using zinc supplementation – can drastically reduce the number of child deaths. Treatment of diarrhoea with Zinc supplementation reduces the duration and severity of diarrhoeal episodes and likelihood of subsequent infections for 2-3 months. (Bhutta ZA et al; American Journal of Clinical Nutrition; 2000, 72(0): 1516-22)

It is estimated that treatment of diarrhoea with Oral Rehydration Salts (ORS) and Zinc, can avert nearly 90 per cent of the deaths.
**II. Rationale**

Diarrhoeal diseases are one of the leading causes of death among underfive children in low and middle income countries and also in India. According to the NCMH Background Papers, the total diarrhoeal deaths among 0-6 years were 1,58,209; (SRS, 1998-2001). According to recent estimates from the Million Death Study, diarrhoeal diseases account for 0.30 million deaths in children aged 1-59 months; and together with pneumonia, account for 50 per cent of all deaths at 1-59 months. Around 25,000 children die due to diarrhoea in a month, around 800 in a day. In children 1-4 years of age, diarrhoea is the leading cause of death, responsible for 23.8 per cent of all deaths in this age group. Diarrhoea is an important cause of death in children of older age group (6 to 14 yrs). It is estimated that about 18% of deaths in children aged 5 to 14 years were due to diarrhoeal diseases and, in 2005, about 59,000 children of this age group, died from diarrheal diseases. Mortality was nearly 50% higher in girls than in boys. (Million death study; 2006). Zinc deficiency is one of the primary reasons for this unacceptably high burden of diarrhoeal deaths.

**Zinc Deficiency in Indian Children**

Zinc is an essential trace element that is required for normal intestinal mucosal integrity, sodium and water transport and immune function. Zinc deficiency is common in India, for the following reasons:

- Poor intake: Zinc is found mainly in non vegetarian foods. Since the diet eaten in India is predominantly vegetarian, the intake of Zinc is poor
- Poor absorption of Zinc from the diet because of presence of phytates in cereals
- Loss of Zinc from the body during diarrhoea

**Zinc deficiency in children results in:**

- Increased risk of diarrhoea, pneumonia and malaria because Zinc deficiency affects the immunity of the body
- Increased severity of diarrhoea - makes episodes of a diarrhoeal illness in a child more severe, last longer and increases the risk of dehydration and other complications
- Impaired growth

**Benefits of giving Zinc in a child having diarrhoea are:**

- Are more playful during the illness
- Recover faster
- Have reduced amount of diarrhoeal stools.
- Have lesser chances of diarrhoea lasting for >7 days
- Have lesser chances of being hospitalized
- Are less frequently given unnecessary oral and injectable drugs; and cost of care is reduced
- Have lesser chances of getting diarrhoea and pneumonia over the next 2–3 months
• Have substantially increased use of ORS when Zinc and ORS are promoted together, as compared to ORS alone

According to estimates, Zinc for the treatment of diarrhoea will reduce diarrhoea mortality and hospitalization by 23 per cent, prolonged diarrhoea (diarrhoea lasting > 7 days) by 33 per cent and prevalence of diarrhoea following the treated episode by 19 per cent.

III. ORS and zinc therapy for childhood diarrhoea: Key aspects

3.1 ORS Dosage Recommendation:
The amount of ORS needed is provided as per age of the child and degree of dehydration. Refer to Annexure I for details of diarrhoea management as per dehydration. Breastfeeding/feeding as per age should be continued. See Annexure II for feeding recommendations and diets during diarrhoea.

3.2 Zinc Dosage Recommendation:
Zinc is very safe drug and has a very large window of safety. Zinc dispersible tablets are to be given in each diarrhoeal episode along with low osmolality ORS or Oral rehydration therapy (in case ORS is not available), irrespective of type of dehydration as per following doses:

<table>
<thead>
<tr>
<th>Age</th>
<th>Zinc Dosage Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-6 months (i.e 5 completed months)</td>
<td>10 mg/per day for 14 days</td>
</tr>
<tr>
<td>6 months to 60 months</td>
<td>20 mg/per day for 14 days</td>
</tr>
</tbody>
</table>

However in case of severe dehydration, oral zinc administration should begin as soon as the child is stabilised and able to eat.

3.3 Zinc administration as per age of child:

a) Children from 2-6 months:
Children aged between 2-6 months should be given 10 mg of elemental zinc per day for a total period of 14 days from the day of onset of diarrhoea. A tablet of zinc contains 20 mg of elemental zinc. Therefore half tablet should be given to the children in this age group. Zinc when supplied in the form of dispersible tablets, easily dissolves in breast milk or water. Therefore, in infants below 6 months of age, the tablet should be given by dissolving in breast milk and in infants above 6 months of age, it should be given by dissolving in breast milk or water.

b) Children above 6 months:
One full tablet should be given to all children with diarrhoea above 6 months of age. It should start from the day of onset of diarrhoea and continued for a total period of 14 days.
3.4 Formulation:
Zinc sulphate dispersible tablets should contain not less than 95.0 percent and not more than 105.0 percent of zinc sulphate, monohydrate, ZnSO4.H2O (as per standards of India Pharmacopeia). It may contain one or more suitable flavors and sweeteners. As the zinc tablets will be used in infants and young children, it is essential that the tablets be dispersible. This means that the tablets should be completely disaggregated in about 30 seconds or less than 60 seconds in 5 ml of water or breast milk. Zinc fortified ORS is not recommended. The standards for Zn and ORS as per the standards for zinc and ORS as per Indian Pharmacopoeia 2010 addendum 2012 should be maintained/followed.

