

245.11 9896

DISTR: GENERAL
WHO/CDD/92.39
ORIGINAL: ENGLISH

DIARRHOEAL DISEASE CONTROL PROGRAMME

LIBRARY
INTERNATIONAL REFERENCE CENTRE
FOR COMMUNITY WATER SUPPLY AND
SANITATION (IRC)

Report of the
thirteenth meeting of the
TECHNICAL ADVISORY GROUP

Geneva, 16-20 March 1992

This report contains the collective views of an international group
of experts and does not necessarily represent the decisions
or the stated policy of the World Health Organization



WORLD HEALTH ORGANIZATION

245.11-92RE-9896

CONTENTS

	<u>Page</u>
LIST OF PARTICIPANTS	3
1. INTRODUCTION	6
2. STATUS OF THE PROGRAMME	6
2.1 Global overview	6
2.2 Regional overviews	8
3. REPORT OF THE TWELFTH MEETING OF THE TECHNICAL ADVISORY GROUP	12
4. REPORT OF THE ELEVENTH MEETING OF INTERESTED PARTIES	13
5. COLLABORATION IN VACCINE DEVELOPMENT	13
6. FUNCTIONAL REORGANIZATION OF CDD PROGRAMME AT HEADQUARTERS	14
7. FINANCIAL MATTERS.....	14
7.1 Financial report for the 1990-1991 biennium	14
7.2 Revised budget for the 1992-1993 biennium	14
7.3 Budgetary projects for the 1994-1995 biennium	15
8. CONCLUSIONS AND RECOMMENDATIONS	15
8.1 Health services component	15
8.2 Research component	18
8.3 Budgetary matters	21
8.4 Functional organization of the Programme at headquarters	22
9. NEXT MEETING OF THE TECHNICAL ADVISORY GROUP	22
ANNEX. DEFINITIONS	24

© World Health Organization 1992

This document is not a formal publication of the World Health Organization (WHO), and all rights are reserved by the Organization. The document may, however, be freely reviewed, abstracted, reproduced and translated, in part or in whole, but not for sale nor for use in conjunction with commercial purposes.

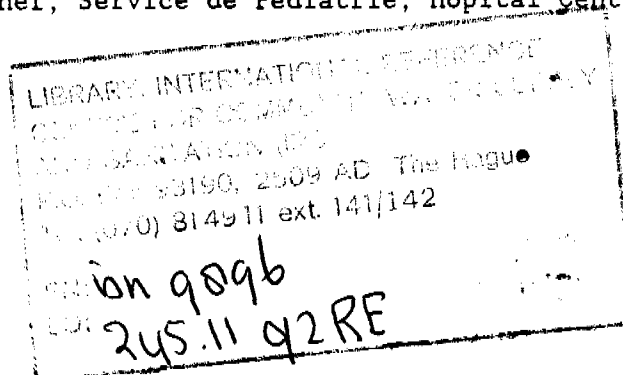
The views expressed in documents by named authors are solely the responsibility of those authors.

LIST OF PARTICIPANTS

Members

- *Dr K.B. Bannerjee, Deputy Commissioner (MCH), Ministry of Health and Family Welfare, New Delhi, India
- *Professor R.E. Black, Chairman, Department of International Health, The Johns Hopkins University, School of Hygiene and Public Health, Baltimore, MD, USA
- Dr A. El Gamal, formerly First Under-Secretary, Ministry of Health, Cairo. Adviser to the Egyptian Environmental Affairs Agency, Cairo, Egypt
- Dr G. Fernando, Director General of Health Services, Ministry of Health and Women's Affairs, Colombo, Sri Lanka
- Professor J.D. Hamilton, Dean, Faculty of Medicine, University of Newcastle, Newcastle, New South Wales, Australia
- *Dr G. Hartono, Director-General of Communicable Disease Control and Environmental Health, Ministry of Health, Jakarta, Indonesia
- Dr C. Lanata, Director General, Instituto de Investigacion Nutricional, Lima, Peru
- Professor S. Lie, Chairman, Department of Paediatrics, Rikshospitalet, Oslo, Norway
- Professor V.V. Maleev, Deputy-Director, Central Research Institute of Epidemiology, Ministry of Public Health, Moscow, Russian Federation
- Dr F. Mota Hernandez, Coordinator, National CDD Programme, Secretaria de Salud, and Head, Oral Hydration Service, Hospital Infantil de Mexico Federico Gomez, Mexico City, Mexico
- *Dr Mutombo wa Mutombo, National CDD Programme Manager, Ministry of Health, Kinshasa, Zaire
- *Professor P. Santos-Ocampo, Head, Department of Pediatrics, College of Medicine, University of the Philippines, Manila, Philippines
- Dr Moncef Sidhom, Director of Health Services, Ministry of Public Health, Tunis, Tunisia
- Dr A.O.O. Sorungbe, Director, Primary Health Care, Federal Ministry of Health, Lagos, Nigeria
- Professor H. Tanaka, Director, The Public Health Laboratory of Chiba Prefecture, Chiba City, Japan
- Professor E. Tetanye, Chef, Service de Pédiatrie, Hôpital Central de Yaoundé, Yaoundé, Cameroon

*Unable to participate



Secretariat

- Dr S. Aboubaker, Medical officer, Diarrhoeal Diseases, Dhaka, Bangladesh
- Mr G. Bartley, Technical Officer, Diarrhoeal Diseases, Regional Office for Africa, Brazzaville, Congo
- Dr O. Bele, Medical Officer, Diarrhoeal Diseases, Regional Office for Africa, Brazzaville, Congo
- Dr M. Claeson, Services Coordinator, Diarrhoeal Disease Control Programme, Geneva, Switzerland
- Dr M.R. Couper, Medical Officer, Pharmaceuticals, Geneva, Switzerland
- Mr P. Crippen, Technical Officer, Diarrhoeal Diseases, Regional Office for the Eastern Mediterranean, Alexandria, Egypt
- Mr C. Drasbek, Technical Officer, Diarrhoeal Diseases, Regional Office for the Americas, Washington, D.C., USA
- Dr R.H. Henderson, Assistant Director-General, Geneva, Switzerland
- Mr R. Hogan, Programme Management Officer, Division of Diarrhoeal and Acute Respiratory Disease Control, Geneva, Switzerland
- Mr J.A. Hueb, Sanitary Engineer, Community Water Supply and Sanitation, Geneva, Switzerland
- Dr M. Lichnevsky, Regional Adviser, Diarrhoeal Diseases, Regional Office for the Eastern Mediterranean, Alexandria, Egypt
- Dr J. Martin, Medical Officer, Office of International Cooperation, Geneva, Switzerland
- Mr R.E. Peck, Technical Officer, Diarrhoeal Diseases, Regional Office for South-East Asia, New Delhi, India
- Dr S. Pieche, Medical Officer, Diarrhoeal Diseases, Manila, Philippines
- Dr N.F. Pierce, Medical Officer, Division of Diarrhoeal and Acute Respiratory Disease Control, Geneva, Switzerland
- Dr S. Ramaboot, Medical Officer, Diarrhoeal Diseases, Islamabad, Pakistan
- Dr D. Robinson, Medical Officer, Office of International Cooperation, Geneva, Switzerland
- Dr P.M. Shah, Medical Officer, Maternal and Child Health and Family Planning, Geneva, Switzerland
- Dr M. Simpson-Hebert, Technical Officer, Community Water Supply and Sanitation, Geneva, Switzerland
- Dr K.B. Singh, Medical Officer, Diarrhoeal Diseases, Regional Office for South-East Asia, New Delhi, India

