Report on Cross-sectional End-of-project Coverage Survey of the Project - Scaling up the Use of Zinc and ORS in the Treatment of Diarrhoea among Children 0-59 Months Old to Reduce Child Morbidity and Mortality in 27 Districts of Bangladesh

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Abbreviations

AHI	Assistant Health Inspector
BCC	Behavior Change Communication
BCI	Behavior Change Intervention
CC	Community Clinic
CHCP	Community Health Care Provider
CS	Civil Surgeon
DCI	Data Collection Instrument
DDFP	Deputy Directors of Family Planning
DGHS	Directorate General of Health Services
FPI	Family Planning Inspector
FWA	Family Welfare Assistant
FWV	Family Welfare Visitor
GoB	Government of Bangladesh
HA	Health Assistant
HDRC	Human Development Research Centre
HH	Household
HI	Health Inspector
HMIS	Health Management Information Systems
IEC	Information, Education and Communication
IPC	Inter Personal Communication
KAP	Knowledge, Attitude, and Practice
KII	Key Informant Interview
NI	Nutrition International
ORS	Oral Rehydration Salt
PPS	Probability Proportionate to Size
SACMO	Sub-Assistant Community Medical Officer
SUZY	Scaling Up Zinc for Young
UFPO	Upazilla Family Planning Officer
UH&FWC	Union Health and family Welfare Centre
UHFP	Upazilla Health and Family Planning
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

CONTENTS

Abbreviations
Executive Summary .....i-xii
CHAPTER 1: BACKGROUND AND OBJECTIVES OF THE STUDY 1
1.1 Background of the Study 1
1.2 Objectives of the study 2
CHAPTER 2: METHODOLOGY 3
2.1 Sample Size for Household Survey 4
2.2 Method of Cluster and Household Selection 5
2.3 Knowledge, Attitude and Practice (KAP) Study among Health Officials, Supervisor, Frontline Workers and Gram Doctors 6
2.4 Key Informant Interviews (KII) 6
2.5 Survey Implementation 7
2.5.1 Field Team Structure 7
2.5.2 Project Orientation 7
2.6 Quality Control Measures 7
2.6.1 Field data Collection 7
2.6.2 Data Quality Control 8
2.7 Data Analysis Plan 8
CHAPTER 3: SOCIO-DEMOGRAPHIC CHARACTERITICS 9
3.1 Household Characteristics 9
3.1.1 Age of the Children 9
3.1.2 Educational status of caregivers and their partners 9
3.1.3 Religion 10
3.1.4 Main source of household income 11
3.1.5 Monthly income 11
3.2 Water, Sanitation, and Hygiene (WASH) Profile 12
3.2.1 Main source of drinking water 12
3.2.2 Time required to collect water 12
3.2.3 Type of latrine 13
3.2.4 Sharing status of latrine 14
3.2.5 Cleaning agent in hand washing place 14
3.3 Functional household assets 14
3.4 Housing Characteristics 15
3.5 Access to Mass Media 15
3.6 Prevalence of Diarrhoea among Under-5 Children 17
3.7 KAP of Caregivers of Children 18
3.7.1 Knowledge and attitude of caregivers regarding diarrhoea 18
3.7.2 Knowledge of management of diarrhoea in children 19
3.7.3 Care-seeking for diarrhoea in children 20

