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ORS PACKET DESIGN

A MANUAL ON
VOLUME AND LABELLING
CONSIDERATIONS
FOR PROGRAM MANAGERS

Prepared by **Project SUPPORT**
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I. Introduction

This manual is written for control of diarrheal disease (CDD) program managers and decision makers who have responsibility for planning CDD programs. It addresses the issues of packet volume and label design for oral rehydration salts (ORS). Both these issues are critical to a successful ORS program.

One of the most important considerations in choosing a program's packet volume is determining the size packet most likely to be prepared and used correctly. If too much water is mixed with the salts, optimal transfer of fluid across the intestinal wall and into the body cannot take place. If ORS is mixed with too little water, the resulting solution can be ineffective or dangerous, resulting in hypernatremia (excess sodium in the blood) and death. Selection of the appropriate packet volume is discussed in Section II.

The ORS packet label is important as one of the most widely seen sources of information in an ORS campaign. It can provide marketing information, such as a logo identifying it in the mind of the consumer with the overall CDD campaign, with government health services, or with other products in a line of consumer goods produced by the private sector. It should also contain regulatory information, such as packet contents and formula and storage requirements. Finally, the packet label should provide clear instructions on how the product should be correctly mixed and used. These instructions are the most important information on the packet label. Label components and characteristics are discussed in section IV.

The ORS packet can play an important role in the overall program of oral rehydration therapy (ORT). In countries where public health programs are promoting an ORS powder, the label provides a convenient mechanism for standardizing instructions for preparation and use. In countries where there is also an active commercial promotion of ORS, it may be possible for the Department or Ministry of Health to influence the private sector to standardize instructions, illustrations, and language used in print materials, including the packet. In most cases the private sector will still want to differentiate its product from the public sector product, by using a brand name, different colors, or other means.

The ORS packet and accompanying print materials can be designed to reinforce nonprint channels of communication as well. In a project in The Gambia, print materials for the preparation of sugar-salt solution were developed for use in conjunction with radio messages. The radio spots told mothers to refer to the printed materials while listening to the instructions. The printed materials had a color-coded layout with each step in the preparation shown in a different color. The radio messages mentioned the color of the panel in which the instructions were contained, thus reinforcing visual and spoken directions.

Finally, package materials used as part of an ORT communication campaign can contribute to the development of a common theme for the campaign. This theme is translated into the print materials by portraying a product image consistent with the positioning strategy used for the product. Positioning strategies are selective communication of the attributes of a product that are important to its identified target market. Product positioning and the packet design development process are discussed in sections III and V. A review with key questions for program managers is found in section VI.

II. Selecting the Packet Volume

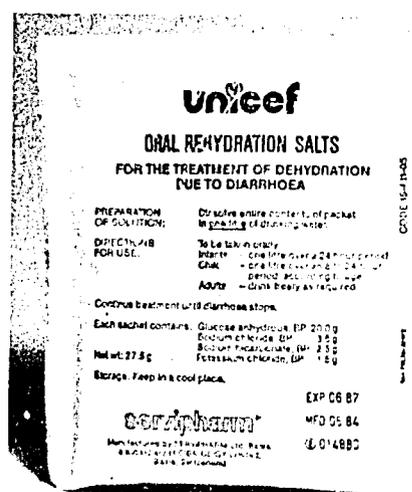
Historical Perspective

UNICEF has been the major supplier of ORS packets and has been distributing a liter-size packet since 1975. Initially, these packets were used mostly by literate health workers in clinic or hospital settings where the accurate measurement of a liter would not be a problem. Since that time, distribution has expanded to include home use as well. In 1985, UNICEF produced approximately 87 million packets, almost all of which were liter size. These packets were shipped to more than 100 countries. Worldwide production for 1987 (including packets produced for UNICEF, other donor agencies, governments, and private sector distribution) totalled over 300 million packets. The overwhelming majority of these packets are one-liter size as well. Current UNICEF policy is to offer to provide packets of any volume and labelling in any language or format in quantities of one million or more. According to UNICEF, several countries have taken advantage of this new option.

Advantages of the Liter Volume

Familiarity may be the greatest advantage of the liter-size packet, based on its wide availability from international sources. Most countries have experience with the liter size before they begin local production, and some countries continue to receive liter packets from UNICEF or other donor agencies even after local production has begun. During emergencies or when local production cannot keep up with demand, ORS brought in to meet local needs is likely to be in liter packets.

Standard UNICEF
one-liter packet



Liter packets can be made with lower production costs than are possible with smaller packets. The materials costs are lower for the production of a one-liter packet than for two 500-ml packets, regardless of the packaging material used. Labor costs for both production and distribution, if calculated on a volume basis, are also lower for a larger packet. The liter packet may also encourage the use of a greater volume of ORS in a 24-hour period than do smaller packets. The average amount of

ORS recommended by WHO for the smallest infant over a 24-hour period is 1500 ml (200-400 ml every 4-6 hours). Preparation of this volume

using 500-ml packets would require that the user measure the correct water volume three times, increasing the probability of mixing errors. Finally, the liter packet allows more surface space for instructions and other information than do smaller size packets.

Disadvantages of the Liter Volume

In many countries, one of the main disadvantages of the liter size packet is the difficulty of finding a common household container that can be used to measure accurately one liter of water. Measuring a liter can be especially problematic in countries that have not widely adopted the metric system. In countries where there is a local trade in cow's or goat's milk, the concept of a liter may be established already, and measures close to liter size may be found in many households. Where this is not the case, and a liter packet is used, the program is forced either to educate users to measure a liter of water using combinations of available containers or to provide standardized containers of the correct size to households.

Another disadvantage of the one-liter packet is that, since it is not consumed in one serving, opportunities exist for the mixed solution to become contaminated during the course of its use. Also, mothers in some cultures reportedly prefer to prepare a fresh serving each time it is given to the child. This may encourage mixing of a partial packet, resulting in a solution of unknown concentration. An additional problem is that if a whole liter is prepared and not used, wastage is greater than would occur with a smaller packet. There is also some evidence that mothers who are instructed to throw ORS out after 24 hours conclude that the product is not as valuable because of this instruction.