3.5 Product:
Zinc dispersible tablets may be made available separately or packaged together with ORS (14 tablets of Zinc and 2 packets of ORS) as Diarrhoea Treatment Kit (DTK).
IV. Operationalizing Zinc ORS scale up in a district

There are **FOUR** components that the concerned district and block officials/managers need to ensure for providing quality services:

- Training or Orientation of service providers (Section V)
- Supply of Zinc and ORS (Section VI)
- Monitoring progress (Refer Chapter VII)
- Undertake community awareness (Refer Chapter VIII)

Planning and implementation for Zinc ORS Scale up starts from State level up to sub block levels. At each of these levels, chief activities include preparing programme plans and budget for procurement of Zinc and ORS, conducting trainings of Medical Officers and frontline health workers, handholding and supportive supervision, review of Zinc ORS stock position and utilization during review meetings, monthly reporting.

The supplies of Zinc and ORS are to be maintained at each public health facility and ASHA should be the village level depot holder of ORS and Zinc tablets. It is to be ensured that Zinc and ORS is provided to all cases of childhood diarrhoea seeking care at DH/CHC/PHC/Additional PHC/Sub Centres.
V. Supply of Zinc and ORS

Demand Estimation: It is critical to ensure availability of standard quality ORS and Zinc products with frontline public sector health workers. In order to ensure this intelligent procurement decisions at state level along with informed assumptions about number of diarrhoeal episodes that will be treated by different public sector health personnel need to be made.

Provided below is the Calculation Table for Demand estimation of Zinc and ORS at District level:

<table>
<thead>
<tr>
<th></th>
<th>Villlage</th>
<th>Sub-centre</th>
<th>PHC</th>
<th>Block level</th>
<th>District</th>
<th>Assumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Average total population</td>
<td>1,000</td>
<td>5,000</td>
<td>30,000</td>
<td>150,000</td>
<td>2,000,000</td>
</tr>
<tr>
<td>b</td>
<td>Average Estimated under 5 children population</td>
<td>100</td>
<td>500</td>
<td>3,000</td>
<td>15,000</td>
<td>200,000</td>
</tr>
<tr>
<td>c</td>
<td>Estimated no. of diarrheal episodes per child in a year</td>
<td>1.7</td>
<td>1.7</td>
<td>1.7</td>
<td>1.7</td>
<td>1.7</td>
</tr>
<tr>
<td>d</td>
<td>Total estimated diarrheal episodes in a year</td>
<td>171</td>
<td>855</td>
<td>5,130</td>
<td>25,650</td>
<td>342,000</td>
</tr>
<tr>
<td>e</td>
<td>Number of children (caregivers/mothers) who will seek care for diarrhea in public sector</td>
<td>68</td>
<td>342</td>
<td>2,052</td>
<td>10,260</td>
<td>136,800</td>
</tr>
<tr>
<td>f</td>
<td>Total estimated requirement of ORS (1 litre pack)</td>
<td>137</td>
<td>684</td>
<td>4,104</td>
<td>20,520</td>
<td>273,600</td>
</tr>
<tr>
<td>g</td>
<td>Total estimated requirement of Zinc (20 mg)/No. of 20 mg tablets</td>
<td>952</td>
<td>4,788</td>
<td>28,728</td>
<td>1,43,640</td>
<td>19,15,200</td>
</tr>
<tr>
<td>h</td>
<td>Estimated requirement of ORS packets for children above 5 years and adults</td>
<td>200</td>
<td>1,000</td>
<td>6,000</td>
<td>30,000</td>
<td>400,000</td>
</tr>
</tbody>
</table>

States can also explore to procure a ‘Diarrhoea Treatment Kit’ (DTK) that has two 21g sachets of ORS and 14 tablets of zinc (see box). The treatment kits can ensure that every child treated for diarrhoea can get both Zinc and ORS. The standards for Zinc and ORS as per Indian Pharmacopoeia 2010 addendum 2012.
VI. Training or Orientation of service providers

Integration with Relevant Ongoing Trainings in the State

- The present diarrhoea management guidelines can be integrated into ongoing trainings in the state wherever relevant, for example, ASHA modular training, Pre & In service IMNCI trainings for Physicians and Health workers.
- The guidelines should also be integrated in the curriculum of the basic training of MBBS/Post graduate students, Nurses, ANMs, AWWs and ASHAs.

Half to one day of orientation training on ORS-Zinc for all health staff may be undertaken for orientation on zinc administration and refresher on diarrhoea management protocols. The districts may utilise monthly PHC meetings for the same.
VII. Monitoring & Evaluation

(i) Monthly Progress reporting
Monthly progress reports should be prepared and compiled at all levels on the reporting formats designed to track treated childhood diarrhoea cases, provision of treatment with zinc and ORS and stock status. These reports are to be prepared at village level by ASHA and further compiled at HSC, PHC, district and state level.

(ii) Periodic visits to the CHC/PHC/SC/AWW/ASHA
District, block, PHC level officials should monitor provision of Zinc and ORS to children with diarrhoea during monitoring field visits to the PHCs, SCs, AWW, and ASHA. Joint visits may be planned by the health and WCD officials from the district/block/sector levels.

