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Improving ORS Supply and Distribution: A PRITECH-Assisted Effort in the Philippines

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INTRODUCTION

This Occasional Operational Paper is another in a series that the PRITECH Project, funded by the U.S. Agency for International Development, will be publishing periodically. The papers will focus on programmatic experiences in the field and on lessons we have learned. The PRITECH Project has full-time field staff operating in country and regional offices in Africa, Asia and Latin America. Our field staff, in collaboration with their national colleagues, have operational experiences and ideas to share with their colleagues through these papers. Although the experiences derive from a particular country situation, we hope that lessons learned can be useful to CDD program managers elsewhere.

For the most part, these papers will be written by field staff for field staff. Papers will not be made to conform to a pre-determined, sanitized format and style. We want to retain the originality of the individual author. Offered by the writers on an ad hoc basis, these papers will be peer reviewed only when the author so chooses.

We believe that, by sharing our experiences working with national CDD programs throughout the world since 1983, we may give you new ideas for your programs. We encourage you to let us know about your experiences. We hope that you find this series interesting and useful -- and that you enjoy a sense of sharing in the many struggles and successes of CDD programs throughout the world.

IMPROVING ORS SUPPLY AND DISTRIBUTION: A PRITECH-ASSISTED EFFORT IN THE PHILIPPINES

Background

The Philippines is a nation of 7,000 islands, with a monsoon-type rainy season during which typhoons are frequent. The Department of Health (DOH) in the Philippines is structured in 14 regional health offices, 60 city health offices, 75 provincial health offices, and 276 district health offices. There are approximately 600 hospitals, 2,100 rural health units and 1,000 barangay (village) health stations in the DOH system.

These geographic features and the complex administrative structure, combined with difficulties in ORS supply at the national level, were among the factors contributing to an undersupply and maldistribution of ORS in the DOH system. A PRITECH evaluation of the CDD program in September 1988 reported that there were stock outs and an undersupply of ORS in some areas and an oversupply in others. Field visits by CDD program staff also found an insufficient and irregular supply, with some facilities being completely out of ORS and others having more than a one-year supply.

During these visits it was observed that there was no reliable system in place for determining the amount of ORS each facility should receive. As they received ORS, higher officials in the administrative chain would simply allocate it to the next lower-level facility, usually giving each facility the same amount. While in a few instances there were attempts to allocate based on the population of the catchment areas of the facilities receiving the ORS, this was basically a "push" system, with the receiving facilities passively waiting for ORS to be given, or only requesting ORS when they ran out or nearly ran out of stock. A number of problems common to the overall DOH logistics system, e.g., inadequate warehousing, lack of transport, and lack of a logistic information system, were also observed to be adversely affecting the ORS supply.

The problem of undersupply of ORS at the national level was related to a deterioration in the DOH's ORS production facility and a series of delays and other problems in importing ORS from donors. By late 1989 the DOH had awarded a contract to a Philippine drug manufacturer for the production of "Oresol," the DOH brand of ORS. These shipments were received on schedule and in sufficient quantity, thereby ending the problem of chronic shortage of supply at the national level.

The overall problems in the system, i.e., warehousing, transport, and the information system, are to be addressed in a World Bank-funded project beginning in 1991. The PRITECH-assisted study leading up to the World Bank effort recommended that the physical movement of drugs and medical supplies be from three national hub warehouses direct to the district health office level. This should reduce the backtracking of supplies and the additional warehousing and handling of supplies at the regional and provincial levels. The orders for drugs and supplies and the notifications that orders have been sent will still be sent through the provincial and regional levels.

While these problems were being addressed, the CDD program also undertook to develop and implement a simple, rational system for determining how much ORS each facility should stock, and for knowing when to re-order and how much to order. Surveys of ORS supply were undertaken in 1989 and again in 1990, and showed a very encouraging improvement in ORS supply at all levels. What follows is a description of the ORS ordering system, an explanation of how the system was developed and implemented, the impact of the system on ORS supply, and lessons learned in implementing the system.

The Philippines Ordering System

Objectives. The Philippines ORS ordering system has three major objectives:

1. To minimize the number of times when facilities run out of ORS;

2. To minimize the number of situations where ORS reaches its expiration date without being dispensed; and

3. To achieve the above two objectives with the least amount of capital tied up in ORS inventory.

ORS Supply Pipeline. The ORS supply pipeline is designed to ensure a steady flow of ORS from supplier to DOH Central and from there to the DOH field units. An ORS authorized stock level (ASL) is set for each facility in the DOH system. The ASL is based on the diarrhea caseload of the facility, and is expressed in terms of months of supply.