3.7.4 Zinc and ORS coverage of under 5 children 22
3.7.5 Consumption of zinc for the recommended duration of 10 days..... 24
3.8 Adherence to Public Sector 25
3.8.1 KAP Public Sector 25
3.8.2 Receipt of counseling from public sector facilities and Quality of it Caregivers received counseling during visit to public health facilities for diarrhoeal episodes of children..... 29
3.9 Adherence to Private Sector 29
3.9.1 Caregivers of children who sought treatment for child diarrhoea to private sector (private hospital/ clinic/ doctor + pharmacy+ gram doctor) 29
3.9.2 Caregivers of children who sought treatment in the private sector and given both zinc and ORS 30
3.10 Adherence to Gram Doctor 30
3.11 Knowledge, Attitude and Practice of Health Workers regarding Diarrhoea and its management 31
3.11.1 Knowledge and attitude of health workers regarding diarrhoea 31
3.11.2 Knowledge of health workers regarding diarrhoea management 32
3.11.3 Use of zinc and ORS by Health Workers 33
3.11.4 Counseling provided to Caregivers on Zinc and ORS use during treatment 34
3.11.5 Home visitation 34
3.11.6 Stock situation and HMIS reporting 34
3.11.7 IEC/BCC/IPC 36
3.12 Knowledge, Skills and Practices of First line Supervisors Regarding Diarrhoea Treatment with Zinc and ORS 36
3.12.1 Categorizations of First Line Supervisors 36
3.12.2 Age and Sex of the Health Supervisors 37
3.12.3 Educational Status of the Health Supervisors 38
3.12.4 Roles and responsibilities of health supervisors 38
3.12.5 Knowledge related to Zinc Tablet/Syrup and ORS..... 38
3.12.6 Knowledge on the Correct Dosage of Zinc Tablets 39
3.12.7 Knowledge on the preparation of ORS 40
3.12.8 ORS and Zinc Supplies and Stock..... 40
3.12.9 Monitoring and Supervision 41
3.12.10 Participation in training supported by Nutrition International (NI) 42
3.12.11 Suggestions of zinc coverage and compliance 42
3.13 Knowledge, skills and practices of Gram Doctors regarding diarrhoea treatment with Zinc and ORS 43
3.13.1 Knowledge and Skills of the Gram Daktars Related to Diarrhoeal Management 43
3.13.2 NI Supported Training received by Gram doctors on ORS and Zinc 43
3.13.3 Behavior of Treatment for Childhood Diarrhoea in the Last Week 44
3.13.4 Availability and Use of Inter Personal Communication (IPC) Tools 44
3.13.5 Availability of Zinc Tablets in Pharmacy in the Locality/Neighborhood 44

3.13.6 Suggestions from Gram Daktars to improve coverage and compliance with zinc and ORS 45
3.14 Knowledge, Skills and Practices of supervision of District and Sub-district level Managers regarding Diarrhoea treatment with Zinc and ORS 45
3.14.1 Status of Zinc supplementation program in the respective areas..... 45
3.14.2 Training of the frontline workers 45
3.14.3 Role of counselling conducted by the frontline workers 46
3.14.4 Role of programme for ensuring Adequate Supplies 46
3.14.5 Monitoring and Supervision of Program Activities 46
3.14.6 Discussion issues about the program in monthly coordination meeting 46
3.14.7 Monitoring, assurance of stock and situation of stock out of Zinc and ORS 47
3.14.8 Suggestions on the IEC/ BCC programme 47
3.14.9 Suggestions to improve the coverage and compliance of Zinc and ORS 48
CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS 49
4.1 Conclusions 49
4.2 Recommendations 49

List of Figures

Figure 2.1: Conceptual framework..... 3
Figure 3.1: Distribution of children who had diarrhoea in 14 days preceding the survey according to their age (in %)..... 9
Figure 3.2: Distribution of caregivers according to ever attending school (in %) 9
Figure 3.3: Distribution of caregivers of by ever attending school by division (in %) 10
Figure 3.4: Distribution of caregivers according to religion (in %) 10
Figure 3.5: Distribution of households according to monthly income (in %) 11
Figure 3.6: Distribution of households according to main source of drinking water (in %) 12
Figure 3.7: Distribution of households according to required time of collecting water (in %)..... 13
Figure 3.8: Distribution of households according to status of latrine (in %) 13
Figure 3.9: Distribution of households according to sharing status of latrine (in %) 14
Figure 3.10: Distribution of households by availability of functional assets (in %) 14
Figure 3.11: Distribution of households according to access to electricity (in %) 15
Figure 3.12: Percentage distribution of caregivers according to access to mass media..... 16
Figure 3.13: Prevalence of diarrhea in children 0-59 months in study areas of 8 divisions of Bangladesh, 2019 (%)..... 17
Figure 3.14: Percentage of caregivers who sought care from private sector (Private health centers/ services /hospitals/service providers + Pharmacy + Gram doctor) by divisions 21