(iii) Home visits to children with diarrhoea treated by the health worker
District/Block/PHC Medical Officers/Supervisors can identify few children treated for diarrhoea in previous 2 weeks from the records/information given by the health worker and visit them at home to assess caregivers’ knowledge on following aspects:

- Does the family know which home available fluids to give, how to prepare ORS?
- Are they giving ORS and Zinc tablets as per recommendations?
- Do they understand the benefits of giving Zinc for 14 days?

Entry in HMIS is to be ensured each month.

Indicators that can be tracked with the help of monthly reports
Following are the main areas of diarrhoea program that need to be monitored and reviewed on regular basis to track program progress and take corrective measures if required:

1. Treatment of cases
   - No. of children (< 5 years) treated for diarrhoea
   - No. (%) of children treated with both Zinc and ORS
   - No. (%) of children with diarrhoea treated with only ORS

2. Supplies of Zinc and ORS
   - Balance stock of ORS and Zinc available at various levels-State/District/Block.
   - No. of facilities/ functionaries reporting stock-out of Zinc and ORS per block.
   - Deaths due to diarrhoea
   - No. of deaths due to diarrhoea in 0-5 years/6-14 years with Male/Female.
The sample Reporting formats for collecting information on the above indicators are annexed (annexure no 2, 3 and 4). States may explore options of integrating the above indicators into existing reports if feasible.

VIII. Undertaking Community Awareness

<table>
<thead>
<tr>
<th>Primary Target group</th>
<th>Secondary Target groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>◆ Parents/Caregivers of children</td>
<td>◆ Village Sarpanch (PRI members)</td>
</tr>
<tr>
<td></td>
<td>◆ Service providers i.e. ASHA / AWW, RMPs</td>
</tr>
<tr>
<td></td>
<td>◆ School Teachers</td>
</tr>
<tr>
<td></td>
<td>◆ School going children for siblings</td>
</tr>
<tr>
<td></td>
<td>◆ Village Volunteers</td>
</tr>
<tr>
<td></td>
<td>◆ Depot Holders</td>
</tr>
<tr>
<td></td>
<td>◆ Master trainers</td>
</tr>
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<td></td>
<td>◆ NGOs/SHGs</td>
</tr>
</tbody>
</table>

Segmentation of target audience

Segmentation of target audience helps in determining customized communication strategy for each group based upon their needs. Following segment of audience pertains for Zinc ORS Scale up:

An integrated IEC/BCC Campaign

Campaign for IEC/BCC activities for propagation of Zinc and ORS scale up requires a mix of all three type of mediums such as Mass media (TV/Radio), Mid media (posters, wall paintings/street plays etc.) and Outreach Inter Personnel Communication by ANM/ASHA (home demonstrations, VHND demonstrations)

The campaign mediums have been selected in order to provide both reach and depth of messaging. While mass media in the form of Television and Radio is used to increase reach of
the messaging among the target audience, mid media and outreach provide depth to the messaging but have limited reach. Interpersonal communication or outreach helps in addressing myths and misconceptions and providing more information through interactive discussions with the target audience.

i) Mass Media-Outdoor Communication:
A consistent campaign should be disseminated through multiple mass media, with a focus on local radios, which has shown to be the most effective medium in rural areas. Strategies such as shortening long-form advertisements into shorter and simpler ones have been found to increase the reach and frequency of campaigns. The mass media campaign should focus on the social and emotional factors that motivate people not only to seek treatment for diarrhea but also to adopt ORS and Zinc as the recommended treatment for the condition.

TV and Radio spots are available on MoHFW website.

ii) Mid Media:
Mid media activities are closer to the community as compared to mass media. They are also more cost and time-effective than mass media. Their primary intent is to create an interest in the topic and get the people to discuss it. It may not be as effective as IPC in achieving behavior change but generates community mobilization. Mid-Media may be more useful as a tool for behaviour change when targeted in a group. Mid-media tools have to be customized based on local trends.

Some of the mid media activities that may be planned are as given below-

- Wall paintings
- Munadi
- Street show
- Folk Shows
- Mela / Haat activities

iii) Interpersonal Communication (IPC):
IPC is the best tool to provide clear understanding and building skills of service providers and caregivers. It is also highly valuable in advocacy and is most powerful to create behavior change. However, the use of IPC is limited as it is time, cost and manpower intensive.

Some of the tools that may be developed for facilitating IPC are given below. It is best to divide them based upon their intended use at points of purchase of product or use at community level.

IPC tools for use at points of purchase-

- Posters
- Danglers
- Buntings
- Stickers
- Tin plates
- Calender cum leaflet
- Physician dealing tools

IPC tools for use at community level-

- Posters
- Flyers
Increase awareness of mothers and caregivers of children under five years of age through households demonstration of ORS and Zn use in diarrhoea by community workers (ASHA/AWW/ANM/NGO workers/SHGs/PRIs)

Platforms to be utilised such as VHNDs, mothers meetings, school meetings, Street plays etc. for ORS and Zinc preparation. Flip books to be carried by ANM/ASHA for home Visits and interpersonal communication.

Key Action Messages
Next understand the key messages that need to be delivered through BCC campaign. In case of childhood diarrhoea, the key messages are on:

- Role of Diarrhoea in onset of malnutrition and cause of death in Children.
- Giving extra fluids during diarrhoea
- Giving ORS to all children with diarrhoea
- Continuing feeding, including breastfeeding in those children who are being breastfed
- Giving Zinc for 14 days, even if diarrhoea stops
- Using clean drinking water
- Hand washing with soap
- Use of ORS and Zinc during diarrheal episodes among children is a safe treatment which makes the child stronger
- Zinc lessen the chances of re-occurrence of Diarrhoea for another two to three Months.
- When to return to the health centre (Danger signs of diarrhoea), if the child is not responding with Zn and ORS at home.

