The issue of this document does not constitute formal publication. It should not be reviewed, abstracted, or quoted without the consent of the Pan American Health Organization. The authors alone are responsible for statements expressed in signed papers.
Some of the most serious infectious diseases of man have a common origin in an environment that facilitates faecal-oral transmission. Although the world's attention in the last decade has been focused on cholera, other serious enteric disease epidemics have occurred and the death toll caused by such enteric infections has now surpassed that caused by cholera. Beginning late in 1968, a particularly severe shigellosis associated with a multiple-drug resistant Shiga bacillus spread extensively in seven countries in Central America (1) and in four years claimed thousands of lives, particularly among children. In 1972-73 in Mexico, an unusual extensive outbreak of a multiple-drug resistant strain of S. typhi was responsible for thousands of cases and many deaths (2). A similar extensive outbreak of Shiga dysentery was also observed in Bangladesh, in which the responsible strain was also multiple-drug resistant (3).

Yet the three epidemic diseases, cholera, dysentery and typhoid fever, usually recognized as the most serious intestinal infections in man, account for only a small portion of the total morbidity and mortality caused by all acute diarrheal diseases, the majority of which are highly endemic in the pre-industrial world. From the available data in Latin America (4), it has been calculated that whenever overall mortality of infants is greater than 6,000 to 8,000 per 100,000 live births, more than 30% of the deaths can be attributed to diarrheal diseases. Such a high death toll from diarrheal diseases are either the direct result of the loss of body fluids and electrolytes or the indirect consequence of inadequate or poor feeding and nutritional deficiency in young children as well as pregnant mothers (5). Furthermore, it has been well established...
that diarrhoea precipitates and aggravates nutritional disorders, which in turn make children more susceptible to diarrhoea and other infections. Although their incidence is lower than that of diarrhoea, some other infectious diseases such as measles aggravate nutritional disorders as diarrhoea in young children.

The many infant and child deaths have an adverse effect on family planning programmes, which are now recognized to be extremely important for improving the standard of living in economically disadvantaged countries. Parents tend to be discouraged from limiting the size of their families so long as their children are unlikely to survive into adulthood.

The problems caused by the diarrhoeal diseases are thus severe and far ranging, affecting many areas of life in addition to the health sphere, and it requires a concentrated and systematic effort on the part of both the pre-industrialized countries and the international agencies for assistance, to reduce the prevalence of this group of diseases.

The Pan American Health Organization has been giving extremely high priority to the prevention and control of diarrhoeal diseases. In 1974, the Technical Discussion at the Pan American Sanitary Conference centered on the theme of "Studies and Strategies to Reduce Morbidity and Mortality from Enteric Infections" (6). "The Diarrhoea of Travelers – New Direction in Research" has been discussed among workers in this field in 1976 in a conference sponsored jointly by the World Bank and the Pan American Health Organization (7), since "Turista" has long been a limiting factor which probably prevents hundreds of thousands of visitors from returning to some Latin American countries from the industrialized countries such as
the United States (6). As a follow-up of those conferences, the following approaches on diarrhoeal diseases have been considered by the Organization:

- Application and implementation of presently available knowledge and technologies, and
- Initiation of various researches which are likely to improve the above implementation strategies in the future.

This document has been prepared for Task Force on Diarrhoeal Diseases as a reference and should not be considered as a final approach of PARO to the project.
2.

Application and implementation of presently available knowledge and technologies

The outlines of the programs in this activity are given on page 3. There are "Short-Term Program, Medium-Term Program and Long-Term Program".

Initiation of various researches

The objectives of this activity are shown on page 3 as "Supporting Research"

The various models or prototypes for the above activities are subjected to be reviewed and modified to fit individual countries by the national health authorities or health planners and should not be considered as the final form of the programs.

Available References from the Organization

1. Cholera and other acute diarrhoeal diseases control - Guiding principles for development of a national program. (........ translated to) (A principal document)

2. Proyecto de protocolo para evaluar en el terreno la viabilidad, aceptabilidad y eficacia de la rehidratación oral en el tratamiento de diarreas infantiles en una comunidad. Protocolo No. 1. (For motivative study of oral fluid treatment. See page 4).

3. Eficacia de la rehidratación como tratamiento domiciliario. Protocolo No. 2 (For motivative study. See page 4).

4. Aceptabilidad de rehidratación oral como tratamiento domiciliario. Protocolo No. 3. (For motivative study. See Page 4).

5. Operational studies for delivery of oral fluid treatment to communities. (For implementation of rehydration treatment to communities. See page 4).

6. Tratamiento y prevención de la deshidratación en las enfermedades diarréicas. Guía para uso del personal de atención médica primaria. (As a text for health workers at primary health care units).

7. Management of cholera and other acute diarrhoeas in adults and children. (For physicians).

8. Guide for the organization of health services in rural areas and the utilization of auxiliary personnel. (For the program formulation).

9. Notes for the treatment and prevention of acute diarrhoeal diseases - including cholera. (A guide for national lecturers, which includes many slides).


12. Guide to simple sanitary measures for the control of enteric diseases. (For control measures through water supplies and sanitary measures).
DIARRHOEAL DISEASE PROGRAMME
(A PROPOSED SCHEME)

SHORT-TERM PROGRAMME

Objectives: to meet any emergency caused by serious infectious diarrhoeal diseases by simple surveillance followed by adequate emergency operations. See footnote 1.

