INTEGRATING ORAL REHYDRATION THERAPY
INTO COMMUNITY ACTION PROGRAMS:
WHAT ROLE FOR PRIVATE VOLUNTARY ORGANIZATIONS?

March 19, 20 and 21, 1980

cefpa

The Centre for Population Activities
1717 Massachusetts Avenue, NW
Suite 202
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WORKSHOP ON ORAL REHYDRATION THERAPY
March 19, 20 and 21, 1980

The Sponsoring Agency

The Centre for Population Activities (CEPPA) is a non-profit, educational institution which conducts management training for family planning, health and development professionals in the Third World. Under a contract with the United States Office of Population. in-country management programs are being carried out in four countries. Under a grant from the Policy, Planning and Coordinating Division of the United States Agency for International Development (USAID), the Women's Program at CEPPA is conducting management training for women in the fields of family planning, health and development.

The workshop, "Integrating Oral Rehydration Therapy Into Community Action Programs: What Role for Private Voluntary Organizations?", is sponsored under a grant to CEPPA from the Office of Health, USAID.

The Collaborating Agencies

The Pan American Health Organization (PAHO), as the World Health Organization (WHO) Region Office for the Americas, is engaged in numerous health programs in collaboration with the countries and territories of Latin America and the Caribbean.

Under the aegis of its Diarrhoeal Diseases Control Programme (CDD), PAHO is currently collaborating with many of its Member States in integrating oral rehydration therapy, along with other diarrheal control and preventive measures, into their primary health care systems.

The National Council on International Health (NCIH) was organized in 1971 to promote cooperation and encourage communication among the many individuals, agencies and organizations, both public and private, working in international health.

The NCIH provides a mechanism whereby common approaches can be defined, joint efforts undertaken and limited resources more effectively utilized in the broad field of international health.

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A two-and-one-half-day workshop (March 19-21, 1980), "Integrating Oral Rehydration Into Community Action Programs: What Role for Private Voluntary Organizations?," resulted in a stimulating exchange of ideas among experts in Oral Rehydration Therapy (ORT) delivery, private and voluntary organization (PVO) representatives and representatives of international donor agencies. The purpose of the workshop was to exchange information about the use of ORT as an integral part of other health and development programs and to explore potential PVO channels for extending the availability of ORT. The workshop participants reviewed current information and collaborated in working groups to identify key issues and options and to make recommendations for the delivery of ORT services through the private sector. The enclosed report is meant to highlight these issues and recommendations. It is not a manual of complete information on the technical aspects of ORT usage, nor a comprehensive guide to ORT program development. Rather, the collaborating agencies, The Centre for Population Activities (CEFPA), the National Council for International Health (NCIH) and the Pan American Health Organization (PAHO), hope this document will be a useful introduction to program planners who will want to investigate the technical aspects of implementing ORT delivery further. The listing of resources in Section 5 of the report may prove a useful guide to those seeking more information.

The collaborating agencies are grateful to the Unit ed States Agency for International Development (USAID), Office of Health, which made this program possible, and to PAHO, which made facilities available for the workshop. We also wish to thank all the panelists and resource people for sharing their vast experiences in ORT delivery.

We are especially indebted to the 34 representatives of private and voluntary organizations who took time to explore with us ways in which better health can be obtained through the increased use of ORT. It is their enthusiastic participation which allows us to state with confidence that the role of PVOs in ORT programs can be a most vital element in a global strategy for controlling diarrheal disease which affects millions around the world.

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APPENDICES

A. AGENDA
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C. REPRESENTATIVES OF RESOURCE AND DONOR AGENCIES
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1. THE SCIENTIFIC FRAMEWORK FOR ORT

In developing countries acute diarrheal disease is one of the major causes of mortality and morbidity among children under five. It has been estimated that in 1975 there were about 500 million episodes of diarrhea in children below five years of age in Asia, Africa and Latin America, resulting in more than 5 million deaths. Estimates of the rate of diarrhea range from one to five or more episodes per child per year in the first two years of life. These episodes result in tremendous morbidity for young children with as much as 12 percent of a child's life being spent with diarrhea.

The Causes of Diarrhea

The social causes of diarrhea are poverty, poor environmental sanitation, malnutrition, poor personal and domestic hygiene and harmful child care practices. Efforts to improve the economy, social structure, nutrition and sanitation of the population are long-term objectives of diarrheal disease control programs.

A variety of infectious agents may cause diarrhea. The most common bacteria are Salmonella, Shigella, enteropathogenic Escherichia coli, enterotoxigenic Escherichia coli, Vibrio cholerae, Vibrio parahaemolyticus and other pathogenic vibrios. A large proportion of diarrheal cases are caused by rotaviruses. Other viruses recognized as causing diarrhea are Norwalk agent, adenovirus, coronavirus and calicivirus. Oral rehydration therapy can be used to treat dehydration from diarrhea whatever the etiology. Antibiotics, along with ORT, are used in certain circumstances in diarrhea caused by specific pathogens. Thus, the identification of bacteria and viruses that cause diarrhea and research on immunization and vaccines are another component of diarrheal disease control efforts.

The Effect of Diarrhea

Diarrhea, as an episode, is common to infants and children and is usually self-limiting with no long-term effect in a well-nourished child. Daily stool patterns of healthy infants vary greatly with diet and eating habits, and the mother can best judge when her child has diarrhea. Most cases will not progress to a point at which the child becomes dehydrated or enters the diarrhea-malnutrition cycle if the mother can be convinced to continue food and fluid when she first discovers her child has diarrhea. If the stools become more frequent and of an unformed or liquid consistency, the infant/child should be started on an oral rehydration solution. The availability and administration of such a solution will be discussed in the following section.

Malnourished children are at a greater risk of more frequent and longer attacks of diarrhea. Diarrhea is a contributing factor to
malnutrition and conversely malnutrition may be associated with more severe diarrheal illness and higher mortality/morbidity. There is a synergistic effect of lowered resistance and increased susceptibility to other childhood diseases. This cycle also affects the fertility rate by contributing to continued high childhood mortality.

