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REPORT OF WORKSHOP
ON HOME AVAILABLE FLUIDS STRATEGIES
AND RESEARCH

A Report Prepared By:
ELIZABETH HERMAN, M.D.

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REPORT OF WORKSHOP
ON HOME AVAILABLE FLUIDS STRATEGIES AND RESEARCH

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PARTICIPANTS: **A.M. Session:** L. Casazza, L. Ferraz-Tabor, E. Herman, M. Marx, R. Northrup, D. Olivola, P. Pelto, D. Sencer, L. Snyder, P. Spain

P.M. Session: E. Herman, D. Olivola, P. Pelto

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I. BACKGROUND AND PURPOSE

The initial household management strategy of most CDD programs focused on assuring that all children suffering from diarrhea would receive either Oral Rehydration Salt (ORS) solution, or a liquid with a sodium and glucose concentration similar to that of ORS (usually sugar-salt solution). However, some CDD programs are reconsidering this initial strategy in light of:

a) the recognition that standard ORS solution is not needed to prevent dehydration in most diarrhea cases,

b) the realization that the availability of ORS packets at the household level cannot be assured and sustained in most developing countries, and

c) the documentation of significant errors in caretaker mixing of sugar-salt solution (SSS) and substantial dropoff in recipe recall over time.

Many of the countries receiving PRITECH support have considering changing their initial strategies and recommending that all diarrhea episodes be initially managed with fluids that are commonly available in the home (home fluids) and that are traditionally used for the treatment of diarrhea. Recent data documenting a decrease in stool output and in diarrhea duration with the use of cereal-based ORT has increased interest in recommending home-made food-based fluids for the initial household management. Commercially manufactured ORS packets would be reserved for more severe cases and/or for cases presenting to health facilities.

Countries considering this basic change in strategy are then faced with the task of identifying safe and appropriate fluids that are likely to be used in adequate volumes during diarrhea. The hope is that these home fluids when given with food, are physiologically adequate to prevent dehydration, while offering advantages of increased availability, acceptability and ease of preparation.

This workshop was organized in response to the need expressed by many countries for specific guidelines on identifying and selecting home fluids that can be recommended for the initial household management of diarrhea. The discussion was planned to focus on the case of Pakistan, with the intention of developing guidelines and protocols that might be applied in other country settings.

The specific objectives of the workshop were:

a) to review country experiences to date in identifying and promoting the use of recommended home fluids

b) to review and revise a sample protocol for obtaining information about the foods and fluids currently given to children with diarrhea

c) to recommend a process through which country CDD programs might refine their national policies on household management of diarrhea.

II. SUMMARY OF THE DISCUSSION ON COUNTRY EXPERIENCES

PAKISTAN

Lucia Ferraz-Tabor, PRITECH field representative to Pakistan, briefed the group on the country's current policy for the household management of diarrhea. Until last year the program recommended that ORS be given at the onset of every diarrheal episode. After reviewing the logistical implications of that policy, the national program decided to recommend that children with diarrhea should initially be given extra amounts of breast-milk, rice water, lassi (a yoghurt drink) or ORS, together with water and food. "Teas" are often recommended by practitioners, although they are not recommended by the national program.

The data that Lucia has access to indicate a great variety in the fluids people actually give during diarrhea, with less variability in foods. Lucia identified a number of problems resulting from the current household management policy including the observations that very few people (except in Sind province) use rice water for diarrhea, ORS is given in small amounts ("as a medicine") and lassi is not perceived to be appropriate for many folk types of diarrhea. Because of these issues, health workers don't know what to answer when mothers ask what foods or fluids to give to children with diarrhea. They tend to either advise mothers to "continue doing what you're doing" or they "make up answers", often recommending teas that may be prepared with large amounts of sugar.

The working group discussed the following issues related to the policy on the household management of diarrhea in Pakistan:

1) How can policy makers be brought to recognize and act on the confusion caused by unclear messages related to household management?

