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THE NATIONAL ORAL REHYDRATION  
PROGRAM OF PAKISTAN  
CONSIDERATIONS FOR AN EXPANDED  
EFFECTIVE INITIATIVE

A Report Prepared By PRITECH Consultant:  
MATTHEW TAYBACK, Sc. D.

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## TABLE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	1
I. BACKGROUND AND PURPOSE	2
II. METHODS	3
III. FINDINGS	4
IV. RECOMMENDATIONS	6
REFERENCES	8

## EXECUTIVE SUMMARY

The current epidemiology of diarrheal disease (DD) and death due to DD among infants and young children suggests an annual loss of not less than 100,000 child lives due to DD and an annual incidence of 14 million episodes of diarrhea among infants alone. Thus at the present stage of the Pakistan ORT program, a vast burden of morbidity and mortality from DD continues.

The necessity for an expanded diarrheal disease control program is recognized by the Government of Pakistan (GOP) and an intensified emphasis on ORT is the focus.

Mounting an effective attack on diarrheal mortality among young children is complex since the problem is greatest in rural areas and will require the cooperation of illiterate mothers as well as change in their child care practice.

The national ORT coordinator has a clear mandate from the GOP, and is a highly qualified administrator, capable of achieving complex objectives. He requires resources beyond those now available and which can be met, in part, by PRITECH and by available AID funds. Within a brief start-up period, continuing technical assistance can be made available through PRITECH in public education and staff training, and in health information and management information systems.

## I. BACKGROUND AND PURPOSE

The Pakistan Medical Association invited Dr. Matthew Tayback, Johns Hopkins Medical Institutions, to participate in the 16th All Pakistan Biennial Medical Conference held November 23-27, 1984 as one of the keynote speakers.

Johns Hopkins School of Public Health, Department of International Health, is one of the agencies engaged in the PRITECH project. PRITECH in collaboration with AID/Pakistan has been exploring what types of technical assistance could most effectively support the GOP ORT program. Two teams visited Pakistan between April and October 1984 and submitted reports<sup>1,2</sup> and recommendations.

The invitation to Dr. Tayback by the Pakistan Medical association provided a unique opportunity to meet with many leading members of the medical profession of Pakistan with the purpose of obtaining their views on the general problem of diarrheal disease among young children and on the usefulness of ORT in particular.

Further, in accordance with joint discussions and communications among Matthew Tayback, PRITECH, and AID Pakistan, it was agreed that the consultant would give special attention to the research, surveillance, and management information requirements of the GP-ORT program.

## II. METHODS

Following a briefing at USAID/Pakistan by Dr. C. Davis and Ms. J. Sewell on November 21, the consultant visited the Wah cantonment hospital and met with the physician in command and with senior medical members of his staff. This was followed by a visit to Wah to determine the best methods for health education with specific reference to diarrheal disease and the use of ORT in rural populations.

Over the period November 23-November 27, during the course of the PMA Conference, meetings were held with leaders of the Pakistan medical community (see Appendix A) to ascertain their views on ORT and diarrheal disease. A thorough briefing was given by Dr. Batul Raza on the operations, accomplishments, and potential of the Pakistan Medical Research Council (PRMC). The interest and capability of the Agha Khan Foundation was the subject of a meeting with Dr. Smythe, Dean of the Agha Khan University, School of Medicine.

On November 28, preliminary findings were reported to J. Sewell (AID), Gen. M. Burney (GOP-National Institute of Health), and to D. Mason (UNICEF). Gen. Burney provided an update on the search for a national ORT manager. D. Mason reviewed the history of the involvement of UNICEF in ORT in Pakistan. Mrs. A. Mirza (AID) described early results of a survey of an ORT KAP study in eight villages in rural Pakistan.

### III. FINDINGS

GOP and donor agencies have been involved in ORT for at least seven years. Death due to diarrheal disease, particularly among infants and children age one and two, has been and continues to be of significant proportions, but in the absence of a valid vital statistics system or a nationwide continuous household health survey, the cause-age specific death rate cannot be stated precisely. Morbidity (incidence) of diarrheal disease is very high and as a burden of disease among infants and young children is staggering.