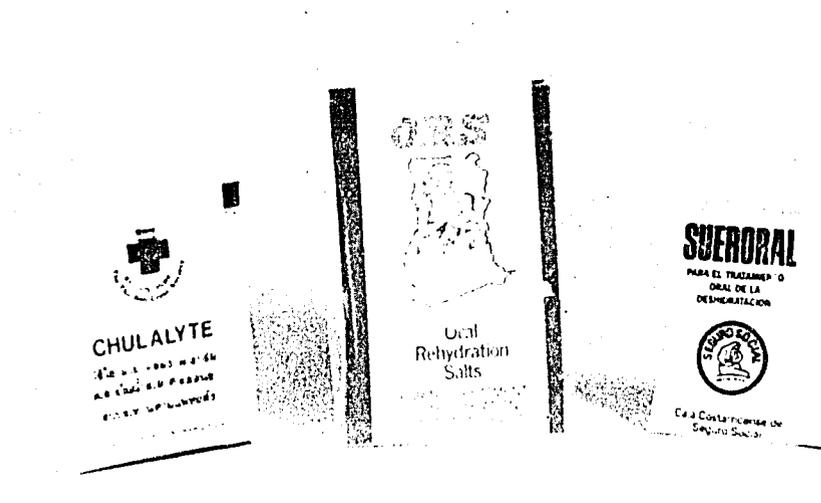
ADVANTAGES	DISADVANTAGES
Wide availability and familiarity	Possible difficulty in measuring
Lower production costs than smaller packets	Contamination of the mixed solution over time
May increase use of greater volume	May increase wastage
More packet space for messages	May encourage mixing of partial packets

Table: advantages and disadvantages of the one-liter size

Other Sizes

Other than the widely available liter, the two most commonly available packet sizes are a single glass or cup size (approximately 240 ml) and, to a lesser extent, a 600- to 750-ml size that corresponds to a locally available container. In terms of convenience, a single-glass serving would seem ideal, especially where there is no simple way to measure a liter, and few households have a container large enough to store a liter of liquid throughout the day.

600-ml packet from Ghana,
250-ml packets from
Costa Rica and Thailand



However, there may be some disadvantages to smaller sizes. In a research study conducted by Kabalikat Ng Pamilya Ng Pilipino in the Philippines using a tablet form of ORS produced to be mixed with 220 ml of water, mothers gave their children less than the one-liter total volume of ORS that they had been instructed to administer each day. Mothers given one-liter packets tended to give children more of the solution so that it would not have to be disposed of and wasted at the end of the day. Although the single-glass packet was easier to prepare and more convenient for mothers, in this instance it did not support the public health objective of providing sufficient amounts of ORS to prevent or treat dehydration.

Multiple Sizes

In some countries more than one ORS packet size is available. The main disadvantage of this approach is the possibility of confusing the consumer so that a packet is mixed with the wrong amount of water. A possible advantage to multiple sizes is product differentiation and market segmentation. These are techniques used to target different sub-

groups within a market by tailoring a product to actual or created demands. The idea is that similar products with slightly different characteristics will attract separate markets rather than compete for the same ones, thus increasing the overall sales or usage. Because the disadvantage of multiple volume sizes is clearly a more important factor than the potential marketing benefits, WHO policy is to encourage national programs to choose one volume and to promote its use through both the private and public sectors. Product differentiation can be achieved by packaging, advertising, or other means.



200-, 250-, 300-ml and one-liter packets available in Kenya

Considerations for Choosing a Volume Size

Once a decision is made to use ORS in a program, the primary considerations in choosing a volume size will be the source of ORS supply and the availability of household containers to measure a predetermined volume of water accurately. If supplies are to be locally produced or obtained from UNICEF in sufficient quantity to allow ordering a size other than the standard liter packet, then volume considerations should focus on available household containers. If ORS is to be supplied from more than one source, or if it is anticipated that the initial source may not be stable over time, then the more widely available liter packet may be the best choice.

Consideration should be taken not only of which containers are available but also which ones are traditionally used to prepare food for or

feed small children. Extensive research was done on these issues in the Egypt ORT program. A sample of mothers was shown pictures of household containers and asked which they used and what volumes were most often prepared in them. This information helped determine the choice of a 200-ml packet and a plastic cup used in a subsequent promotional campaign. In Pakistan, initial mother response to a liter-size measuring cup being tested for possible use indicated that the shape and size of the container too closely resembled a common cup used for bathing to be considered appropriate for mixing medicine.



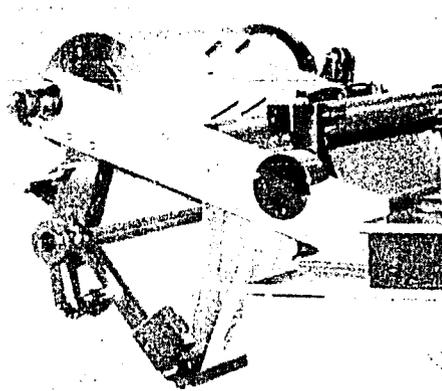
Packet and cup from the Egypt ORT program

It is also important to consider the expected availability of a chosen household container over time. If a program is built around a packet volume based on a widely available beer or mineral water bottle, it is necessary to make sure that the company producing the product does not expect to make any changes (bottle size, distribution, deposit policy, etc.) that could affect the availability of the correct measure at the household level. In Guatemala, for example, a decision by a popular, local soft-drink bottler to phase out their liter-size bottle raised concerns about using it in illustrated ORS packet mixing instructions.

Other considerations include user experience with similar products and volume preferences. Similar products might include fruit salts or powdered glucose products used as tonics. Consideration should also be given to sugar-salt-solution recipes that have been promoted. If there is widespread knowledge of a recipe for sugar-salt solution, promotion of a different volume of water for use in mixing ORS should be avoided.

Considerations for Changing Volume Sizes

When deciding to change volume size in an existing program, several additional issues need to be taken into account. These fall into three broad categories: production, distribution, and promotion. Production considerations include retooling costs for filling and sealing machines and existing stocks of printed packaging materials. Some automatic filling machines are limited in the packet sizes that they can accommodate; others can be adjusted but may require costly or time-consuming mechanical modification. Polyfoil laminate, one of the most widely used packaging materials, is a relatively expensive component of the finished packet and is only sold in large quantities. Because this material is preprinted to produce a specific size packet, volume size or labelling changes should be planned to coincide with its reorder.