Figure 3.15: Percentage of caregivers who sought care from both public and private sector by divisions 22
Figure 3.16: Percentage of caregivers who sought care from gram doctor by divisions 22
Figure 3.17: Percentage distribution of caregivers of children aged 0-59 months having diarrhea received zinc and ORS among those who were treated in public sector 23
Figure 3.18: Percentage distribution of caregivers of children aged 0-59 months having diarrhoea received zinc and ORS among those who were treated in private sector 23
Figure 3.19: Percentage of children who received Zinc syrup and consumed for recommended duration among those who sought treatment from public sector by divisions 24
Figure 3.20: Distribution of children who got Zinc tablet or syrup and reported to consume it for recommended duration of 10 days (%) 24
Figure 3.21: Percentage distribution of caregivers of children aged 0-59 months having diarrhoea in last two weeks by place/person visited in public sector to treat her diarrhoeal child 25
Figure 3.22: Distribution of the mothers/caregivers by having correct knowledge about preparation of ORS among those who were treated in public sector (%) 26
Figure 3.23: Distribution of caregivers of diarrheal children treated in public sector having knowledge that Zinc tablet or syrup is to be used for 10 days (%) 26
Figure 3.24: Distribution of caregivers of children having diarrhea in last two weeks received zinc and ORS among those treated in public sector 27
Figure 3.25: Percentage of children who received Zinc tablet and consumed recommended duration among those who sought treatment
from public sector by divisions 28
Figure 3.26: Percentage of children who received Zinc syrup and consumed for recommended duration among those who sought treatment from public sector by divisions 28
Figure 3.27: Percentage of caregivers who sought care from private sector (Private health centers/ services /hospitals/service providers + Pharmacy + Gram doctor) by divisions 30
Figure 3.28 Percentage of children given Zinc and ORS among those who were treated in private sector 30
Figure 3.29: Percentage of children were given Zinc and ORS among those who were treated by gram doctor by divisions 31
Figure 3.30: Distribution of health workers by having correct knowledge of preparation of ORS (in %) 33
Figure 3.31: Distribution of health workers by ability to demonstrate dispensing of dispersible zinc tablets (in %) 33
Figure 3.32: Counseling provided to the caregivers on dosages of zinc when treating diarrheal children (in %) 34
Figure 3.33: Counseling provided to the caregivers giving zinc tablet for 10 days when treating diarrheal children (in %) 34
Figure 3.34: Distribution of health workers by their knowledge on how to estimate the requirement for zinc and ORS for their catchment area (in %) 35
Figure 3.35: Distribution of whether received any communication materials/IPC tools related to this project on treating diarrhoea with Zinc (in %) 36

List of Tables

Table 2.1: Sample Distribution 4
Table 2.2: Illustration: Drawing a Sample Using Probability Proportional to Size Technique 5
Table 2.3: Sample of health workers health supervisors, workers Gram doctors..... 6
Table 2.4: Sample of health managers..... 7
Table 3.1: Distribution of households according to the main source of income (in %) 11
Table 3.2: Percentage distribution of caregivers of children aged 0-59 months having diarrhoea in last two weeks by episodes 17
Table 3.3: Percentage distribution of caregivers of children aged 0-59 months having diarrhoea in last two weeks by duration of the last episode of diarrhoea 18
Table 3.4: Percentage distribution of caregivers of children by their knowledge of definition of diarrhoea by signs and symptoms 18
Table 3.5: Percentage distribution of caregivers of children by knowledge of definition of diarrhoea by times of loose watery motion a day 18
Table 3.6: Percentage distribution of caregivers of children by their knowledge of signs and symptoms of dehydration among children 19
Table 3.7: Percentage distribution of caregivers of children aged 0-59 months having diarrhoea in last two weeks by having knowledge of benefits of zinc in diarrhoea 19
Table 3.8: Percentage distribution of caregivers by their opinion of the appropriate/best method of treating child diarrhoea 20
Table 3.9: Percentage distribution of caregivers by what did they do to treat their diarrhoeal children 21
Table 3.10: Percentage distribution of caregivers of children aged 0-59 months having diarrhoea by receipt/purchase of Zinc & ORS and others as treatment (excluding home remedies) 23
Table 3.11: Percentage distribution of caregivers of children aged 0-59 months having diarrhoea in last two weeks received zinc and ORS among those who were treated in public sector by different tiers 27
Table 3.12: Percentage distribution of caregivers by the issues informed during counseling in public sector health facilities 29
Table 3.13: Distribution of health workers by Knowledge about common signs and symptoms of dehydration (%) 32
Table 3.14: Knowledge of health workers by recommended dosage of zinc according to the age of the children and duration of continuation zinc without interruption in treatment of acute diarrhoea 32
Table 3.15: Percentage of health workers prescribed zinc and ORS 33
Table 3.16: Whether an occasion when could not give Zinc tablet and ORS to a client because you ran out of supplies 35
Table 3.17: Percentage distribution of Health Supervisors segregated by the designation by districts and divisions..... 37
Table 3.18: Percentage distribution of health supervisors by age range by districts and divisions 37
Table 3.19: Percentage distribution of health supervisors by sex 37