Estimates of the epidemiology of diarrheal disease among young children are shown below.

	<u>1984 Estimate</u>
(1) Population <sup>1</sup>	90,000,000
(2) Birth Rate <sup>2</sup>	42/1000/year
(3) Annual Births	3,780,000
(4) Infant Mortality Rate <sup>2</sup>	120/1000/year
(5) Annual Infant Deaths	453,600
(6) % of ID due to diarrhea <sup>3</sup>	27%
(7) Infant deaths due to diarrhea (annual)	122,000
(8) Annual attack rate of diarrhea	4/child
(9) Episodes of diarrhea among infants/year	14,3000,000

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<sup>1</sup> Conservative estimate based on 1981 census count

<sup>2</sup> Planning Division, GOP

<sup>3</sup> Based on 20% of infant deaths occurring in 1st month due to non-specific causes and 33-1/3% of infant deaths 1-11 months of age due to diarrhea.

The population of Pakistan is 70% rural and 30% urban. Rural-urban differences in fertility would suggest that there are proportionally more infants and young children in the rural area, say 75% of them in rural areas and 25% in urban areas. The availability of piped water is greater in urban areas than in rural areas. Thus the incidence of diarrheal disease would be greater in rural areas and it must be assumed that 80% of childhood diarrheal disease is found in the rural areas and 20% in the urban areas.

Literacy of rural mothers is approximately 10%. The danger of diarrhea is understood, universally, by rural mothers. However, there is no clear understanding that dehydration, not diarrhea per se, is the killer.

There is no difficulty in gaining acceptance by the medical profession of the scientific validity of oral hydration. Some, however, doubt that exclusive emphasis should be directed towards ORS as contrasted with a balanced promotion of ORS and the home prepared sugar-salt solution. ORT is seen by medical leaders as a holding action. It should not be a substitute for fundamental improvements in food hygiene, excreta control, and adequate piped water supply.

ORS as currently used in rural areas is likely to be mixed incorrectly and not administered long enough.<sup>3</sup> Continuation of diarrhea while administering ORS is a cause for dissatisfaction among rural mothers.

The national ORT coordinator is uniquely qualified to lead an exciting, successful ORT campaign. He is widely respected, has a remarkable background in medical and health administration, and is familiar with the management and logistics requirements of a major new national program. He has many responsibilities and thus requires a supporting team specifically for the ORT initiative.

PMRC has funded a small number of projects in assessment of ORT effectiveness under limited clinical conditions. PMRC is launching two continuous household-health surveys, one at Attock and one at Gizri, which can serve as sentinel areas for ORT evaluation.

The resources immediately required are (1) an executive officer (manager) answering to the national coordinator; (2) technical assistance in public health education, especially in rural areas and for training of the large segments of health providers in the public and private sectors; (3) technical assistance in the development and maintenance of a health and management information system to provide on-going surveillance of program impact; and (4) small scale, short-term studies of the epidemiology of diarrheal disease and death due to diarrheal disease to increase the cost-effectiveness and the end point effectiveness of the ORT program.

#### IV. RECOMMENDATIONS

1. Establish the following management and functional organization (see Figure 1).

2. All operations including supporting services should emphasize what is necessary and practical for rural areas. The central issue, death from diarrheal disease among infants and young children, is concentrated in rural areas.

3. Evaluation of the program should be based upon a reduction in diarrheal deaths among infants, one year and two year old children. It will be necessary to monitor a total population of 40,000 persons with the following expectations.

Sample Population	=	40,000
Births	=	1,680
Infant Deaths	=	200
Diarrheal Death	=	67

Diarrheal deaths, without program impact, are expected to affect 67 infants. With program impact, at a 50% effectiveness rate, there should be a reduction from 67 to 33. This will be a statistically significant effect.