2) Should countries such as Pakistan undertake the collection of data outlined in the draft protocol, or are enough data currently available to propose a reasonable policy? In the latter case, program efforts would focus on implementing and testing the effectiveness of the proposed policy.

3) What is the best protocol for testing how health workers and caretakers will respond to a proposed policy regarding the initial household management of diarrhea?

MEXICO

Bert Pelto presented data on the household management of diarrhea in rural highland communities northwest of Mexico City. Preliminary research in that area indicated that the fluids most frequently used during diarrhea are herbal teas, water, rice water, ORS and soft drinks. Eighteen percent of respondents reported giving ORS and the same percentage reported giving soft drinks. The rice water ranged in consistency from the supernatant of boiled rice, to a thick gruel called atole. In either form, it is prepared with sugar but not with salt. No information is available on the volume of fluids administered.

When asked specifically about rice water, 77% of respondents said they sometimes gave it during diarrhea; 60% spoke of it as a treatment for the diarrhea, and 30% spoke of it as a food.

The next stage of this ongoing study will involve comparing the efficacy of rice water with that of ORS in a hospital setting.

Central African Republic (CAR)

Maye Olivola described the experience of the CCCD program in assisting the CAR CDD program to develop an appropriate strategy for the initial household management of diarrhea. A questionnaire about fluids given to children with diarrhea (with particular emphasis on gruels) was added to an EPI coverage survey. That study indicated that gruels are the staple weaning food. As typically prepared they are energy and nutrient deficient, and there is resistance to adding any salt to the gruels. Sauces served with the staple grain are often salted, but these are generally not considered appropriate for young children.

At this point, Maye is inclined to recommend that the CDD program focus its efforts on developing practical recommendations to increase the nutrient density of the weaning foods. During diarrhea, mothers would be advised to give the enriched weaning food (with added salt if possible) together with extra water. At the same time, the program should intensify efforts to increase ORS availability for children or individuals with moderate and

severe diarrheal episodes by focusing on the logistics of ORS distribution, and on training health workers in the assessment and management of diarrhea.

Maye further suggested that this policy may be the most appropriate one for many African countries where the variety of available foods is limited. The implication of this recommendation is that the collection of information about fluids currently used during diarrhea may not be productive in leading to different or better choices regarding a household management policy. Maye stresses that if a program chooses to put resources into conducting studies of fluids given during diarrhea, it should simultaneously collect information about weaning foods, about foods given during diarrhea, and about other treatment practices (eg. the use of enemas).

III. SUMMARY OF KEY ISSUES

A. The Objectives of Home Therapy

The group reviewed and was in agreement with the recommendations made by the recent UNICEF/WHO/JHU sponsored conference on the Household Management of Diarrhea and ARI. The recommendations state that the objectives of the initial household management of diarrhea are that the child's caretaker:

1. recognize that loose stools of any perceived cause require some action,

2. replace ongoing fluid losses with adequate amounts of available fluids,

3. support nutrition by continuing breast-feeding and feeding during diarrhea, as well as providing extra food after diarrhea,

4. take a child to a provider of ORS when dehydration or other complications of diarrhea occur.

The conference further stressed that the criteria for the selection of fluids recommended for the initial household management of diarrhea place priority on the "likelihood of use in adequate quantities" rather than on the efficacy of those fluids in treating dehydration. This emphasizes the point that the purpose of household management is to prevent dehydration and support nutrition in the vast majority of diarrheal episodes. It is not expected that mothers act as "rehydrators" of dehydrated children or that they attempt to manage diarrhea cases with high purging rates at home. Therefore, programs should not focus scarce resources on developing and teaching recipes for home fluids that yield an electrolyte content that is "ORS-like".