Attachment A is a diagram of the ORS supply pipeline. On the diagram the "months of supply" is expressed as a range, e.g., 1-3 months, with the higher of the two numbers being the ASL. The lower number is the number of months' supply that the stock level is likely to drop to at the end of a peak diarrhea season month, when ORS is being consumed rapidly. For example, during peak season, a normal three months' supply might be used twice as fast, so that after one month two months' supply has been used, and only one month's supply remains.

It should be noted that larger amounts (months of supply) of ORS are kept at the district and city levels than at the regional and provincial levels. This is done so that the ORS is kept

closest to the level at which it will be used. The pipeline is also designed this way because many regional and provincial offices do not have proper storage space for large amounts of ORS and other medicines.

The regional and provincial offices act as "pass through" facilities only. When the quarterly ORS supply is received at these levels, it is quickly (within about two weeks) sent to the next lower levels, based on the requests from those levels. The regional and provincial officers retain as a "buffer" an ORS supply sufficient for one month's use for the entire regional or provincial catchment area.

When diarrhea outbreaks occur, the ORS stock levels at the district and city offices should be sufficient to cope with them. If an area still needs ORS on an emergency basis, it can request it from a neighboring city or district office, or from the provincial or regional one-month buffer stock.

Because diarrhea is a very seasonal disease, the ASL for direct-service facilities (hospitals, rural health units and barangay health stations) is set at three months. This means that at the end of the month in the non-peak diarrhea season these facilities would be expected to have a balance of about a two-month supply of ORS. At the end of the month in the peak diarrhea season, the balance on hand in these facilities would be near a one-month supply of ORS.

Calculating Authorized Stock Levels. Health facilities calculate their authorized ORS stock levels only once a year. This calculation is normally done in the early part of the fourth quarter of each year to prepare for the coming year.

The top half of Attachment B is the form used by barangay health stations, rural health units and district, provincial, and regional hospitals for calculating their ASLs. The following are explanatory notes on the form.

Line 1 — If the calculation is being done prior to the end of the calendar year, the number of cases entered here can be for the most recent twelve consecutive months for which figures are available.

Line 2 — Two packets are used per diarrhea episode, as an average ORS consumption figure for field health facilities. Large provincial and regional hospitals which see a larger portion of dehydrated cases should use a figure of four packets on line two.

Line 3 — The CDD staff at the regional and provincial levels, in consultation with their field units, determine the percentage increase or decrease to be used in line three. The expected increase/decrease is affected by activities such as training of new health workers in CDD, establishing new ORS providers, promotion activities, etc.

Line 4 This is the facility's estimate of the amount of ORS which it will give to other organizations and practitioners for use with their patients.

Line 7 The ASL for direct-service facilities is three times the average monthly projected usage.

In calculating the ASL for district and city offices, the diarrhea caseload figure used on line one is the consolidated figure for all cases seen at facilities within the district or city office catchment area. On line seven the figure from line six is multiplied by six, since district and city officers are authorized a six-month stock level. In all other respects, the calculation for district and city offices is the same as for direct-service facilities.

Similarly, the calculation for regional and provincial offices uses the same formula, except that on line seven the figure from line six is multiplied by four, since regional and provincial offices have a four-month ASL.

Once the ASL is calculated for a facility, it is used for placing orders for ORS throughout the year.

Ordering ORS. This ORS ordering system is a "pull" system. The amount of ORS sent each month or quarter from one level to the next lower level is based on the amount requested from the lower level. No ORS is sent automatically from one level to the next.

From the national level through the district level, the ordering dates are coordinated so that each level orders its ORS in time to receive the order just prior to receiving the ORS orders from the facilities in the level below it. The following is the schedule for placing ORS orders:

- Barangays order ORS in the last week of each month.
- Rural health units and hospitals order ORS in the first week of each month.
- Districts and cities order ORS from the province at the beginning of January, April, July, and October.
- The provinces order ORS from the regions at the middle of March, June, September, and December.
- The regions send their quarterly ORS requests to the CDD national office by radio message at the end of February, May. August, and November.
- The DOH Central Office ships ORS to the regions during the first two weeks of March, June, September, and December.