Table 3.20: Educational status of Health Supervisors 38
Table 3.21: Percentage distribution of health supervisors by their role and responsibilities 38
Table 3.22: Status of knowledge among health supervisors about the benefits of use of Zinc tablet for diarrhoea management 39
Table 3.23: Knowledge among health supervisors about the doses of zinc supplements segregated by the age of the children..... 39
Table 3.24: Knowledge among the supervisors about the days for continuing zinc tablet and number of time per day for zinc intake 40
Table 3.25: Knowledge about preparation of ORS solution 40
Table 3.26: Knowledge among the supervisors about the estimation of Zinc and ORS requirement for the respective catchment areas 40
Table 3.27: Information of stock out of Zinc and ORS and steps taken by the supervisors to overcome the situation 41
Table 3.28: Frequency of supervision or monitoring visit conducted by supervisors 41
Table 3.29: Supervision of service providers while conducting home visit and issues monitored 42
Table 3.30: Percentage distribution of supervisors participated in training supported by NI 42
Table 3.31: Percentage distribution of Gram doctors by treatment with zinc and ORS for childhood diarrhoea 44
Table 3.32: Percentage distribution of Gr am doctors by whether zinc tablets are available in pharmacy or in the locality/neighborhood 44

Annexure

Annex 1: Data Tables .....
Annex 2: Data Collection Instruments (DCIs) .....
Annex 3: Ethical Clearance .....

Executive Summary

Diarrhoea is one of the common causes of death of children in Bangladesh. Considering this, Bangladesh was one of the first countries globally to pilot the use of zinc supplementation with ORS in the treatment of childhood diarrhea through introduction of Scaling Up Zinc for Young children with diarrhea (SUZY) project. Nutrition International "NI" (formerly known as the Micronutrient Initiative), a renowned International Development organization based in Ottawa, Canada has a commitment to improve global nutrition in developing countries. NI Bangladesh demonstrated a model for strengthening zinc supplementation and ORS distribution in the treatment of diarrhea among children 0-59 months of Bangladesh. In view of the promising results of the demonstration program, NI scaled up the best practices identified through the demonstration program in additional districts as per request of Director, Primary Health Care, DGHS. The scale up program was implemented in 27 districts in a phased manner. Under such circumstances, End-of- project coverage survey of the project has been conducted in 27 districts.

The overall objective of this end-of-project survey is to assess the coverage of zinc and ORS among children 0-59 months who had diarrhea in the past last two weeks. And, the specific objectives are – (i)To estimate the diarrhea prevalence in 27 districts of Bangladesh among the children of age 0-59 months; (ii)To measure coverage of zinc and ORS during diarrheal episodes of children aged 0 to 59 months; (iii) To quantify the level of knowledge, attitude and practice among caregivers of children 0-59 months regarding diarrhea management; and (iv) To quantify the level of knowledge, attitude and practice among providers (public and private) regarding diarrhea management.

Household Characteristics: Among the children studied, 5.3% were aged 0-5 months and 94.7% 6-59 months. Overall, 91.7% caregivers and 82.3% caregiver's partners ever attended school. Their household's main source of income was 'day labour' (27.4%) followed by 'small/medium business' (24.3%), and. 45.1% household's monthly income ranges from 10,001 to 20,000 BDT. About 93.8 % household's main source of drinking water was tube-well or borehole and in 98.7% it required less than 30 minutes to collect drinking water from their main source. Overall, 65.9% households used improved latrine, and 31.5% shared their latrine with others. Around 44% households had no cleaning agent in hand washing places. Mobile' was there in 99.3% household item and 95.8% households had access to electricity. In 88.8% households 'tin' was used to construct the household roof, and 58.7% used 'tin' as the main material of wall. Earthen floor was there in 70.8% households, 56.6% households had 2-3 rooms for their dwelling purpose. Overall, 63.2% caregivers watch television, and 11.4 % had access to internet.