Dr S. Suomela, Medical Officer, Diarrhoeal Diseases, Regional Office for the Western Pacific, Manila, Philippines

Dr J. Tulloch, Director, Division of Diarrhoeal and Acute Respiratory Disease Control, Geneva, Switzerland

Dr J.J. Urrutia, Regional Adviser, Diarrhoeal Diseases, Regional Office for the Americas, Washington, D.C., USA

Dr D. Warner, Sanitary Engineer, Community Water Supply and Sanitation, Geneva, Switzerland

Dr I. de Zoysa, Research Coordinator, Diarrhoeal Disease Control Programme, Geneva, Switzerland

1. INTRODUCTION

The thirteenth meeting of the Technical Advisory Group (TAG) of the Diarrhoeal Disease Control (CDD) Programme was held in Geneva on 16-20 March 1992. Dr R.H. Henderson, Assistant Director-General, opened the meeting and welcomed the new TAG members. He reminded members of the goals endorsed by the World Summit for Children in September 1990, which specified that childhood mortality due to diarrhoea should be reduced by 50% between 1990 and 2000. He thanked the TAG for its past guidance and looked forward to receiving its advice on all aspects of the Programme. Professor Hamilton, the current Chairman of the TAG, was invited to preside over the meeting.

2. STATUS OF THE PROGRAMME

2.1 Global overview

The TAG reviewed the progress made by the Programme during the 1990-1991 biennium, as described in greater detail in the 1990-1991 Programme Report¹.

It was reported that programme staff had met with UNICEF, New York in April 1991 to discuss a joint strategy for diarrhoeal disease control in the 1990s in order to achieve the diarrhoea mortality and morbidity reduction targets for the year 2000. At this meeting it was acknowledged that, globally, significant proportions of diarrhoeal deaths are now caused by persistent diarrhoea (35%) and dysentery (15%), although these two entities each account for only 10% of all cases. This was taken into account in describing the prerequisites for attaining the targets.

Four new key indicators for measuring Programme progress have been defined. These relate to the use of ORT and continued feeding for diarrhoea cases, access of the population to ORS, case management in health facilities, and mothers' knowledge of home case management. It is considered that UNICEF's commitment to the agreed 1995 and 2000 targets for these indicators and to active cooperation at country level would be a very significant factor in the coming years. However, this also implies the need for more effective support from WHO to national CDD programmes as well as increased implementation research to shape and improve these efforts.

In the research component, support was awarded to 36 new projects in 15 countries in the biennium. Some important conclusions were reached through research to improve the formulations of ORS. A meta-analysis of 13 trials of rice-based ORS concluded that although it produced a significant reduction in stool output in the first 24 hours in patients of all ages with cholera, the effect on non-cholera diarrhoea in children was much smaller. Studies were initiated to examine the effect on total stool output and to compare the effect with that of a combination of a rice-based diet given with glucose-ORS solution. Other studies concluded that the inclusion of maltodextrin or various amino acids in the ORS formulation produced no practical benefit in treating acute watery diarrhoea in children. Low osmolarity ORS was added as a research topic.

Studies on feeding during acute diarrhoea have shown the benefits of continuing feeding and that it is not necessary to dilute the milk formula given to non-breast-fed infants during diarrhoea. The testing of an algorithm for the management of persistent diarrhoea was initiated in six countries using a standard protocol; three trials are examining different possible roles of antibiotics; and community-based studies are addressing determinants of treatment and care-seeking behaviours. The rational use of drugs was added as an area for research.

¹Document WHO/CDD/92.38.

Various approaches for promoting breast-feeding and other infant feeding practices through community groups and health workers are being studied. In response to a 1991 TAG recommendation the Programme is seeking to define more precisely the optimal age for introducing supplementary feeding. Two trials assessing the impact of vitamin A delivered through two different approaches are under way as are studies of hygiene behaviours, particularly hand washing. In the area of vaccine development, the most recent progress was seen in the initiation of phase II trials for the killed whole-cell/B subunit and the live CVD-103-HgR cholera vaccines in Latin America.

The health services component continued its efforts to work with countries to revise and improve their plans of action for national CDD programmes: 46 countries did so during the biennium. A draft of a focused programme review process developed in 1991 was field-tested. It is expected that this tool will help focus attention on major problem areas during replanning.

The major emphasis continued to be on training. An extensive range of targeted training materials is now available with the addition of a four-day course on case management for use at small hospitals and large health facilities, and a distance learning course on clinical skills. The programme management and supervisory skills courses continued to be widely used and 369 courses in case management were reported to WHO, more than twice as many as in the previous biennium. It is estimated that at the end of 1991 31% of supervisors and 19% of staff treating diarrhoea cases had been appropriately trained.

The total supply of ORS to developing countries remained relatively stable, with over 450 producers globally and 95% of products conforming to WHO/UNICEF standards. Among countries to which advice on ORS production was provided were several where stocks had been rapidly depleted by cholera epidemics. The rational use of drugs continued to receive the Programme's attention following the publication in 1990 of a careful review of the main groups of drugs used in diarrhoea treatment. A number of countries reported regulatory or other action taken to reduce the excessive and irrational use of drugs and the Programme developed guidelines for assisting countries in such actions.