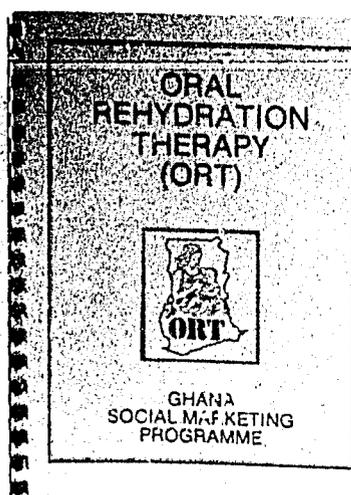
A roll of polyfoil laminate packaging material

Distribution issues center on the change between the existing and the new size stock. Arrangements must be made for the recall and disposition of existing packets. These can be collected and redistributed for specialized use, either in restricted geographical areas, within specific programs, or by specially trained personnel. New packets need to be distributed widely in a short period of time.

Promotion considerations include the retraining of health workers, pharmacists, chemists, and shopkeepers, and the re-education of consumers. This is especially important if the new size is a larger volume than the existing packet, because of the potential for dangerous over-concentration. The higher the preparation knowledge is for the existing product, the more difficult it will be to change.

Provision of Containers

The logical alternative to adjusting the ORS packet volume to accommodate locally available household containers is the distribution of standard containers for measuring the volume of water required for a packet of a predetermined size. This has been done successfully in Egypt where the national program has distributed a plastic cup that holds the correct amount of water to mix with their 200-ml packet. In Ecuador a plastic bag has been distributed that mothers can use to measure one liter of water. The national program in Turkey tested a

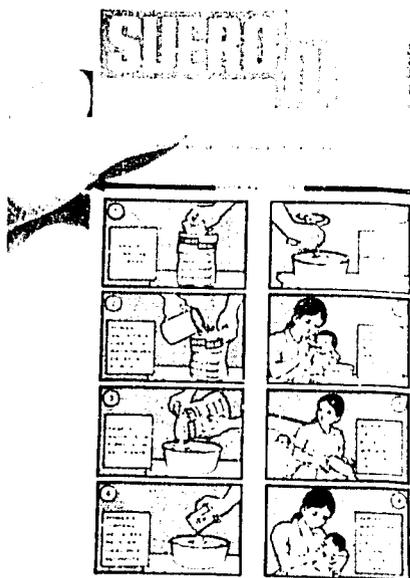


Ghana pharmacist's manual

plastic bag which it later abandoned because of production difficulties and user dissatisfaction. Honduras is now considering distributing a bag for use with the liter packet in their program. In Pakistan, the national CDD program has field tested both plastic bags and plastic mugs that hold one liter.

Several variations on the provision of standard containers could be tested. In a pilot project carried out a few years ago in Sudan, for example, health workers used standard measures

to calibrate containers in each household. This approach greatly reduces the expense of providing containers to each household and alleviates some of the problems of transportation, storage, and distribution but increases the labor costs of launching such a program. No long-term follow-up study has been done in Sudan to determine if the calibrated containers are still marked or continue to be used. Recent field trials in Pakistan include some villages where standardized containers were held by midwives or local religious leaders for use by village mothers when the need arose.

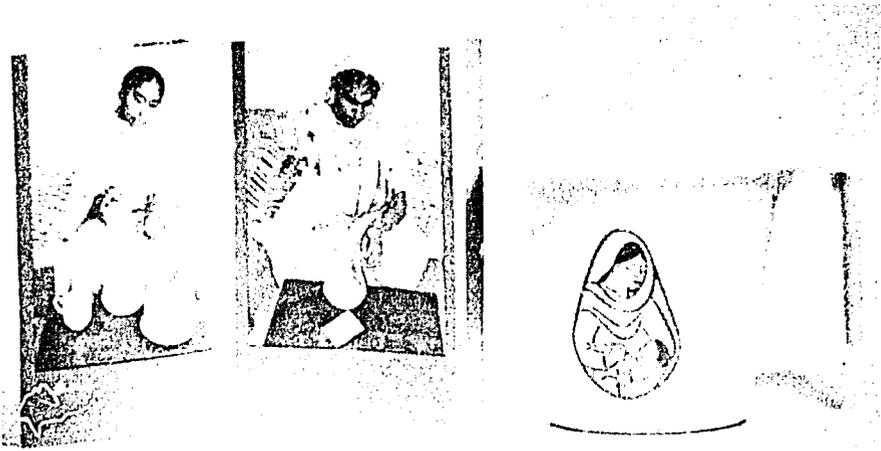


One-liter measuring bag from Ecuador

There are many considerations in deciding whether or not to provide standardized containers. These include the availability of alternatives already in households, distribution logistics, production and distribution costs, durability, ease of use, accuracy of measurement, and unforeseen uses. Cost is one of the most important issues, especially with programs trying to reach the poorest households. For this reason, and because of the distribution problems likely to be encountered in any developing country, a container size should be chosen that matches

one most likely to be available in the hardest-to-reach households. Production costs are likely to be lowest in countries that have a developed plastics industry.

Standardized containers can have promotional advantages as well as encourage the correct preparation of ORS. The presence of a special container in the household can serve as a reminder to use ORS, and the container itself can have an ORT logo or mixing and use instructions printed on it. Depicting the standard container in pictorial packet mixing instructions and other promotional materials will reinforce its use.



Pakistan pamphlet with measuring mug

III. Product Positioning: A Determinant of the Labelling Strategy

Positioning a product means defining what the product's use is, and, consequently, how it is classified in the minds of the target audience. As such, one of the first steps in the promotion of ORS is to identify clearly the purpose of the product. Oral rehydration salts may be positioned in different ways:

1. As a product for the **prevention** of dehydration due to diarrhea
2. As a product for the **treatment** of dehydration due to diarrhea
3. As a tonic to restore strength or appetite
4. As a combination of the above

Positioning has serious implications for ORS demand. In a country like the Philippines, it is estimated that there may be 25 million episodes of diarrhea each year. If the product is positioned for the prevention of dehydration (recommended for use at the onset of diarrhea), there would be a potential annual demand of 50 million packets (assuming two packets would be required for each episode). However, if the product is positioned for treatment of dehydration (recommended for use when early signs of dehydration occur), and if dehydration is estimated to occur in only ten percent of diarrhea cases where home-available fluids are not increased, then the potential annual demand drops to five million packets. In this case, it is important that the packets get to those children who actually are dehydrated. It may be necessary to increase the number of available packets to ensure adequate coverage of that group. The third positioning of ORS, as a tonic to restore strength to a child who has diarrhea, would have other implications for demand. This would give a less medical connotation to the product as well.