B. The Safety of Recommended Home Fluids

One member of the group suggested that water (together with food) may be the only fluid that should be promoted to be given in large quantities during diarrhea. It was argued that the pharmacologic properties of various teas and traditional remedies made from plant products are largely unknown, and that most other fluids are prepared with large variations in the amount of added sugar and salt. This concern with safety was also reflected in discomfort with making generic recommendations to give "available foods and fluids" during diarrhea for fear that teas and soft drinks with high osmolality may be offered.

It was pointed out that water may not be an appropriate recommendation in many cultures given that water is not necessarily perceived in a "neutral" way. In some belief systems water may be attributed with hot or cold humoral properties that make it inappropriate for use during diarrhea, or it may be perceived that young children cannot "digest" plain water. Furthermore, when people state that they give "water" it should not be assumed that they give plain water. "Water" often means water with sugar or other ingredients added.

Some members of the group felt that specific fluids should not be eliminated from consideration because of high osmolality or high sodium content. The arguments in support of this view are that any fluid is better than no fluid, and that fluids such as soft drinks are seldom given to young infants (at higher risk from high osmotic loads). A report from Peru suggested that soups prepared with high concentrations of sodium were typically given during diarrhea (and where also an important part of the normal diet). In addition to the soup, children were also give plain water to drink. Although the concentration of sodium in the soup was much higher than that of ORS, the concentration of sodium averaged over the total fluid intake (soup and plain water) was appropriate.

C. How Much Data Gathering is Necessary and Appropriate?

The question of how extensive data collection efforts should be before programs formulate a household management policy was a basic and critical one to the discussion. Although it is preferable to make decisions based on more rather than less information, there are very clear costs to recommending data collection, particularly at the household or community level. In a world of finite and often shrinking CDD resources, the value of potential information gained must be weighed against the distraction from other activities that is often associated with data collection.

Alternatives to collecting information on foods and fluids that are given to children during diarrhea are 1) for the program to make generic recommendations to "give extra fluids and food"; and 2) for the program to use existing information to make a best guess of what fluids are likely to be available, acceptable, affordable, and safe for use during diarrhea.

The major problem with the first recommendation is that it leaves the people who advise mothers in an awkward position. Mothers may well ask "What fluids are best?" when advised to "Give extra fluids." If health workers are not given guidance on what fluids to recommend, they may improvise their answers, resulting in different (and perhaps inappropriate) recommendations from different providers. Furthermore, health workers may feel awkward because they don't know what fluids are best and therefore neglect to recommend "extra fluids" at all.

The danger of the second recommendation is that available data are limited. Few programs have access to information about what fluids are considered appropriate for very young children and about the volumes of different fluids that are typically administered. Therefore, most programs developing household management policies based on available information would have to do so without consideration of these important issues. It is feared that making recommendations that turn out to be culturally inappropriate may generate confusion and undermine the credibility of the CDD program.

Sometimes, "the best available information" that exists is based on inaccurate assumptions and impressions. For example, it has long been an accepted "impression" of health workers and CDD personnel that mothers generally "withhold" food during diarrhea. Careful observational studies, however, have documented that mothers do not "withhold" food but that they sometimes shift the diet or reduce the amount of food offered in response to a decreased appetite in the child. In Liberia, health workers assured CDD personnel that mothers generally add salt to weaning foods. However, careful questioning of mothers indicated that they rarely if ever add salt to weaning food.

In addition to personnel, time and resource costs, there are other risks to pursuing data collection. A data collection instrument that seeks to identify the most appropriate fluids for use during diarrhea focuses once again on the <u>characteristics of the fluid</u> (although the characteristics of concern involve likelihood of use rather than physiologic efficacy). This may distract attention from the main objective which is to encourage mothers to <u>increase</u> the <u>amounts of fluids</u> given during diarrhea, and to convey the idea of balancing input and output (i.e. the more diarrhea, the more fluid should be given). Furthermore, focusing program efforts on identifying appropriate home fluids

may have the effect of permitting programs to ignore the logistics of ORS access.