In communication the Programme is focusing particularly on face-to-face communication skills of health workers and on the effective use of radio, as well as providing intensive support to selected countries. During the period under review the Programme engaged a staff member to work on breast-feeding promotion as its most important intervention for the prevention of diarrhoea. A major activity was the preparation of a training course for health workers on counselling in breast-feeding. The Programme played an active role, as a member of the WHO working group on infant feeding, in defining breast-feeding indicators for household surveys agreed upon in an interagency meeting in 1991.

Programme evaluation using programme reviews, household and health facility surveys and the CDD country programme profile yielded information on constraints and on progress in the key programme indicators. It is estimated that 67% of the developing world's population has access to ORS and that in 1991, 38% of diarrhoea episodes were treated with ORT while 20% received both ORT and continued feeding. While steady progress is being made, intensification of efforts is considered necessary if the Programme's targets are to be reached.

2.2 Regional overviews

Africa

- ORS access and ORT use rates are increasing slowly but steadily: the latest figures are 56% and 40% respectively. In 24 countries (representing 57% of the region's population) the ORS access rate is in excess of the regional average and in 18 countries (25% of the region's population) the ORT use rate is in excess of 40%.
- Some countries initiated the revision of their existing national CDD plans of action, using data and conclusions from recently conducted programme reviews.
- A number of training activities were organized, particularly at country level. In 1991, these included training in programme management (90 participants), supervisory skills (1019 participants) and case management (including 3 intercountry courses and national courses in 16 countries). The regional office provided the technical, and, usually, financial support required. Efforts were continued to introduce the CDD programme into medical and nursing school curricula.
- The cholera situation was serious during 1991, with a total of 19 countries reporting cases. Case fatality rates were particularly high, averaging 9.3% throughout the region, with ranges from 3-30%. Two intercountry cholera coordination meetings were organized with ministerial level participation; the need for WHO involvement in establishing national policies and in coordinating control efforts was strongly expressed.
- In order to reach programme targets, increased efforts are needed in the following areas: revising national CDD plans and improving collaboration of partners for the support of these plans; establishing more DTUs and increasing the number of staff properly trained in case management; and upgrading the collection and use of data for monitoring progress.

Americas

- CDD Programme activities are well established in all countries. The WHO Regional CDD Programme was designated Permanent Secretariat of the Regional Interagency Coordinating Committee for the Control of Diarrhoeal Diseases (ICC/CDD).
- At the end of 1991, the ORS access rate was estimated to be 68% and the ORT use rate 54%.
- The presence of cholera in the Region presents a new and challenging perspective to the Programme. In May 1991, the Pan American Health Organization (PAHO) Executive Committee adopted Resolution WHA 44.6, in relation to the appearance of cholera in the Region and in September 1991 it was approved by the PAHO Directing Council; the Regional Director organized a Cholera Task Force. The cholera case fatality rate in the Region has been kept to around 1%.
- The WHO publication "Rational use of drugs in the management of acute diarrhoea in children" was translated into Spanish and widely distributed in the Region; it was used in Mexico as the basis for regulatory action.

- A CDD programme managers' course was held in Mexico for 20 participants; 25 case management workshops, courses or seminars were held in 10 countries, at which were trained approximately 1532 participants. Seventy-two formal Diarrhoeal Training Units (DTUs) associated with schools of medicine have been established in 20 countries.
- Seven case management courses were held in schools of medicine, nursing and nutrition, training approximately 221 participants.
- The Programme has assisted countries in establishing Community Oral Rehydration Therapy Units (CORUs): there are now approximately 18 000 in nine countries.
- Special efforts were made in breast-feeding promotion by organizing and supporting training activities in the Lactation Training Centre established in Santos, Sao Paulo, Brazil, and by adopting the WHO/UNICEF "Baby-Friendly Hospital" Initiative.
- The Programme received national CDD country programme profiles from 20 countries and local CDD profiles were prepared in three countries.
- The Regional Office for the Americas prepared a report that assessed diarrhoeal disease mortality trends in 32 Latin American countries for the years 1965-1990.
- The CDD household and health facility case management survey manuals were translated into Spanish and the Programme increased technical coordination in information and evaluation technologies with the United States Agency for International Development (USAID), Technologies for Primary Health Care (PRITECH), Instituto de Nutricion de Centro America y Panama (INCAP) and the Westinghouse Demographic and Health Surveys (DHS).

South-East Asia

- Each of the 11 Member States have operational CDD plans with designated national programme managers. Three countries, Bangladesh, Myanmar and Nepal, conducted programme reviews during 1991, and have developed revised workplans.
- According to CDD country programme profile data, six of the 11 SEAR countries had ORS access rates of 85% or higher and four countries had ORT use rates of 60% or higher, the regional targets established for 1991.
- All but two SEAR countries have designated Diarrhoea Training Units, with a total of 87 such units partially or fully functional and another 29 planned for the coming year.
- During the year training was a major activity with WHO supporting: 47 national and intercountry five-day clinical management courses for over 2000 health workers; 21 supervisory skills courses for 447 CDD supervisors; and three programme management courses for 75 participants. For the first time, the short clinical management course for small hospitals was conducted in India.
- Nine countries continue to produce ORS locally, contributing to the total of over 120 million litres of ORS produced or imported during the year.

- Health facility surveys and visits have revealed that case management at many health facilities continues to be substandard. Irrational drug use during episodes of diarrhoea continues to be a problem in all of the countries of the region. Although enough ORS is available in the region, it is not always distributed evenly with resultant shortages in some areas.
- Household surveys have shown that although most caretakers continue to feed their children during diarrhoea, the majority do not give increased fluids, cannot correctly mix ORS and do not know when to refer their children with diarrhoea to a health worker.
- Cholera continues to be a problem in the region with large outbreaks of cholera or suspected cholera in several countries; some countries are still reluctant to report cases officially.
- There continues to be a lack of sufficient political commitment and system support for the CDD programmes in some of the SEAR countries.