Beyond the demand and production issues, positioning options represent important differences in the marketing of the product. If ORS is recommended for all cases of diarrhea, then educating mothers about when to begin treatment will be relatively easy in most cultures. The disadvantage of this approach is that children who are not dehydrated may find the taste of ORS undesirable, which may in turn discourage their mothers from giving it. There are anecdotal data that support this scenario but little quantitative information. A second disadvantage is the perception that the medicine is not doing anything if the diarrhea continues after a few days of treatment. Since most diarrheal disease in developing countries will continue for at least two days, if treatment is started at the first loose stool, the perception of ineffectiveness is easily reinforced.

If ORS is recommended for administration only if dehydration begins, then it is necessary to teach mothers to recognize the signs of dehydration. This is especially critical in countries where the health service delivery system is weak, where health centers are inaccessible, or

where ORS is not readily available. Under these circumstances it is necessary to ensure that mothers are aware of the earliest signs of dehydration to avoid situations in which a child is not treated until dehydration is severe.

The effort required to do this will vary with the culture. It is important to understand the local knowledge, attitudes, and practices (KAP) surrounding diarrheal disease before choosing an approach to teaching the concept of dehydration. In some countries agricultural analogies have been used, comparing a dehydrated child to a drought-stricken plant. A survey in Ghana found that many mothers noticed that their children became weak and irritable after having had diarrhea for a short time. This recognition became the basis of a message on determining when to start the administration of ORS.



Philippine pamphlet using the analogy of a drought-stricken plant

Mothers will not be disappointed when diarrhea continues after treatment has begun if it has been explained the ORS treats the dehydration and not diarrhea. Most diarrheal disease in developing countries is self-limiting after two to three days, so waiting to start treatment with ORS until after the onset of dehydration means that diarrhea will often cease shortly after the beginning of treatment.

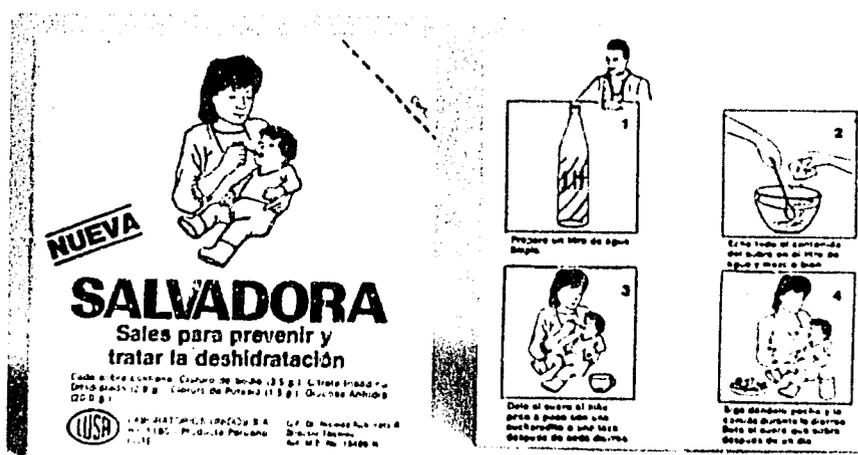
A third positioning for ORS is to promote it as a tonic or a product that will help restore a child's appetite and normal level of activity during

an episode of diarrhea. In countries where a diarrhea episode is readily perceived as a cause of loss of appetite and energy, this position for the product may be useful. Like a treatment for dehydration, this position avoids the disappointment that may result from continued diarrhea after treatment has begun. This approach may be especially desirable in countries such as Kenya, which has a very well developed market for tonic products, and is under consideration for a campaign in Ghana. One disadvantage to this approach is the potential for use of ORS as a general tonic by children who neither have diarrhea nor are dehydrated.

The choice of a market position for ORS depends on the KAP of mothers and health workers, as well as the distribution system to be used for the product. In addition to selecting a market position, a product image can also be created. For example, by presenting ORS as either a medicine or a home remedy, the product can be made to fit the perceptions of the user and help to reinforce the positioning. The following two examples will help to illustrate the kinds of information that go into positioning decisions:

Philippines

The government-produced ORS product is called ORESOL. It is produced in one-liter packets and distributed through health centers all over the country. Research showed that although mothers had difficulty recognizing signs of dehydration, they were aware of the need to continue feeding children during episodes of diarrhea. In addition to feeding home-available fluids such as coconut juice and tea, "so that the child will not lose all his sustenance," many mothers were giving antidiarrheals.



Packet design from Peru showing a physician

Studies also showed that mothers had a great deal of respect for health workers and perceived them as authority figures. This fact was a key part of the decision to position the product as a medicine for treatment of dehydration. The packet label mentions the World Health Organization. A booklet prepared for mothers shows a physician promoting the product. The medical orientation of the product will allow it to compete better with the antidiarrheals on the market. A recent packet design from Peru takes a similar approach.

Mexico

The USAID-funded HEALTHCOM project has been working in Mexico to design a public sector campaign around a product called Vida Suero that is available through the government health system. Since ORS packets have been available in Mexico for several years, research was done to determine how the product is currently positioned in the minds of consumers. These studies showed that the product had no strong position, and that it was not seen clearly as either a real medicine or a home remedy.

When more in-depth interviewing was done, it was discovered that medical products are clearly associated with "cure" rather than "prevention" and that, because ORS does not cure diarrhea, it would be unlikely to live up to consumer expectations as a medical product. While ORS was considered to be as effective as other home remedies, it had the disadvantages of being less easily accessible and not tasting as good. Based on these findings, a dehydration prevention positioning was selected, and major efforts will be made to increase both the accessibility of the product and its perceived value.



