

**REPORT
ON
ORAL THERAPY EXTENSION PROGRAMME
PHASE - I
(July 1980 - September 1983)**

February 1984



BRAC

Bangladesh Rural Advancement Committee
66 Mohakhali, Dhaka 12

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1. INTRODUCTION:

The Bangladesh Rural Advancement Committee (BRAC) has been at the forefront of development activities in Bangladesh and has focussed its programmes on the socio-economic emancipation of disadvantaged rural populations since its inception in 1972. Its integrated development projects are characterised by an approach in which all aspects of rural life are taken into consideration. Considering the acute health hazards in Bangladesh, programmes on public health care have been included in BRAC's programme activities.

2. BACKGROUND OF ORAL THERAPY:

Diarrhoea is one of the most important health problems and a major cause of deaths of infants and young children in Bangladesh. Children under 5 may suffer from two to five diarrhoeal episodes annually. It is estimated that some ten per cent (10%) of the children die from the effects of diarrhoea before reaching their fifth year.

The scientific rationale for oral rehydration is firmly established. It is well known that in the treatment of diarrhoeal diseases, when a body becomes dehydrated, the only effective treatment is rehydration - replacing either intravenously or orally approximately the same volume of water and electrolytes lost.

The major concern is not the composition of the solution administered, rather it is the provision of necessary services to all who require them that is important. Intravenous administration is not accessible to the rural poor because of the lack of trained personnel, inadequate supplies of saline solution and high costs involved. Similarly it is impractical to supply packets of oral rehydration salts to every household in Bangladesh as tens of millions would have to be produced and distributed annually in the rural areas where 92% of the people live

and where diarrhoea is an acute problem.

To combat all the above problems and difficulties and with the objective of reducing mortality and morbidity, particularly of children, BRAC felt the need to develop a new technique which would be safe, simple, readily acceptable and easily available to the people. Hence BRAC's oral therapy, prepared out of home ingredients, was developed after a year of research and field trials.

3. BRAC'S METHOD OF ORAL THERAPY:

To ensure acceptability, the simple technique of using pinch and scoop measurements has been adopted. A three finger pinch of Lobon (common salt) and a four finger scoop of Gur (molasses) when dissolved in half a seer (467 ml.) of pure water gives a solution very close to the recommended preparation. The Lobon-Gur Saline solution (LGS) may be dangerous if the amount of salt is excessive; however, concentrations of upto 120 mmol/L are acceptable. Both clinical and field experiences have led to no reports of danger nor this factor has caused any complications or deaths. This LGS is given to the diarrhoeal victim with the first onset of watery purging.

4. THE OTEP: PRESENT PROGRAMME:

The ideal technology for community-based programmes should involve knowledge that is easy to communicate to people and actions that people can understand and accept. Thus the OTEP method is communicated by an educational package called "Seven Points to Remember" (see appendix - I) which covers various aspects such as education on diarrhoea, preparation of LGS and related nutritional and other information. Originally, the message contained ten points but, considering the question of retention, it has been modified to 7 points.

Female Oral Rehydration Workers (ORWs) visit each household and teach one responsible woman in the household the 7 points including a practical demonstrations of how to prepare the LGS. The duration of the instruction is about 25-35 minutes. The most important aspect in this method is the face-to-face teaching which facilitates better relationships and enhances basic understanding of the message. Education is imparted through dialogue. In the initial stages of the programme, ORWs could not follow the dialogue method and turned it instead into monologue. Thus, to generate dialogue and to encourage client participation in the learning process, a colourful illustrative Flip-Chart is now used as a manual for ORWs. Besides the education, the ORWs also search out diarrhoeal patients in the locality and refer them to the male worker. The rationale behind this is to demonstrate to the community the beneficial effects of LGS.

Once the task of educating one woman is completed, the ORW moves on to the next household. Following this procedure village after village and union after union is visited until the entire Upa-Zilla has been covered.

A Team consists of 7 ORWs, 2 Team Co-ordinators and a cook. Originally, the number of ORWs per Team was 10 but this was later reduced to the present size. It has been found that when a Team operates in an area for a relatively longer period of time, the use of LGS increases remarkably. This experience was found in the pilot scheme carried out in Laskarpur Union (Sylhet District) in March - May, 1981.

The Team Co-ordinators (TCs) are male members of the Team and are responsible for a number of activities. Their first job is the pre-operation study of the concerned Upa-Zilla with the objective of creating congenial ground for Team operations. The

study includes meeting with the Upa-Zilla Nirbahi Officer, all other government officials particularly the Upa-Zilla Health Administrator, the Upa-Zilla Education Officer, the Union Chairman, institutional and non-institutional leaders and other local influentials. It also includes conducting a survey of the whole Upa-Zilla in respect of villages, households, all types of institutions and selection of bases for the team to live in. In this respect, a T.C. contacts people individually and through seminars and meetings.

During ORW operations, TCs are mainly responsible for precontact, smooth working of the ORWs, patient care and follow-up and school forums. This was the case in the early stages of the 1st phase. However, the efforts of the TCs and ORWs proved to be less than satisfactory as the usage rate for LGS remained negligible and efforts had to be made to overcome this problems. On the other hand, a pilot scheme carried out in March-May, 1981 in Laskarpur village of Habiganj Area (Sylhet District) showed better results. The core reason for this better performance is probably the dialogue with the male members of the society by the TCs. It seems that no matter whatever other efforts are made, acceptance and use rate of LGS will remain low unless the male members of the society are involved.

Therefore, new strategies were evolved from May '82 that more male contact should be attained through the follow forums:

- a) Individual contact
- b) Group Meetings
- c) Mosque Forum
- d) Hat (Market place) Forum
- e) Central Village Workshops.

Because of the short stay of a Team in an area, none of the channels enumerated above could be explored adequately.

As such, ORW teams were split into smaller units to ensure more time-allocation to an area. It was also envisaged that the 3(three) Unions in an Upa-Zilla would have to be operated simultaneously.

Since rural society is dominated by leaders of different classes and their opinion is sought by people at every step, particularly in undertaking anything new, it is obviously important to mould their opinion in favour of the programme, so that they may encourage people to use IGS when approached. A training module on conducting Seminar was designed and its implementation started from October, 1982, leaving no village untouched. It was conducted in two ways, on the spot seminars and pre-arranged seminars.

Similarly, the role of traditional healers cannot be ignored as they command high faith in health matters. Of course, they are ignorant of the medically accepted knowledge on Diarrhoea and treat all patients in a like manner with frequent use of antibiotics. To make them aware of ORG treatment, gain their support and encourage them to use IGS treatment, seminars with village healers had to be conducted either at the Upa-Zilla level or at the Union-level, inviting them through the Upa-Zilla Health Administrator. They were awarded certificates for participating in this seminar and attending at least one male seminar. Village healers' seminars have had a significant impact in enhancing the usage rate.