![Diagram: high fertility rate, high infant mortality rate, malnutrition, infantile diarrhea]

The main complication of diarrheal disease is dehydration, a result of fluids lost from the body. When this fluid loss is less than 5 percent of body weight, thirst, apart from diarrhea, may be the only sign of dehydration. Other symptoms such as a dry mouth, sunken, tearless eyes and sunken fontanelle may also be observed. When the deficit exceeds 5 percent of the body weight, the following signs and symptoms develop rapidly: rapid heart beat, decreased elasticity of the skin, restlessness, irritability, decreased urinary output or absence of urinary output and severe thirst. Shock occurs when the deficit reaches or exceeds 10 percent of the body weight. Greater losses cause death.

**Treatment**

The major objectives in treating acute diarrhea are rehydration and continued food intake. Infants require about two-and-one-half times more water per kilogram of body weight than an adult and should continue to be breast-fed or given dilute bottle feedings and plain water throughout the diarrheal episode. Infants, children and adults should be encouraged to eat any foods they can tolerate. There is no physiological basis for giving the bowel a "rest" during or soon after acute diarrhea.

The purpose of rehydration therapy is to replace the water and electrolyte losses due to diarrhea. Until recently, rehydration therapy has been confined to treatment centers because the solution has been administered intravenously. Extensive research has shown that replacement fluid can be orally administered, is well absorbed during diarrhea and can be used in the treatment of dehydration from acute diarrheas of all causes and in all age groups. Further studies have shown this solution to be as effective as intravenous therapy except in the most severe cases of dehydration.
ORT cannot be used when the person:
- cannot drink because of fatigue, stupor or coma (the oral solution can be given to such persons by nasogastric tube);
- has a prolonged decrease or absence of urinary output;
- has severe and sustained vomiting; or
- has glucose malabsorption.

The complete formula for ORT is:

<table>
<thead>
<tr>
<th>Ingredients and Composition of Oral Rehydration Therapy Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingredients</td>
</tr>
<tr>
<td>Sodium Chloride</td>
</tr>
<tr>
<td>Sodium Bicarbonate</td>
</tr>
<tr>
<td>Potassium Chloride</td>
</tr>
<tr>
<td>Glucose</td>
</tr>
<tr>
<td>Water</td>
</tr>
</tbody>
</table>

People with diarrhea who are dehydrated generally have a deficit of sodium, potassium, bicarbonate and water. A solution containing glucose facilitates the absorption of sodium in the small intestine. Potassium and bicarbonate are important in maintaining a balanced body fluid composition. The complete oral rehydration solution, when available, is the best procedure for treating mild and moderate dehydration and for preventing severe dehydration. The dry ingredients should be dissolved in one liter of water and made fresh daily.

Rehydration is usually achieved by offering the solution frequently and allowing the person to drink as much fluid as desired. Thirst is a very useful guide to the amount of oral solution required. When the complete formula, pre-packaged or locally made, is not available, one level standard* teaspoonful of salt and eight level standard teaspoonsful of sugar should be dissolved in one liter of water. Generally, infants and children should be given one liter per day and adults up to three or more liters per day. Maintenance requirements after rehydration should equal the rate of continuing stool loss. Signs of adequate rehydration include: normal elasticity of the skin, normal urine flow, normal breathing and pulse rate and a sense or appearance of well-being.

Vomiting is a frequent symptom in diarrheal diseases and dehydration. In the initial stages of oral rehydration therapy, persons may vomit. Unless vomiting is severe and repeated, oral therapy should be continued, with small amounts being given frequently. The volume of fluid lost by vomiting is usually a very small portion of that taken and retained by the person.

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*The equivalent of a standard teaspoon is a measure which holds 1-1/3 fluid drams.
The introduction of ORT must be accompanied by education on proper feeding practices, continuing breast-feeding at frequent intervals, giving the usual foods during diarrhea as tolerated, and increasing the amount of food given during convalescence. The use of an oral rehydration solution will contribute significantly in reducing diarrhea-related morbidity/mortality if widely applied within a primary health care system, the community and household. The ingredients for the complete solution may not always be available or accessible. Section 2 will address the family's role in the treatment and control of diarrhea and alternatives to the complete rehydration solution.

Summary

1. In developing countries more than 5 million children under five die annually from acute diarrheal diseases.

2. Better water, sanitation, more hygienic food practices, improved nutrition, and education on breast-feeding, weaning practices and personal hygiene would reduce the incidence of diarrhea-related mortality/morbidity.

3. The severity and frequency of diarrheal diseases in infants and children can be associated with their nutritional and health status.

4. Diarrheal diseases, regardless of cause, often result in dehydration.

5. Dehydration, unless severe (coma, shock), can be treated by administering oral rehydration solution.

6. The most effective formula for oral rehydration fluid includes sodium chloride (salt), sodium bicarbonate (soda), potassium chloride and glucose mixed in the correct proportions in 1 liter of water.

7. An important adjunct of oral rehydration therapy is the maintenance of nutrition. Infants should be breast-/bottle-fed and children offered fluids and food during treatment.
2. THE ROLE OF THE FAMILY IN ORT

The previous section has established the scientific basis for ORT in the treatment of diarrheal disease and the prevention of dehydration. ORT can be safely and effectively administered by ordinary people who have been taught when and how to use it. Health care workers may be the appropriate persons to teach local people how to use ORT, but the families of children needing ORT can and should be the providers of ORT in all but the most severe cases.

The family has a critical role to play in all aspects of the control of diarrheal disease. It is the family which first recognizes the onset of a diarrheal episode and decides how to react to the disease. As discussed in the previous section, minor changes in the frequency of bowel movement and in characteristics of the stool are common among healthy young children. Family members, who are familiar with what is usual for a particular child, will know when diarrhea begins.

In every community there are customary responses to diarrhea in children. Some of these customs are relative harmless. In rural Mexico, for example, a traditional reaction to the drooping of the fontanelle is to suck the skin around it and poke fingers against the palate in an attempt to raise it again. However, some customs are extremely harmful. Most notably, the widespread belief that food and liquid should be withheld contributes significantly to the number of deaths from diarrheal disease.

The family will respond to diarrhea in some manner. The objective of diarrheal disease control efforts is to help families to respond in a way that will not harm the child and one that will lead to the replacement of fluid and electrolytes.

Continued Offering of Liquids and Food

After the family has recognized an episode of diarrhea, the single most important task for them to perform is to continue
to offer liquids and food to the child. Breast-feeding should continue as normal. If bottle feeding is used, the formula should be diluted a little more than normal, but the frequency of feeding should not be reduced. Fluids such as plain water, rice water, clear broth and coconut milk should be given to the child in the same or greater quantities as they are when the child is not sick. The child itself is the best judge of how much fluid its body requires and, therefore, should be offered liquids frequently.

