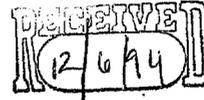


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**CHILD SURVIVAL VII PROJECT:
DIARRHOEAL DISEASE CONTROL PROGRAMME
SOLOMON ISLANDS
1991-1994**

FINAL EVALUATION REPORT

September 1994

FOUNDATION FOR THE PEOPLES OF THE SOUTH PACIFIC

BEST AVAILABLE COPY

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Glossary of Terms

ARI	Acute Respiratory Infections
AIDAB	Australian International Development Assistance Bureau
CDD	Control of Diarrhoeal Diseases
CMO, MCH/FP Unit	Chief Medical Officer, Maternal and Child Health / Family Planning Unit
DCA	Danchurchaid
EEC	European Economic Community
EPI	Expanded Programme on Immunization
FSP	Foundation for the Peoples of the South Pacific
HED	Health Education Division
HIS	Health Information System
IEC	Information, Education and Communication
MCH/FP Unit	Maternal and Child Health / Family Planning Unit
MHMS	Ministry of Health and Medical Services
MTM	Mobile Team Member
NGO	Non Governmental Organization
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PHC	Primary Health Care
SPC	South Pacific Commission
SCF Australia	Save the Children Fund Australia
SICHE	Solomon Island College of Higher Education
SIDT	Solomon Island Development Trust
SINP	Solomon Island National Pharmacy
SOMARC	Social Marketing
SSS	Sugar-Salt Solution
TA	Technical Advisor
TOT	Training of Trainers
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Childrens Fund
USAID	United States Agency for International Development
VHW	Village Health Worker
WHO	World Health Organization

EXECUTIVE SUMMARY

In 1991 diarrhoea was the second leading cause of mortality and morbidity in children under five years of age in Solomon Islands¹. A National Diarrhoeal Disease Survey conducted in 1992 found a seasonally adjusted attack rate of 3.5 per child, per annum, and that diarrhoeal related mortality accounted for 14% of child deaths².

The Child Survival VII Project: Diarrhoeal Disease Control Programme (1991-1994) in Solomon Islands aimed to reduce diarrhoeal related mortality and morbidity in children under five years of age. The project was implemented by the Foundation for the Peoples of the South Pacific (FSP) in collaboration with the Ministry of Health and Medical Services (MHMS), and formed the basis of the national diarrhoeal disease control (CDD) programme in Solomon Islands.

Half way through the project the FSP Technical Adviser/Project Manager was asked to leave the country at short notice and funding was subsequently suspended for a period of nine months. In November 1993 the Solomon Island Development Trust (SIDT) agreed to represent FSP and funding resumed in February 1994. The project therefore has been fully operational for 27 months. Since May 1994 the MHMS has been the main implementing agency, with assistance from SIDT in latter months.

During the first year of implementation, a national diarrhoeal disease survey was conducted³. The survey provided reliable data on diarrhoeal incidence, treatment and knowledge. This data provided valuable information on which to base and guide project objectives and activities. The main thrust of project activities concentrated on the training or retraining of health workers in proper case management of children presenting with diarrhoea. Also, community level interventions were to focus on providing care givers information on basic home care

¹ Child Survival Project : Diarrhoeal Disease Control Programme. Detailed Implementation Plan 1992. Also see MHMS/FSP 1992 Solomon Islands National Diarrhoeal Diseases Survey 1992.

² Solomon Islands National Diarrhoeal Diseases Survey 1992. Incidence, treatment and mortality. See Appendix A for executive summary of survey report.

³ See Appendix A.

techniques, including correct mixing of Oral Rehydration Salts (ORS), the importance of Oral Rehydration Therapy (ORT), and diarrhoea prevention messages.

Project activities have been well integrated with other MHMS activities, especially those associated with acute respiratory infections (ARIs), thus increasing cost effectiveness and enhancing prospects for sustainability of CDD activities. Although the project has succeeded in completing country wide training of three tier of health workers in correct case management, and has recently embarked on expanding activities to the community level through the involvement of SIDT Mobile Teams, a number of activities have not been addressed. Perhaps the weakest component of the project has been the low level of interventions at the community level. The network of women's organizations operating at the community level has not been integrated into project activities. The national policy for the Control of Diarrhoeal Diseases has not been officially adopted by Government. Monitoring of both project activities and impact indicators is another weak aspect of the project. There is little in the way of historical or institutional documentation of project undertakings. With respect to the envisioned monitoring of key diarrhoea related indicators, the CDD health information system (HIS) which was established was not operationalised, not were project staff trained in its application. "ORT Corners" have not yet been established at any health facility and Information, Education and Communication (IEC) activities have been limited.