Posters and other IEC material developed for Zinc ORS Campaign are placed in Annexures.

Timing and Consistency
The impact of the social marketing campaign on target outcomes rests heavily on the strategic planning and execution. Ideally the campaign should be rolled out before the peak seasons of diarrhoea, for example, before monsoon season when the incidence of diarrhoeal episodes is the highest, and to be continued during the season. Special Campaigns should be organised
according to local needs, like after flood, earthquake, tsunami or occurrence of any local outbreak.

**IX. Frequently Asked questions**

Zinc supplementation is a treatment for diarrhoea to be given always in addition to ORS. Both healthcare workers and caregivers may have questions regarding this treatment. Below are some frequently asked questions that may be raised by the care giver of the Child:

1. **Can I give zinc and ORS at the same time?**

Yes, zinc and ORS can be given at the same time while your child has diarrhoea. Zinc is given once a day and can be given along with ORS. Give the zinc at a time of day that is easy for you to remember and repeat every day until all zinc tablets are exhausted. ORS needs to be given throughout the day while your child has loose stools.

2. **Can zinc be added directly to the ORS? Will this work as well?**

The zinc tablet will not be harmed by the ORS and can easily be dispersed in a small amount of ORS after it has been prepared. This is an option for infants in lieu of dispersing the tablet in breast milk. This is also an option for a child who does not like the taste of zinc or is resistant to tablets and medicines. Zinc should not be added to a large amount of ORS because it is then uncertain if the child will be able to finish the desired quantity to get the full zinc dose per day. 2-3 spoonful’s of prepared ORS are sufficient.

3. **Should I give less ORS since I am giving zinc?**

No, you should continue to give plenty of ORS, as recommended, even though you are giving zinc. ORS will help to replace fluids lost during diarrhoea. Zinc will speed up recovery, and will help the child fight off new episodes of diarrhoea in the 2-3 months following treatment. Zinc will also improve appetite and growth.

4. **Can zinc be promoted instead of ORS?**

Zinc should never be used instead of ORS for the treatment of diarrhoea. Zinc supplementation is an addition to the diarrhoea treatment guidelines, not a replacement for ORS. ORS is vital to prevent and treat dehydration. Zinc helps to decrease the duration and severity of the diarrhoea, but does not prevent or treat dehydration. The combination of ORS and zinc supplementation in conjunction with continued feeding can prevent and treat dehydration, shorten the duration of the episode, and prevent diarrhoea induced malnutrition.
5. Why are zinc tablets recommended after the diarrhoea episode has stopped?

Zinc supplements are recommended for the complete dosing regimen, 14 days, because zinc not only treats the diarrhoea episode at hand, it also helps to repair the damaged gut mucosa and enhances overall immune function. The recommendation of 14 days has been made to ensure that recovery from the diarrhoea episode is complete and to improve the health of the child in the 2-3 months following. When counseling mothers the healthcare worker should emphasize the importance of giving the full 14 day dose by telling the mother both the short and long term benefits of zinc including: decreases the number of days of diarrhoea, decreases the severity of the diarrhoea, helps the child fight off new episodes of diarrhoea and pneumonia in the 2-3 months following the full treatment and in that time may help your child grow better and improve appetite.

7. If my child vomits the zinc should I give another one?

Yes, try to give the child one more tablet. Wait until he/she is calm again and vomiting stops. Make sure your child is taking ORS. When he/she takes ORS with no problems, give the next zinc tablet. If he/she vomits after the second tablet, do not give any more on that day; wait to give the next tablet until the next day. Give zinc again the next day and daily until there are no more tablets in the pack.

8. If my child is vomiting other things, like ORS, should I try to give the child zinc?

No, if your child is vomiting ORS and all food and other liquids you should bring him/her to the health center.

9. What are the side effects of zinc supplementation?

The only reported side effect of zinc supplementation is vomiting. Zinc at the low recommended dose of 10-20 mg should not induce vomiting. Well made supplements will mask the metallic taste of zinc. The standard Zn supplements are well treated and rarely cause vomiting. Vomiting is not reported often and when reported is typically very minimal. Children with diarrhoea often experience vomiting with or without receiving a zinc supplement.

10. I think tablets are bad for babies, what do I do?

Zinc tablet is not given to the babies as such. It is a disposable tablet and should be dissolved in breastmilk, ORS, or clean water. When you do that, you will make a liquid solutions syrup to give it to your baby. Babies like this very much, especially in breastmilk.

11. What if my child takes more than one tablet?

You should keep the tablets away from children in a safe place in your house to prevent this situation. If your child takes too many tablets she will probably vomit them up. Your child should
take 1 per day. One or two extra taken by mistake will likely not hurt your child, but you should come to the clinic and discuss what happened with a healthcare worker for seeking his/her advice.

12. I give a multivitamin to my child; can I give zinc on top of that?

Yes, your child is losing a lot of zinc in his stools right now, so giving more than usual zinc is good while he/she is sick. After the diarrhoea is over it will help replace lost nutrients. You can continue to give the multivitamin and give the zinc as diarrhoea treatment for the full 14 days. This will not harm your child.

13. If a child is already eating zinc fortified food as a regular part of his/her diet, is there a risk of a zinc overdose with 10-20 mg of zinc as a supplement for 14 days?