The bottom half of the same form (Attachment B) used for calculating the facility's ASL is used to calculate the amount of ORS to order. The form is used for a one-year period. If the facility is re-ordering on a quarterly basis, there is one line for each of the four quarters. This form is retained by the facility, and if properly filled out provides a running record of the ORS supply situation in the facility, which can be easily monitored by supervisors.

To calculate the amount to order, the health worker at the facility writes the authorized stock level from line 7 in column 1 on the form.

She then does a physical count of ORS on hand and writes that number in column 2, "Balance of Order."

She then subtracts the balance at time of order (column 2) from the authorized stock level (column 1). The result is the amount to order (column 3). If the number in column 3 is a negative number it means the facility has more ORS than it is authorized to have; the worker does not place an order if the number in column 3 is a negative number. If the number is positive the health worker shows the calculation to the CDD Coordinator at the next higher level and requests that amount of ORS. For the rural health unit and above, a standard government requisition and issue voucher is completed.

Once the health facility receives the ORS, the health worker enters the amount received and date received in column 4.

At all higher levels, the procedure for ordering is the same as that described above, with the exception that the ordering is done quarterly.

Each facility keeps a folder with its CDD records in it. This form for calculating the ASL and for calculating the amount to order each time is kept in the folder. In addition, each facility keeps a copy of the form for each facility which orders from it, and updates this copy each time an ORS order is received and sent. For example, a rural health unit, in addition to its own form, should have updated copies for all the barangay health stations that order from it.

Exceptions to ASL and Frequency of Ordering. In some regions, there are provinces, districts, and rural health units that cannot be easily reached in the rainy season. These locations with limited access are usually in the mountains or on remote islands. In these cases, the facilities are given a larger authorized stock level than shown on the forms. They also order less frequently than quarterly or monthly. The DOH Central Office CDD Program staff assist the field units in adapting the ordering forms so they can be used for these special situations.

Developing and Supplementing the System

Testing the System. The PRITECH and WHO resident CDD advisors prepared an original version of the ordering system and introduced it to the regional CDD coordinators at

a meeting in February 1989. It was agreed at this meeting that each region would test the new system for 3-6 months in one district. The regions were given a format for reporting their experiences in implementing the system. In addition to these reports the PRITECH Advisor and the CDD Administrative Officer visited the test districts in four regions. As a result of the reports (from ten regions only as the other four were not able to do the pilot test) and field observations the following actions were taken:

1. The formula for calculating the ORS ASL was simplified by eliminating a calculation for wastage.

2. The amount of ORS to be held at the regional and provincial levels was reduced. It was determined that they should act as "pass through" facilities, sending most of the ORS they receive almost immediately to the next lower levels.

3. The ASL for direct-service facilities (hospitals, rural health units, and barangay health stations) was originally set at two months, and was to be doubled for the peak season and reduced after the peak season. This caused confusion. The ASL was consequently raised to three months for these facilities, which is sufficient for both low season and peak season.

4. Written directions, in the form of a training module, were prepared for the system.

5. The two forms for calculating the ASL and the amount of ORS to order were combined into a single form which can be used for a whole year.

6. It was agreed that higher ASLs and less frequent ordering periods could be used depending on special circumstances in various places.

All of the regions visited were eager to expand the system to the whole region.

Implementing the Revised System. The new, revised ORS ordering system was introduced to the regional CDD coordinators at a national meeting in October 1989. Because the ordering system had not been reviewed and approved by the DOH Executive Committee, its implementation in the field was not mandatory. It was agreed at the meeting that the CDD coordinators from each region would discuss the system with their regional technical staff and regional director and determine to what extent the system would be implemented. All regions implemented the system in at least some of their provinces.

Field monitoring visits to eleven of the fourteen regions during 1990 revealed that implementation of the system was going very slowly, and that it was not being implemented as extensively and as well as had been expected. The main reason for this was that district, provincial, and regional staff were preoccupied with a host of initiatives mandated by the central

office. In some cases, the training/orientation to the new system was not done until near the end of the second quarter of 1990.

A number of specific problems were observed during the field visit, including:

1. Most regions had not ordered enough ORS to fill the pipeline at the start of implementation of the system. They were to have placed this "special order" to fill the pipelines based on their estimates of how much ORS was in the system at various levels. As a result, orders for ORS from lower levels in the system could not be filled completely by the higher levels. This was very frustrating to those trying to implement the system correctly.