The evaluation makes a series of recommendations aimed at addressing these constraints to project implementation. It is recommended that the draft policy on CDD be formally adopted as soon as possible and include findings of analysis conducted on *Shigella* and corresponding antibiotic sensitivity patterns. Project monitoring activities should be improved, so as to better understand the impact of interventions. In terms of health worker training it is suggested the component to train 12 physicians be initiated as soon as possible, but also that training activities should expand beyond the formal health structure to include women's, church, and community groups. During training, greater emphasis should be given to preventive messages, and the importance of practical demonstrations by health workers of mixing ORS, should be stressed continuously throughout training. IEC material development and dissemination should be given higher priority, and quantities of material produced increased. The establishment of ORT Corners should be accelerated, and negotiations with

Primary Health Care staff reopened in order to secure a member of staff to be responsible for extending this initiative to other provinces.

Overall the Child Survival VII Project : Control of Diarrhoeal Diseases is a priority programme for the MHMS. SIDT regards CDD workshop activities as important, providing a cost effective and sustainable mechanism for long term continuation of community based activities.

INTRODUCTION AND BACKGROUND

The Child Survival VII Project : Control of Diarrhoeal Disease Programme (1991-1994) in Solomon Islands has been fully operational for 27 of the 36 months originally proposed. In May 1993 the Technical Advisor/Project Manager was forced to leave the country at short notice. There was no handover or transitional period for the project. Following this incident the Solomon Island Government revoked its Memorandum of Understanding with Foundation for the Peoples of the South Pacific (FSP), and funding was suspended shortly thereafter. The counterpart implementing institution, the MHMS, was left to manage programme activities as best it could for a period of approximately nine months, until USAID funding once again resumed in February 1994.

In November 1993 SIDT agreed to represent FSP for the remaining duration of the Child Survival VII Project. Despite events, requests for a no-cost extension for the project was denied by United States Agency for International Development (USAID) due to the closure of the South Pacific mission. These events have played an important role in project development, and are identified as the dominant factors affecting successful and timely implementation and monitoring of activities, and therefore the achievement of project objectives. The forced departure of FSP and the subsequent cessation of USAID funds were critical, as these external inputs formed the basis of funding for the National CDD Programme, with the exception of the Programme Coordinators salary.

Technical assistance from, and direct involvement of FSP was restricted to the first year and half of implementation. Since May 1993 the Project Coordinator, MHMS, under the supervision of the Chief Medical Officer (CMO), Maternal and Child Health/Family Planning Unit (MCH/FPU), has had no direct contact with FSP. The sudden departure of the Technical Advisor's (TA) meant that there was no "phase over" of responsibilities to local personnel or institutions. Involvement of SIDT has been restricted to financial management and assistance with implementation of community level activities.

SIDT was not provided with information regarding implementation of past project activities. Indeed, it was not until April 1994 that SIDT was informed of the remaining project budget. This information has only been passed to the MHMS in the last few months. The last formal

report on the progress of project activities submitted to FSP and USAID was written in March 1993.

Failure of FSP to conform with Government protocol resulted in the cancellation of the mid-term evaluation. This document therefore provides the first chronological review of project activities since March 1993.

Final Evaluation Process:

The final evaluation was carried out between 29 August and 14 September 1994 in Solomon Islands. The evaluation team comprised Ms Megan Douthwaite (Team Leader), Mr Winston Pitakomoni (CDD Programme Coordinator, MHMS) and Dr John Roughan (FSP Representative). No project documents or activity reports exist after March 1993, and many documents regarding activities prior to the departure of FSP were unavailable. Therefore time was spent collecting information on activities development. Also, interviews with key figures at national, provincial and community levels were carried out, both in Guadalcanal Province and Malaita. A rapid knowledge and practice survey was conducted over a period of four days, in and around Honiara.