Zinc fortified foods are becoming more and more available around the world. Although zinc fortified foods may enhance the overall zinc content of the diet, it is rare that zinc fortification would provide more than the Recommended Daily Allowance (RDA) of zinc. In addition, during diarrhoea zinc is lost at much higher rates than normal in the excess stools, thus more zinc is needed during a diarrhoea episode. The recommended zinc dose of 10-20 mg per day is 2 times the RDA and is meant to be a treatment dose for a limited a short period of time. Because of the increased loss during diarrhoea and the short 14 day dose, the risk of overdosing because of fortified foods and an added zinc supplement is very small. Zinc supplementation should be recommended to all children with diarrhoea even if the child is consuming zinc-fortified foods.

14. Is zinc supplementation safe in populations where children may be infected with HIV?

Available data indicate that zinc supplementation is safe for persons with HIV. Although there have been only a few small studies of zinc supplementation in HIV positive persons, none have reported adverse effects and in fact, some benefits were noted including improved weight gain and resistance to opportunistic infections. There are no reasons to believe that 14 days of zinc therapy for the treatment of diarrhoea in children who are HIV positive could cause any adverse effects. All children with diarrhoea, regardless of HIV status, should be given zinc supplements for 14 days.

15. Can zinc be given with other medicines?

Yes, you can give zinc with other medicines. Only give your child medicines that are prescribed at the clinic or by a healthcare worker like ANM(?) or doctor.

16. Should I get an antibiotic for the diarrhoea?
Only children with bloody diarrhoea need antibiotics. If your child has not been given any at this time, your child does not need one. If you start to see blood in your child’s stool, bring him/her to a health centre for further treatment.

17. What do I do if my child does not get better? Could this be because of the zinc?

Even if your child does not improve, continue to give Zinc. If your child does not get better that is not because of the Zinc, but for some other reason. If he/she does not get improved in 3 days, come back to the health centre. Also, come to the health centre at any time should he/she show any danger sign.

18. Can I give zinc if my child has blood in the stools?

Yes, zinc can be given if your child has bloody stools. If your child develops bloody stools, you should come back to the health centre for more medicine. Your child will need an antibiotic in addition to ORS and Zinc.

19. Should I feed my child as usual?

Yes, continue to feed your child and offer an extra meal each day. If your child will eat more than usual, allow him/her to do that. Increased foods will help him. Do not restrict eating.

20. Should I give breast milk?

Yes, allow your baby to breastfeed as much as he/she wants. This might be more than usual and that is good. Allow him/her to eat as many times as she wants for as long as the wants.

21. Does breast milk cause diarrhoea?

No, breast milk is not the cause of diarrhoea. Keep breastfeeding your child. Exclusive breastfeeding can even prevent diarrhoea. Babies under 6 months of age should get only breast milk to prevent diarrhoea.

22. Can I still give my child milk?

Yes, if your child already drinks cow’s milk, you can keep giving this to him/her. Be sure to also give plenty of ORS and plain clean water as well.
### Annexures I: Management of Dehydration during Diarrhoea

**Assessment of diarrhoea patients for dehydration:**

<table>
<thead>
<tr>
<th>Look at:</th>
<th>A: No dehydration</th>
<th>B: Some dehydration</th>
<th>C: Severe Dehydration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Condition</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Well, alert</td>
<td>Restless, irritable</td>
<td>Lethargic or unconscious</td>
</tr>
<tr>
<td><strong>Eyes</strong>&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Normal</td>
<td>Sunken eyes</td>
<td>Sunken eyes</td>
</tr>
<tr>
<td><strong>Thirst</strong></td>
<td>Drinks normally, not thirsty</td>
<td>Thirsty, drinks eagerly</td>
<td>Drinks poorly, or not able to drink</td>
</tr>
<tr>
<td><strong>Feel: Skin Pinch</strong>&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Goes back quickly</td>
<td>Goes back slowly</td>
<td>Goes back very slowly</td>
</tr>
<tr>
<td><strong>Decide</strong></td>
<td>The patient has NO SIGNS OF DEHYDRATION</td>
<td>If the patient has two or more signs in B, there is SOME DEHYDRATION</td>
<td>If the patient has two or more signs in C, there is SEVERE DEHYDRATION</td>
</tr>
<tr>
<td><strong>Treat</strong></td>
<td>Use Treatment Plan A</td>
<td>Weigh the patient, if possible, and use Treatment Plan B</td>
<td>Weigh the patient, and use Treatment Plan C URGENTLY</td>
</tr>
</tbody>
</table>
DIARRHOEA TREATMENT PLAN A: TREAT DIARRHOEA AT HOME

Counsel the mother on the 4 rules of home treatment:

1. **GIVE EXTRA FLUID (AS MUCH AS THE CHILD WILL TAKE)**
   - Tell the mother:
     - **If the child is exclusively breastfed:**
       - Breastfeed frequently and for longer at each feed. If passing frequent watery stools:
         - For less than 6 months age give ORS and clean water in addition to breast milk
         - If 6 months or older give one or more of the home fluids in addition to breast milk.
     - **If the child is not exclusively breastfed:**
       - Give one or more of the following home fluids; ORS solution, yoghurt drink, milk, lemon drink, rice or pulses based drink, vegetable soup, green coconut water or plain clean water.
       - It is especially important to give ORS at home when:
         - The child has been treated with Plan B or Plan C during this visit
         - The child cannot return to a clinic if diarrhoea worsens.
   - Teach the mother how to mix and give ORS. Give the mother 2 packets of ORS to use at home.
   - Show the mother how much fluid to give in addition to the usual fluid intake:
     - Up to 2 years- 50 to 100 ml after each loose stool
     - 2 years or more-100 to 200 ml after each loose stool
   - Tell the mother to:
     - Give frequent small sips from a cup.
     - If the child vomits, wait 10 minutes. Then continue, but more slowly.
     - Continue giving extra fluid until the diarrhoea stops.