2. The regions had not reproduced enough copies of the form for calculating ASLs and the amounts to order, even though each region had been given a set of stencils for this purpose by the Central Office CDD Unit. As a result, many facilities were found to have no forms, to be using the wrong forms, or to be using handwritten forms.

3. Key people at the district level sometimes missed the orientation to the system because of their involvement in other activities. This resulted in the system not being implemented in those districts or in being incorrectly implemented.

4. In some cases the quality of the second-level training/orientation to the system had not been sufficient, resulting in confusion about the system among nurses and midwives.

5. Many provincial health offices were mixing their ORS stock with that of the nearby districts, which use the same warehouse. This was resulting in their placing smaller orders to the region than they should have. A similar problem was observed between the districts and rural health units.

6. Large provincial regional hospitals were using 3-4 packets of ORS per case, resulting in the ASLs arrived at by the formula (which assumed two packets per case) being too low.

7. Some facilities with a three-month ASL were dividing the ASL by three before filling in column 1 of the form, because they thought they should just order what they needed for one month. This action seemed to have come from their earlier experience where they would be out of or nearly out of ORS before asking for more.

8. Some facilities were counting only diarrhea cases in children under five when filling out line 1 of the calculation for ASL. This would result in too low an

ASL. This was apparently done because of the Maternal and Child Health Service's focus on the under-five target group.

9. Lack of transportation resulted in facilities receiving less ORS than they ordered and in receiving it late.

As a result of these visits, the regional CDD coordinators pledged to give more time to monitoring the ORS system, with special attention being given to the problems listed above. All regions found to have insufficient ORS for the initial filling of the pipeline placed very large special orders to correct the situation.

The field visits by Central Office staff to monitor the implementation of the ORS ordering system were made more effective by the use of a checklist for monitoring implementation of the system. During the visits, various field staff were taught how to use the checklist. The monitoring checklist is appended as Attachment C.

Impact of the System

The first nationwide ORS supply survey was conducted in February 1989. It covered 1,203 health facilities in 68 of the 75 provinces of the Philippines. Forty percent, or 486 of the facilities surveyed, were found to be "at risk," meaning they had no ORS in stock, had only expired ORS in stock, less than a one-month supply of ORS (barangays, rural health units, cities, and hospitals), or less than a three-month supply of ORS (regions, provinces, districts). In some provinces, as many as 88 percent of the surveyed facilities were "at risk."

The overriding problem revealed by the survey was a shortage of ORS supply in many facilities. The exception to this general finding was the city health offices. Forty percent of them had more than a six-month supply of ORS, and only 11 percent had less than a one-month supply.

In July 1990, a second nationwide ORS supply survey of 1,205 health facilities was undertaken. In spite of the slow start in implementing the system, the survey showed that in those regions and provinces where the CDD coordinators were able to introduce the new ORS ordering system and closely supervise its implementation there were marked improvements in the ORS supply situation.

In the 1990 survey, only 6 percent of the facilities were out of ORS on the day of the survey, compared to 14 percent in 1989. In addition, a total of 25 percent of the facilities were "at risk" compared to 40 percent "at risk" in 1989.

All regions except two showed declines in the percentage of "at risk" facilities. The two most improved regions, in terms of reduction in percentage of "at risk" facilities, went from

1989 figures of 56 percent and 48 percent to 1990 figures of 13 percent and 10 percent, respectively.

One region showed an increase in facilities "at risk" from 1989 (23 percent) to 1990 (33 percent). This region was implementing the ORS ordering system in only one of its seven provinces. That province had no facilities "at risk."

In the 1989 survey, 48 out of 68 provinces surveyed (71 percent) had some facilities which were out of ORS. In the 1990 survey this had dropped to 30 out of 68 provinces (44 percent).

Future Actions

As a result of the field trips and the 1990 survey, the regions and provinces which are still having major problems with ORS supply have been identified. The staff in these areas will closely supervise the implementation of the ORS ordering system in early 1991 and work out any problems encountered in order to ensure availability of ORS at all levels in the DOH system for the 1991 peak diarrhea season and beyond.

Additional minor changes were made in the ORS ordering forms as a result of the 1990 field visits. WHO is interested in funding the final preparation of training materials for this system, for each level, to be used as supplements in future supervisory skills training in the Philippines.