MEDIUM-TERM PROGRAMME

Objectives: to establish early treatment of the cases with mild diarrhoea at home and of severe cases at health centres, as well as to improve nutritional habits, personal hygiene, and environmental sanitation. A simple reporting system is implemented along with the provision of treatment facilities for detecting introduction of exotic infections and epidemics. See footnote 2.

Supporting Researches

Objectives: to improve strategies of diarrhoea control programmes through various researches on still unknown factors related to diarrhoea. See footnote 3.

LONG-TERM PROGRAMME

Objectives: to bring diarrhoeal diseases to such a low level that they no longer represent a public health problem or endanger the lives and health of children or communities as a whole. See footnote 4.

See 2.2, page 10 of "LA LUCHA CONTRA EL COLEDA Y OTRAS ENFERMEDADES DIARREICAS AGUDAS" or 2.2, page 8 of "O CONTROLE DA COLEDA E OUTRAS DIARREIAS". PAHO has prepared a guide on "Cholera Emergency Programme" for national health authorities, which will be available to national authorities upon request.

See 2.4, page 14 of "LA LUCHA CONTRA..." or 2.4, page 12 of "O CONTROLE....". PAHO has prepared a few models of the medium-term programme, which will be available to national authorities upon request.

Several research programmes have been developed by PAHO. The member countries are invited to participate in some of those researches, if they wish to contribute to diarrhoea control.

The long-term programme depends upon the experiences gained by the medium-term programmes in individual countries. Thus there is no model or approach presently available.

Some outlines of model programmes are attached with this information.
SHORT-TERM PROGRAMME
(PROGRAMME FOR EMERGENCIES)

Organization

National Disaster Organization
HQ

Other Committees

National Epidemic Control Committee (Ministry of Health)

Other Committees incl. health aspect

National Surveillance Unit

Operations

Preparatory Phase

Epidemic Phase

Post-epidemic Phase

MEDIUM-TERM PROGRAMME
(See page 5)

Note:
Reference for the short-term programme: Reference No. 10 (References Nos. 1, 6, 7, 10, 11, 12 and other information relevant to this programme are included in No. 10).
MEDIUM-TERM PROGRAMME

Organization for motivation

- Study group on simple
  rehydration treatment
  with particular emphasis on oral fluid
  treatment.

Operations

Various studies on the effectiveness of oral fluid treatment at curative service delivery points.

Evaluation

Note: If there is a doubt among physicians or health authorities on the effectiveness of oral fluid treatment, this motivative study may be considered.

References Nos. 2, 3, 4 may be referred to as models. For training before study, Reference No. 10 may be useful.

Organization for implementation of oral fluid treatment

- National Project Team
- Working groups
- Sectors on health services*
  - Sector on surveillance and preventive medicine
  - Sector on supplies
  - Health planning sector
- International and bilateral agencies

Operations

- Operational Studies.
  (Monitoring the progress and periodic improvement of the strategies)
- Improvement of delivery strategies.
  and expansion of the services to other areas of the country.

Reference No. 5 may be referred to as a model.

Gradual transfer of diarrhoeal treatment to primary health care or other health service systems (also planning LONG-TERM PROGRAMME)

* "Health services" include not only curative service but also health education to be given to communities as well as individual patients by workers giving daily curative services.

SUPPORTING RESEARCHES
(See page 6)
**Improvement of diarrhoea treatment based on clinical symptoms**

**Objectives:** to examine possible diarrhoea treatment based on simple clinical observation or clinical tests without elaborate laboratory examination.

**Approach:** Surveys on symptoms and etiologies of diarrhoeal diseases in pre-industrialized areas. Various host factors such as nutritional status, socioeconomic conditions, etc. will be included to evaluate the data.

Based on the above surveys, which may last a few years in selected fields, a prototype or prototypes of recording forms of diarrhoeal cases may be developed and tested in the field. Such prototype/s includes flow-chart/s by which medical auxiliaries can work without the necessity of memorizing diagnostic and therapeutic methods.

Approximate target of this study may be within 5 years.

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**Alternative ingredients for oral fluid preparations.**

**Objectives:** to find out new compositions of oral fluid, which is effective to treat diarrhoeal cases under various host and environmental conditions.

**Approaches:** Various ingredients such as sucrose, glycine or other aminoacids will be evaluated in pre-industrialized areas in which etiologies of diarrhoea and host factors will be taken into account. Local available material such as coconut water will also be studied as a home remedy before visit to a delivery point of oral fluid treatment or before obtaining oral fluid powder. Based on strictly controlled studies, the priority of various alternatives will be determined.

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**Impact of oral fluid treatment on the nutritional status of young children**

**Objectives:** to confirm the favourable effect on growth of young children treated with oral fluid (1975-76 Philippine Study).

**Approach:** In areas where malnutrition is a serious health problem, studies similar to Reference 2 will be performed. Such studies are important, since the Philippines study was performed in areas where malnutrition and diarrhoea were relatively less severe among children.
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REFERENCES


(4) Puffer, R. R. & Serrano, C. V. (1973) Patterns of Mortality in Childhood. PAHO.


(6) Studies and Strategies to reduce morbidity and Mortality from Enteric Infections. September - October, 1974, Washington D.C., PAHO.