In the light of the close integration of the FSP Child Survival project and the Solomon Island National CDD programme this evaluation covers both, and makes no distinction between the two. This evaluation has been written in the format stated in the **BHR/PVC Guidelines for Final Evaluation and Sustainable Assessment of Child Survival Projects ending in 1994 (CS-VII)**.

I PROJECT ACCOMPLISHMENTS AND LESSONS LEARNED

A. Project Accomplishments

A1. Objectives/Activities outlined in Detailed Implementation Plan:

Diarrhoea is a leading cause of mortality and morbidity in children under five years of age in Solomon Islands⁴. A National Diarrhoeal Disease Survey conducted in 1992 found a seasonally adjusted attack rate of 3.5 per child, per annum, and that diarrhoeal related mortality accounted for 14% of child deaths⁵. Table 1 shows episodes per child, per annum, for countries in the Pacific region, where data is available.

Table 1 Diarrhoeal episodes, per child, per annum.

Date of Survey	Country	Episodes
1990	Vanuatu	3.8
1988	Kiribati	5.2
1986	Western Samoa	3.03
1992	Solomon Islands	3.5
1985	Tonga	2.4

Source: Draft Document, UNICEF, September 1994, Pacific Children: Toward 2000. Progress on achieving global goals for children.

The overall goal of the Child Survival VII Project: Diarrhoeal Disease Control Programme in Solomon Islands was "to reduce diarrhoeal related mortality and morbidity in children under five years of age"⁶. The programme formed the basis of the National Control of Diarrhoeal Disease programme and was implemented through the MHMS.

As a result of a detailed baseline study into incidence, treatment practices and under five mortality associated with diarrhoeal diseases in Solomon Islands⁷, the following quantifiable

⁴ Child Survival Project : Diarrhoeal Disease Control Programme. Detailed Implementation Plan 1992.

⁵ Solomon Islands National Diarrhoeal Diseases Survey 1992. Incidence, treatment and mortality. See Appendix A for executive summary of survey report.

⁶ FSP, 1992 Revised Detailed Implementation Plan submitted to USAID.

⁷ See Appendix A for Solomon Islands National Diarrhoeal Disease Survey 1992 Executive Summary.

objectives were formulated;

- 1 To increase the percent of children receiving packaged ORS for diarrhoea from 12.6% to 25%.
- 2 To increase the percent of children receiving coconut water for the prevention of dehydration from 52% to 70% of all cases.
- 3 To increase the percent of children receiving ORT, (ie. coconut water, breastmilk or packaged ORS) from 60% to 80%.
- 4 To increase the percent of guardians making ORS correctly from 33% to 60%.
- 5 To ensure that 95% of all mothers of children under two continue to be breastfed during the child's attack of diarrhoea.
- 6 To increase the percent of guardians which continue to feed children during an attack from 66% to 85%.
- 7 To decrease the percent of children who receive antibiotic therapy for watery diarrhoea from 6% to 3%.
- 8 To increase the percent of guardians who know at least two reasons to refer a child with diarrhoea to health personnel from 40% to 65% by 1995.

Achievement of the above objectives necessitated a number of activities to be implemented at national, provincial and community levels. Activities were divided into two: those to be implemented country wide; and those that would be implemented initially in three provinces, namely Guadacanal, Malaita and Western Province, and subsequently taken to scale.

Nation wide project activities were to focus on training of MHMS staff at national, provincial and community levels, in proper case management of children presenting with diarrhoea, including timely referral, and basic home care messages to teach to care givers. Nurses were also to receive training, or retraining, in the use of IV fluids/nasogastric tubes in an effort to reduce diarrhoeal related mortality.

Outreach activities would involve training of women's and community group leaders, and Non Governmental Organisations (NGOs) operating at the community level, in promoting home care messages, including the correct mixing and use of ORS. These groups, in turn, would provide information to their members. Details of the training schedule and training materials were to be developed in the first year for both health workers and community based groups.

Three supervisory staff, each based in one of the three provinces to receive initial project activity, were to be identified to coordinate activities in the second a year of implementation.