A final concern about recommending additional data collection before formulating a policy on the household management of diarrhea is that data collection may not lead to recommendations that are either better than or different from recommendations based on a best guess. In areas with access to a large variety of products, fluid preparation and use may vary so much and be so idiosyncratic that it is impossible to make generalizations about patterns or trends. In areas with a limited variety of products (as may be the case in most of Sub-Saharan Africa) it may be best to follow a uniform strategy of recommending simple ways of improving the quality of weaning foods, and advising mothers to give frequent feedings of the weaning food (possibly with added salt) with extra water during diarrhea.

D. Is There a Need for Both Pre- and Post-Consultation Recommendations?

When policies for the household management of diarrhea are formulated, they are intended to target caretakers of young children before they present to a health worker. However, many children with no or mild amounts of dehydration are brought to health facilities for consultation after they have followed home management recommendations (whether they involve the use of ORS, SSS or home fluids). In that case, it would be appropriate for the health workers to determine if the home management is adequate and, if so, reassure the mother that she is doing the right thing for her child, and to send her home with advice to "carry on" as she has been doing and to return if the child develops signs of dehydration or other complications of diarrhea.

Some of the workshop participants felt that this is not a realistic policy and that every child who is brought to a health facility for an episode of diarrhea should be provided with or prescribed a packet of ORS. There are many reasons for this recommendation:

1) In many countries it requires a great deal of effort (including travel time and opportunity costs) for mothers to seek help from a health provider. If mothers are not given something "different" (be it a product or advice on different treatment) they will become dissatisfied and be less likely to return if the child becomes more severely ill.

2) Children who live a distance from health workers or health facilities may not be able to return if they suddenly become more severely ill. Therefore, they

should be provided with the "safety net" of an ORS packet.

3) Health workers feel pressured to "do something" or to prescribe something for the sick child. They will feel uncomfortable if they cannot offer anything different and may feel compelled to prescribe inappropriate antibiotics or antidiarrheal drugs.

There is no contradiction or problem with health workers distributing ORS packets to all children with diarrhea. The key behavior to be encouraged is the administration of fluids in amounts that replace ongoing losses. Health workers can emphasize that ORS is the best fluid for this purpose, but many other fluids (the recommended home fluids) can be used during mild episodes and until ORS can be obtained.

IV. CONCLUSIONS

The participants agreed that CDD programs would be likely to achieve the greatest effect on morbidity and mortality by focusing their resources on:

1) promoting a simplified household management strategy that stresses the administration of increased amounts of fluids together with nutritious foods during the majority of diarrheal episodes (and <u>not</u> necessarily how to prepare a special fluid),

2) teaching mothers how to recognize the more severe diarrheal episodes, and

3) increasing access to skilled providers of ORS for the management of moderate and severe episodes.

It was also agreed that, particularly where weaning foods and general childhood nutrition are inadequate, CDD programs would be best advised to communicate simple messages to improve the quality of the diet, rather than expend resources on the development and teaching of special recipes for "ORS-like" fluids or for special "diarrhea-foods".

The participants recognized that this shift from a strategy that focuses on promoting a product (whether it was ORS packets or SSS) to a strategy that focuses on broader case management issues (giving increased amounts of fluids and food), places CDD programs in unfamiliar territory. There are no controlled trials or case studies that indicate the best way of promoting adequate fluid replacement, the optimal method for determining what specific fluids are most available and acceptable for

increased use during diarrhea, or how to approach the task of developing "simple messages to improve the quality of the diet". There is both a lack of consensus and a lack of information on these topics. However, programs must take action before that information becomes available. Meeting participants recognized the need for outlining a decision process that helps programs make their best guess at how to proceed with these tasks. A draft outline of a proposed strategy is included in the recommendations section.