2. **GIVE ZINC SUPPLEMENTS**
   - Tell the mother how much zinc to give:
     - 2 months Up to 6 months 10 mg per day for 14 days
     - 6 months and more 20 mg per day for 14 days
   - Show the mother how to give the zinc supplements
   - Remind the mother to give the zinc supplement for the full 10-14 days.

3. **CONTINUE FEEDING**

4. **WHEN TO RETURN:** Advise mothers to return immediately if:
   - Not able to drink or breastfeed
   - Becomes sicker
   - Develops a fever
   - Blood in stools
   - Drinking poorly
DIARRHOEA TREATMENT PLAN B: TREAT SOME DEHYDRATION WITH ORS

1. GIVE RECOMMENDED AMOUNT OF ORS IN CLINIC OVER 4-HOUR PERIOD
   ➢ Determine amount of ORS to give during first 4 hours.

<table>
<thead>
<tr>
<th>Age*</th>
<th>Up to 4 months</th>
<th>4 months up to 12 months</th>
<th>12 months up to 2 years</th>
<th>2 years up to 5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight in ml</td>
<td>&lt; 6 kg</td>
<td>6 - &lt; 10 kg</td>
<td>10 - &lt; 12 kg</td>
<td>12 – 19 kg</td>
</tr>
<tr>
<td></td>
<td>200-400</td>
<td>400-700</td>
<td>700-900</td>
<td>900-1400</td>
</tr>
</tbody>
</table>

* Use the child’s age only when do not know the weight. The approximate amount of ORS required (in ml) can also be calculated by multiplying the child’s weight (in Kg) by 75.

• If the child wants more ORS than shown, give more.

2. SHOW THE MOTHER HOW TO GIVE ORS SOLUTION:
   - Give frequent small sips from a cup.
   - If the child vomits, wait 10 minutes. Then continue, but more slowly.
   - Continue breastfeeding but stop other feeding.

3. AFTER 4 HOURS:
   - Reassess the child and classify the child for dehydration.
   - Select the appropriate plan to continue treatment.
   - Begin feeding the child in clinic.

4. IF THE MOTHER MUST LEAVE BEFORE COMPLETING TREATMENT:
   - Show her how to prepare ORS solution at home.
   - Show her how much ORS to give to finish 4-hour treatment
   - Give her enough ORS packets to complete rehydration. Also give 2 packets as recommended in Plan A.
   - Explain the 4 Rules of Home Treatment:
     1. Give extra fluid
     2. Give zinc supplements
     3. Continue feeding
     4. When to return

Plan A

24
MANAGEMENT OF DYSENTERY

1. YOUNG INFANTS (<2 MONTHS):
   - Admit and rule out surgical causes (for example, intussusceptions) - and refer to a surgeon, if appropriate.
   - Give the young infant IM/IV ceftriaxone (100 mg/kg) once daily for 5 days.

2. CHILD: Give oral antibiotics for 3-5 days. In admitted children IM/IV Ceftriaxone (100 mg/kg) once daily for 5 days may be used.

<table>
<thead>
<tr>
<th>CHILD WITH LOOSE STOOL WITH BLOOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severely Malnourished?</td>
</tr>
<tr>
<td>▼</td>
</tr>
<tr>
<td>NO</td>
</tr>
<tr>
<td>▼</td>
</tr>
<tr>
<td>Give Antimicrobial For Shigella</td>
</tr>
<tr>
<td>▼</td>
</tr>
<tr>
<td>Better In 2 Days</td>
</tr>
<tr>
<td>▼</td>
</tr>
<tr>
<td>NO</td>
</tr>
<tr>
<td>▼</td>
</tr>
<tr>
<td>Initially Dehydrated, Age &lt; 1 Year Or Measles in Past 6 Weeks</td>
</tr>
<tr>
<td>▼</td>
</tr>
<tr>
<td>NO</td>
</tr>
<tr>
<td>▼</td>
</tr>
<tr>
<td>Change To Second Antimicrobial For Shigella</td>
</tr>
<tr>
<td>▼</td>
</tr>
<tr>
<td>Better In 2 Days</td>
</tr>
<tr>
<td>▼</td>
</tr>
<tr>
<td>NO</td>
</tr>
<tr>
<td>▼</td>
</tr>
<tr>
<td>Refer To Hospital Or Treat For Amoebiasis</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Antimicrobials that are effective for treatment of Shigellosis</th>
<th>Antimicrobials that are ineffective for treatment of Shigellosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ciprofloxacxin 15mg/Kg/2 times per day for 3 days</td>
<td>- Metronidazole -streptomycin</td>
</tr>
<tr>
<td>Ceftriaxone (100 mg/kg) IM/IV once daily for 5 days</td>
<td>- tetracyclines - chloramphenicol</td>
</tr>
<tr>
<td></td>
<td>- sulfonamides - amoxycillin</td>
</tr>
<tr>
<td></td>
<td>- nitrofurans (e.g. nitrofurantoin, furazolidone)</td>
</tr>
<tr>
<td></td>
<td>- aminoglycosides (e.g. gentamicin, kanamycin)</td>
</tr>
<tr>
<td></td>
<td>- first and second generation cephalosporins (e.g. cephalexin, cefamandole).</td>
</tr>
</tbody>
</table>
### Annexures V: Counsel the Mother - Feeding Recommendations during Sickness and Health