Educational institutions are very significant within the institutional frame-work of the community as most of the families are represented at schools through their children and they are important sources and media for inducing new cultural practices. Moreover, teachers provide a formal leadership role in the decision-making process of the community. This is an additional back-ground reason for undertaking the coverage of

educational institutions, especially Primary and High Schools. At various stages, efforts were made to provide more input so that the forums may become an effective force. To raise and retain their enthusiasm, a system of monetary incentives which provided cash prizes and certificates to schools with the best performance had been introduced. This system was later abandoned it led to falsifications and other deceitful claims. Instead, cadres selected for their outstanding performance were honoured with coat pins.

The field experiences resulted in the development in mid-1982 of a "Guide Book" for Programme Organisers of ORW Teams where the objectives and steps for organising the forums has been described.

4.1. REINFORCEMENT, MONITORING AND USAGE SURVEY:

To control the quality of education as well as determine the ORWs salary, a team consisting of 2 male Programme Organisers, known as the Monitor Team, visited all the Unions about 15 days after the ORWs activities. The team also assessed the teaching quality of ORWs. Ten per cent (10%) of the taught women were selected randomly and interviewed, following collection of sample vials for electrolyte analysis. The monitors, on the other hand, were evaluated by the Monitor's Monitors.

The original task of Monitors was only that of monitoring and they simply determined the monthly remunerations of the ORWs on the basis of monitoring grades (A,B,C or D). They did not contribute towards enhancing the use rate where non-use was encountered until their role was rectified towards re-teaching and further motivation work. Their tasks were redesigned from September 1982 and they were then entrusted with three-fold responsibilities: Monitoring, Usage Survey and Reinforcement. Reinforcement then became a prime job of the team and consequently monitoring was reduced to 5% while the team size was

increased to 4 and the Team was renamed 'Reinforcement Team'. Reinforcement activities included re-education, individual male contact, conducting and following-up male seminars, patient care, follow-up of patients identified by the ORW team and utilisation of all other forums for male coverage. They visited the taught areas one month after the educational programme of the ORWs.

Initially the usage survey was conducted by another group which was withdrawn when this task was entrusted to the Reinforcement Team. The rationale behind usage surveys being conducted by the Reinforcement Team is to ensure quick feedback of the results to the ORW Team so that they can take corrective actions for the future.

4.2. SPECIAL REINFORCEMENT (SRT):

Significant changes have been brought about in ORW and Reinforcement Team activities since October, 1982. ORW Team activities now include systematic coverage of the male population; even the Reinforcement Team activities have been rationalised. Their current package of field activities is thought to be significantly more effective and it is proposed that the areas covered earlier need to be revisited considering how vital it is to increase use rates through better acceptance of LGS.

Special Reinforcement Teams were set up entrusted with the responsibility of male coverage, particularly through male seminars, quack seminars, meetings, mosque, hat and other venues. Out of a total 682 Unions under SRT, 45 were covered during phase-I period.

4.3. ORW INCENTIVE SALARY SYSTEM:

Each woman who is interviewed by a Reinforcement Team member is graded A,B,C or D depending on answers on the 7 points and on LGS preparation. Grade A is obtained if the respondent

scores 10 and IGS preparation is correct; Grade-B if the score is 9-7 and IGS is correctly prepared; a score of less than 7 with correct IGS making yields grade C; while incorrect IGS preparation, irrespective of points scored, merits grade D. The ORWs are paid according to the number of households visited during the month in each grade. Taka 4, 2, and 1 are paid for grades A, B and C respectively, while no money is paid for grade D. The average monthly salary of an ORW has been found to be Tk.650.00 (US \$ 30).

4.4. PUBLICITY AND INFORMATION:

The objectives of programme publicity are:

- a. To reinforce field activities by creating general awareness;
- b. To develop a favourable sentiment for OTEP.

Materials have been developed from field experiences while various available media are being explored and utilised to disseminate the information and knowledge to the population in general. Materials developed and re-designed in phase-I are:

- a. Folder (on Diarrhoea and Oral Saline);
- b. Folder (on OTEP organisation and management);
- c. Multicolour poster;
- d. Leaflet (seven points to remember);
- e. Plastic Badges to School Cadres.

Commercials have been aired through television and radio and advertisements have been printed in journals and periodicals. To gain social recognition, utilisation of the government mass media is necessary. Thus, for recognition of oral therapy and to ensure its use, radio and television have to be utilised. Besides these, installation of hoardings in public gathering places and uniform signboards are also part of the publicity activities.

4.5. PERSONNEL - RECRUITMENT AND TRAINING:

The recruitment of staff for various positions to replace and open new areas continued throughout the phase.

The ORWs are selected through a series of formal procedures. Interested women having at least 10 years of schooling, not having children less than three years old and having ages not more than 40 years asked to appear for interview. The interview is followed by 5-days of intensive Pre-recruitment training. Aspects such as communication abilities, family background, general health condition, intelligence etc. are assessed. The 5-day training is divided into two parts - 3 days of class room activities and 2-days of field trial. Formal tests and role-playing are the main assesment tools.

The Programme Organisers are recruited through advertisements in the national dsilies. Two categories of workers, graduates/post graduates and intermediate candidates, are selected for the programme. Selection is made after written tests and interview. Training in different aspects are imparted at the training centre of BRAC and, after assesment of potentiellity is made, some are weeded out and the rest are sent to the field. Confirmation of their service depends on satisfactory performance during the first year of service. The total number of ORWs and P.Os are 608 & 299 respectively at the end of the first phase.

5. ACHIEVEMENTS IN PHASE-I:

A total of 2.51 million of households have been visited during this phase (see appendix 3). The average number of households visited by an ORW was 9.96 per day and a total of 169788 households were monitored during the phase (see appendix 5). Upto the end, 113 Upa-Zillas, 1159 Unions, and 20,668 villages under 5 districts have been covered (see appendices 3-4).

of this is to evaluate the impact of OTEP on morbidity and mortality.

The study was commissioned in early 1981. After nearly a year of preparation, a design was finalized for the mortality study. The design was presented in a number of forums to test its robustness. The design was accepted at a Technical Advisory Committee (TAC) meeting and was subsequently published by the International Centre for Diarrhoeal Diseases Research, Bangladesh (ICDDR,B).

The mortality study is a massive study. A total of about 130,000 people in different rural areas of the country are being followed up every six months. Apart from its programme implications, it also has great policy and academic importance. No study has ever been undertaken in Bangladesh which allows such an intensive follow-up of population over a wide range of geographical and socio-economic locations. The latest status of different operations of the impact mortality study are given in appendix 10 .