Old and new Mexico packets

IV. Label Components and Characteristics

Label Information

Label information falls into three general categories: marketing or identification, regulatory information, and mixing and use instructions. Marketing information includes brand name, logo, endorsements by the health ministry or WHO, and other information to identify the product with the CDD program, a social marketing group, or other organizations. Decisions on product positioning will influence the kind of identification and marketing information used and its presentation.

Regulatory information includes those items required by local law or international convention for the labelling of pharmaceutical products. Composition, indications, dosage, manufacturer, date of manufacture, batch number, and instructions for storage fall into this category. Exact requirements vary by country and can be determined by contacting the appropriate local regulatory body.

Mixing and use instructions include exact directions for the correct preparation and administration of the product. They may also include information on breastfeeding or other supplemental feeding, on referral (when to discontinue treatment or seek other help), and on the prevention of diarrheal disease.

Target Audiences

It is important to keep the target audiences in mind when choosing the information to be used from each of these three categories. Marketing and identification information is aimed at physicians and other health workers, as well as those in the distribution chain (pharmacists, chemists, and shopkeepers) and consumers. Regulatory information is less likely to be critical to the consumer but may be essential to convince physicians or pharmacists of the importance of this relatively new and simple



Breastfeeding and continued feeding illustrations from Paraguay

treatment. Mixing and use instructions should be especially targeted to users, including those who are not literate.

Dosage instructions (volume required by age or weight) are difficult to present clearly on a packet label. This is a special concern with nonliterate users and in programs where ORS is obtained from untrained personnel. Since these messages are aimed at both health workers and consumers, general dosage instructions need to be discussed with and made acceptable to local physicians and health authorities. An ORS packet dosage message that includes the statement "or as prescribed by a health worker" will allow leeway in determining dosage for a specific case but may also detract from an image of a safe, home remedy.

Mixing and Use Instructions

Mixing and use instructions are probably the most important information on an ORS packet. They are usually, or should be, given more space than either marketing or regulatory information. More field work should be done on their development and testing than on other label components. Packet instructions are based on data from two main sources: 1) CDD program policy, and 2) consumers. CDD program policy dictates messages on indications and administration, referral, and prevention or nutrition. Some programs recommend use of ORS at the first loose stool. Others suggest the use of sugar-salt solution or home-available fluids unless or until there are early signs of dehydration. Referral policy is also set by the CDD program and is determined by such factors as the structure and availability of health services. The selection and use of prevention and nutrition messages on ORS packets should be done with consideration of overall ORT program goals.

While many of these decisions are made by administrators, they should be based on consumer needs. Before policy can be made and translated into appropriate messages, it is necessary to collect user information on household containers for measuring water or mixing ORS and KAP surrounding diarrheal disease. Collection of this information is discussed in the section below.

The main obstacle to the clear presentation of mixing and use instructions is space limitation. This is especially true when user messages are illustrated. Even the largest liter sachet, if packaged in foil laminate, has only approximately 200 sq cm of usable space for messages, and usually half of this is required for marketing or identification and regulatory information. Space constraints are proportionately more severe with packets of less than a liter. If the salts are packaged in two polyethylene bags, with a folded insert between the two, more space is

available for instructions. Another way to increase available instruction space is to repackage foil sachets either in polyethylene bags with inserts or in boxes or "matchbook" covers. Additional packaging, however, does add to the product's final cost.

Nigeria packet insert
and Guatemala "matchbook"

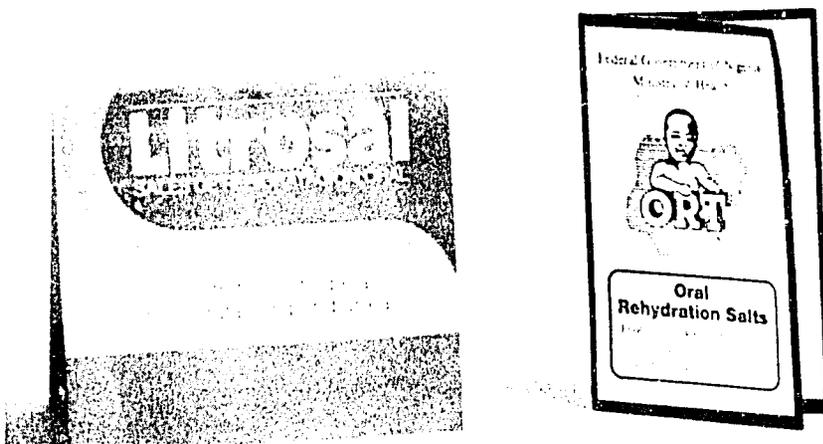


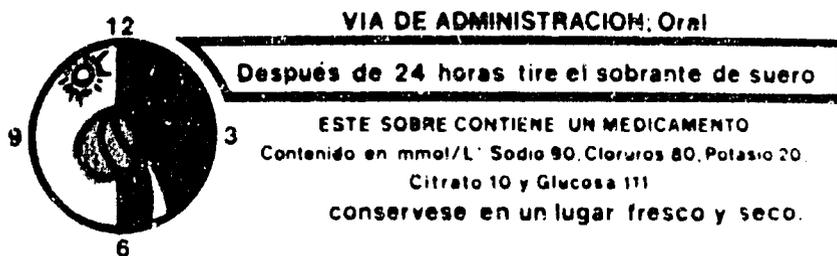
Illustration of User Messages

There are several advantages to illustrated user messages. Nonliterate can follow them more easily. Illustrations provide a common denominator in countries where there are several local languages. Pictures also create visual interest, which can help convey the message of the importance of careful mixing.

General guidelines for pictorial instructions include the use of audience-specific models, use of the illustration as a reminder, the preference of positive messages over negative ones, and the necessity of using simple lines for a clear image after reduction. "Audience-specific models" refers to the representation of people, objects, and settings familiar to the users. People depicted should be wearing appropriate local dress, and utensils that are illustrated should resemble those actually available in local households. For these reasons pictorial instructions developed for one country will usually be unsuitable for use in another without adaptation.