Europe

- Turkey is currently the only country in Europe with an operational national CDD programme; it reported an ORT use rate of 44%. However, during the biennium two countries started the development of national CDD programme plans: Albania and Yugoslavia. CDD activities have also been carried out in the Russian Federation and the former Soviet republics of Central Asia.
- Major achievements in 1991 were the intercountry programme managers' course in Bulgaria for Central and Eastern European countries, and case management training courses in Yugoslavia, where Diarrhoea Training Units are being developed.
- Regulatory actions were taken by Turkey and France in 1991 to reduce the availability of loperamide for paediatric use. Sulphaguanidine was also banned in Turkey for the management of diarrhoea in children.
- The major challenge for the region is the problem of diarrhoeal diseases in some Central Asian and Eastern European countries or areas with a total population of at least 75 million, in which there are relatively high infant mortality rates (30-50 per 1000 live births), and high diarrhoea-associated death rates (around one-third of deaths in children caused by diarrhoeal diseases).
- The Programme participated in the joint UNICEF/WHO/UNFPA mission to the Central Asian republics and is providing technical advice in support of CDD in these countries. Among the major problems identified are lack of case management guidelines, inappropriate multiple drug use, excessive hospitalization and a decline in breast-feeding. Previous centrally directed disease control programmes are no longer operating, resulting in many difficulties, including critical shortages of essential drugs.
- The Region will need increased input in CDD to accelerate the process of CDD programme development in the priority areas in the next biennium. The Programme intends to seek additional funds, as necessary, to avoid diverting resources currently allocated to other regions.

Eastern Mediterranean

- Most national CDD programmes in the region were established several years ago and most of them have achieved notable advances in making ORS and ORT widely available. In 1991, over two-thirds of countries had ORS access rates above or close to the targeted 80% and over half of the countries had ORT use rate close to or above 50%. The regional average rates of ORS access (74%), ORT use (45%), supervisory skills (39%) and clinical management training coverage (26%), all showed good progress towards targets above the average global estimates.
- The regional programme provided support to national training courses in CDD programme management (the Islamic Republic of Iran, Pakistan and Sudan), in supervisory skills (Djibouti, Morocco and Pakistan) and in diarrhoea case management (DTU-based courses in Afghanistan, Morocco and Yemen). In order further to promote practical clinical training an intercountry course was conducted at the Regional CDD Training Centre, El Chatby Hospital, Alexandria, Egypt, for senior trainers-paediatricians from six countries, using the new CDD training package for health centres and small hospitals. New DTUs and ORT corners were reportedly established in several EMR countries.
- A Cholera Control Coordination Meeting conducted in EMRO on 5-6 August 1991 recommended that national CDD programmes should have strong involvement in national committees for cholera control and that national CDD guidelines should be revised to include clinical management of cholera.
- In order to encourage greater national efforts aimed at rationalizing use of drugs in diarrhoea case management, the third circular letter from the Regional Director to ministers of health in the region, together with the new CDD drug review publication, were disseminated. In 1991 Lebanon banned registration and marketing for children of loperamide, diphenoxylate, hydroxyquinolines and oral streptomycin.
- CDD health facility surveys were conducted in the Islamic Republic of Iran and Pakistan, a household survey was conducted in Pakistan, and a programme review was carried out in Sudan. They provided valuable observations for improving training of health workers and their face-to-face communication with mothers and other caretakers of children.

Western Pacific

- During the period under review, WHO/WPRO continued to give high priority to supporting national CDD programmes through technical collaboration, particularly in the areas of planning, training and evaluation. As of December 1991 the ORS access rate in the region was estimated to be 82%, with an ORT use rate of 34%.
- Twenty-two countries or areas are implementing the CDD programme in the Region. Activities have been strengthened in Cambodia; a programme managers' training course was conducted, followed by the development of a plan of action.
- Two programme managers' courses, 25 supervisory skills courses and 69 case management training courses were held in the region in 1991. Thirty-four DTUs have been established in seven countries in the region and are holding training courses.

- The introduction of CDD approaches and materials into the curricula of medical schools, nursing and midwifery schools and allied health worker schools, has continued in China, Malaysia, Papua New Guinea, the Philippines, and Viet Nam. Lactation management and counselling courses have been conducted in the Philippines.
- Activities to improve the communication skills of health workers and to enhance the use of mass media have been undertaken in China, the Philippines and Viet Nam.
- In collaboration with UNICEF, efforts continued to ensure that ORS is available in adequate quantities and rationally distributed in the region.
- Activities to promote the rational use of drugs have been carried out in the Philippines, where a workshop was organized to assess the current situation and to propose a workplan.
- Four household case management surveys and one health facility survey were carried out. In addition, a mortality survey in Viet Nam and a cost-effectiveness analysis in China were conducted. Regional/provincial programme reviews were conducted in China and in the Philippines. Evaluation of clinical case management training was carried out in the Philippines in two phases in 1991 and 1992. Two workshops on CDD implementation research were conducted in China and in the Philippines.

3. REPORT OF THE TWELFTH MEETING OF THE TECHNICAL ADVISORY GROUP

The TAG reviewed the report of the twelfth meeting of the TAG¹ and endorsed this as an accurate record, subject to clarification on a small number of recommendations, subsequently taken up in detailed discussion.

The twelfth meeting had reviewed and made recommendations on:

- The priorities of the Programme, especially case management in the home; preventive strategies; the proper use of drugs; improved coordination between research and service components; and implementation research.
- The organization of the TAG, and the option of alternating full meetings of TAG with a meeting of a smaller subgroup.
- The new management system for research.
- Linkages with other WHO programmes, in particular with the Programme for Vaccine Development for the development and trial testing of vaccines relevant to CDD.

The TAG reviewed the recommendations of the twelfth meeting and commended the Programme on the wide range of activities generated in response to these. It was noted that difficulties in responding to some recommendations would be overcome by the closer cooperation between research and services activities, an aim of reorganization discussed later in the meeting.

¹Document WHO/CDD/91.35.

4. REPORT OF THE ELEVENTH MEETING OF INTERESTED PARTIES

The TAG was informed about the comments and conclusions of the eleventh Meeting of Interested Parties (MIP), held on 27-28 June 1991. The Meeting had examined a report on the progress, plans, and targets of the Programme, and the reports of the twelfth meeting of the TAG, and the eleventh meeting of the Management Review Committee. The MIP had discussed a report on the cholera situation and the role being played by WHO and the Programme in its control and had noted the World Health Assembly resolution on cholera control. The TAG had also considered a report on evaluating national programme progress through surveys. It had noted the endorsement by the TAG of the Programme's major priorities and activities and of the balance between research and services. The meeting had urged the Programme to continue to monitor closely the outcome of programme implementation. It had requested the Programme to strengthen collaboration with other agencies and WHO programmes involved in control of diarrhoeal diseases. It had expressed concern at the continued inappropriate use of drugs by some doctors and had urged extension of training coverage to combat this. It had also noted the positive comments from the TAG on the experience to date with the revised research management structure. The MIP had regretted the slow progress in establishing appropriate case management in the home and had urged the Programme to accelerate its efforts in this regard.