Weaning and other foods should also be continued, but easily digested foods such as fruits and vegetables should replace fatty and spicy foods. Families may find it difficult to believe that continued feeding is an appropriate response to diarrhea. Food and liquid may seem to be "wasted" through vomiting and excretion or may seem to increase the rate of diarrhea. With little enough food to meet the needs of other family members, waste may be thought unacceptable. Further, traditional practices may favor withholding food. Many children with diarrhea are literally starved to death by their well-meaning families.

Obtaining Oral Rehydration Solution

The second major role for the family is to obtain and use an electrolyte replacement solution. The clinical basis for therapy is described in the previous section, as is the fact that intravenous administration under medical supervision is needed only in the most extreme cases. The preferable alternative, oral administration (ORT), is the method discussed here.

In order to use ORT, a family needs to have the solution or its ingredients readily available. In situations where a family member can easily visit a health center, it is possible to distribute the solution in pre-mixed liquid form. These circumstances are rare, however, because of the lack of accessible health centers, the inconvenience of having to go to the center to fetch the solution and the fact that daily preparation is required because any remaining solution, once mixed, should not be kept beyond a 24-hour period. The burden on the family to fetch the solution and on health center staff to mix and distribute it makes this a less than desirable method of obtaining the solution in most developing country circumstances. Indeed, there is no need for the oral rehydration solution to be distributed in liquid form because families can obtain the ingredients and mix them with water to make the solution in their own homes. There are a variety of forms in which these ingredients can be made available.

Centrally-made and distributed packets of the ingredients for making the oral rehydration solution may be made available to
the family. These packets, whether produced through UNICEF or in-country manufacturers (as in the Philippines and Egypt), are sealed in laminated foil and contain the complete formula. Family members mix the contents of the packet with a specific and precise quantity of water to make the solution.

The advantages to the family of this method of obtaining the ingredients include its simplicity and accuracy and the ease of storage. If these packets are readily available at a convenient location, the family can get them at the onset of a diarrheal episode or can keep them in the home in anticipation of an episode. If the contents are mixed with the correct amount of water, the solution will be safe and effective therapy.

The disadvantages to the family of centrally-made packets of ingredients include availability and cost. Even UNICEF places its most optimistic assessment of the number of people who can be reached by centrally-made packets at one-third of those in need. The distribution of packets, especially in rural areas, is logistically very complex and family members may not be able to get them.

When available, centrally-made packets may be sold or distributed without charge to the consumer. Most packets currently available make one liter of solution and cost about US $0.065 to produce. At least two packets of this size are needed to treat one episode of diarrhea. Thus, the cost to the family, if packets are purchased at cost, would be at least US $0.13 per episode; and it is not unusual for a child to experience four or five diarrheal episodes during a year.

An alternative way of obtaining the dry ingredients in pre-packaged form is through local packaging. Because the packaging is local and consequently distribution to the consumer easier and quicker, the packet does not need to have such a long shelf life. Laminated foil is therefore not needed, and the powder can be sealed in a moisture resistant material such as plastic. In Matlab, Bangladesh, for example, there is a small packet production unit staffed by two women which produces up to 500 packets a day.

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1 The complete formula for oral rehydration solution contains the following quantities of ingredients if mixed in one liter of water:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride</td>
<td>3.5 gm</td>
</tr>
<tr>
<td>Potassium chloride</td>
<td>1.5 gm</td>
</tr>
<tr>
<td>Sodium bicarbonate</td>
<td>2.5 gm</td>
</tr>
<tr>
<td>Glucose</td>
<td>20.0 gm</td>
</tr>
</tbody>
</table>
As with centrally-made packets, the advantages to the family of locally-made packets of ingredients are their simplicity and accuracy. The potential disadvantages of cost remain, though the cost is likely to be lower because foil is not needed. Locally-made packets are likely to be more accessible to the consumer, but their reduced shelf life means that they should not be stored for long periods in the home.

A further way in which the family may obtain the oral rehydration solution is through a depot system. This method of distribution assigns responsibility to particular members of a community for mixing and handing out the ingredients for ORT. In the Matlab region of Bangladesh one woman in each extended family household has been trained to mix oral rehydration solution and make it available in liquid form to those needing it. Other strategies for depot distribution involve training specific community members to mix the ingredients and either add these to the correct amount of water on the spot, or instruct the family how to mix these with water at home.

For the family, this depot system has the advantage of being readily accessible. Further, it identifies one person in the community who is knowledgeable about ORT and provides the opportunity for face-to-face instruction on how to administer ORT within the home. Family members with questions can get them answered, and the depot holder may be able to provide reassurance and to correct misconceptions. The disadvantages include the possibility of inaccurate measuring of ingredients and the need for the depot holder to have a ready supply of these ingredients. If the ingredients are purchased in the local commercial marketplace, the advantages associated with bulk purchase for locally- or centrally-made packets are lost and so the cost may be increased.

The final way in which the family may obtain ORT is by mixing the individual ingredients in the home. In this method, the family itself measures the appropriate quantity of each ingredient. The advantages to the family, if the ingredients are available in the home, are that there is no need to seek outside assistance of any kind. The disadvantages include the fact that the ingredients may not be available and that they must be measured accurately.

Family members can measure the ingredients in a variety of ways. Traditional measures, using the fingers and hand, result in wide variation. Household spoons differ in size even within the same community. Homemade spoons of standard size, made from metal that would otherwise be discarded, have been suggested. They have the advantage of consistent accuracy and have essentially no cost. A specially designed plastic spoon has been developed, but this has problems of distribution, cost and availability similar to those of pre-packaged ingredients.
Home-measuring of the ingredients for oral rehydration solution is currently under extensive investigation. While it is recognized that the complete formula for ORT is the best therapy, it is also recognized that families may not be able to obtain the ingredients in mixed form.

Making the ORT Solution

Helping families to mix the solution correctly is central to any attempt to bring ORT to those communities in need of it. For ORT to be safe and effective, the correct quantity of each ingredient must be mixed with the correct volume of water. The need for careful measuring may be a difficult concept to understand, both because it is counter to customary mixing practices and because of difficulties associated with accurately measuring a particular volume of water.