When using illustrated instructions, it is necessary to keep in mind that pictures alone will seldom be adequate to communicate all the messages that need to be transmitted and they will be unable to communicate them in sufficient detail. Some messages, such as ones involving the passage of time, are especially difficult to illustrate in limited space (for example, "do not keep the mixed solution for more than 24 hours"). The best use of illustrated instructions is as a reminder to the

consumer that will help recall the more detailed instructions that have been given by a health worker, pharmacist, or shopkeeper.



UNICEF-designed illustration from a Mexico packet instructing mothers to dispose of unused ORS after 24 hours

Positive messages, those that tell the user what should be done instead of what should be avoided, are easiest to illustrate. Negative messages are often mistaken for positive ones, resulting in the user doing exactly the opposite of what was intended.

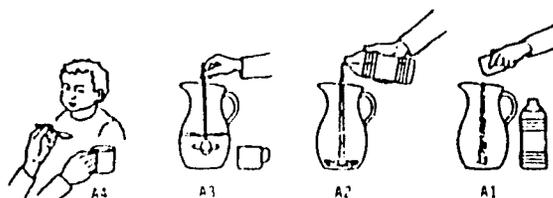
The use of simple lines in illustrations is essential because the final size at which they will appear when on a packet will usually be much smaller than the size at which they are drawn and initially tested. Before any designs are finalized they will need to be tested at their reduced size. This will be discussed in more detail in the section on packet design development.

V. Packet Design Development

The central focus of the packet design development process is the testing and retesting of designs with those individuals who will use the information being presented. The testing and retesting process is often time-consuming, but it is essential if information is to be understood clearly and the product is to be used properly. Because what registers mentally when an individual sees a design or hears a brand name is conditioned by that person's experience and current environment, it is impossible to be sure that materials will be understood until they are tested by those who will use them.

Sometimes seemingly unimportant details can make large differences in comprehension. In Yemen, for example, in a recent pretest of draft ORS mixing instructions, rural mothers were scandalized by a drawing of a woman's hand stirring the ORS solution. The problem was that the lower arm was uncovered, something culturally unacceptable in rural Yemen. Their reaction was so strong that the stirring message was lost. The problem was solved by drawing a single line across the pictured wrist, suggesting a long sleeve. This done, the stirring message became the focus of the drawing and was clearly understood.

Instructions:



- A1: Pour all the contents of the [product name] packet into a clean container.
 A2: Fill one clean, small water bottle (750-ml) with drinking water. Add this to the [product name].
 A3: Stir with a clean spoon until the powder has dissolved.
 A4: Slowly feed the solution to the child with a spoon or from a cup.

Draft illustrations for Yemen
 packet instructions

The testing process is important not just for low-literate or isolated populations. Written product storage and expiration information should be tested with pharmacists and those responsible for stocking ORS in medical stores in the public sector. In countries with highly developed consumer markets, advertising firms spend large sums of money testing product names with well-educated, high-income consumers. While market testing for ORS can be done economically, it deserves the same careful attention.

Regulatory Information

While some national pharmaceutical regulatory agencies have very detailed requirements for both the information that they require on drug packets and its placement, others do not. Interviews with pharmacists, shopkeepers, and health workers responsible for the stocking, storage, and dispensing of ORS can ensure that the necessary information is presented and understood clearly. Draft packet designs should be used to focus the interviews, and each piece of information on the design should be discussed in terms of who will need to use it and how it might be made more precise. Issues such as the formatting of production or expiration dates (numerical or with the month written out) and the placement of information on the packet should be explored.

Marketing Information

Brand name and logo testing are two important components of ORS packet design. Both these processes can begin with focus group discussions (see Appendix II on research methodologies) with representatives of those who will make or influence decisions about ORS purchase or use. Health workers, pharmacists, shopkeepers, and influential family members, in addition to the actual caregivers, may be included. In countries where almost all pharmaceuticals are purchased at the recommendation of pharmacists or physicians, considering how these groups view the product is essential to its positioning and brand name.



A focus group discussion
in Thailand

In focus group discussions, the product is described and those being interviewed are asked what characteristics would make them most likely to recommend or use it. Finally, based on these selected characteristics, discussants are asked to suggest names for the product. All or some of the suggested names are then tested in subsequent individual interviews to see what kind of image they bring to mind, and preferences are measured.

Ideas for logo designs can be elicited from the same focus groups and tested on individuals using the techniques described in the section on user information below. In some countries, such as Ghana, the private and public sectors have agreed to use the same logo on their products. This helps each sector to take advantage of promotion and education done for the other's product. Consistent presentation of information may also encourage correct mixing and use.

User Information

Mixing and use instructions should be developed based on the available KAP information and government policy. Simple messages are then written and illustrated by an artist. Illustrated ORS preparation messages usually include the following:

- measure a certain volume of clean water into a container
- add the entire contents of one packet of ORS
- mix the solution until the salts dissolve

In addition, some countries recommend or have mandated that messages on the use of boiled water be included. WHO does not recommend this message.

Illustrated ORS use information usually includes:

- give the child the ORS solution slowly but frequently
- if the child is being breastfed, continue breastfeeding
- if the child is no longer being breastfed, continue giving solid foods and lots of liquids

If space permits, as is sometimes the case with package inserts, messages can also be given on handwashing or other prevention measures.

Messages that are difficult to illustrate with a single drawing include:

- dispose of any unused solution after 24 hours
- if the child vomits, continue giving ORS but more slowly
- take the child to a health worker after a certain length of time if she or he is not better
- give a certain amount of ORS over a certain length of time

These messages should appear in writing on the packet and should be emphasized in radio messages and in the training given to the health workers, pharmacists, or shopkeepers who will be instructing mothers on ORS use.

Illustrated messages can be tested initially in focus groups to determine the acceptability of the illustrations. These groups should consist of mothers or other caregivers. It is useful to include the artist in these groups so that drawings can be modified as they are being discussed. Issues concerning clothing, settings, and appropriateness of utensils that are depicted can be settled quickly in this fashion.