The MIP had noted the report on the financial situation, including the revised budget for 1990-1991 and had endorsed the proposed 1992-1993 budget, understanding that it may be revised upwards if resources permit.

5. COLLABORATION IN VACCINE DEVELOPMENT

The promotion and support of research on vaccine development has been a major activity of the Programme since its inception. Vaccines of highest priority are those for rotavirus diarrhoea, cholera, shigellosis, diarrhoea caused by enterotoxigenic Escherichia coli, and typhoid fever. Most work has been done in collaboration with other research-supporting organizations, with commercial vaccine producers and with individual research teams. Recently, substantial collaboration has been developed within WHO with the WHO/UNDP Programme for Vaccine Development (PVD), which already supports research on a number of other vaccines. Collaboration with the Children's Vaccine Initiative is also planned.

Vaccine-related research is divided into two phases: (i) development of new or improved candidate vaccines, and (ii) evaluation in the field of their safety, immunogenicity and efficacy. Direct support by CDD for the development of new candidate vaccines ended in 1991, as recommended by the TAG. Responsibility for that activity has been assumed within WHO by the PVD in close collaboration with CDD. The Programme continues, however, to encourage and follow closely relevant research supported by other agencies and companies.

The major effort of the Programme concerns the organization and support of field trials to evaluate safety, immunogenicity and efficacy of promising candidate vaccines. Such trials, usually performed in developing countries, require very close collaboration with vaccine developers, vaccine manufacturers, other funding agencies, and local researchers. Vaccine is usually provided by the manufacturer free of charge. Large, costly trials are often jointly supported with other agencies.

Collaboration with the PVD was implemented in 1991, when that programme established a Steering Committee on Diarrhoeal Diseases Vaccines, organized with CDD support a meeting to define priorities for the development of new or improved candidate vaccines for diarrhoeal diseases, and held initial meetings of a Task Force for Vaccines Against Cholera and Other Bacterial Diarrhoea. The CDD Programme participated in all of these activities. Additional meetings of the Steering

Committee and Task Force are planned for 1992, at which specific research proposals will be considered for funding. Initial meetings of a Task Force for Vaccines Against Rotavirus Diarrhoea will also be held. All PVD activities are reviewed annually by its Scientific Advisory Group of Experts.

6. FUNCTIONAL REORGANIZATION OF CDD PROGRAMME AT HEADQUARTERS

Progress has been made towards a functional reorganization of the Programme at headquarters with the objectives of: (i) improving its capacity to cooperate effectively, through the WHO Regional Offices, with national CDD programmes, (ii) facilitating communication and collaboration between staff currently assigned to the headquarters services and research components, and (iii) optimally focusing research on agreed global and country priorities. Two proposed features of the reorganization are:

1. Headquarters staff would, in collaboration with Regional staff, work closely with specific countries to identify problem areas in programme planning or implementation and ensure that appropriate assistance is provided.
2. The current services and research components of the Programme, to which most staff are assigned, would be replaced by several "working groups" that address the major processes of national control programmes both individually and globally. Each group would include staff with a variety of skills from all parts of the present Programme. Areas individual groups might address include: (i) case management in health facilities, (ii) case management in the home, (iii) prevention of diarrhoea, and (iv) national programme development.

A staff committee has been established to draw up a full proposal for reorganization. This would incorporate the features described above, while clarifying such areas as: the most effective approaches to strengthening country programmes, the most appropriate division of staff time between priority activities, and an efficient plan for supervision and support of staff.

7. FINANCIAL MATTERS

7.1 Financial report for the 1990-1991 biennium

The resources available to the Programme in 1990-1991 (US\$ 21.0 million) were virtually the same as for the 1988-1989 biennium. The number of active contributors decreased from 20 to 17. Actual obligations for 1990-1991 (US\$ 20.9 million) were also very similar to those of 1988-1989. Overall, in the services component, nearly three-quarters of the obligations continued to be incurred at the regional and country levels.

The overall financial position at the end of 1991 was good, with a carry-over of US\$ 4.7 million, the same amount as was carried over into 1990. This carry-over was essential for the Programme to continue operations without interruption early in the year, since many contributors do not make funds available until well into the calendar year.

7.2 Revised budget for the 1992-1993 biennium

The original 1992-1993 budget, prepared in early 1991, was endorsed in that year by the TAG, the Management Review Committee, and the MIP. It was based on estimates of obligations for 1990-1991, projections of necessary activities, and estimates of potential contributions. The revised budget reflects no overall change, and involves instead shifts of resources. Less has been projected for research in epidemiology and disease prevention, and more for implementation research.

7.3 Budgetary projects for the 1994-1995 biennium

For the 1994-1995 biennium, the Programme projects an increase of US\$ 3.7 million, or 15%, over the revised budget for the 1992-1993 biennium; nearly all of this increase will be to compensate for inflation. No increases are proposed for staff salaries or for any additional staff. Increased attention to training and implementation research are planned.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 Health services component

8.1.1 General

8.1.1.1 The TAG welcomes the increased collaboration with other agencies, in particular, the intensified cooperation with UNICEF in support of national programmes to achieve the goals of the 1990 World Summit for Children.

8.1.2 Planning and implementation

8.1.2.1 The TAG commends the Programme for the fact that a high proportion of countries now have operational national CDD programmes and approves of the direction the Programme is taking to intensify collaboration with countries with the highest diarrhoeal disease burden.

8.1.2.2 The TAG notes with satisfaction the increased efforts, including the appointment of a Technical Officer, to support national CDD programmes in the planning, monitoring and evaluation of activities to attain the mortality and morbidity reduction goals of the Programme.

8.1.3 Training

8.1.3.1 The TAG notes the progress in the development of the distance learning course and the plan to revise the managerial training courses over the next biennium. The TAG urges the Programme to include in the latter a section on how to follow up trained staff to assess and support their continued participation in implementation of programme activities. Budget allocations for follow-up activities should be an integral part of national training plans.

8.1.3.2 The TAG recommends that the Programme encourage local adaptation and translation of its training courses, in particular the distance learning course and, wherever appropriate, the integration of the supervisory skills modules with others, e.g., ARI, EPI.

8.1.3.3 The TAG looks forward to a full report of the evaluation of case management training at a future TAG meeting and recommends that the Programme consider evaluating other training activities.

8.1.3.4 The TAG notes the wide range of training materials produced by the Programme and recommends that the training courses be adapted for use by other categories of providers, such as community health workers and social workers, where appropriate.