As discussed earlier, the ingredients for making oral rehydration solution may be distributed in pre-mixed form or measured out in the home. The size of the packet of ingredients or the amount of each ingredient to be measured out corresponds to a particular and specific volume of water with which these ingredients are mixed. The UNICEF packets, for example, contain the right amount of ingredients for mixing with one liter of water, while those made in the Philippines contain the right amount of ingredients for mixing with 500 ml. and those in Egypt contain the right amount of ingredients for mixing with 200 ml. The various methods for measuring out ingredients in the home vary in the amount of water to be mixed with these ingredients, but always relate to a specific volume.

Families can be helped to measure water correctly with the assistance of a specific container. In some situations a standard size of can, glass, or other container may be easily available in the community and may be used as a measure of volume. Another approach is to supply the family with a container in which to prepare the solution, such as a one liter intravenous bottle, plastic bottle or strong plastic bag. For the family, the critical thing is to know how much water to use for a given amount of ingredients, whether in a pre-packaged sachet or measured by spoon.

Even with the assistance of a standard container for measuring volume, errors can still occur. Families may believe that "more is better" and deliberately increase the quantity of other ingredients in relation to water in order to make a stronger solution. Other families may sweeten the solution to improve its taste. In teaching family members to use ORT this potential danger must be taken into account.

Although it is preferable that the water used to make the solution be clean, the first priority is to begin the therapy. In the
Philippines, the family is specifically urged to boil the water for 15 minutes and let it cool. Other ORT programs, however, do not teach this, but rather instruct the family to use their usual water source.

Administering the Solution

The family has the central role in administering ORT, regardless of how the solution itself is obtained. The method of administration varies with the child, but may be by bottle, spoon or directly from a glass or cup. An older family member needs to be with the child almost all the time to give ORT. The solution should not be forced on the child, but should be offered to the child frequently. The child with diarrhea is itself the best judge of how much solution it needs and at what rate. About one liter in a 24-hour day is desirable for infants under one year; but older children may require as much as four liters, depending on the age of the child and the severity of the diarrhea.

Diarrhea will continue after ORT is begun, and may even get worse for the first few hours. Vomiting may also continue. The family must not be discouraged by this, but continue to administer the therapy until the child is rehydrated. This may require several days of constant care, with the resulting disruption of the family's normal activities and schedule.

Discontinuing ORT

The final aspect of the family's role in ORT is to discontinue giving the solution when it is no longer needed. In the Philippines, for example, it was found that the rapid improvement in the child's appearance and behavior led families to use ORT beyond the point at which diarrhea had ceased. Usually, however, the child will refuse the salty solution once its extreme thirst lessens and it is offered alternative liquids and foods.

Summary

1. The family recognizes the onset of diarrhea.
2. The family responds to an episode of diarrhea in some way.
3. Continued feeding and drinking is essential.
4. There are several ways in which the family might obtain the ingredients for ORT.
5. The complete formula consisting of sodium chloride, sodium bicarbonate, potassium chloride, glucose and water is the preferred therapy.
6. Pre-packaged ingredients have the advantages of simplicity and accuracy, but disadvantages in terms of availability and cost.

7. Home-measured ingredients have the risk of inaccurate measurement, but the advantage of ready availability.

8. It is essential that the correct amount of ingredients be mixed with the corresponding and correct amount of water.

9. Administering ORT to a child requires continuous family care.

10. The child with diarrhea is the best judge of how much oral rehydration solution, other liquids and foods it should consume.

11. ORT should not be continued once diarrhea ceases.
3. THE ROLE OF ACTION PROGRAMS IN THE COMMUNITY IN ORT

This section of the report addresses the workshop findings about ORT as a component in action programs in the community. Programs of this type may be national, regional or local in scope. They may be sponsored by the national government, private funding, local resources, foreign or international donors or any combination of these. The community action program may be concerned primarily with health care, nutrition, agriculture, family planning or other aspects of improving conditions in the developing countries. Regardless of these variations, the community programs featured here have several characteristics in common: they are concerned with poor people; they reach people in the communities where they live; and they have the potential or actual capability of helping families to understand, obtain and/or use ORT to treat diarrhea.

Ways in which programs can assist diarrheal disease control efforts are discussed under three headings: training, community education and distribution. These headings correspond to the topics discussed in detail by the working groups during the workshop. Conclusions and recommendations developed by these working groups are presented in Section 4 of the report.

Training

In order for ORT to be made available to those children in need, training has to have been provided to a variety of community action program personnel. Programs experienced in ORT stress the need to provide orientation and training to programmatic and political decision-makers and senior members of the health care team as well as to those who will actually implement the program. This orientation has the purpose of creating a receptive framework for the introduction of ORT and thus reducing the possibility of opposition or resistance.

The major focus of training efforts, however, is the community-level worker. These workers, whether their focus is primary health care, nutrition, family planning or other aspects of development, should be able to recognize the need for rehydration, to mix oral rehydration solution and to teach family members how to do so. They should also discriminate between harmful, beneficial and harmless customary practices and learn techniques for discouraging those which are harmful and accommodating or encouraging those which are beneficial or not harmful. Training should also place ORT and the need for it in the context of primary health care and particularly for the long-term goals of preventing diarrhea.

The previous section discusses the role of the family in ORT. Family members, once they learn how to obtain, mix and administer the oral rehydration solution, can become the providers of ORT to
children within the family. They can also provide ORT training to other families in the community and work with community-level workers to ensure that ORT is made available to all children with diarrhea.

Training in ORT should become an integral part of the training of community-level workers for other activities, rather than a separate effort. Care should be taken, however, to ensure that in adding ORT to the responsibilities of community-level workers the program is not over-burdening these workers beyond their capability and/or the time available for their duties.

One important component of training efforts is follow up in order to reinforce the content of training and remind family members and workers of what they have learned. Follow-up methods of this kind include self-instructional materials, features and promotional spots on the radio, articles in newsletters and a review of ORT in subsequent training activities. Community worker supervisors can also play an important role in reinforcing the need for ORT, in checking that workers are using correct and complete information and in answering questions or reiterating what has been learned.

Community Education

Community education refers to efforts to guide and assist members of the general public and special target groups within the population. The means by which this education for ORT can take place include: the mass media (television, radio and print); customary entertainment (songs, drama); local institutions (churches, schools); materials developed to accompany the ingredients of oral rehydration solution (brochures, packet labels, messages printed on containers); messages accompanying related items (growth charts, nutritional supplements, salt packets); and face-to-face education of the family by the community worker.