Not surprisingly for any retrospective survey, the data on deaths were found to be under reported in the first round. Several techniques were employed subsequently to improve the death recording. Better results were obtained later on and the data from all these surveys are now being analysed to construct a correction factor for estimating the missing events. Very soon we will be able to get meaningful feed-back on the impact of this programme on mortality.

6.2. USAGE SURVEY:

The Research and Evaluation Division also started a utilization or usage study (measured in terms of the use of the method in diarrhoeal episodes) as early as the pilot phase of the programme. The initial results did not appear to be

encouraging and several studies were undertaken to identify the bottlenecks. Consequently programme changes were made and since then the situation has improved. However, the range of the usage rate in different areas remained very wide (8-80%). One important reason for low usage is the perception of the rural people about diarrhoea itself. Mild to moderate cases are not considered a disease worthy of medication and hence about half of the reported patients are not treated at all. If the untreated group is left out, the acceptance rate rise to 35% or so. Though this acceptance figure may appear to be low, it should be kept in mind that this is a "first recruitment" of a single exposure programme. Given the prevailing socio-cultural conditions of the community, the slow rise of the usage rate in the initial stages need not be a cause for undue concern.

6.3. CHLORIDE CONCENTRATION:

One important aspect of monitoring was the feed-back provided on the quality of the programme with respect to the 'safety' of the solutions prepared by the BRAC method. A sample of the Lobon-Gur mixtures collected by monitors was analysed for chloride in the field laboratory. The results revealed that about 90 per cent of the sample was within the safe and effective range of chloride concentrations. The proportions of the sample in different concentration groups are given in appendix 11-13.

Moreover, for quality control, 10 per cent of the analysed sample selected at random, was re-analysed for chloride using the chloride-counter at the ICDDR,B. A study of 698 chloride results analysed at ICDDR,B revealed that 570 (or 82%) were within 10 mmol/L of the field analyses. During the first phase, more than 100,000 sample vials have been analysed for chloride concentration. Besides, 2071 sample vials each have

been analysed for estimation of potassium and sodium concentrations. In all 1768 samples have also been analysed for glucose ($C_6H_{12}O_6$) concentration (see appendix 14).

6.4. RETENTION OF KNOWLEDGE:

The chloride concentrations discussed so far are based on samples which were collected between 15 to 30 days after the teaching of the OTEP message. A study was also commissioned by the Research and Evaluation Division of BRAC to assess the extent of retention over a longer period of time. A random sample of 250 households were surveyed in each of the areas which had been covered by the programme three to six months earlier. The results showed that the women retained the knowledge equally well three or six months after the teaching as they did after 15-30 days (available through monitoring). Detailed results are given in the appendix 15.

6.5. THE EXTERNAL EVALUATION TEAM:

During January-February 1983 an External Evaluation Team nominated by the donor agencies consisting of Dr. Shushum Bhattia, Dr. Richard A. Cash and Dr. Immit Cornez made a complete assessment of the programme. The conclusions and recommendations of the team are attached to appendices 16-21.

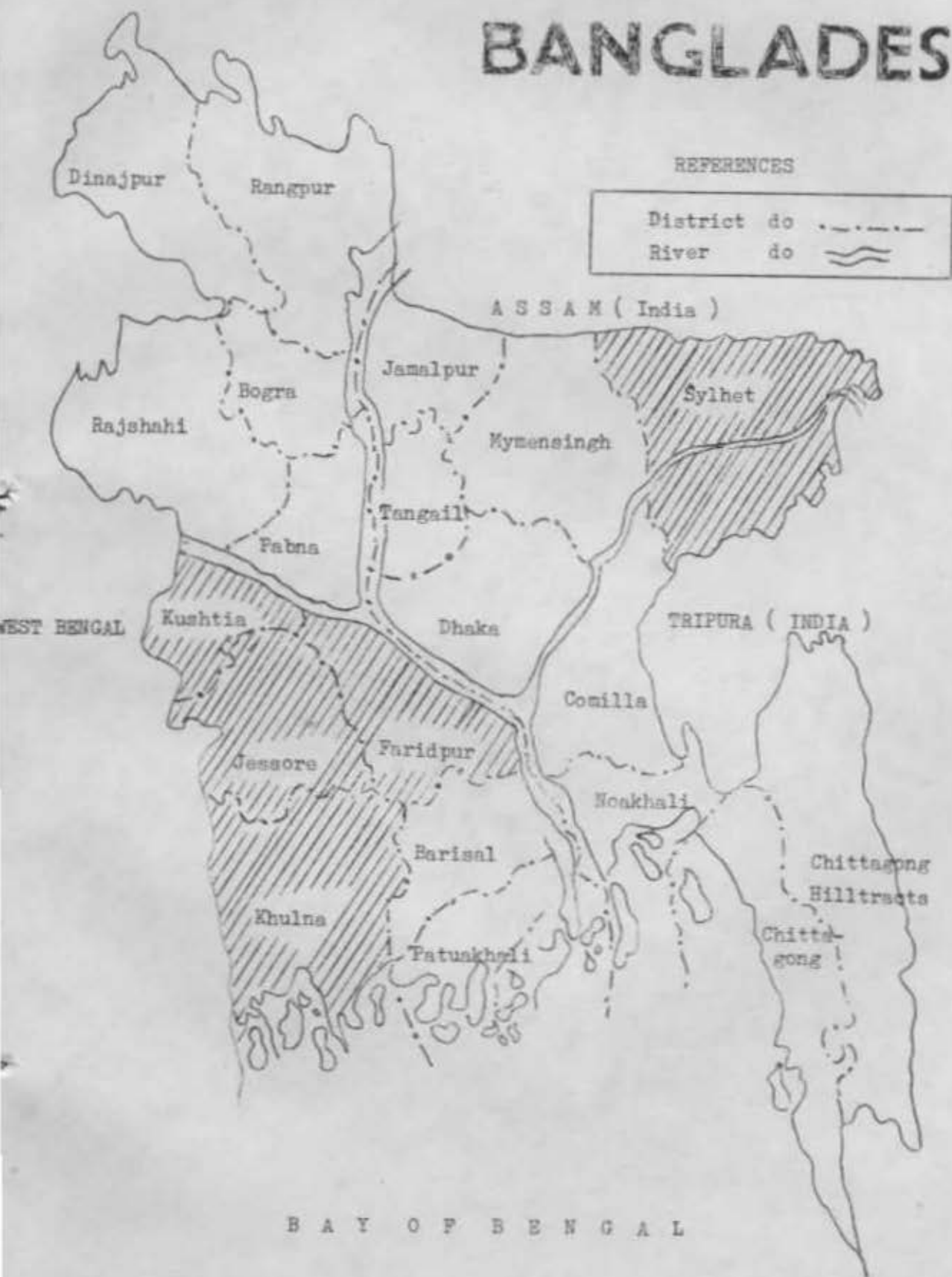
7. CONCLUDING REMARKS:

During the First Phase of OTEP the institutional infrastructure of the programme had to be gradually built up and this sometimes led to unanticipated difficulties. In most such cases, however, the management resources of the programme were able to find ways to overcome or circumvent these obstacles. Thus, although some of the programme objectives may have remained unreachd, one can say that sufficient successes were achieved and lessons learned to encourage the continuation of the programme into phase-II. The ultimate success of

the programme will rest, of course, on widespread usage of LGS and since this involves, as we have learned from the first phase, a change in cultural practices, we should not be surprised to learn also that this cannot be achieved overnight but has to be striven for with perseverance, devotion and patience.