8.1.3.5 The TAG recommends that the Programme continue to encourage expansion of training beyond DTUs to small hospitals and health centres, while supporting development of more DTUs in individual countries.

8.1.3.6 The TAG congratulates the Programme on its efforts to improve the teaching in medical schools as regards the management of diarrhoeal diseases, noting that DTUs

and practical hands-on training are an essential part of the enhancement of teaching in medical schools. The TAG stresses the need for such improvement in medical education in developed countries as well.

8.1.3.7 The TAG notes the progress made in the development of materials to improve training in nursing and paramedical schools, and urges the Programme to continue its efforts, including the translation of the package into local languages when finalized. The TAG appreciates that the same core content and essential skills are used in the education of both medical students and nurses.

8.1.3.8 The TAG looks forward to the results of the field-test and the final version of the guide on the training of pharmacists and drug sellers. The TAG anticipates difficulties in changing the behaviours of pharmacists and drug vendors, but encourages the Programme to continue its efforts in this important area.

8.1.3.9 The TAG suggests that the Programme increase its collaboration with relevant experts in developing countries in the development and evaluation of its training materials.

8.1.3.10 The Programme is commended on the work done to review the diarrhoeal diseases sections of major paediatric and public health reference books, and is encouraged to continue this activity.

8.1.4 Case management in the home

8.1.4.1 The TAG welcomes the increased emphasis on case management in the home and encourages the Programme to continue its efforts at this level. The TAG notes the expanding country experiences with community ORT units and would welcome a review of these experiences to guide the advisability of similar approaches in other countries. (See also 8.2.4.4).

8.1.5 Communication

8.1.5.1 The TAG notes the efforts made to develop training courses on communication skills and guidelines on advising mothers and looks forward to a review of the country experiences and the development of general guidelines for application in countries; the need to evaluate communication activities, including behavioural changes, is stressed.

8.1.5.2 The TAG notes the developmental work being undertaken to improve the use of radio and suggests that the Programme also consider support to national efforts in using other media. The TAG stresses the importance of developing communication materials that are consistent with, and reinforce, the Programme's preventive messages.

8.1.6 Production and supply of oral rehydration salts

8.1.6.1 The TAG urges the Programme to continue to assure sufficient supplies of ORS in countries, including local production, and to be active in establishing and monitoring quality control.

8.1.7 Promoting the rational use of drugs

8.1.7.1 The TAG notes the progress made in the promotion of the rational use of drugs in the management of diarrhoeal diseases and urges the Programme to continue its collaboration in this area with other programmes, including ARI and DAP.

8.1.7.2 The TAG commented on the usefulness of the publication on the rational use of drugs in helping to revise national essential drug lists. The review of other antidiarrhoeals, such as bismuth-subsalicylate, should also be included in new editions of the publication.

8.1.8 Evaluating programme progress

8.1.8.1 The TAG looks forward to the finalized Focused Programme Review methodology and the revised household survey instrument, and encourages the Programme to continue supporting national CDD programmes in these activities.

8.1.8.2 The TAG considers the problem-solving process of the new Focused Programme Review to be useful for other health programmes and encourages the Programme to conduct such reviews in collaboration with other programmes, whenever possible.

8.1.8.3 The TAG recommends that the Programme give more attention to the monitoring of changes in diarrhoea morbidity, especially incidence and severity, as this could help to stimulate preventive and other measures.

8.1.8.4 The TAG endorses the selective use of the Programme's guidelines on cost-effectiveness analysis, and recommends that a review of results from studies already made be disseminated to countries as soon as possible.

8.1.8.5 The TAG notes the development of the mortality survey method and suggests that the Programme review field experience in a few countries, in particular with respect to cost-effectiveness, before recommending it for wider application.

8.1.8.6 The TAG notes the development of the country programme profiles and recommends that the Programme further improve their development and use by national programmes.

8.1.9 ORS access and ORT use rates

8.1.9.1 The TAG acknowledges the continued increase in ORS access and ORT use rates and stresses the need to give greater emphasis to the indicator on increased fluid intake; the need to advise other agencies supporting national CDD activities on the use of the key indicators is also emphasized.

8.1.9.2 The TAG notes the redefinition of some key indicators into new compound indicators and stresses the need to maintain measurement of the other key indicators. The Programme is advised to test the feasibility of measuring and interpreting the new compound indicators.

8.1.10 Interventions for the prevention of diarrhoea

8.1.10.1 The TAG commends the Programme on the efforts to promote, protect and support breast-feeding, including the development of the training course on breast-feeding counselling, and urges continued close coordination with other relevant agencies and organizations.

8.1.10.2 The development of breast-feeding indicators for use in the home is noted and the TAG encourages the Programme to take a leading role in the finalization of breast-feeding indicators for the health facility level.

8.1.10.3 The TAG is pleased to note that steps are being taken to improve collaboration with other programmes to intensify the promotion and implementation of preventive interventions, and their inclusion in the Programme's training courses.

8.1.11 Control of cholera

8.1.11.1 The TAG notes the leading role of the Programme in the WHO Task Force on Cholera Control, including the coordination of the preparation of policy guidelines. The TAG stresses that the approach to cholera should be the same as for any other of the acute diarrhoeal diseases, while recognizing the socioeconomic and political implications of cholera. The TAG suggests that there is a need for WHO to review the current international health regulations with respect to cholera, including notification requirements.

8.1.12 Current status of the Programme

8.1.12.1 The TAG notes the progress made so far and recognizes the challenge posed by the Programme's new targets. The TAG is concerned that the 100% targets for maternal knowledge and ORS access rates by the year 2000 may be very difficult to attain and advises the Programme to consider revision of these targets according to data generated from surveys on these indicators over the next biennium.

8.2 Research component

8.2.1 General

8.2.1.1 The TAG is impressed by the quality and relevance of the research which is described in the Programme Report and which is aimed at the development and evaluation of new or improved approaches for the treatment and prevention of diarrhoeal diseases. It also notes with satisfaction that work on implementation research has been initiated. The TAG recognizes that the results of this research are of the utmost importance in reaching the Programme's goals of reducing diarrhoeal mortality and morbidity in young children.

8.2.2 Case management

8.2.2.1 The TAG notes that studies on ORS containing precooked rice powder instead of glucose have made excellent progress. A meta-analysis of all available randomized clinical trials indicates that while rice-based ORS has a beneficial effect in cholera, it has not been demonstrated to have any advantage over standard ORS solutions with regard to rate of stool loss and duration of diarrhoea in acute non-cholera diarrhoea. The TAG notes that further studies to evaluate rice-based ORS are under way, and agrees that no new studies are required at the present time.