<table>
<thead>
<tr>
<th>Up to 6 months of age</th>
<th>6 months up to 12 months</th>
<th>12 months up to 2 years</th>
<th>2 years &amp; older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breastfeed as often as the child wants, day &amp; night, at least 8 times in 24 hrs.</td>
<td>Breastfeed as often as the child wants</td>
<td>Breastfeed as often as the child wants</td>
<td>Give family foods at 3 meals each day</td>
</tr>
<tr>
<td>Do not give any other food or fluids not even water.</td>
<td>Give at least 1 katori serving* at a time of:</td>
<td>Offer food from the family pot</td>
<td>Also, twice daily, give nutritious food between meals, such as:</td>
</tr>
<tr>
<td>What are the signs to understand that the baby is getting enough of breastmilk?</td>
<td>- Mashed roti/bread mixed in thick dal with added ghee/oil or khichdi with added oil/ghee. Add cooked vegetables also in the servings or</td>
<td>Give at least 1½ katori serving* at a time of</td>
<td>- Banana/biscuit/cheeko/mango/papaya as snacks</td>
</tr>
<tr>
<td></td>
<td>- Sevian/dalia/halwa/kheer prepared in milk or</td>
<td>- Mashed roti/bread mixed in thick dal with added ghee/oil or khichdi with added oil/ghee. Add cooked vegetables also in the servings or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Mashed boiled/fried potatoes</td>
<td>- Mash ed roti/rice/bread mixed in sweetened milk or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Offer banana/biscuit/cheeko/mango/papaya</td>
<td>- Sevian/dalia/halwa/kheer prepared in milk or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* 3 times per day if breastfed,</td>
<td>- Offer banana/biscuit/cheeko/mango/papaya</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 times per day if not breastfed.</td>
<td>* 5 times per day</td>
<td><strong>Remember:</strong></td>
</tr>
<tr>
<td><strong>Remember:</strong></td>
<td><strong>Remember</strong></td>
<td><strong>Remember</strong></td>
<td>- Ensure that the child finishes the serving</td>
</tr>
<tr>
<td>- Keep the child in your lap &amp; feed with your own hands</td>
<td>- Sit by the side of child &amp; help him to finish the serving</td>
<td>- Wash your own &amp; child’s hand with soap &amp; water every time before feeding</td>
<td>- Teach your child wash his hands with soap and water every time before feeding</td>
</tr>
<tr>
<td>- Wash your own &amp; child’s hand with soap &amp; water every time before feeding</td>
<td>- Wash your own &amp; child’s hand with soap &amp; water every time before feeding</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Persistent diarrhoea is an episode of diarrhoea, with or without blood that lasts at least 14 days. Undernourished children and those with other illnesses, such as AIDS, are more likely to develop persistent diarrhea. Diarrhoea, in turn, tends to worsen their condition.

1. The Initial Diet A:

[Reduced lactose diet; milk rice gruel, milk sooji gruel, rice with curd, dalia]

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Measure</th>
<th>Approximate quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>1/3 cup</td>
<td>40 ml</td>
</tr>
<tr>
<td>Sugar</td>
<td>½ level tsp</td>
<td>2 g</td>
</tr>
<tr>
<td>Oil</td>
<td>½ level tsp</td>
<td>2 g</td>
</tr>
<tr>
<td>Puffed rice powder*</td>
<td>4 level tsp</td>
<td>12.5 g</td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td>To make 100 ml</td>
</tr>
</tbody>
</table>

* Can be substituted by cooked rice or sooji

Preparation

- Mix milk, sugar, rice together
- Add boiled water & mix well
- Add oil
The feed can now be given to the child

2. The second Diet B:

[Lactose-free diet with reduced starch]

About 50-70% of children improve on the initial Diet A. Remaining children, if free of systemic infection are changed to Diet B which is milk (lactose) free and provides carbohydrates as a mixture of cereals and glucose. Milk protein is replaced by chicken, egg or protein hydrolysate.

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Measure</th>
<th>Approximate quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egg white</td>
<td>3 level tsp</td>
<td>15 g</td>
</tr>
<tr>
<td>Glucose</td>
<td>3/4 level tsp</td>
<td>3 g</td>
</tr>
<tr>
<td>Oil</td>
<td>1 level tsp</td>
<td>4 g</td>
</tr>
<tr>
<td>Puffed rice powder*</td>
<td>2 level tsp</td>
<td>7 g</td>
</tr>
<tr>
<td>Water</td>
<td>¾ cup</td>
<td>To make 100 ml</td>
</tr>
</tbody>
</table>
* Can be substituted with cooked rice

**Preparation**

Whip the egg white well. Add puffed rice powder, glucose, oil and mix well. Add boiled water and mix rapidly to avoid clumping.

**3. The Third Diet C: [Monosaccharide based diet]**

Overall 80-85% patients with severe persistent diarrhoea will recover with sustained weight gain on the initial Diet A or the second Diet B. A small percentage may not tolerate a moderate intake of the cereal in Diet B. These children are given the third diet (Diet C) which contains only glucose and a protein source as egg or chicken. Energy density is increased by adding oil to the diet.