BANGLADESH



BAY OF BENGAL

Seven points to remember in case of diarrhoea.

1. Loose motion and increased frequency of motion are the first symptoms of diarrhoea. Water and salt contents drain out from the body with each loose motion. If such loose motions continue for some time, symptoms like vomiting tendency, loss of appetite, indigestion and spasm of hands and legs may set in. Loose motion then turns into diarrhoea, which may prove to be fatal. So necessary measures should be taken in time to save the diarrhoea-patients.
2. In order to save ourselves from this disease, we should drink tube-well, tap water. If such water is not available, water from other sources should be boiled and then cooled before use. Totten food should not be eaten. All foodstuffs should be covered well so that flies cannot sit on them. Hand and mouth should be washed properly before eating.

Remember that breast-milk is always harmless. But children fall sick when they suck dirty breasts. So the nipples of breast should be kept clean.

3. The only treatment of diarrhoea is to replenish by any means the water and salt lost. Previously it used to be done by intravenous saline injection. Injectable saline contain water, salt and glucose. But there are some difficulties to use, such as, saline for injections are not easily available in the villages; and since these injections are intravenous, the services of a doctor are necessary moreover is expensive. It is, therefore, necessary to take timely measures so that loose motions do not turn into diarrhoea. The easiest treatment is to administer oral rehydration saline. This saline is also made of salt, water and sugar like saline for injections. But the advantage of it is that it can be prepared right in the house and it requires only a little bit of salt, molasses and pure water.
4. Oral Rehydration Saline is to be prepared by mixing a pinch of salt with the help of tips of three fingers and a fistful of molasses in half a seer of water well stirred. Care should be taken to mix salt, molasses and water in right proportion.

5. Oral saline should be administered immediately after the first loose motion. If it is delayed, it may be difficult to replenish the lost water and salt. As a result, there may be shortage of water in the system of the patient, and he/she may become weak. If dehydration takes place, saline injections become essential.
6. Adult patients should be given at the rate of half a seer of oral saline as prepared at a time after each motion. The children should be given only as much as they want, but at frequent intervals.
7. Advice in regard to nutrition: During the disease, the patient should be given to take plenty of water and food-stuffs like rice, curry along with oral saline. In case of children, breast-feeding by mothers must not be stopped. The patient should be given increased amount of water and food at least for seven days after recovery. This will help to cure malnutrition and weakness of the patient and minimise the possibilities of his/her falling victim of the disease again.

DIARRHOEA IS A SERIOUS DISEASE

PREVENT IT

Coverage by Area, Thana, Union, Village & Household
From 1st July 1980 to 30th September 1983

Appendex-

Area	Total No. of Thana	No. Of thanas covered	Total no. of Union	No. of Unions covered	Total No. of village	No. of villages covered	Total No. of HHs	Total No. of rural H Hs	No. of H Hs visited	% of rural H Hs visited	Remarks
1. Haoriganj	8	8	57	57	1639	1432	182807	180402	118309	65.86	
2. Jessore	7	8	85	89	1253	1356	267798	243891	179637	73.65	
3. Gopalganj	5	5	68	68	618	651	169727	167013	116081	69.50	
4. Moulavi-bazar	6	6	66	56	1926	1583	212767	207162	119033	57.46	
5. Bagerhat	7	7	73	73	967	966	213437	203346	152781	75.13	
6. Madaripur	10	10	119	120	1101	1034	344571	334093	222313	66.54	
7. Sylhet-	10	10	93	93	2855	2742	292347	279742	201554	72.05	
8. Khulna	8	8	66	66	885	909	298080	184201	154633	83.95	
9. Faridpur	7	7	76	76	1133	1197	222242	212020	170176	80.26	
10. Narail	3	3	37	38	629	642	98329	92493	66618	72.02	
11. Meherpur	2	2	9	18	236	213	63899	60240	48632	80.73	
12. Sunamganj	8	8	82	82	2218	2644	230499	225991	188225	83.29	
13. Jhenidah	6	6	74	74	1193	1147	171588	158793	144026	90.70	
14. Satkhira	7	7	77	77	1199	1273	229528	220034	181578	82.52	
15. Chudanga	4	4	29	30	495	498	101219	93415	83574	89.47	
16. Goalundo	4	4	45	45	812	807	121627	115905	96841	83.55	
17. Magura	4	4	36	37	685	694	95122	90704	84830	93.52	
18. Kushtia	6	6	60	60	918	880	193822	180870	159241	88.04	
Total	112	113	1152	1159	20762	20668	3509409	3250315	2488582	76.56	

* Total coverage 25,12,746 HHs as 24,164 HHs from Chandina P.S. have been covered.

District wise coverage by Thana, Union, Village & Household

Appendix

District	Total No. of thana	No. of thanas covered	Total No. of Unions	No. of Unions covered	Total No. of village	No. of villages covered	Total No. of HHs	No. of rural HHs	No. of HHs visited	% of rural HHs visited	Remarks
1. Sylhet	32	32	298	288	8638	8151	918420	893297	627621	70.26	
2. Faridpur	26	26	308	309	3664	3689	858167	829031	605411	73.03	
3. Jessore	20	21	232	238	3760	3839	632837	585881	475111	81.09	
4. Khulna	22	22	216	216	3051	3148	741045	607581	488992	82.4	
5. Kushtia	12	12	98	108	1649	1591	358940	334525	291447	87.12	