The checklist for monitoring implementation of the ORS reordering system developed by PRITECH should be used by all central office staff in their monitoring visits to reinforce correct implementation of the system. This checklist could also be introduced to all regional CDD coordinators at the first semi-annual consultative workshop held in 1991.

In 1991, the CDD staff will closely monitor ORS stock levels in direct-service facilities to ensure that the three-month ASL is sufficient for the peak-season months. If the ASL is not sufficient, consideration should be given to raising the ASL for a four-month supply.

Lessons Learned (What I Would Do Differently If I Were Doing it Over)

1. Ensure that there is plenty of ORS available at the national level prior to launching a new ordering system. This might be as much as a one-year supply if the pipeline is fairly empty. It is extremely frustrating to field personnel to introduce a system and then not be able to fill the orders. The problem in this case was the fact that a special order of 3.9 million packets of USAID/UNICEF ORS which was supposed to have been available was found to be mislabeled. It took some time for this to be corrected and as a result, the central office could not fill the orders from the field.

2. Prepare a simple set of clear instructions and related training materials at the outset. Because the pilot test was launched on very short notice, the instructions were only verbal. The only written materials were the forms.

3. Conduct the first pilot tests in fewer regions, and expand to only three full regions after the revisions. Monitor these three regions much more closely than it was possible to do for the full fourteen regions. Expand to all the regions only after working out the problems encountered in this expanded trial.

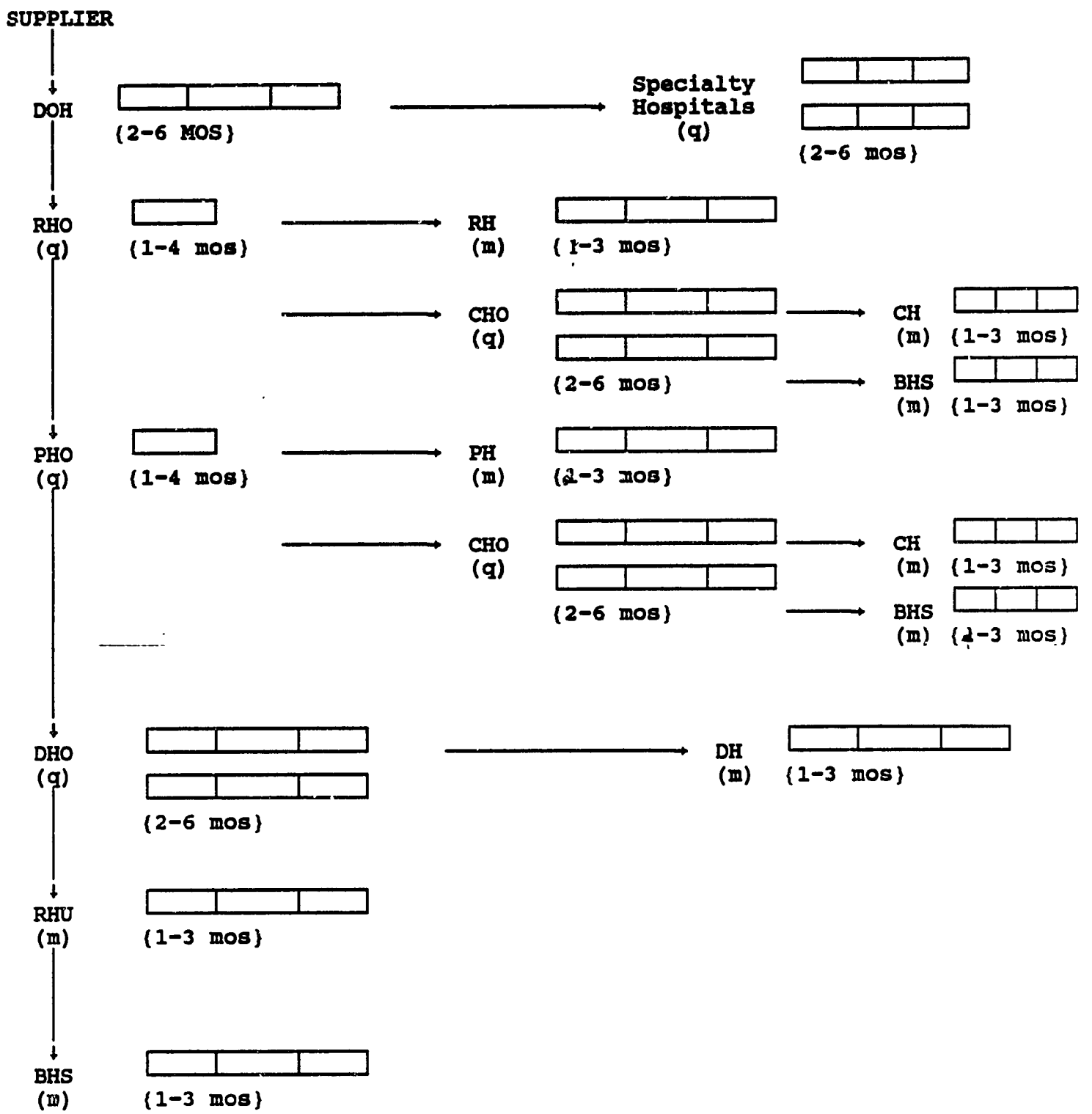
4. Involve a regular Department of Health employee from the central office in the development and implementation of the system. The assigned counterpart, the Administrative Officer, was a contract employee whose services ended at the same time as those of the PRITECH advisor.