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Measure</th>
<th>Approximate quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicken or Egg white</td>
<td>2 ½ level tsp</td>
<td>12 g</td>
</tr>
<tr>
<td></td>
<td>5 level tsp</td>
<td>25 g</td>
</tr>
<tr>
<td>Glucose</td>
<td>¾ level tsp</td>
<td>3 g</td>
</tr>
<tr>
<td>Oil</td>
<td>1 level tsp</td>
<td>4 g</td>
</tr>
<tr>
<td>Water</td>
<td>½ - ¾ cup</td>
<td>To make 100 ml</td>
</tr>
</tbody>
</table>

**Preparation**

Boil chicken, remove the bones and make chicken puree. Mix chicken puree with glucose and oil. Add boiled water to make a smooth paste.

Or

Whip the egg white well. Add glucose, oil and mix well. Add boiled water and mix rapidly to avoid clumping.
ANNEXURE VII: IMPORTANT POINTS ABOUT PREPARATION & ADMINISTRATION OF ORS

The instructions for preparing ORS are simple:

- Wash your hands with soap.
- Take a litre of clean drinking water in a clean container.
- Take a packet of ORS and add all its contents in the water.
- Stir thoroughly so that the powder is completely mixed.
- Cover the vessel.
- This ORS is to be given to the infants every one or two minutes. The amount of ORS to be given to the infant is based on the infant’s age, as given here:
  - Up to 2 months – 5 spoons of ORS.
  - From 2 months up to 2 years – One-fourth to half a cup.
  - More than 2 years – half a cup to one full cup.
  - Give enough ORS for the patient pass pale, yellow urine, four or five times a day.

You can give more if the child wants it. Other than ORS, ASHA also advices the mothers or other people of the family to have more of what is termed HAF or home available fluids. These include shikanji, lassi or plain and clean water.

- For the small very and very sick children, give ORS by teaspoon.
- Give small sips, frequently
- If the child vomits, wait for ten minutes and then begin again.
- Feed after every loose bowel movement.
- Continue to give solids if child is four months or older.
- Gruels can be made with: rice, cereal, potato, cassava, yogurt.
- If the child still needs ORS after 24 hours, make a fresh solution.
- Continue to breast feed, but supplement fluid intake with ORS
ANNEXURE VIII: IEC MATERIAL FOR ORS – ZINC SCALE UP
2 का दम
ओ आर एस + जिंक
का टम्सर साव.
जो की दस को पास.

ध्यान रखें
दस के दौरान, बच्चे को अधिक तस्क पदार्थ दें।
स्वास्थ्य करने बच्चे में, स्वास्थ्य जारी रखें।
हरेक रोज के बाद, खाने से पहले साक्षर से खाएं।

Bunting AS
जो का पुतला + लिंक

वाह तरह साथ, जो को घाटना की परत

दम दोबे रोली पांच दिनों तक बदलना चाहिए।

Back

Front

में जिकर को मुक्त करने की तिथि

1. दो दो के तार के बीच में जिकर
2. दो दो के तार के बीच में जिकर
3. दो दो के तार के बीच में जिकर
4. दो दो के तार के बीच में जिकर
5. दो दो के तार के बीच में जिकर

हरे रंग का धातु का फैला दिखाये।

कई नई रूप से आप यह समझ सकते हैं कि जिकर की पूरी तलाश यहां से होती है।

envelope
ORS गोल और जिंक गोली की जोड़ी से
दस्त जाए और जल्द वापस न आए
दस्त में ORS और शिक्षा की जोड़ी लम्बे समय तक सेहत की मुस्कान रहे रहें

यह पहली दस्त के पीछे कि बच्चों की अत्यधिक मात्रा में प्लेन्स बिराज और अद्वितिया का भाग होता है।
ORS घोल और जिंक गोली की जोड़ी से दस्त जाए और जल्द वापस न हो।

दस्त होते ही जिंक की एक गोली प्रतिदिन 14 दिनों तक
ओ आयुर्युज्य का घोर और जिंदगी विलायों
दर्द को मार दूर भगाओं

- दस्त के रक्तम बच्चों को जिंदगी और जीवनजनित सेवा तर्क दें
- दस्त के रक्तम बच्चों का दूर और माता पत्नी खाली रखें
- 15 दिनों तक ड्रिंक की जरूरत करें

दस्त उपचर से लिस्प, ओल्स वा आंगलाडी लिखें से मिलें
बच्चे हैं अनमोल...
दल में दे जिक और ओआरएस का पोल

बच्चे हैं अनमोल...
दल में दे जिक और ओआरएस का पोल

बच्चे हैं अनमोल...
दल में दे जिक और ओआरएस का पोल

बच्चे हैं अनमोल...
दल में दे जिक और ओआरएस का पोल
दस्त को मार दूर भगाओ

दस्त के दौरान भी का दूष और तरम गालण नहीं रहे।
14 हिस्से तक जिम्मी खपत की तरीक़े पर की जाएती है।
दस्त उपचार के लिए आया या अगर दर्जन लेखिका से लिये।

बच्चे हैं अनमोल...

दस्त में दे जिंक और ऑआर्स का घोल
ओआएफस का गोल और जिंक चिल्ड़ चिल्ड दब्स्त को मार दूज भजाओ

- रसा के दैनिक कप में जिंक और ओआएफस चिल्ड का जमा हो
- रसा के दैनिक में जिंक और ओआएफस का जमा हो
- रसा के दैनिक का जमा हो

रसा नए में फिक करके जमा हो

Artwork: Print Ad
Size: 12 x 20 cm
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