Regardless of the channels used for community education in ORT, it is important that the messages be consistent, correct and not contradictory. This implies that in a given community there should be a standardized approach to ORT in terms of the method of obtaining the ingredients and the amount of water used to make the solution. For example, community education can become potentially dangerous and full of pitfalls if the ingredients are distributed within the community in packets of more than one size, to be mixed, for instance, with either a glassful or a liter of water. It is also difficult in community education activities to argue in favor of both prepacked and home-measured methods of oral rehydration solution.

A community action program could contribute to the introduction of ORT through the development and/or financing of community education activities. Before creating a demand for ORT in this way, however, it is important that the demand can be met through an adequate
cadre of trained workers to teach families how to make the solution and the availability of the solution's ingredients. It is also important that the educational activities fit within the cultural context of the community, not only because they will be more successful if they do so, but also because they could potentially do more harm than good if people reject the information or grasp some but not all of it.

**Distribution Activities**

Section 2 describes various ways in which a family might obtain the ingredients with which to make oral rehydration solution and discusses these in relation to the needs of the family. The following paragraphs discuss distribution factors from the point of view of action programs in the community.

The central issue to be resolved by any community action program is how to assure an adequate supply of the ingredients without jeopardizing quality. Each of the methods of supplying the ingredients--central packaging, local packaging, depots and home measuring--requires some degree of compromise between these two concerns.

Another issue concerns the advantages and disadvantages of private and public sector distribution. The supplying of contraceptives through private, retail outlets has been very successful in some countries; and it is argued by some that this experience might be a useful model for packets of ingredients for oral rehydration solution. Others, however, feel strongly that commercial distribution is inappropriate.

It is reported that in the Philippines some consumers have questioned the value of ORT because the packets of ingredients are distributed without charge rather than sold in pharmacies. In Afghanistan the government subsidizes the cost of the packets but the consumer still pays something, and this money contributes to a revolving fund. However, at present, most countries distribute pre-packaged ingredients through the public sector and without charge to the consumer.

The selection of an approach should be based on the knowledge of a variety of factors. If a retail approach is taken, the pre-packaged ingredients must be a product which is attractive to the retailer. It may also be necessary to accompany the distribution of packets to retailers with promotional materials such as signs, as well as instructional materials for the consumer.

Community action programs can further contribute to the distribution of the ingredients of the oral rehydration solution through assistance in establishing packaging capability on a regional or local basis. Local entrepreneurs might be helped to develop packaging plants by being given technical advice, loans or grants. If this were done, there is the additional benefit of creating employment opportunities.
If home measuring of ingredients is selected, community programs could assist by investigating the composition of locally available ingredients and the required quantity of each ingredient per unit measure of water. They could also contribute to the testing and selection of appropriate measuring techniques, such as specially designed spoons or the use of common household measures.

Data Collection, Monitoring and Evaluation

There is an urgent need for data about all aspects of ORT. Many of the issues raised during the workshop could not be resolved because sufficient data are not available. To date, programmatic data, in particular, are largely anecdotal or else based on small samples only. While not needing elaborate research methodologies or excessive data collection, policy-makers in national and international agencies are anxious to be exposed to reliable data about the alternate methods of making ORT available, their impact, efficacy and safety.

Information is also needed for monitoring of ORT activities in order to assist program managers and planners. Information systems need to be developed to provide guidance in program direction and modification. This information could well be a part of broader primary health care record keeping systems. At a minimum, monitoring techniques should provide programmatic feedback on the following: the need for ORT, the demand for the ingredients, the ability of families to mix the solution correctly, the resources available to meet the demand for ORT and any problems that are occurring in the community.

Evaluation is complicated by the fact that ORT is only one part of diarrheal disease control efforts, and the cause and effect relationships are unlikely to be straightforward. However, community action programs have much to contribute to evaluation and are usually willing to do so if their role is clearly defined and within their resource constraints.

Summary

1. Action programs in the community have the potential capability to help families use ORT for children with diarrhea.

2. Training and orientation in ORT should be given to programmatic and political decision-makers.

3. Comprehensive training should be given to community level workers so that they can recognize the need for ORT; mix the solution; and teach families how to obtain, mix and administer the solution.

4. The training of community level workers in ORT can be integrated into training for other activities.
5. Follow up should be included in any training efforts.

6. Community education for ORT can take place through a wide variety of channels.

7. Messages about ORT used in community education efforts should be concise, correct and not contradictory.

8. There are a variety of ways in which community action programs can assist families to obtain the ingredients of the oral rehydration solution.

9. Data collection and monitoring are important for community action programs in ORT, and programs can assist in the evaluation of ORT by documenting their programmatic experiences.
4. REPORTS OF THE PARTICIPANT WORKING GROUPS

Much of the second day of the workshop was spent in topic-related working groups. The three groups were concerned with training, community education or home and village level distribution. Each participant elected to join one of these groups and worked with other group members to identify the major issues within the topic and develop conclusions and recommendations about how these issues might be addressed or resolved. Unfortunately, the time available was limited and justice could not be done to all aspects of any topic. This section presents a summary of the statements made by the rapporteurs of each working group during a plenary reporting session.

Working Group on Training

The working group identified three issues which need to be considered prior to any training activities. These are:

1. The identification of the channels through which ORT might be implemented. These channels, in addition to the health care system, might include the agricultural extension system, educational system, etc. PVOs should consider adding ORT activities to their existing service delivery functions before seeking new channels.

2. The political system of the area should be identified, as this will influence the degree of flexibility available to training activities.

3. A receptive environment for ORT should be developed by sensitizing decision-makers, both within the PVO itself and within the local political and service delivery structure.

The working group centered its attention on three levels of training and discussed these in relation to the curricula needed, training methodologies and objectives. These levels of training are:

1. The training of trainers to teach community level workers about ORT. In selecting trainers, preference should be given to personnel already in the delivery system. The curricula for trainers should include: a) a basic set of messages about ORT which are to be taught to community level workers; b) skills needed for teaching these messages; and c) skills needed to supervise community level workers.