Respondent Category: Caregivers of children of age 0-59 months who had diarrhoea in the last two weeks, health officials, frontline health workers, health supervisors, and gram doctors.

Prevalence of diarrhea: Overall, 5.6% children age 0-59 months were suffering from diarrhea in the last 2 weeks.

Knowledge of diarrhoea and dehydration among caregivers: Almost all caregivers (99.7%) stated diarrhoea as loose and watery stools when expressing sign and symptoms of diarrhoea. As for times, 85.4% caregivers reported diarrhoea as 3 or more times loose watery motion a day. Regarding signs and symptoms dehydration in children, 89.2% caregivers reported 'physical weakness', and 41.4% reported 'drinks eagerly, thirsty'.

Knowledge of management of diarrhoea in children: Among public sector, 40.6% knew of ORS in Upazila Health Complex (UHC) and 24.3% Community Clinic (CC). In private sector, 28.2% reported of ORS in pharmacy and 61.9% about gram doctor. About 35% caregivers

knew that Zinc reduces duration and severity of diarrhoeal episode, and 31 % improves appetite and weight gain. Regarding the source of zinc tablet and syrup, 22.1% knew that they could get zinc tablet or syrup from UHC, and 14.7% from community clinic, while 31.9% knew that they it from gram doctor and 35.1% knew of pharmacy.

Overall, 29.8% caregivers could correctly describe the ORS preparation procedure and 93.5% had the knowledge that zinc tablet is to be dispensed after diluting it in one spoonful of water. Only 13.5% caregivers were having knowledge that zinc tablet or syrup is to be used for 10 days.

Care-seeking for diarrhea in children: Around 25% of the caregivers reported that, they took their children to public health centers/services/hospitals/service providers and 24.3 % bought medicines from pharmacy for treatment of diarrhea. Overall, 71.5% caregivers sought care from private sector for diarrheal children, and 50 % took children to gram doctor. However, 10.3 % of caregivers sought care from both public and private sector.

Zinc and ORS coverage: Among the caregivers 91.3% consumed ORS, while 11.8 % consumed both ORS and zinc tablet, and 28.7% both ORS and zinc syrup treated in any sector. Zinc and ORS was used by 25.0% of those visited public sector, 36.3% of those visited private sector, and 36.8% of those visited gram doctors for their diarrhoeal children.

Consumption of zinc for the recommended duration of 10 days: Only 8% of the caregivers of children continued zinc for the recommended duration of 10 days. Overall, 12.9% caregivers received Zinc tablet and 19% received Zinc syrup consumed those for recommended duration of 10 days among them who sought treatment from public sector for their diarrhoeal children.

Counseling in Public facilities: Among the caregivers received care from public sector, overall 91 percent received counseling on treatment of diarrhoea during visit to health facilities. Around half each of the caregivers received care in public facilities reported that they were asked to ‘feed zinc and ORS’ and ‘keep child neat and clean’. Around one-fourth of them reported that they were shown IEC materials where ‘Festoon’ was major (87%). More than 80% of them reported of better understanding of ‘Festoon’ shown in public facility.

Knowledge, Attitude and Practice of Health Workers on Diarrhoea and its Management: The health workers, Health Assistants (HAs), Family Welfare Assistants (FWAs), and Community Health Care Providers (CHCPs) posted in Community Clinics (CCs), and Sub-Assistant Community Medical Officers (SACMOs) posted in Union Health and Family Welfare Centres (UH&FWCs) were interviewed. No private level health workers were interviewed at this stage. Among those interviewed, around 22% were HAs, 23% FWAs, 29% CHCPs and 26% SACMOs. Around 90% health workers reported receiving training on use of zinc and ORS in acute diarrhoea of under-5 children.

Knowledge of symptoms of diarrhoea: All the health workers were found aware that loose, watery stools is diarrhoea. Additionally, 97 percent of them reported that passing loose stool 3 or more times a day is diarrhoea.

Knowledge of signs and symptoms of dehydration: Around 88 percent reported that, if dehydrated, the skin goes back slowly>2 seconds after skin pinch, eyes shrunken (75.2%), and child drinks eagerly, thirsty (70.6%).

Knowledge of benefits of dispersible zinc tablets in acute diarrhoea: According to 79 percent health workers ‘zinc reduces duration & severity of episode’, ‘it prevents diarrhoea over next 2-3 months’ (47%), ‘it improves appetite’ (71%) and ‘it replenishes zinc lost in stools’ (78%).