5. Explain much more clearly to the regional CDD coordinators the need to fill the supply pipeline with a large special order of ORS at the outset in order to fill the orders from the districts and cities. This was not emphasized enough during the October 1989 training season.

6. Emphasize more clearly to the regions the importance of their providing sufficient copies of the ordering forms for all levels in the system. Expecting provincial and district levels to retype the sample forms on stencils proved to be a significant bottleneck to implementation.

ORS SUPPLY PIPELINE

Attachment A



= 1 month supply of ORS

(2-6 mos) = the no. of months ORS supply which will be kept at the facility.

(q) (m) = frequency of re-ordering (q = quarterly, m = monthly).

CALCULATING YOUR AUTHORIZED ORS STOCK LEVEL FOR 1991
(For use at BHSs, RHUs, and Hospitals)

Name of Facility _____ Type _____

Location _____ Prepared by _____
Mun./City Dist. Prov. Name Title

1. Diarrhea cases of all ages seen/reported in 1990 = _____
2. Multiply line 1 by 2 packets = _____
3. Multiply line 2 by (the expected % increase or decrease in cases for 1991) _____ = _____
4. Expected number of ORS packets to be distributed to private clinics, NGOs, etc. in 1991 = _____
5. Add line 2, 3 and 4 = _____
6. Divide line 5 by 12 months (= average monthly ORS usage) = _____
7. Multiply line 6 by 3 (= authorized ORS stock level) = _____

RE-ORDERING ORS ON A MONTHLY BASIS

MONTH	AUTH. STOCK LEVEL	BALANCE AT TIME OF ORDER	AMOUNT TO ORDER	Date	AMOUNT RECEIVED	Date	REMARKS
JAN							
FEB							
MAR							
APR							
MAY							
JUN							
JUL							
AUG							
SEP							
OCT							
NOV							
DEC							

Attachment C

ORS MONITORING CHECKLIST

Facility _____ Date _____

Use this checklist when monitoring whether a facility is correctly using the new ORS ordering scheme. Use the back of the sheet for any additional notes.

		YES	NO
1.	Does the facility have the ORS calculation and ordering form?		
2.	Is it the correct form for the facility?		
3.	Did the facility correctly calculate its authorized stock level? (If no, note on the back of this page what they did wrong) What is the facility's authorized stock level?_____		
4.	Did the facility place its order(s) at the correct time? (If no, note on the back of this page what they did wrong.)		
5.	When they ordered, did they calculate the correct amount to order? (If no, note on the back of this page what they did wrong.)		
6.	Did the facility receive the amount of ORS it ordered? (If no, note on the back of this page why they did not.)		
7.	If the facility received more or less than ordered, is there a comment in the remarks column as to why this happened?		
8.	How much ORS does the facility have on hand (do a physical count) ORS on hand = _____		
9.	Is this less than a one month supply? (If yes, note the reasons for this on the back of this page.)		
10.	Does the facility keep an ORS stock card?		
11.	Does the balance stated on the stock card match the actual balance on hand from the physical count?		
12.	Will the ORS reach its expiration date before it is consumed?		
13.	If the facility being monitored is an IPHO, DHO or RHU does it have copies of the ORS calculation and ordering form for each of the facilities below it, i.e., the IPHO has forms for each DHO, DHO has forms for each RHU, RHU has forms for each BHS. (If not, note the reason for this on the back of this page.)		