V. RECOMMENDATIONS ON HOW CDD PROGRAMS SHOULD PROCEED IN DEVELOPING A STRATEGY FOR THE HOUSEHOLD MANAGEMENT OF DIARRHEA[1]

The title of this section is intentionally not "How to select recommended home fluids" because there was a strong feeling among the participants that the issue of what home fluids to recommend should not be considered in isolation from other aspects of case management. The different aspects of appropriate household management must be coordinated with each other. It is recommended that an individual country's strategy be developed through a careful decision process involving experts in diarrhea case management, communication, cultural issues and nutrition. The following steps are a rough outline of the series of decisions that an "expert panel" of this type must make in designing or clarifying a strategy for the household management of diarrhea.

STEP 1: Decide how the program will attempt to communicate the importance of giving increased volumes of liquids together with food during diarrhea.

Although many CDD programs have been effective in achieving high levels of awareness and high ever-use rates for either ORS or SSS, they have consistently been much less successful in achieving effective use of ORT. Studies and evaluations that inquire about the volume of ORS or SSS administered indicate that most caretakers administer small, medicinal doses. Health workers who educate caretakers about household management may talk about mixing but rarely emphasize the volume of fluid or the importance of feeding. One

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[1]It should be noted that the recommendations do not represent a consensus, as the time allotted for discussion by the large group was too brief to reach definitive conclusions. Sections V, VI, and VII are the writer's recommendations and are based on, but not limited to, the presentations and discussions of both the morning and afternoon sessions.

of the arguments for promoting fluids that are available in the home (rather than ORS or SSS) for the initial management of diarrhea is that educational messages can then focus on giving adequate volumes of fluids and on continued feeding rather than on the preparation and promotion of a packet or recipe.

There is a tendency for programs to "skip over" this step, assuming that the individuals who design the educational materials and the communication materials will work out a way to encourage caretakers to give adequate amounts of fluids. However, the strategy for encouraging the critical behavior of replacing diarrheal losses by giving extra amounts of fluids with food must be given priority and attention by decision makers.

A number of different strategies may be considered. The most common is a direct physiologic explanation: the water lost during diarrhea causes the body to dry out; to prevent this drying out, fluid in must balance the fluid out; giving food along with the fluid will help the diarrhea stop sooner. The problem with this approach is that is often conflicts with existing beliefs about the proper treatment of diarrhea, and with the common perception that giving extra fluids leads to vomiting or increased diarrhea, (and that therefore the only way to prevent the body from drying out is to stop the diarrhea!). Programs choosing the strategy of a physiologic explanation must also address these concerns and perceptions.

More creative strategies may refer to local concepts of maintaining the balance of body fluids or may draw the connection between giving an adequate volume of fluids and maintaining strength or appetite. Analogies using familiar objects may also be helpful in communicating the idea of fluid replacement or maintaining fluid balance and of the idea that giving food helps to stop the diarrhea. Some ideas on appropriate analogies might be elicited during training sessions or through contests offering a small prize for the most appropriate entry.

STEP 2: Decide whether the selection of foods and fluids to be recommended during diarrhea is to be made on a regional or national level.

This decision will require a review of available data regarding the variation in beliefs and practices related to diarrhea, in infant and child feeding practices, and in the availability of different food

products between and within different parts of the country. Where variation is significant, specific recommendations regarding initial household management of diarrhea (Steps 3-5) must be made on a regional level.

STEP 3: Decide whether an investment will be made in gathering additional information or whether the selection of recommended foods and fluids will be based on available information. Conduct additional research if indicated.

This step requires the identification, collection and review of available materials related to the household management of diarrhea including:

-ethnographic studies of infant and child feeding practices; of beliefs and practices related to the household management of diarrhea; and on attitudes about giving salt, sugar, milk and plain water to children during diarrhea

-KAP surveys about beliefs and practices related to feeding and giving increased volumes of fluids during diarrhea

-nutritional surveillance results and studies of the preparation and content of local weaning foods

-household case management survey results on what foods and fluids are most commonly given to children with diarrhea and which are avoided

-data from DTU's or other health facilities on fluids and foods given to children before they are brought to health facilities

Although no country will have access to as much information as the expert panel may like, a judgement must be made as to whether the existing information is sufficient to formulate a policy, and whether further data collection is a feasible and priority activity for the CDD program at the time.