Recommended dosage of zinc by age of children: Around 39% could report the correct dose of 10 mg in children between 0-5 months, and 50% the correct dose of 20 mg in children between 6-59 months. Overall, 64% health workers reported correctly of preparation of ORS, and 61% could demonstrate preparation of dispersible zinc tablets correctly.

Use of zinc and ORS by Health Workers: Around 23% HAs, 18% FWAs, 29% CHCPs, and 18% SACMOs reported that they used zinc and ORS for management of childhood diarrhea.

Counseling provided to Caregivers on Zinc and ORS use during treatment: Overall, 51% reported that they counseled on dosage of zinc and 69% on giving zinc tablet for 10 days.

Home visitation: Around half of the health workers reported that they made home visits of children suffering from diarrhoea. Overall, half of them reported of providing zinc tablet, two-thirds providing ORS, half providing advice on breast feeding, and two-thirds reported on counseling on benefits of these services during these visits.

HMIS reporting: Almost all of the health workers reported that they submit previous month's report (along with HMIS report) in a timely manner.

Stock-out of zinc and ORS: Overall, 20% health workers reported an occasion when they could not distribute zinc tablet to clients due to stock-out of supplies, and 17% reported an occasion when could not give ORS to a client due to ran out of supplies. Overall, 54% health workers reported that they were having adequate stock of diarrhoea treatment course. Only 23% knew how to estimate the requirement for zinc and ORS for their catchment area.

Estimation of Zinc and ORS requirement: According to most of the health workers, the required estimation of zinc and ORS mainly depends on the number of diarrhoea affected children during the last and existing month, severity of diarrhoea, and existing stock of Zinc and ORS.

Supplies managed at frontline distribution points: One-fourth of the health workers reported that they normally do not face any problem except during stock-out. Most of the health workers collected zinc and ORS from other CC in case of availability and opportunity, informed the upazila officials, or advised the caregivers to purchase from private pharmacy during such situation.

Health Supervisors Interview Findings

Participation in training supported by Nutrition International (NI): Around 60% of the supervisors reported that they received trainings supported by NI in different years under different sessions. In addition, in response of further necessary trainings, a majority of them (68%) expressed their interest to receive training on mother and child health while another 62% were interested in training on zinc (use, effectiveness, etc.). .

In addition, 46% of them were also interested to receive trainings on monitoring & supervision of zinc-ORS program, one-fourth also interested on use of BCC/IEC materials in Zinc and ORS.

Knowledge, skills and practices of Gram Doctors

About 42.6% Gram doctors knew the correct dose of zinc supplement for treatment of diarrhoea among children aged 0-6 months, and 55.6% knew correct dose of Zinc supplement of diarrhoea for children aged 6-59 months. Further, 60.2 percent Gram doctors were aware of preparation method of ORS correctly, and 64% had ability to demonstrate the use of

dispersible Zinc tablet correctly. Additionally, 57% Gram doctors know the correct duration for continuation of zinc supplement for 10 days.

NI Supported training received by Gram doctors: About 60% Gram doctors received trainings on ORS and Zinc within one year. On the contrary, all of them opined that they required further training in this regard.

Treatment behavior on childhood diarrhoea: Overall, 52.8% Gram doctors prescribed only ORS for under-5 children, and 15.3% prescribed both Zinc and ORS.

Opinion of District and Sub-district level Managers: Most of the Civil Surgeons have informed that they always monitor the supply and demand of zinc stock and stock checklist to know the amount of storage of zinc. Half of the Civil Surgeons s have ensured that currently they have no shortage of Zinc and ORS. On the other hand, some Civil Surgeons have informed that ORS are available to them but Zinc is out of stock. Most of DDFPs and UFPOs are not well aware of the stock of zinc and ORS.

Recommendations

Considering the above, the team have the following suggestions for future advancement of the programme on use of Zinc and ORS in diarrhoea of under 5 children.

1. More gram doctors and medicine shop salesman's should be trained;
2. Taste of zinc tablets should either be increased or caregivers be informed to use sugar with it before dispensing;
3. Electronic media, especially- television should be used to inform people of use of zinc and ORS for diarrhoea in under 5 children;
4. Doctors at UHCs and above should be trained on use of zinc and ORS in diarrhoea in under 5 children;
5. District level managers of both health and family planning should be given equal emphasis in programme; and
6. Zinc tablet or syrup should be made available at all the public health facilities for supply free of cost.