An individual interview to test a packet design in Guatemala

Tests for comprehension of the illustrations should be done with individual interviews in which a caregiver is asked what is seen in each illustration and the response is recorded. Individual interviews are essential because in group interviews people tend to agree with the first person who guesses the meaning correctly, and it is difficult to be certain which participants would have understood the messages on their own. Finally, each caregiver should be given an unlabelled packet of ORS and the illustrated instructions and asked to show how it should be prepared and used. The exact steps followed and their sequence should be noted, as well as the containers and utensils used, any difficulties encountered, and the final volume of solution that is produced. Comprehension testing should be done using illustrations that are the actual size they will be on the product and in the proposed

layout. A protocol and sample data sheet for a user message test done for a generic ORS packet developed for use by the United States Agency for International Development is included as Appendix I. A resource list is found in Appendix II.

VI. Volume and Labelling Review: Key Questions for the Program Manager

A program manager needs to make several decisions on the ORS product—what it is to be used for, how it is prepared, in what dosages it is to be given—before design of a label can begin.

What is the product?

The product is a WHO-approved formulation containing the following ingredients:

- glucose anhydrous
- sodium chloride
- trisodium citrate dihydrate
- potassium chloride

or a formula containing sodium bicarbonate in place of trisodium citrate dihydrate.

What is the product form?

Although most programs are using the powder packet, ORS is also available in a tablet or premixed-solution form. The choice of product form is affected by the ease and cost-effectiveness of production and distribution, and by customer acceptance.

What is the product for?

The product must be positioned clearly in the caregiver's mind. Is ORS a preventive measure or a treatment for dehydration? Will it be positioned as a product to restore appetite or strength to a child with diarrhea? Will more than one of these positions be used?

What image/appeal will communicate best the positioning for the product?

If the ORS product is positioned as a medicine rather than as a home remedy used for prevention, then the product image should be consistent with that medical positioning. Graphics used will need to convey a serious, authoritative tone, and the product should be recommended by a medical practitioner. The brand name must capture this same quality. Ideally, the brand name also gives a clue as to the product category—whether it is a food product or a medicine.

What packet size will be used?

Two important factors must be considered:

- A. Household-level availability of containers for measuring water, and
- B. Packet size that would encourage correct volume intake.

The latter consideration becomes critical when ORS is positioned as a product for dehydration. In mild to moderate dehydration, total volume intake is critical. On the other hand, if the ORS product is positioned as a preventive measure to be started when diarrhea occurs, total volume intake may be a less important consideration since the child is not in a life threatening condition.

What information should be on the label?

Three types of information will be on the ORS label: marketing or identification, regulatory information, and mixing and use instructions.

The label must be understandable to its primary target audience—nonliterate or semiliterate mothers. Therefore it must focus their attention on a few core messages. These include: brand name; what the product is for; and mixing, use, and dosage instructions. Other messages will need to be down-played so as not to overload the users with information not needed for the correct preparation and use of the product. Experience in many countries has shown that there are ways to optimize the effective presentation of mixing, use, and dosage messages.

- A. Mixing instructions should include a basic message on how to measure the correct volume of water and that the whole packet of ORS should be mixed at one time. Many programs consider stirring the solution an important aspect of mixing.
- B. Use instructions may include when to start giving ORS, when to refer to medical authorities, and the need to continue feeding of solids and breastfeeding during and after diarrhea. Available background data on current feeding practices during and after diarrhea and on mothers' ability to recognize diarrhea and dehydration will indicate how believable, feasible, and acceptable the program's messages are going to be. If the new behavior is very different from current behavior, then one must be aware that simply having a label containing these messages will not be adequate to promote correct use. Instead, a more comprehensive treatment of these issues will need to be provided in other

materials and marketing communications interventions. A product label merely summarizes key elements about the product and how it is to be used.

- C. Dosage instructions are the most difficult to convey. A new perspective on this issue is to develop dosage instructions from a consumer standpoint rather than from a medical viewpoint.

Appendix I. Draft Protocol for Testing USAID ORS Packet Designs

Mothers

Sample Size:

20 mothers urban (alternate 4 and 6 panel)

20 mothers rural (alternate 4 and 6 panel)

Respondent Criteria:

Never prepared or heard how to prepare ORS

Non-literate

Mothers with children under 5

Introduction

We are working with the MOH to develop a packet design for ORS, a medicine for children who have dehydration due to diarrhea.

We have some sample designs here and would like to have you help us to see how we can make them easier for mothers to understand and use.

Demographics:

Test site

Date

Name

Age

Have you ever gone to school? (Screen out)

Ever heard of ORS before? (Okay)

Ever heard how to prepare ORS before? (Screen out)

Ever used ORS before? (Screen out)

Illustrations

These pictures tell a story about how to prepare and use this medicine. Please tell me what the story says. (Note where starts and order.)

What do you see in this picture? (Test logo first.)

What is this? (Pointing to each object in each drawing.)

Do you have a pitcher/bowl like this in your house?

What can you tell me about this mother? Baby?

Mixing Observation 1 – Unaided

Give mother blank packet, packet design, and ask her to prepare it.

Observe:

- Volume water used
- If added all contents of packet
- If stirred until dissolved

Ask:

- How she would give it to the child
- What else the pictures say that she should do
 - (Continue breastfeeding)
 - (Continue giving other foods)

Mixing Observation 2 – After Reading the Instructions

Read the instructions under each panel to the mother, and ask her to prepare another packet. Observe and ask as above.

Preferences/Other

Show both instructions (4 and 6 frames) and ask which is easier to understand.

- Ask if the mother thinks that the pitcher or bowl is better.
- Ask what are good colors for the packet.
- Ask if the mother likes the logo.
- Ask how the package could be made better.

Health Workers

Sample Size:

- 5 urban
- 5 rural

Respondent Criteria:

- Literate

Introduction:

Same as for mothers

Demographics:

Same as for mothers plus level and type of training

Illustrations:

Same as mothers

Instructions**Ask:**

Are the instructions clear?

Is the wording right?

Do the pictures illustrate the instructions adequately?

Are the instructions on the front of the packet clear?

Is there other information that should be on the packet?

Is there information that should be left off the packet?