2. The training of community level workers in diarrheal disease control. This training should emphasize the prevention of diarrhea, the importance of continued feeding and the use of
ORT. In addition, the community level workers themselves should be able to mix the oral rehydration solution correctly and administer it to children of different ages. The importance of practical experience with ORT was stressed, with community workers needing to have direct experience in all aspects of ORT. The following training curriculum summary was suggested:

- Harmful and helpful local beliefs and practices
- Diarrhea - causes, dangers, and ways to reduce its dangers
- How to treat babies and young children with diarrhea:
  --how to make the solution
  --how to give it to babies
  --how much to give
  --what other liquids to give
  --what other foods to give
  --how to involve the family in treatment
- Treatment of older children and adults
- Prevention of diarrhea
- Local epidemiological and surveillance requirements
- Useless and dangerous medicines
- What to do if packets of ingredients are not available
- How to integrate ORT into present activities

It was suggested that satisfied users of ORT in the community might also be enlisted to teach others how to use ORT.

3. The training of family members in the use of ORT should be based on a clear and concise set of messages. These messages should take into account the local traditional customs and beliefs about diarrhea and its treatment. Because of the need for consistency, it is important that the method of making ORT available within a community be established before training
of families begins. The controversy over the use of the complete formula or simple salt-sugar solution needs to be addressed, and the working group recommended that further research be carried out to establish the ideal and suitable alternatives. In situations where pre-packaged ingredients cannot be made available, the group favored a depot system of distribution.

Working Group on Community Education

Community education and any type of curriculum or materials to accompany community education must be approached through a step-by-step planning process. The members of the group emphasized that community education must be planned as any other development program and go through the various stages of planning.

The group examined the following issues:

- Who is the community
- What is the community's needs
- Information needed to design an ORT community education program
- Specific strategies for eliciting information on feasibility and design of educational program
- Actual steps in setting up the educational program
- Use of various educational and communication channels and their validity
- The content of an educational program or activity
- The evaluation or monitoring and tracking format

The working group identified five target groups: the family, community workers such as teachers and social workers, community health workers, senior members of the health care team such as physicians and nurses, and policy-makers and decision-makers at all levels. The importance of pilot programs and demonstration projects to solicit support for and demonstrate the effectiveness of ORT activities was stressed for the last two target groups.

The working group emphasized the important role of education at the community level and stressed that each community requires an individualized approach as well as different types of educators for each target group level. Above all, educational needs are different for each level, thus requiring the program to be flexible and adaptable as possible.

Community education programs should consider community resources; i.e., access to mass media, literacy, etc. The program must be realistic in scope and consistent in content and message. The content of the program should be based on behavioral objectives. Information needed to develop behavioral objectives are as follows:

- Local feeding practices
- Causes of diarrhea
- Local attitudes toward diarrheal disease and its treatment
4 - 4

- Traditional treatments for diarrhea
- Characteristics of the local health care system
- Attitudes toward dosage
- Expectations of treatment on the part of families
- Established patterns of communication
- Observed family response to ORT

Information about these factors can be gathered from a variety of sources, including anthropological studies, interviews with community members and actual trials with ORT. Where the educational program is given should not be limited; in fact, as many entry points as possible should be tried and utilized.

The preferred channels of communication with a community will vary. Mass media techniques can be effective; however, face-to-face communication is an extremely important component of any community education effort in ORT. Standardized educational materials can be adapted and modification of successful materials should be encouraged.

The key messages to be included in any community education effort were identified as follows:

- The correct ingredients and their mixing
- How and where to obtain these ingredients
- The need to continue breast-feeding
- When to refer for further treatment
- Inadvisability of purges
- How to administer ORT

In considering evaluation, the working group recognized that the number of ORT packets distributed has been used as a measure of success for a program but stressed that programs should also be evaluated through studies of knowledge, attitudes and actual practices adopted through family members in the community.

Working Group on Home and Village Level Distribution

The group identified several basic approaches to home and village distribution and grouped these under the two headings of home preparation and the distribution of centrally-made packets of oral rehydration solution ingredients. The advantages and disadvantages of each were presented, along with the group's recommendations.

The working group stressed that there is no set dogma about methods of distribution. Community needs vary and call for a variety of approaches. Regardless of the approach taken, however, the importance of continued feeding should accompany any attempt to introduce ORT.

Home preparation includes five approaches:

1. Pinch and scoop method:
   - Advantages
     - no equipment needed
     - appropriate in areas where people eat with fingers
Disadvantages  - inaccuracy  
- problem of "more is better"  
- variation in concept of pinch  
- delay between learning and using method

Recommendations - more data needed

2. Use of actual practices such as herbal teas, rice, water, etc.:

- Advantages - known and practiced now
- Disadvantages - does not provide all ingredients
- Recommendations - more study needed

3. Use of domestic spoon:

- Advantages - ready availability
- Disadvantages - variation in size
- Recommendations - assessment of variation in given community

4. Use of homemade standardized spoon:

- Advantages - easily available  
  - uses local resources
- Disadvantages - may not be completely accurate
- Recommendations - involve local people in production

5. Use of special plastic spoon:

- Advantages - step towards standardization
- Disadvantages - needs educational reinforcement  
  - distribution logistics  
  - use may not be appropriate

The distribution of centrally-made packets includes four approaches:

6. Cottage-level mixing and package industry:

- Advantages - uniformity and accuracy  
  - creates jobs
- quality control
- local people involved
- dispells "magic" of outside product
- ensures safeguards

- Disadvantages
  - impurity of raw materials
  - short shelf life
  - less quality control than centralized preparation

- Recommendations
  - develop manual for setting up cottage-level industries
  - encourage study of local raw materials

7. Depot system for mixing and packaging:

- Advantages
  - ready availability
  - strong personal interest

- Disadvantages
  - need for good supply system

- Recommendations
  - examine receptivity of local culture

8. Commercial distribution of centrally-made packets:

- Advantages
  - extensive structure in place
  - perceptions of commercial as good
  - quality control

- Disadvantages
  - need to train retailers
  - possibility of commercial exploitation

- Recommendations
  - investigate within local circumstances

9. Distribution of centrally-made packets through the health system:

- Advantages
  - quality control
  - system in place
  - opportunity for education
  - extends health worker's role in community

- Disadvantages
  - limited coverage of population
The working group emphasized the need for more information on many of these means of distribution and investigation into their relative merits under particular circumstances. They also suggested that the advantages and disadvantages of the various methods should be assessed not only in terms of the individual child, but also for the community as a whole.
5. THE ROLE OF NATIONAL AND INTERNATIONAL AGENCIES IN ORT

This final section of the report summarizes the presentations made by those representatives of major resource and donor agencies who attended the workshop. These agencies are the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), the United States Agency for International Development (AID) and the National Council for International Health (NCIH). Diarrheal disease control is an objective of many bilateral and multilateral development efforts. Financial and other assistance is being offered by many international agencies, including the agencies represented at the workshop, to help countries develop primary health care systems, expand water and sanitation services and improve living conditions of the poor. The introduction and institutionalization of ORT is often one component of these programs.