4. Other measures of effect which should be ascertained are: (1) the proportion of mothers of infants who can prepare ORS liquid without major error; and (2) the proportion of mothers of infants who can prepare the salt-sugar solution without major error.

5. It is necessary, operationally, to understand what the essential factors are which are associated with deaths, among infants, ascribed to diarrheal disease. Through PMRC, several retrospective studies should be launched. The questions to be clarified are:

- (1) What was the interval between onset of diarrhea and death?
- (2) What interventions were attempted?
- (3) Was IV available?
- (4) Was IV used?
- (5) Was the death preventable (to be determined by a Delphi method procedure)?

6. Semi-annual impact review meetings should be held to consider:

- (1) public information products
- (2) distribution and inventory of ORS
- (3) status of training program
- (4) evaluation findings
- (5) research efforts.

Meetings should involve Coordinator, Manager, Donor Agencies, Provincial Managers, TA principals in (a) public information and training, and (b) planning, evaluation, and research.

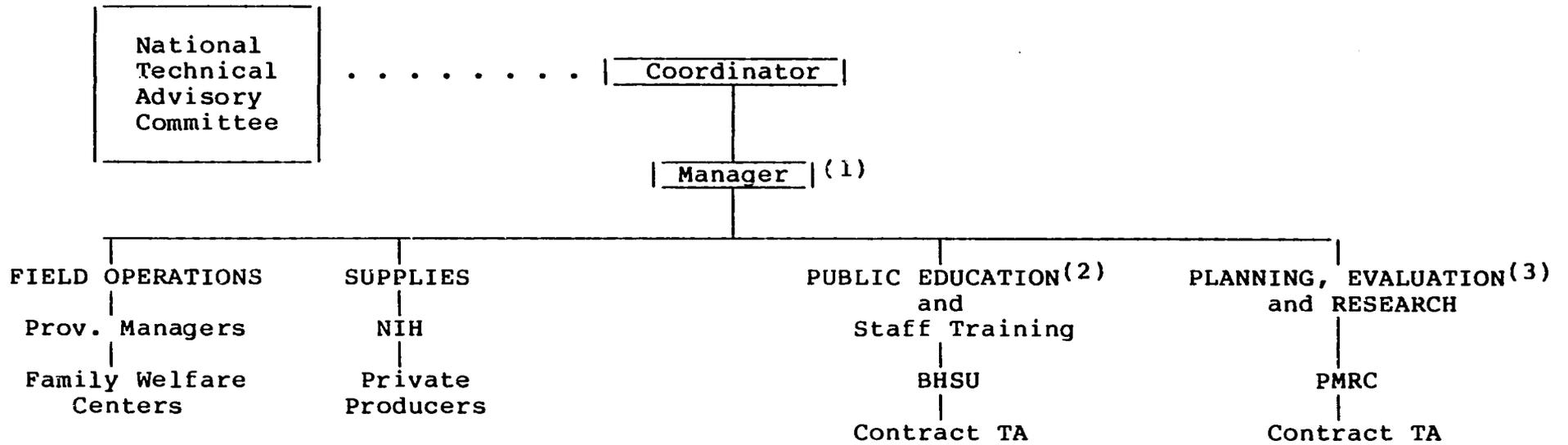
7. TA agreement should be negotiated for a period of two years, four months per year, for planning, evaluation, and research. Johns Hopkins School of Public Health is available and is interested in participating.

## REFERENCES

1. Snyder, J., et. al., Evaluation of the Pakistan National ORT Program, PRITECH Report, D.C., 27, May 1984.
2. Grieser, M., and Lours, T., Communications Strategy for the Pakistan ORT Program, PRITECH Report, October, 1984.
3. Mirza, A., et. al, Oral Communication, November, 1984, Islamabad.

FIGURE 1

PAKISTAN ORT PROGRAM



(1) Gen. Burney believes appointment of manager is imminent.

(2) TA for education and training is available, through Pritech, from AED

(3) TA for Planning, Evaluation and Research is available, through Pritech, from Johns Hopkins School of Public Health.

6