Area - wise percentage of Household Monitered & Monitered

Appendix

Household / Grade

Area	No. of HHs visited	No. of HHs monitered	% of HH Monitor-ed	No. of Monitered Household/Grade				Percentage of Households /Grade				Re
				A	B	C	D	A	B	C	D	
1. Habiganj	118809	11854	9.98	6010	5469	226	149	50.70	46.14	1.90	1.26	
2. Jessore	179657	17958	10.01	9138	8692	126	32	50.80	48.32	0.70	0.18	
3. Gopalganj	116031	11725	9.97	5741	5409	304	121	49.60	46.73	2.63	1.04	
4. Moulaviba	119033	11984	10.07	6019	5719	187	59	50.23	47.72	1.56	0.49	
5. Bagerhat	152781	13215	8.65	6140	6514	297	234	46.46	49.52	2.25	1.77	
6. Madaripur	222313	17787	8.00	8408	8831	478	70	47.27	49.65	2.69	0.32	
7. Sylhet	201554	9338	4.88	4752	4849	176	51	48.40	49.29	1.79	0.52	
8. Khulna	154633	11159	7.2	5855	4908	503	42	52.47	43.98	3.16	0.32	
9. Faridpur	170123	12478	7.33	5837	5933	409	249	47.02	47.55	3.44	1.99	
10. Narail	66618	5946	8.93	2923	2913	60	50	49.16	48.99	1.01	0.84	
11. Meherpur	48632	2906	5.98	1454	1421	19	12	50.03	48.91	0.65	0.41	
12. Sunamganj	188225	11029	5.86	5064	5419	306	210	45.92	49.41	2.77	1.90	
13. Jhenaidah	149028	7194	4.99	3691	3405	67	31	51.31	47.33	0.93	0.43	
14. Satkhira	161273	8998	4.96	4315	3829	312	42	53.51	42.55	3.47	0.47	
15. Chuadanga	83572	3225	3.38	1690	1479	43	11	52.39	45.85	1.33	0.43	
16. Goswami	96314	3972	4.10	2054	1830	77	11	51.71	46.07	1.94	0.28	
17. Magura	84830	3096	4.00	1729	1658	9	-	50.91	48.82	0.27	-	
18. Kushtia	159241	5243	3.29	2678	2105	139	21	51.06	45.87	2.65	0.40	
Total	2488582	159738	6.82	84038	80743	3008	1399	49.50	47.56	2.12	0.82	

Area-wise school Forum Statistics by no. of Schools covered,
No. of Students & Teachers taught, No. of Cadets selected.

Appendix - 6

Area	No. of School			No. of School covered			% of Coverage			No. of Participan's			No. of Cadets selected
	Primary	Secondary	Total	Primary	Secondary	Total	Primary	Secon-dary	Total	Stud-ents	Teach-ers	Total	
1. Habiganj	324	40	364	274	29	303	84.57	72.50	83.24	18869	583	19452	3951
2. Jessore	513	148	661	399	76	475	77.78	51.35	71.86	42090	2045	44135	8354
3. Gopalganj	228	41	269	186	21	207	81.57	51.21	76.95	17260	465	17725	2632
4. Moulavibazar	661	64	725	522	58	580	78.97	30.63	80.00	39374	1416	40790	3667
5. Bagerhat	327	55	423	294	71	365	89.91	73.96	82.29	23184	1335	24819	1023
6. Madaripur	620	124	744	545	82	627	87.90	66.13	84.27	31341	2241	36582	8564
7. Sylhet	1055	123	1178	1003	176	1179	95.07	94.51	94.99	51406	3045	54421	12673
8. Khulna	568	171	739	536	150	686	94.37	87.72	92.83	69385	2683	72568	10104
9. Faridpur	484	100	582	418	80	498	85.66	80.00	84.69	52055	1944	53999	6142
10. Narail	279	74	353	170	30	200	60.93	40.54	56.66	18089	823	18912	306
11. Meherpur	152	31	183	112	26	138	73.68	33.83	75.41	9177	532	9709	2579
12. Sunamganj	830	77	913	608	58	666	72.73	75.32	71.54	34786	1654	36444	8178
13. Thana	413	103	516	382	93	475	92.49	90.29	92.05	38513	1961	40474	6332
14. Satkhira	464	130	594	424	110	534	91.38	84.62	89.90	46845	2299	49144	7172
15. Chudanga	214	42	256	196	40	236	91.59	85.24	92.19	17280	809	18169	3674
16. Gopalganj	273	72	345	231	54	285	84.62	75.00	82.61	26709	1138	27847	2535
17. Magura	278	99	377	223	72	295	80.22	72.73	78.25	23219	1409	24628	4478
18. Kushtia	399	94	493	341	73	414	85.46	77.66	83.96	30537	1649	32186	5667
Total	8092	1629	9721	6864	1239	8103	84.82	76.06	83.36	593919	28081	622000	115898

District wise School Forum Statistics by No. of Schools Covered,
No. of Students & Teachers taught, No. of Cadres Selected.

District	No. of School			No. of School covered			% of coverage			No. of participants			No. of Cadres Selected
	Pri- mary	Seconda- -dary	Total	Pri- -mary	Secon- -dary	Total	Pri- -mary	Second- -ary	Total	Studen- -ts	Teach- -ers	Total	
1. Sylhet	2376	304	3180	2407	261	2668	83.69	85.86	83.90	144435	6668	151103	33449
2. Faridpur	1609	337	1946	1380	237	1617	85.77	70.33	83.09	130365	5788	136153	19876
3. Jessore	1483	424	1907	1174	271	1445	79.16	63.92	75.77	421911	6238	128149	22731
4. Khulna	1359	397	1756	1254	331	1585	92.27	83.38	90.26	140214	6317	146531	27922
5. Kushtia	765	167	932	649	139	788	84.84	83.23	84.55	56994	3070	60064	11920
Total	8092	1629	9721	6864	1239	8103	84.82	76.06	83.36	593919	28081	622000	115898

District wise Program Statistics on Seminar by No. of Seminar organised, No. of Villages covered and No. of Male and Quacks taught.

District	No. of Seminar organised			No. of Participants			No. of villages covered	No. of Quacks attended the male seminar	Remarks
	Male	Quack	Total	Male	Quack	Total			
1. Sylhet	671	60	731	11619	530	12149	595	175	
2. Faridpur	671	35	706	15837	349	16186	569	161	
3. Jessore	1111	61	1172	20011	554	20565	1132	151	
4. Khulna	1262	21	1283	28380	427	28807	1370	129	
5. Kushtia	794	35	829	11842	377	12219	779	205	
Total	4509	212	4721	87689	2237	89926	4445	821	

Statistical Report on various Media
used for disseminating the Information

1.	No. of 7 points script distributed	4,29,000
2.	No. of Posters distributed	1,38,000
3.	No. of Folders distributed	1,21,000
4.	No. of Spots advertised in Radio	600
5.	No. of Spots advertised in TV	122
6.	No. of bill-boards displayed	3

MORTALITY STUDY
STATUS OF DIFFERENT OPERATIONS AT A GLANCE AS ON 31ST JANUARY, 1984

STUDY	THANA	BAHUBAL	RAJNAGAR	GOSAIRHAT	JAJIRA	MORALGONJ	SALIKA	BATIAGHATA	MIRP
BASELINE	DC	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	E	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	C	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	CE & C	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	W	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
FOLLOW-UP 1	DC	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	E	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	C	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	CE&C	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
FOLLOW-UP 2	W	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	DC	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	E	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	C	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	CE & C	//////////	//////////	//////////	//////////	//////////	//////////	//////////	//////////
FOLLOW-UP 3	W	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	DC	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	E	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	C	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	CE&C	//////////	//////////	//////////	//////////	//////////	//////////	//////////	//////////
FOLLOW-UP 4	W	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
	DC	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	//////////	//////////		
	E	XXXXXXXXXXXX	XXXXXXXXXXXX	//////////	XXXXXXXXXXXX				
	C	XXXXXXXXXXXX	XXXXXXXXXXXX	//////////	XXXXXXXXXXXX				
	CE&C	//////////	//////////	//////////	//////////				

W WRITING
 DC DATA COLLECTION
 E EDITING
 C CODING
 CE & C COMPUTER ENTRY & CLEANING.