Tables of End-of-Project Assessment, Bangladesh Zinc Program

Table 01: Percentage of caregivers children who sought treatment from any sector

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from any sector among them having diarrhoea in the two weeks preceding the survey	193	88.5	188	92.6	260	89.3	641	90.0
N	218		203		291		712	

Table 02: Percentage of caregivers children who sought treatment from public sector

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from public sector among them having diarrhoea in the two weeks preceding the survey	55	25.2	53	26.1	70	24.1	178	25.0
N	218		203		291		712	

Table 03: Percentage of caregivers children who sought treatment UHC and above level among all children

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from UHC and above among them having diarrhoea in the two weeks preceding the survey	43	19.7	40	19.7	49	16.8	132	18.5
N	218		203		291		712	

Table 04: Percentage of caregivers children who sought treatment from UHC among all children

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from UHC among them having diarrhoea in the two weeks preceding the survey	36	16.5	32	15.8	27	9.3	95	13.3
N	218		203		291		712	

Table 05: Percentage of caregivers children who got treatment from CC among all children

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from CC among them having diarrhoea in the two weeks preceding the survey	13	6.0	10	4.9	21	7.2	44	6.2
N	218		203		291		712	

Table 06: Percentage of caregivers of children who sought treatment from public sector and gave both Zinc and ORS

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from public sector and gave both zinc and ORS among them having diarrhoea in the two weeks preceding the survey	37	17.0	38	18.7	46	15.8	121	17.0
N	218		203		291		712	

Table 07: Percentage of caregivers of children who sought treatment from UHC and above level of facilities and gave both Zinc and ORS

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from UHC and above and gave both zinc and ORS among them having diarrhoea in the two weeks preceding the survey	28	12.8	28	13.8	32	11.0	88	12.4
N	218		203		291		712	

Table 08: Percentage of caregivers of children who sought treatment from UHC and got both Zinc and ORS

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from UHC and gave both zinc and ORS among them having diarrhoea in the two weeks preceding the survey	21	9.6	21	10.3	16	5.5	58	8.1
N	218		203		291		712	

Table 09: Percentage of caregivers of children who sought treatment from CC and got both Zinc and ORS

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from CC and got both zinc and ORS	12	5.5	8	3.9	15	5.2	35	4.9
N	218		203		291		712	

Table 10: Percentage of children who got Zinc tablet or syrup and reported to consume zinc tablets for the recommended duration of 10 days among those who sought treatment from any sector outside home

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children who got zinc tablet or syrup and reported to consume zinc tablets for the recommended duration of 10 days among those who sought treatment from any sector outside home	30	15.5	18	9.6	13	5.0	61	9.5
N	**193**		**188**		**260**		**641**	

Table 11: Percentage of children who got zinc syrup and reported to consume zinc syrup for the recommended duration of 10 days among those who sought treatment from public sector

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children who got zinc syrup and reported to consume zinc syrup for the recommended duration of 10 days among those who sought treatment from public sector	6	10.9	8	15.1	4	5.7	18	10.1
N	55		53		70		178	

Table 12: Percentage of children who got zinc tablet and reported to consume zinc syrup for the recommended duration of 10 days among those who sought treatment from public sector

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children who got zinc tablet and reported to consume zinc tablet for the recommended duration of 10 days among those who sought treatment from public sector	9	16.3	3	5.6	4	5.7	16	8.9
N	55		53		70		178	

Table 13: Percentage of children who got zinc tablet or syrup and reported to consume zinc tablet or syrup for the recommended duration of 10 days among those who sought treatment from public sector

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children who got zinc tablet and reported to consume zinc tablet or syrup for the recommended duration of 10 days among those who sought treatment from public sector	15	17.2	11	20.7	8	11.4	34	19.1
N	55		53		70		178	

Table 14: Percentage of caregivers who have correct knowledge

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of caregivers who have correct knowledge	177	81.2	176	86.7	253	86.9	606	85.1
N	218		203		291		712	

Table 15: Percentage of caregivers who correctly describe the most common signs and symptoms of dehydration among children