STEP 4: Choose the specific foods that will be recommended as good to give to different age groups during diarrhea

All programs should recommend the continuation and increased frequency of breast feeding during diarrhea and encourage the mother to drink more in order to support the child's need for more fluids. Recommendations about feeding children of weaning age require careful consideration because, in most

developing countries, these children have the highest incidence of diarrhea and are also at greatest risk of developing malnutrition. The expert committee must decide whether messages about the household management of diarrhea will recommend frequent feeding with the current diet (and extra feedings during convalescence), or whether messages will recommend simple changes to improve the nutritional quality of the diet, or whether changes must be made to accommodate beliefs about what foods are appropriate during diarrhea.

This decision will require information about the nutritional status of young children in the country, about the type and quality of weaning foods that are most commonly used, and about the acceptability of certain foods and food ingredients during diarrhea.

If weaning foods are generally inadequate and believed to be the cause of high rates of malnutrition, the CDD program's best strategy may be to collaboration with individuals from the government nutrition program, universities and other groups to develop practical recommendations for improving the quality of the weaning foods. The CDD household management strategy would then be to continue feeding X weaning food with added Y during diarrhea, and in greater amounts during convalescence. The same enriched food could be continued when the child is well. If weaning foods are low in sodium, the recommendation to add a small amount of salt during diarrhea should be considered.

STEP 5: Choose the specific fluids that the program will recommend as particularly good to give in extra amounts during diarrhea

The critical behavior that the CDD program should seek to promote during the initial management of diarrhea is the administration of increased volumes of fluids. Given that some fluids are likely to be better than others in preventing dehydration, and that mothers and health workers will need some guidance regarding what fluids are best, the program should identify some examples of fluids that are good to give during diarrhea. It is important that the committee recognizes that the suggestion of examples (and not the identification of a product to be promoted) is its task.

The recommended procedure is a process of elimination. All fluids that are known to be commonly available at the household level (including ORS and including water) should be considered as candidate home fluids. Fluids

that are known to be culturally unacceptable for use during diarrhea should be eliminated. Similarly, fluids known to contain or be prepared with a high sodium concentration or a high osmolality should also be eliminated. Fluids about which there is concern regarding unknown pharmacological properties (such as local teas and remedies made from plant products) should not be considered.

If the remaining list of candidate fluids is long (more than 6 items) preference should be given to fluids that contain some salt and to food-based fluids. The remaining fluids can be named as examples of fluids that can be given in increased amounts during diarrhea. It is not recommended that the listing of "unsafe" fluids (or fluids that are not recommended for other reasons) be part of communication messages directed at mothers. (Negative messages are confusing and are discouraged by communications experts.) However, programs may consider informing health workers about fluids that are not recommended during training sessions.

STEP 6: Develop recommendations for when children with diarrhea should be brought to the next level of care.

There are two parts to the challenge that faces CDD programs. The first is to assure appropriate case management for the bulk of mild to moderate diarrheal episodes occurring in the home. (The previous five steps address that objective.) The second is to increase the sensitivity of caretakers' abilities to identify children who are at risk from dehydration or other complications of diarrhea, to assure that health workers are trained to manage cases at high risk, and to encourage caretakers to seek help from providers who are able to treat children at high risk.

Participants in the recent UNICEF/WHO/JHU conference on the Household Management of Diarrhea and ARI concluded that recommendations on when caretakers should take children with diarrhea to a health facility should be developed at country level. These should be based on symptoms and signs shown to predict or indicate severity, especially those that caretakers can recognize and are concerned about.

1. Indicators likely to be useful in most countries include:

   a. frequent or numerous loose stools (possibly with reference to a specific number, e.g. at least 6/day, or to watery consistency),

   b. repeated or frequent vomiting

   c. an indicator of general condition that suggests dehydration or serious illness e.g. poor feeding, loss of playfulness, and

   d. blood in the stool.