8.2.2.2 The TAG notes that formulations of ORS containing maltodextrin or amino acids such as glycine, alanine or glutamine, have not shown any advantage over standard ORS and considers that there is no justification for further studies on these formulations, nor for their production and use. The TAG recommends that this information be disseminated.

8.2.2.3 The TAG notes that a small but significant proportion of dehydrated children present with transient glucose intolerance. A pilot study supported by the Programme indicates that such children may benefit from a low osmolarity ORS solution. The TAG endorses the ongoing multicentre study to investigate this observation further.

8.2.2.4 The TAG has previously endorsed efforts to define the appropriate dietary management of non-exclusively breast-fed infants under 6 months of age with acute diarrhoea. A multicentre randomized double-blind clinical trial addressing this question has recently been completed. The TAG notes that the study did not address the issue of milk feeds in some high-risk infants (e.g., with dysentery or severe malnutrition). It reviewed the data from this trial, and feels confident that full-

strength cow's milk formula can be recommended for the group of patients studied. It was pleased to note that steps have already been taken to incorporate this important information into the Programme's training materials and recommends that it be widely disseminated.

8.2.2.5 The TAG recognizes the urgent need to evaluate alternative anti-microbial drugs for the treatment of dysentery caused by Shigella that are resistant to the commonly used antibiotics. Antibiotics that prove to be effective should then be evaluated in further studies using simplified treatment schedules.

8.2.2.6 The TAG notes that studies of risk factors for persistent diarrhoea have not suggested practical approaches for the prevention of this problem. It hopes that further studies addressing the role of micronutrients in improving host immunity and in reducing diarrhoeal morbidity will lead to possible interventions in the future (see 8.2.3.4). It commends the high priority given by the Programme to elaborating an algorithm for the clinical management of persistent diarrhoea and to evaluating this algorithm in a multicentre study. It believes that the results of this study will be of great importance for strengthening country programme efforts in this area in the future.

8.2.3 Epidemiology and disease prevention

8.2.3.1 The TAG is pleased to note the greater prominence accorded by the Programme to nutrition research and urges greater collaboration with the WHO Working Group on Infant Feeding.

8.2.3.2 The TAG commends the Programme on the studies currently developing and testing interventions to promote exclusive breast-feeding during the first 4-6 months of life at the community level, and commends it for its work on clarifying the technical bases of WHO's recommendations regarding breast-feeding.

8.2.3.3 The TAG commends the Programme for developing studies of determinants of feeding practices among children in health and during diarrhoea at the community level. These have revealed a complex pattern of use of low energy density foods and/or low frequency of feedings. These problems should be further investigated with the goal of developing practical guidelines for the promotion of improved feeding practices with specific attention to the energy and nutrient content, and safety, of the foods.

8.2.3.4 The TAG commends the Programme for the studies conducted on the role of vitamin A in reducing diarrhoea morbidity and looks forward to reviewing their results. It also endorses the priority given to the evaluation of the effect of zinc and other micronutrients on acute and persistent diarrhoea.

8.2.3.5 The TAG recognizes the importance of hygiene promotion in reducing the incidence of childhood diarrhoea and is pleased to note the results emerging from intervention-related studies on this topic. It commends the planned consultation organized jointly by the CDD Programme and the Community Water Supply and Sanitation Unit to identify key hygiene behaviours and approaches to modify them.

8.2.4 Implementation research

8.2.4.1 The TAG recognizes the importance of implementation research, and endorses the plans to give it greater priority in the future. It notes that good progress has been made in certain areas, but recognizes that the current structure of the Programme hampers further expansion. It expects that the proposed reorganization would provide, among other benefits, a useful forum for identifying issues encountered in the implementation of CDD country programmes that would benefit from

formal enquiry, for formulating research questions, for developing projects, and for proposing improved implementation approaches to programme staff. The TAG recognizes that this is a difficult area of work. It feels therefore that a substantial increase in total staff time allocated to this endeavour will be required to ensure growth. The TAG requests that a report on progress and plans for implementation research, as fostered within the reorganized structure, be reviewed at its next meeting.

8.2.4.2 The TAG endorses the high priority for research on case management in the home, and is pleased to note that studies are under way to identify patterns and determinants of fluid consumption and to address the issue of possible food/fluid confusion in areas where food-based fluids are recommended for use during diarrhoea. It urges that further studies be conducted in this area, to examine in greater detail issues regarding case management in the home, including ORS and ORT use, feeding and care-seeking behaviours.

8.2.4.3 The TAG believes that greater attention should be paid to research on case management in health facilities, because results from health facility surveys and programme experience indicate that there are some deficiencies in the performance of health workers and in the quality of care provided to children with diarrhoea.

8.2.4.4 The TAG notes the results of the study of the community oral rehydration units (CORUs) in Peru which suggest that knowledge of the CORU volunteers in case management, and coordination with the formal health services, require improvement. As CORUs are being widely promoted in Latin America and elsewhere as a useful means to improve access to correct management of diarrhoea at community level (see 8.1.4.1), the TAG urges the Programme to take a leading role in the evaluation of their activities, in collaboration with other agencies.

8.2.4.5 The TAG endorses the initiative to develop research related to the use of drugs in the management of childhood diarrhoea; and approves the focus both on developing interventions to ensure the rational use of drugs, and on evaluating the cost-effectiveness of policy changes and regulatory interventions related to the rational use of drugs.

8.2.4.6 The TAG commends the close coordination of programme and research activities related to the promotion, protection and support of breast-feeding, and is pleased to note that a detailed evaluation is now under way of the programme-supported lactation management training programme in Santos, Brazil.

8.2.4.7 The TAG recommends a flexible but coordinated approach to the development and management of implementation research, so that important research topics may be addressed without delay and worthwhile opportunities followed up without the high standard of the work being compromised. It recognizes that the Programme must take an active role in developing projects and will need to make provision for substantial technical assistance to investigators through site visits, proposal development workshops and the use of standard protocols and research guidelines, and believes that it would be important to ensure the close involvement of the Programme's research advisers in this process.

8.2.4.8 The TAG is of the opinion that future efforts to strengthen research might usefully focus on developing capabilities for implementation research, i.e., applied research and evaluation. It believes that the fostering of linkages between researchers, planners and programme implementers at the local level should also receive more attention and commends the collaboration of the Programme in initiatives of this kind in the Philippines and China.