XXXXXX COMPLETED
 // // // // UNDER PROCESS
 _____ NOT YET STARTED

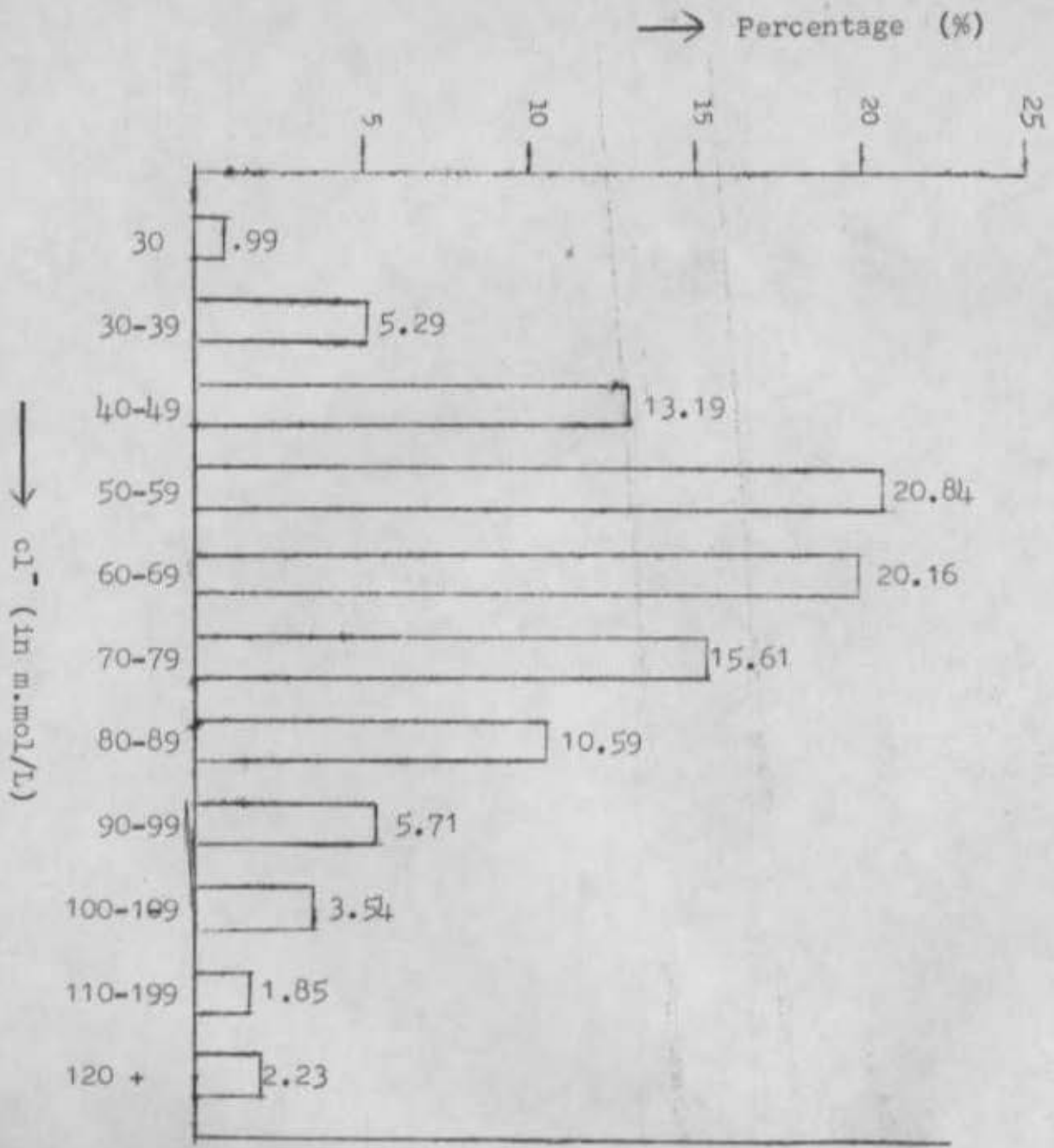
TABLE

Distribution of chloride concentrations as observed
in different time periods of the programme
along with sample statistics

Chloride concentrations (in mmol/l)	Safety and effectiveness	Time period			
		July 80- June 81	July 81- June 82	July 82- Dec. 82	Jan. 83- till end of Phase I
< 30	Safe but less effective	8.8	1.5	1.2	0.63
30 - 99	Safe and effective	89.9	94.5	90.3	88.63
100-119	Effective but potentially dangerous				7.43
120 and over	Dangerous	0.6	0.9	2.0	3.31
All samples		3903	33603	18892	36651
Mean (mmol/l)		64.2	66.0	68.0	72.40
s.d.		N.A.	N.A.	21.8	22.48