2. Additional indicators that may prove useful in some countries include:

   a. fever,

   b. any sign or symptom of dehydration that mothers can recognize, e.g. intense thirst, sunken eyes, dry mouth, and

   c. all infants less than 6 months of age who are not breastfed.

STEP 7: Decide how the newly formulated strategy will be assessed and monitored.

The true test of a household management strategy is how it is perceived and applied by mothers and other caretakers, as well as by the health workers who are charged with promoting that policy. It is quite likely that the initial strategy will need to be revised based on feedback from the field. The methods for assessing the strategy include:

- Developing and pilot testing some educational messages with focus groups of the targeted audience

- Working with health providers who agree to try some recommended messages in a clinical setting. Follow-up discussions can be conducted with the health workers (to determine whether they perceive the messages to be useful and understood by caretakers) and with caretakers either at the time of exiting the facility (to test understanding), or at home (to determine whether the recommended behavior was tried and adopted).

VI. RECOMMENDED PLAN OF ACTION IN PAKISTAN[2]

1. Consolidate information on the current national and regional policies related to household management of diarrhea, and on health worker and caretaker responses to those policies

   There are indications of problems in both the interpretation and application of the current household management strategy. Data from field testing educational materials and from the experience of DTU workers (and any other sources) should be summarized to better define "the problem" and the source of confusion.

   It is important to determine whether all aspects of a household management strategy have been defined and what gaps, if any exist. How is the idea of fluid replacement communicated? Is there any indication of how the current age specific recommendations drafted by the CDD program for the feeding of children during diarrhea are received by health workers and by caretakers?

2. Identify, gather and review existing data on fluid administration and feeding practices prior to coming to health facilities.

   If careful definition of the status of the household management strategy (see the preceding section) indicates significant problems, the first step in mobilizing support for addressing the problems will be to analyze existing information on fluid administration and feeding practices during diarrhea. These data are available from case assessment forms completed during training sessions in the DTUs. Although caretakers bringing their children to DTUs may not have the same practices of caretakers who do not make use of DTUs, the data will provide information on an important target population in different regions of the country. Analysis will probably require hiring an individual to code, enter and tabulate the data.

3. Develop a proposal for a workshop on household management policy, including objectives, agenda and participants

   The next step in mobilizing support for refining and assessing the current household management strategy may be to organize a workshop of key decision makers to facilitate

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[2]The recommendations were drafted without the participation of Pakistan's CDD program manager or of the DTU directors. They will be submitted to the individuals concerned for their consideration and input.

working through the 6 steps of formulating (or in this case, refining) a policy.

4. Develop a list of priority issues to be addressed by operations research.

Although priority issues cannot be developed prior to problem definition and summarizing available data, some relevant topics for assessment and research may be:

- Determining whether providing a written list of fluids that are "good" and fluids that might be "harmful" to give during diarrhea improves the educational skills of health workers

- Testing different approaches to communicating an understanding of fluid replacement to caretakers

- Conducting follow-up visits to assess caretakers' responses' to advise on continued feeding and administering increased amounts of recommended home fluids.

VII. RECOMMENDED IMMEDIATE PLAN OF ACTION

1) PRITECH/Washington staff:

- work with PRITECH/Pakistan to conduct follow-up activities at the country level

- follow and document the experience of the Kenya expert panel that will assemble to address household management policy formulation (June 1990)

- seek additional opportunities to field test the steps for formulating a household management strategy, and the protocol for community-based data collection

2) PRITECH/Pakistan staff:

- draft a summary of existing information regarding health worker and caretaker responses to current national and regional policies related to household managment of diarrhea,

- identify an individual to code, enter, and compile existing data on fluid administration and feeding practices of caretakers prior to coming to health facilities.

- draft a proposal for a workshop on household management policy, including specific objective, agenda, and participants.