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of caregivers who correctly describe the most common signs and symptoms of dehydration among children	138	63.3	141	69.5	170	58.4	449	63.1
N	218		203		291		712	

Table 16: Percentage of caregivers who correctly describe how to treat child diarrhoea with Zinc and ORS according to national guideline/minimum standard

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of caregivers who correctly describe how to treat child diarrhoea with Zinc and ORS according to national guideline/minimum standard	19	8.7	14	6.9	13	4.5	46	25.8
N	218		203		291		712	

Table 17: Percent of caregivers of children who sought treatment from gram doctor

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of caregivers who sought treatment from gram doctor	109	50.0	101	49.8	146	50.2	356	50.0
N	218		203		291		712	

Table 18: Percent of caregivers of children who sought treatment from gram doctor and gave both Zinc and ORS

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of caregivers who sought treatment from gram doctor and gave both Zinc and ORS	94	43.1	82	40.4	86	29.6	262	73.6
N	218		203		291		712	

Phase-wise Output Tables of End-of-Project Assessment, Bangladesh Zinc Program

Table 01: Percentage of caregivers children who sought treatment from any sector

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from any sector among them having diarrhoea in the two weeks preceding the survey	193	88.5	188	92.6	260	89.3	641	90.0
N	218		203		291		712	

Table 02: Percentage of caregivers children who sought treatment from public sector

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from public sector among them having diarrhoea in the two weeks preceding the survey	55	25.2	53	26.1	70	24.1	178	25.0
N	218		203		291		712	

Table 03: Percentage of caregivers children who sought treatment UHC and above level among all children

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from UHC and above among them having diarrhoea in the two weeks preceding the survey	43	19.7	40	19.7	49	16.8	132	18.5
N	218		203		291		712	

Table 04: Percentage of caregivers children who sought treatment from UHC among all children

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from UHC among them having diarrhoea in the two weeks preceding the survey	36	16.5	32	15.8	27	9.3	95	13.3
N	218		203		291		712	

Table 05: Percentage of caregivers children who got treatment from CC among all children

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from CC among them having diarrhoea in the two weeks preceding the survey	13	6.0	10	4.9	21	7.2	44	6.2
N	218		203		291		712	

Table 06: Percentage of caregivers of children who sought treatment from public sector and gave both Zinc and ORS

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from public sector and gave both zinc and ORS among them having diarrhoea in the two weeks preceding the survey	37	17.0	38	18.7	46	15.8	121	17.0
N	218		203		291		712	

Table 07: Percentage of caregivers of children who sought treatment from UHC and above level of facilities and gave both Zinc and ORS

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from UHC and above and gave both zinc and ORS among them having diarrhoea in the two weeks preceding the survey	28	12.8	28	13.8	32	11.0	88	12.4
N	218		203		291		712	

Table 08: Percentage of caregivers of children who sought treatment from UHC and got both Zinc and ORS

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from UHC and gave both zinc and ORS among them having diarrhoea in the two weeks preceding the survey	21	9.6	21	10.3	16	5.5	58	8.1
N	218		203		291		712	

Table 09: Percentage of caregivers of children who sought treatment from CC and got both Zinc and ORS

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children 0-59 months who sought treatment from CC and got both zinc and ORS	12	5.5	8	3.9	15	5.2	35	4.9
N	218		203		291		712	

Table 10: Percentage of children who got Zinc tablet or syrup and reported to consume zinc tablets for the recommended duration of 10 days among those who sought treatment from any sector outside home

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children who got zinc tablet or syrup and reported to consume zinc tablets for the recommended duration of 10 days among those who sought treatment from any sector outside home	30	15.5	18	9.6	13	5.0	61	9.5
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Table 11: Percentage of children who got zinc syrup and reported to consume zinc syrup for the recommended duration of 10 days among those who sought treatment from public sector

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
% of children who got zinc syrup and reported to consume zinc syrup for the recommended duration of 10 days among those who sought treatment from public sector	6	10.9	8	15.1	4	5.7	18	10.1
N	55		53		70		178	

Table 12: Percentage of children who got zinc tablet and reported to consume zinc syrup for the recommended duration of 10 days among those who sought treatment from public sector

Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
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Indicator	Phase-1		Phase-2		Phase-3		Overall	
	n	%	n	%	n	%	n	%
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Indicator	Phase-1		Phase-2		Phase-3		Overall	
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