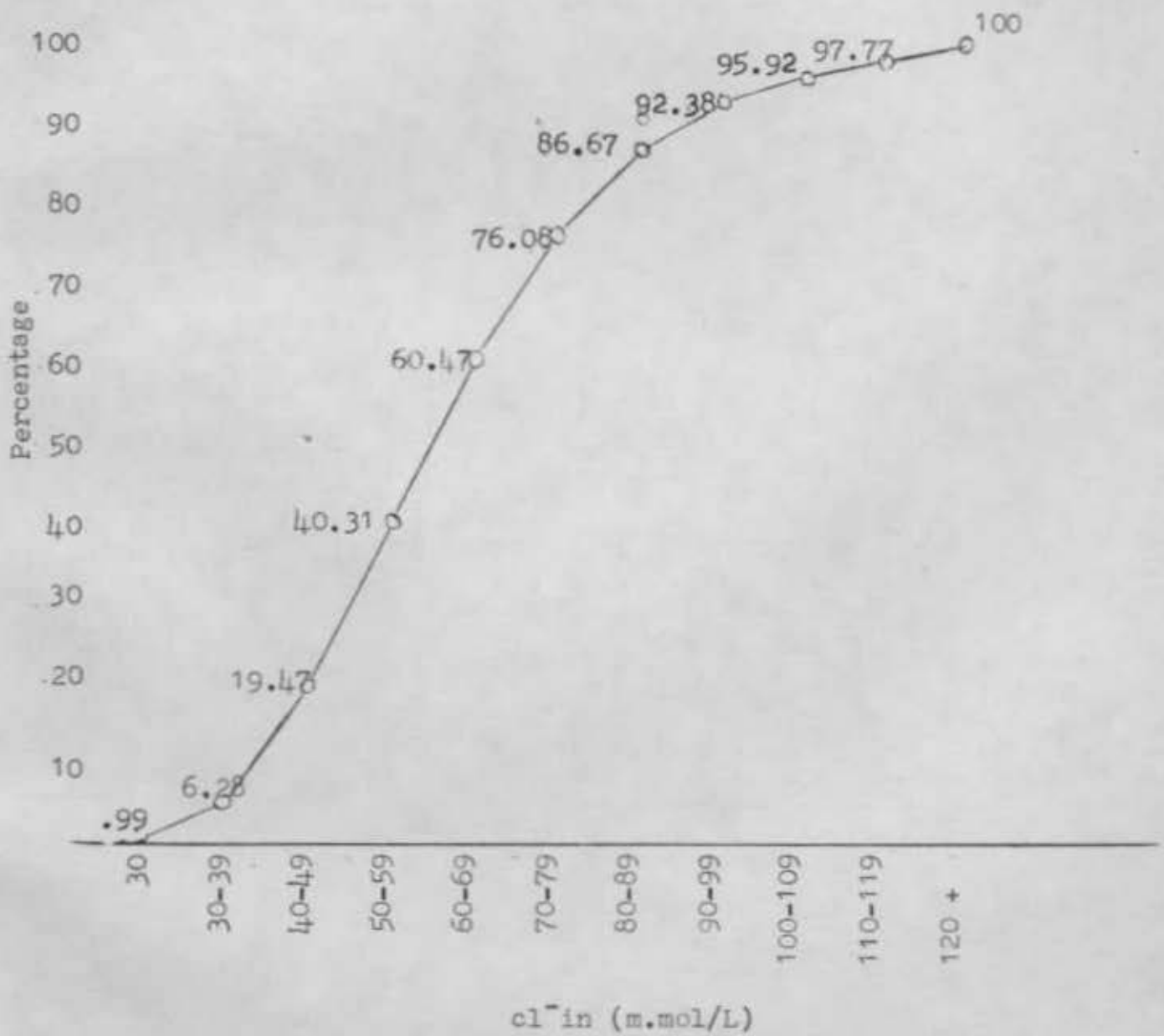
DIAGRAM SHOWING CHLORIDE CONCENTRATION
IN IGS SAMPLE DURING PHASE 'I'

TOTAL NO. OF SAMPLE = 95230



+ Due to high water salinity in coastal areas of Khulna district.

CUMULATIVE DIAGRAM OF CHLORIDE
CONCENTRATION IN LGS SAMPLE
DURING PHASE-I



Total Sample analysed during phase - I

Chloride (Cl^-)	=	96406
At Field	=	88599
At ICDDR,B	=	6631
Sodium (Na^+)	=	2071
Potassium (K^+)	=	2071
Glucose ($\text{C}_6\text{H}_{12}\text{O}_6$)	=	1768

10176 samples have been re-analysed at ICDDR,B

The retention of knowledge about Lobon-Gur Oral Rehydration Saline.

Glimpses from a survey in rural Bangladesh.

Table -1

Distribution of Sodium concentrations in oral rehydration salines prepared by women in two different samples who were taught about Lobon-Gur three and six months before the survey.

Na ⁺ (in mmol/L)	3 months after teaching		6 months after teaching	
	No.	%	No.	%
Less than 30	6	2.4	2	0.8
30-59	101	40.4	78	31.2
60-89	117	46.8	131	52.4
90-119	18	7.2	31	12.4
120 +	7	2.8	7	2.8
Not available	1	0.4	1	0.4
All	250	100.0	250	100.0
Mean*	65.4		71.2	
S.D.	21.4		22.0	
Highest	129.0		149.0	
Lowest	15.0		21.0	

* Significant at 5% level.

Table - 2

Distribution of the amount of water added by women to prepare the Lobon-Gur oral rehydration saline in two different samples who were taught about the method three and six months before the survey.

Amount of water (in c.c.)	3 months after teaching		6 months after teaching	
	No.	%	No.	%
Below 251	-	-	2	0.8
251-350	21	8.4	29	11.6
351-450	74	29.6	83	33.2
451-550	131	52.4	123	49.2
551-650	22	8.8	13	5.2
651 +	2	0.8	-	-
All:	250	100.0	250	100.0

All:	250	100.0	250	100.0
Mean*	460.1		443.7	
Sd.	74.1		72.1	
Highest	770.0		620.0	
Lowest	290.0		230.0	

* Significant as 5% level.

Table - 3

Differences of the observed means of Sodium and water from the target in the two samples.

Na ⁺ /water	Differences between the observed means and target values	
	3 months after teaching	6 months after teaching
Na ⁺	5.4*	11.2*
Water	- 6.9	- 23.3*

* Significant at 1% level.

Table - 4

Distributions of Potassium concentrations in oral rehydration salines prepared by women in two different samples who were taught about Lobon-Gur three months and six months before the survey.

K ⁺ (mmol/L)	3 months after teaching		6 months after teaching	
	No.	%	No.	%
2.5 - 8.4	99	39.6	108	43.2
8.5 - 14.4	91	36.4	92	36.8
14.5 - 20.4	45	18.0	49	19.6
20.5 +	14	5.6	-	-
Not available	1	0.4	1	0.4
Total	250	100.0	250	100.0
Mean *	10.9		7.8	
Sd.	4.8		2.4	
Highest	27.0		19.1	
Lowest	2.7		3.7	

* Significant at 5% level.

1. CONCLUSIONS AND RECOMMENDATIONS of the External Evaluation Team February-1983

We have expressed our opinions about various components of the programme in the discussion. The approach taken in this section is to emphasize those aspects and implications that are of particular importance to us and in some cases to make specific recommendations.

This evaluation took place after only 30 months of activities of OTEP. The introduction of the use of the lagon and gur solution (LGS) implies important behavioral changes which generally take time to occur, particularly in the early stages. The findings of this evaluation therefore have a somewhat provisional character. The results of the 2nd phase will most probably give clear indications as to the future developments.

2. The Objectives of OTEP

The External Evaluation Team (EET) was impressed by the results achieved by OTEP during the first 30 months of activities. More than 1.6 million households have been taught oral rehydration therapy using the homemade lagon and gur solution (LGS) and the objective of covering 2.5 million households will most likely be met by the end of Phase I in September 1983. A remarkably high number of women - 95% of all households taught - remember the message one month after the teaching and 98% know how to prepare the solution. OTEP has thus shown that it is able to achieve its goal of teaching one woman in each rural household the why and how of LGS.