8.2.4.9 The TAG endorses the goals set by the World Summit for Children for reductions in diarrhoeal mortality and morbidity. It emphasizes the need to continue

developing instruments to assess the progress of national programmes, and to document their impact.

8.2.5 Immunology and vaccine development

8.2.5.1 The TAG endorses the current priority of the Programme to support and facilitate field trials of available candidate vaccines against the five diseases previously selected: rotavirus diarrhoea, cholera, shigellosis, diarrhoea associated with enterotoxigenic Escherichia coli and typhoid fever.

8.2.5.2 The TAG notes with satisfaction the close collaboration with the WHO/UNDP Programme for Vaccine Development which has assumed responsibility for supporting research for the development of candidate vaccines against these diseases.

8.2.5.3 The TAG notes the results obtained to date regarding the protective efficacy of the rhesus-human reassortant tetravalent rotavirus vaccine, and endorses the priority given to the evaluation of the efficacy of a high titre formulation of this vaccine against severe, dehydrating rotavirus diarrhoea. It feels that for the time being no further field trials of other candidate rotavirus vaccines are warranted.

8.2.5.4 The TAG recognizes the progress made in developing field trials of the killed whole-cell/B subunit cholera vaccine in South America and approves the support given by the Programme. The TAG also endorses the priority given by the Programme to evaluate the safety and immunogenicity in children of the new live attenuated cholera vaccine CVD-103-HgR and, eventually, its efficacy.

8.2.5.5 The TAG recognizes the critical contribution of the Programme to developing and evaluating the live attenuated oral typhoid Ty21a vaccine, now available for use. The TAG also endorses the priority given to testing the immunogenicity and efficacy of the Vi typhoid vaccine in young children. The TAG recommends that the Programme conduct a cost-effectiveness analysis of immunization with these available typhoid vaccines for the guidance of countries interested in their use.

8.2.5.6 The TAG recognizes that there are no currently available candidate vaccines against diarrhoea caused by enterotoxigenic E. coli and Shigella and encourages the Programme to continue to support and work with the Programme for Vaccine Development for their development.

8.3 Budgetary matters

8.3.1 The TAG notes with some concern that the Programme had not increased its resources in 1990-1991 over 1988-1989, and that the number of contributors had decreased from 20 to 17. It notes that the Programme's obligations were essentially the same in the past two biennia. It is pleased to see that the programme had a satisfactory carry-over into the 1992-1993 biennium of US\$ 4.7 million, similar to the carry-overs in both of the previous biennia, and recognizes that such a carry-over is necessary to ensure continuity of programme activities at the start of the biennium.

8.3.2 The TAG endorses the revised budget of US\$ 25.4 million for 1992-1993, the same amount as in the original budget, and notes that modest reductions in some activities permitted an increase in the amounts designated for survey development and implementation research.

8.3.3 In reviewing the preliminary budget for 1994-1995, the TAG notes that the 15% increase in the budget to US\$ 29.1 million was primarily to cover inflation. This amount would, however, permit significant increases for training at the country level and a further increase in implementation research.

8.3.4 The Programme's efforts to raise additional extrabudgetary resources, including private contributions, were welcomed, and the TAG urged the Programme to pursue all possible avenues to ensure its financial security.

8.4 Functional organization of the Programme at headquarters

8.4.1 The TAG approves the principle behind the reorganization of the Programme at headquarters.

8.4.2 The TAG urges the Programme to complete its deliberations and to implement the new structure in the near future. The TAG looks forward to reviewing experience with the new structure at its next meeting with a view to final endorsement.

8.4.3 The TAG recommends that the reorganization should take into consideration the following aims:

8.4.3.1 The Programme at headquarters, in collaboration with the Regional Offices, having improved capacity to strengthen national programmes.

8.4.3.2 Maximal cooperation among staff currently in the research and services components of the Programme.

8.4.3.3 Research of continued high quality, targeted to global and country priorities, and drawing upon the skills and advice of the international research community.

8.4.3.4 National programmes receiving the best possible support and guidance from experts in the international community, and from research generated by the Programme.

8.4.3.5 Management structures supporting these aims, with clear lines of accountability and supervision.

8.4.3.6 Efficient use of the skills and time of staff, both individually and as a group.

9. NEXT MEETING OF THE TECHNICAL ADVISORY GROUP

The TAG decided that, in view of a number of important issues to be discussed, a full meeting of the TAG should be held in 1993. However, it was proposed that it be a shorter (three-day) meeting and would not consider all aspects of the Programme in detail. Instead, it was agreed that it would focus on:

- the reorganization of the Programme at headquarters;
- progress in implementation research;
- a review of the Programme's key indicators and targets;
- cooperation with UNICEF;
- activities carried out in conjunction with the ARI Programme;
- a review of the financial situation.

The Regional Office presentations would also focus on the last three of these issues as they relate to activities in the region or on special topics (e.g., cholera control in the Americas).

The TAG decided that the meeting would be held on 8-10 March 1993.

DEFINITIONS

Oral rehydration salts (ORS): Specifically, the WHO/UNICEF recommended formula, consisting of:

Sodium chloride	3.5 grams
Trisodium citrate, dihydrate*	2.9 grams
Potassium chloride	1.5 grams
Glucose** to be dissolved in one litre of drinking water.	20.0 grams

*May be replaced by 2.5 grams of sodium hydrogen carbonate (sodium bicarbonate).

**When glucose is replaced by another substrate, the resulting ORS is termed by the substrate name (e.g., sucrose ORS, rice ORS, maltodextrin ORS, glycine ORS).

ORS access rate: The percentage of population having reasonable access to a provider of ORS who receives adequate supplies.

ORS use rate: The percentage of diarrhoea episodes in children under 5 years of age treated with ORS.

Oral rehydration therapy (ORT): The administration of appropriate fluid by mouth to prevent or correct the dehydration that is a consequence of diarrhoea.

ORT use rate: The percentage of diarrhoea episodes in children under 5 years of age treated with ORS or a recommended home fluid.

Home fluid: A fluid used in the home and recommended for the prevention of dehydration from diarrhoea.

Case management rate: The percentage of diarrhoea episodes in children under 5 years of age receiving ORT, including an increase in total fluid intake, and continued feeding.

Persistent diarrhoea: A diarrhoeal episode that begins acutely and lasts at least 14 days.