Preferences/Other:

Same as for mothers

Ministry Personnel**Sample Size:**

As available (after health worker and mother interviews)

Interview:

As under "Instructions" and "Preferences/Other" above

Site _____ Date _____ Interview No. _____

Mother's Name _____ Mother's Age _____ Language _____

Has under-5 _____ Heard of ORS* _____ Used ORS* _____

Can read _____ Heard how to prepare ORS* _____

Order - 1st _____ 2nd _____ 3rd _____ 4th _____ 5th _____ 6th _____

* Screen Out

What is seen in logo:

What is seen in frame:

1

2

3

4

5

6

Has pitcher like this in her home? _____ Bowl? _____

What can you tell me about this mother?

What can you tell me about this baby?

Mixing 1 - whole packet? _____ Stirred? _____ Volume _____

Mixing 2 - whole packet? _____ Stirred? _____ Volume _____

How would she measure 1 liter at home?

Preferences— Likes logo? _____

What color? _____

Prefers pitcher or bowl _____

How could the package be improved? _____

ORS Mixing Instructions

Latin American (Spanish)

USE EXACTAMENTE 1 LITRO DE AGUA



1



2



3

Eche un litro de agua limpia en un envase

Abra el sobre y eche todas las sales en el agua

Menea hasta que se disuelva completamente



4



5



6

Lentamente dóle las sales al niño con una cucharadita o una taza. Dóle las sales después de cada diarrea.

Siga dando pecho durante la diarrea.

Siga dando comida y líquidos durante la diarrea.

Back

Fecha



No. de Lote

**SALES DE REHIDRATACION ORAL
PARA LA DESHIDRATACION POR LA DIARREA**

Para mezcla e instrucciones del uso véase otro lado.

Dóle todo el suero que el niño pueda tomar después de cada diarrea. Bote la solución no utilizada después de 24 horas.

Guardé el sobre en un sitio fresco y seco.

NOTA: Si la deshidratación no mejora dentro de pocas horas, o si la diarrea continúa por más de tres días, consulte a un promotor de salud.

Cada sobre contiene el equivalente de:

- glucosa anhidra (20.0 g)
- cloruro de sodio (3.5 g)
- citrate trisódico, déhidrato (2.9 g)
- cloruro de potasio (1.5 g)

Front

African (French)

UTILISER 1 LITRE D'EAU EXACT



1



2



3

Verser 1 litre d'eau potable dans une cuvette

Ouvrir le sachet des SRO et verser tout le contenu dans l'eau.

Mélanger le liquide jusqu'à dissolution complète des sels.



4



5



6

Faire boire le mélange doucement à l'enfant. Redonner du liquide après chaque selle.

Continuer à donner le sein pendant les épisodes de diarrhée.

Continuer à donner aliments et boissons pendant les épisodes de diarrhée.

Back

Date de fabrication



No. du lot

**SELS DE REHYDRATATION ORALE (SRO)
CONTRE LA DESHYDRATATION DUE A DIARRHEE**

Les instructions pour le mode d'emploi des contenus de ce sachet se trouvent au verso.

Donner à l'enfant autant de SRO que possible, après chaque selle diarrhéique. Jeter tout le liquide non utilisé au bout de 24 heures.

Conserver le sachet dans un endroit frais et sec.

A noter: Si la diarrhée persiste au bout de 3 jours, consulter un agent de santé.

Chaque sachet contient l'équivalent de:

- 20.0 grs de glucose anhydre
- 3.5 grs de chlorure de sodium
- 2.9 grs de citrate trisodique déhydraté
- 1.5 grs de chlorure de potassium

Front

Appendix II. Resource List

Social Marketing, Audience Research, and Communications Resources

Social Marketing

Frederikson, Lee W., Laura J. Soloman, and Kathleen A. Brehony, eds. *Marketing Health Behavior: Principles, Techniques, and Applications*. New York and London: Plenum Press, 1984.

Israel, Ronald C., Dennis Foote, and Jane Tognetti. *Operational Guidelines for Social Marketing Projects in Public Health and Nutrition*. Nutrition Education Series, Issue 14. Paris: Nutrition Education Programme, UNESCO, 1987.

Kolter, Philip, and Alan R. Andreasen. *Strategic Marketing for Non-profit Organizations*. Englewood Cliffs, NJ: Prentice-Hall, 1987.

Mannoff, Richard K. *Social Marketing*. New York: Praeger Publishers, 1985.

Audience Research/Focus Group Discussion

Basch, Charles E. "Focus Group Interview: An Underutilized Research Technique for Improving Theory and Practice in Health Education." *Health Education Quarterly*, Vol. 14, No.4, pp. 411-448, Winter 1987.

Bertrand, Jane T. *Audience Research for Improving Family Planning Communication Programs*. The Media Monograph Series, Monograph Seven, Chicago: Community and Family Study Center, University of Chicago, 1980.

Folch-Lyon, Evelyn and John F. Trost. "Conducting Focus Group Sessions." *Studies in Family Planning*, Vol. 12, No. 12, pp. 443-449, December 1981.

Krueger, Richard A. *Focus Groups: A Practical Guide for Applied Research*. Newbury Park, CA: Sage Publications, 1988.

Spradley, James P. *The Ethnographic Interview*. New York: Holt, Rinehart and Winston, 1979.

Pretesting

Bertrand, Jane. *Communications Pretesting*. Chicago: The Media Monograph Series, Monograph Six, Chicago: Community and Family Study Center, University of Chicago, 1976.

Haaland, Ane. *Pretesting Communications Materials with Special Emphasis on Child Health and Nutrition Education*. Rangoon: PSC Section, UNICEF.

U.S. Dept. of Health and Human Services. *Pretesting in Health Communications: Methods, Examples, and Resources for Improving Health Messages and Materials*. Washington D.C.: Public Health Services, National Institutes of Health.

Mass Media and Communication

Clearinghouse on Development Communication. *Interactive Radio Instruction Handbook: A Guide to Planning and Implementation*. Washington, D.C.: Academy for Educational Development, 1988.

Diarrhoeal Diseases Control Programme. *Communication: A Guide for Managers of National Diarrhoeal Disease Control Programmes*. Geneva: Diarrhoeal Diseases Control Programme, World Health Organization, 1987.

McBean, G., N. Kaggwa, and J. Bugember. *Illustrations for Development*. New York: UNICEF, 1980.

PATH. *Guide to Developing Print Materials for Low-literates*. Washington, D.C.: Program for Appropriate Technology in Health, In Press.