3. The Approach of OTEP

The OTEP approach is unique as it is based on the work done by mobile teams of young women staying together independently from their respective families, teaching individually, at their home, one woman in each household, usually the mother. This approach

which is remarkable in a fairly traditional predominantly men orientated society such as rural Bangladesh - is most likely one of the factors of the results achieved so far by OTEP.

4. The Teaching of the ORWs

EET was impressed by the work of the ORWs (the female Oral Rehydration Workers). Their way of teaching, their attitude towards the women they teach, their patience,, and the interest they show in their work are important assets to OTEP.

5. The Training of the Male Field Workers

In addition to the ORWs, OTEP had to recruit a great number of new male field workers as team coordinators and for the reinforcement teams. Some of the field staff of OTEP have worked in other BRAC Projects. Thus the experiences and the abilities of the field workers in their job training and preparation varied greatly. EET feels that for those male field workers lacking experience, additional training in communication skills, in monitoring, and supportive supervision would enhance the effectiveness of the ORW teams.

6. Additional Training of the Staff in Matters Concerning Diarrhoea

All field staff - male and female - in order to be comfortable with their work should have sufficient knowledge about diarrhoea and dysentery, and their management. Additional training in the technical aspects of these illnesses would, therefore, be valuable for those working at the community level

7. Reinforcement Teams

As of September 1982 the reinforcement teams took on the additional activity of conducting the user surveys. Monitoring and reinforcement are the other two activities for which they are responsible. Most field based groups in OTEP have fewer discrete functions. EET feels that it will be important for the supervisors (the area managers, the regional manager and the program

manager) to closely monitor the efforts of these workers in order to determine whether all the activities are equally emphasized and whether further training is needed in any one area.

8. Complementary Integrated Approach

The effectiveness of the teaching is most likely to increase if it is followed up by new contacts, if it is expanded to other members of the households, and if it is integrated with other health activities. BRAC therefore has the intention, as a complement to its teaching in all villages and increasing the use of the newly initiated reinforcement teams, to focus on 150 unions (i.e. 1 union in 150 Thana) and initiate there a set of activities mainly related to health. BRAC assumes that this integrated approach would increase the use of ORS in those unions and have a spread effect in others. EET was much in favour of this new complementary action.

9. Prevention

The message that are now being given by OTEP on the prevention of diarrhoea may reduce its incidence in many situations. Messages include water boiling, greater use of tube wells, hand washing, and protection of food. Many of these activities, however, cannot be carried out by villagers mainly because of a lack of facilities and/or economic resources. It is hoped that research organisations such as ICDDR,B will be exploring other simplified means of preventing diarrhoea.

It is recommended that OTEP, based on its own field experience and by keeping up-to-date on the findings of other groups, continually look for ways to prevent diarrhoea that rural families can afford and practice.

10. Personnel Policy and Management

EET was very favorably impressed by OTEP/BRAC's personnel policy and its managerial style and capabilities. We are convinced that the successful implementation of OTEP is largely due to these

11. User Survey

Who, why and how L.G.S. is used is information that is critical to OTEP. These data will determine whether OTEP should change any component of the program, redirect its activities to certain groups, or give a different direction to the reinforcement activities. OTEP has done a remarkable job in recognizing the importance of these data and in designing and implementing imaginative studies in this area.

It is recommended that the user data already collected be given priority in the study and the possible effect on user rates of factors such as education, income, distance from the nearest health centre be analyzed. Actual use of LGS will also have to be determined by indirect procedures and more adequate definitions to distinguish "seven cases" from milder illness will have to be found.

12. Impact Survey

a. OTEP's impact survey is a well designed study that attempts to determine the effect of ORT on childhood diarrhoeal mortality as a measure of the effectiveness of the OTEP program. However, caution should be exercised in interpreting the findings. It will be tempting to over or underestimate the results of the study. Many factors will have a bearing on outcome; use rates, for example, most probably will have to be taken into account.

b. Data from the impact survey is now being analyzed and results should be forthcoming. Data analysis has been somewhat delayed because BRAC is dependent on other computer systems which understandably may not always give BRAC priority. Arrangements have been made between BRAC and other institutions and BRAC has been exploring its computer needs considering future purchase of a computer. EET hopes an adequate solution will be found soon, taking into account also cost effectiveness.

13. Work with Other Health Personnel

OPEP contacts health personnel wherever they are working to inform them of their activities and the LGS messages. A much more concerted effort is now being made to contact local traditional practitioners, either individually or in forums, to inform them of ORS in general and LGS in particular. It has been decided by OPEP that more effort should be made to have team coordinators and reinforcement teams contact pharmacists to have their cooperation. All these groups are assured that the packet is always recommended for use if available and that LGS should be given if the packet is unavailable. EMT supports OPEP in these efforts and suggests that they continue to increase their activity to reach local practitioners as well as pharmacists.

14. Other Organizations with ORT Programs

Bangladesh is fortunate in having a number of organizations, both government and non-government, interested and involved in developing programs in ORT. Organizations such as NORP, UNICEF, and ICDDR,B are particularly prominent in this area. There are increasing efforts to have all groups communicate with each other and share information whenever possible. We encourage BRAC to continue this process, making others in the field aware of any new development, cooperating with them whenever possible, and benefiting from the experience of the other groups. This also concerns the message utilized and it is important that others continually be updated on BRAC's observations and findings.

* OPEP uses a half seer (467 cc) of water as its volume as it is adapted to local conditions. Most other ORS programs use a liter measure and design their packets accordingly. OPEP has amended and improved its directions for the preparation of LGS by shifting from the initial "1-2-1" message (one pinch of lobon, two small scoops of gur and a half seer of water) to the simpler "1-1-1" message (one pinch of lobon, 1 full scoop of gur, and a half seer of water).

15. Relationship with ICDDR,B

The relationship that OTEP has with the ICDDR,B has been a very productive one. Advice on study design and training of computer programmers has been given, computer facilities have been used, and laboratory analysis of LGS conducted. A technique for chloride analysis in the field has been developed for use by OTEP. It is clear that OTEP should continue to collaborate with ICDDR,B whenever possible.

16. Expansion of OTEP

EET feels that OTEP is in a position to expand the program, that is, to increase the number of areas it works in at one time. However, such an expansion, since it requires additional field staff, can only be successfully implemented if the necessary attention is given to the training and supervision of the new workers. BRAC's training methods and capabilities should enable the organisation to meet this condition.

17. Recommendation for Continued Funding

EET feels that OTEP should be supported in its second phase and urges present and potential funders to commit themselves to this effort.