The representatives of WHO, UNICEF, AID and NCIH explained how these agencies might be able to assist US-based PVOs to undertake programs in ORT. Although little direct funding is available at this time, PVOs and other organizations were urged to write to the responsible officers in these organizations to make their interest in ORT known. Further, each of these agencies produces written materials about ORT which they would be glad to share with PVOs.

The World Health Organization (WHO)

In May 1978, the World Health Assembly passed a resolution requesting the Director General to assist in the development of national diarrheal diseases control programs through the promotion of technical cooperation and the implementation of important research activities. WHO's resulting Program for the Control of Diarrheal Diseases (CDD) has two components:

1. Implementation and training assistance to those WHO member States which request it. This assistance helps governments to establish ORT programs within the context of primary health care and as one part of a broader effort to combat diarrheal diseases. In addition to ORT, the other WHO-recommended strategies are proper maternal and child health care, improved water supply and sanitation, health education and epidemiological surveillance.

2. Sponsorship and coordination of research, with high priority being given to the following topics: The clinical management of acute diarrheal diseases, immunity and vaccine development, the epidemiology and etiology of acute diarrhea and environmental health and diarrheal disease prevention. Research efforts in the operational aspects of ORT programs are also underway.
As of February 1980, some 90 countries have been contacted by the WHO CDD program, and about 70 of these have made a preliminary or definite commitment to developing a national diarrheal disease control program, including the promotion of ORT.

WHO can only work with governments, and so cannot provide assistance directly to any PVO which is planning to develop a program in ORT. However, at the country level, WHO is interested in collaborating with PVOs in research activities and may also be able to assist through training and technical advice. PVOs wishing to explore the possibility of such collaboration should contact the relevant WHO country representative and/or the CDD program representatives in any of the six WHO Regional Offices. The addresses of these offices are given on the following pages.

WHO can also indirectly assist PVOs by making available those written materials which have been developed under the auspices of the WHO global CDD program. A number of research documents, an annotated bibliography and several nontechnical papers are currently available from any WHO office. More publications are planned.

Further, WHO is in the process of developing training and other technical materials and these might be adapted by PVOs for their own use. The publication schedule for these materials is as yet uncertain, but plans include the following:

- Guidelines on prevention and treatment of acute diarrheal diseases for primary health care workers and physicians
- Diarrheal disease compendium
- Manual of simple laboratory procedures for isolating and identifying diarrheal pathogens
- Guidelines for production of the ingredients of oral rehydration solution
- Guidelines for epidemiologic investigation of diarrheal disease
- Guidelines for epidemic control
- Guidelines for simple water purification and sanitation measures
- Operations manual for managers of diarrheal disease control programs

PVOs interested in obtaining these materials should request them from their local WHO office.
The WHO CDD program is decentralized by design. PVOs are encouraged to establish contact with the WHO Regional Office most convenient to them. Each of the offices has an officer responsible for that region's CDD program and that person can answer questions and send copies of those materials that are requested. The following is a list of these WHO offices:

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<tr>
<th>Western Pacific Regional Office</th>
<th>Eastern Mediterranean Regional Office</th>
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<tbody>
<tr>
<td>Taft Ave., Cor. Isaac Peral Street, P.O. Box 2932</td>
<td>P.O. Box 1517</td>
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<tr>
<td>Manilla, Philippines</td>
<td>Alexandria, Egypt</td>
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<th>South East Asia Regional Office</th>
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<tr>
<td>World Health House</td>
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<tr>
<td>Indraprastha Estate</td>
</tr>
<tr>
<td>Ring Road</td>
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<tr>
<td>New Delhi 1, India</td>
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<tr>
<th>Bureau Regional pour L'Afrique</th>
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<tr>
<td>Boite Postale 6</td>
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<tr>
<td>Brazzaville, Republique of Congo</td>
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<th>Regional Office for the Americas</th>
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<tr>
<td>Pan American Health Organization</td>
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<tr>
<td>525 - 23rd Street, N.W.</td>
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<tr>
<td>Washington, DC 20037 USA</td>
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Headquarters:

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<tr>
<th>World Health Organization</th>
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<tbody>
<tr>
<td>20 Avenue Appia</td>
</tr>
<tr>
<td>1211 Geneva 27</td>
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<td>Switzerland</td>
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The United Nations Children's Fund (UNICEF)

Early in the development of ORT, UNICEF took a leading role in acting as an intermediary between manufacturers capable of producing the ingredients for oral rehydration solution in packaged form and programs which could get these packets into the hands of those who needed them. Through large-scale commercial production and the promotion of competition among would-be producers, UNICEF has brought down the price of a one-liter packet of the complete formula for ORT from US 10 cents in 1974 to US 6.5 cents in 1980.¹ Production of the UNICEF packets

¹ This price is made up of the following factors: Ingredients 2.5¢, laminated foil 2¢, labor, packing and profit 2¢. The packets have a shelf life of at least three years.
(formerly called Oralyte and now called ORS) is now at a rate of 10 million annually.

These packets of ingredients for mixing with one liter of water are distributed in a variety of ways. UNICEF field offices make them available to in-country programs. Stocks of 50,000 packets are maintained at each WHO regional office to meet emergency needs, and PVOs and donor agencies may purchase them in any quantity through UNICEF at cost.

UNICEF is taking an active role in promoting ORT. Packets of ORS are routinely added to other drugs and supplements being shipped to the field, posters have been prepared by UNICEF in-country staff, articles are regularly submitted to journals and magazines and exhibits have been mounted in a variety of international forums.

UNICEF also assists countries to establish their own manufacturing capacity. It is estimated that any country with a demand in excess of five million packets per year can economically develop its own production industry. Currently, some 12 developing countries have such capacity or are in the process of acquiring it with UNICEF's assistance.

UNICEF is willing to assist PVOs by making packets of ORS available through its field offices, by providing any educational materials related to ORT and by helping to assess the feasibility of local manufacture of packets of ingredients for oral rehydration solution with PVO support. In all its activities in ORT, UNICEF is working closely with WHO. PVO staff members based in particular countries may wish to establish contact directly with the UNICEF representative in that country.

**The Agency for International Development (AID)**

AID has a variety of programs which may be able to assist PVOs undertaking activities in ORT, but there is no centralized office for this purpose. Theoretically, funding for such activities could derive from several sources within AID/Washington, each of which has a certain amount of autonomy. These are: Office of Health, Office of Population, Office of Nutrition, Office of Foreign Disaster Assistance, Office of Private and Voluntary Coordination, Bureau for Near East, Bureau for Africa, Bureau for Asia and Bureau for Latin America.

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2 An overhead expense charge of 3% is added.

3 The mailing address for each of these Offices or Bureaus is:

Agency for International Development
Washington, D.C., 20523, U.S.A.
US-based PVOs should establish contact with the sector office most closely allied with their particular programs (Health, Population, Nutrition or Disaster Assistance), the Office of Private and Voluntary Coordination and the Regional Bureau(s) of greatest interest to them geographically. PVOs based in specific developing countries should contact the AID Missions in those countries.

In addition to the possibility of assisting ORT efforts through funding, AID has undertaken several initiatives which are relevant to the role of PVOs in ORT. The Office of Population of AID is currently engaged in field research to test alternative community-based delivery systems. Although the primary focus is family planning and maternal and child health, 13 out of the 28 projects include an ORT component. These ORT studies are investigating training techniques, delivery systems, utilization, impact on mortality and cost effectiveness. Some related technical assistance may be available to PVOs as part of this project. Inquiries about this, and requests for written materials, should be sent to:

Dr. Duff Gillespie  
Chief, Research Division  
Office of Population  
Agency for International Development  
Washington, DC 20523

The Office of Nutrition of AID has funded the International Nutrition Communication Project which is coordinated by the Education Development Center. The project provides technical consultants in a variety of fields to support and strengthen nutrition and health education programs in the developing countries. A major component of the project is concerned with diarrheal disease control and ORT. PVOs and other organizations wishing to request assistance from the Center through this project should contact the AID Mission in the country itself and through them, submit a request to the appropriate office in Washington. Inquiries about the Center may be sent to:

Ronald Israel  
Project Manager  
International Programs  
Education Development Center  
55 Chapel Street  
Newton, MA 02160 USA

The National Council for International Health (NCIH)

NCIH was organized in October 1971 to promote cooperation and encourage communication among the many individuals, agencies and organizations, both private and public, working in international
health. In June 1979 NCIH received funding from AID to establish headquarters in Washington, DC. NCIH is responsible for advising, assisting and coordinating health-related PVOs working in developing countries as well as improving communication between various members of the private sector.

Without receiving additional support, NCIH is unable to directly assist PVOs with funding or technical assistance for ORT programs. However, the Council can provide a forum for dialogue and exchange among PVOs as well as between PVOs and government, individual consultants and other resources. NCIH is extremely interested in ORT, as demonstrated by it being one of the collaborating agencies for the workshop, and is planning a variety of follow-up activities.

NCIH is planning to establish a committee of persons from the private sector on ORT. Inquiries about NCIH and any proposed follow-up activities on ORT should be sent to:

National Council for International Health
2121 Virginia Avenue, NW, Suite 303
Washington, DC 20037 USA
APPENDIX A

WORKSHOP ON ORAL REHYDRATION THERAPY
AGENDA

Day One

8:30-9:00  Registration
9:00-10:00 Introduction and Welcome/Participants/Program & Technical Panelists/Facilitator
10:00-10:15 Break
10:15-12:00 The Problem: Diarrheal Disease--Cause and Effect/Technical Panel
12:00-1:30 Lunch
1:30-3:00 The Solution: Oral Rehydration--Experience and Constraints/Program Panel
3:00-3:15 Break
3:15-5:00 Discussion and Clarification/Participants/Panelists
5:30 Reception

Day Two

9:00-2:30 Working Groups on "The Role of PVOs"/Program & Technical Panelists/Participants

A. Training for OR Delivery: Professional, Paraprofessional and Community

B. Community Education: Materials Development

C. Home and Village Level Distribution: Risks and Benefits

2:30-5:00 Group Recommendations/Participants

Day Three

9:00-12:00 Resource Sharing: Where To From Here?/PAHO/UNICEF/CDC/USAID/NCIH/Participants
APPENDIX B

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Bureau of Quarantine  
Ministry of Health  
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PAHO

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Vice Chairman  
NCIH

Dr. John Romani  
Chairman of the Board  
CEFPA
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THE SCIENTIFIC FRAMEWORK FOR ORT

- More than 5 million children die annually from acute diarrheal diseases.
- Preventive health, nutrition and hygiene practices would reduce diarrhea-related mortality and morbidity.
- The severity and frequency of diarrheal diseases in infants and children can be associated with their nutritional and health status.
- Diarrheal diseases, regardless of cause, often result in dehydration.
- Dehydration, unless severe, can be treated with ORT.
- If available, the complete formula of ORT is the most effective treatment for dehydration.
- Infants should be breast/bottle-fed and children offered fluids and food during treatment.

THE ROLE OF THE FAMILY IN ORT

- The family recognizes the onset of diarrhea.
- The family responds to an episode of diarrhea in some way.
- Continued feeding and drinking is essential.
- There are several ways in which the family might obtain the ingredients for ORT.
- Pre-packaged ingredients have the advantages of simplicity and accuracy, but disadvantages in terms of availability and cost.
- Home-measured ingredients have the risk of inaccurate measurement, but the advantage of ready availability.
- It is essential that the correct amount of ingredients be mixed with the corresponding and correct amount of water.
- Administering ORT to a child requires continuous family care.
- The child with diarrhea is the best judge of how much oral rehydration solution, other liquids and foods it should consume.
- ORT should not be continued once diarrhea ceases.

THE ROLE OF ACTION PROGRAMS IN THE COMMUNITY IN ORT

- Community action programs can help families use ORT for children with diarrhea.
- Training and orientation in ORT should be given to programmatic and political decision-makers.
- Comprehensive ORT training should be given to community-level workers.
- The training of community-level workers in ORT can be integrated into training for other activities.
- Follow-up should be included in any training efforts.
- Community ORT education can take place through a wide variety of channels.
- Messages about ORT should be concise, correct and not contradictory.
- Community action programs can assist families to obtain the ingredients of the oral rehydration solution.
- Data collection and monitoring are important for community action programs which use ORT.