FSP proposed to cover 75% of the cost of each post during the second year, reducing this to 50% in the final year of implementation. ORT "corners" were to be established over the duration of the project, initially in the Central Hospital, Honiara, and then in hospitals in Malaita and Western Province. These were to provide training and education to care givers on the five steps for correct use of ORT. Furthermore, in order to increase usage of manufactured ORS, the project proposed to encourage a social marketing approach, to increase access to, and demand for, ORS.

Table 2 presents a summary of key project activities over the duration of the project.

Table 2 Project Activities

Year 1	Year 2	Year 3
<ul style="list-style-type: none"> • Development of training materials 	<ul style="list-style-type: none"> • Revision of 3 nursing school curricula 	<ul style="list-style-type: none"> • 100 Village Health Workers trained (3 days)
<ul style="list-style-type: none"> • Finalization of national Policy on Control of Diarrhoeal Diseases 	<ul style="list-style-type: none"> • Training of 12 doctors on diarrhoeal management (1 day) 	<ul style="list-style-type: none"> • 100 Nurse aides trained (3 days)
<ul style="list-style-type: none"> • Baseline survey 	<ul style="list-style-type: none"> • 185 (50%) Registered Nurses trained (1.5 days) 	<ul style="list-style-type: none"> • 25 trainers for refresher courses (5 days)
<ul style="list-style-type: none"> • Development of CDD Health Information System 	<ul style="list-style-type: none"> • 100 Nurse Aides trained (3 days) 	<ul style="list-style-type: none"> • By the end of the 3rd year 600 community group leaders from women's groups and clubs trained
	<ul style="list-style-type: none"> • 100 Village Health Workers (VHWs) trained (3 days) 	<ul style="list-style-type: none"> • Regular MCH/FPU training of national and provincial level staff
	<ul style="list-style-type: none"> • 25 Trainers trained (5 days) 	
	<ul style="list-style-type: none"> • Establishment of ORT "corner" in Central Hospital, Honiara 	<ul style="list-style-type: none"> • Establishment of ORT "corners" in Malaita and Western Province

It was intended that 10 key process indicators and a number of impact indicators would be monitored on a monthly basis through the use of a CDD HIS. Community based groups were to play an important role in data collection, providing information on ORT usage, diarrhoeal related mortality, women trained etc.. The Solomon Island HIS, developed with assistance from European Economic Commission (EEC), was to provide additional data on five indicators, including diarrhoeal incidence rates. The number of children hospitalized with infectious

diarrhoea at Central Hospital, would also be monitored.

Soltrust, a local partner agency of FSP, in collaboration with FSP agreed to assist in the rehabilitation of approximately 150 water tanks, over the duration of the project.

The project planned to utilize existing infrastructure within the MHMS so as to: (1) avoid vertical planning; (2) develop a sustainable capacity within the MHMS; and (3) facilitate community outreach through collaboration with community based organisations, most particularly, women's organisations.

A2. Project Activities

A comprehensive review of accomplishments related to each objective was not possible during this evaluation because the data for most indicators was not available, and was regarded as inappropriate given the history of the project and stage of implementation. Therefore this evaluation reviews accomplishments related to stated activities. Given the actual duration of the project, following the interruption in 1993, and the under implementation of community activities it is assumed that little impact, if any, would have been made on behavioural change, and therefore achievement of objectives.

Despite events that occurred in 1993, the MHMS has succeeded in completing country wide training programmes for three tier of health worker, and has recently embarked on expanding activities to the community level, through both the formal health structure and involvement of a NGO network. However a number of project activities remain to be addressed.

In general project activities have been well integrated into other MCH/FP and Primary Health Care (PHC) related activities, at national, provincial and community levels. Table 3 provides a summary of activities carried out by the CDD project. Funding for these activities came from a number of sources, including USAID, MHMS and United Nations Fund for Population Activities (UNFPA).

Baseline Survey⁸:

The national diarrhoeal disease survey took almost a whole year in planning, preparation, collection and analysis of data. The cross sectional cluster survey collected information on incidence, treatment and diarrhoeal associated mortality from a representative sample of 4,020 children from 40 clusters. The survey provided reliable data to guide project objectives, and overall, form the basis of the National Policy on Diarrhoeal Diseases for Solomon Islands.

National Diarrhoeal Disease Control Committee:

During the first year of implementation a multi-sectoral committee, the National Diarrhoeal Disease Control Committee, was established comprising representatives from the Health Education Division (HED), the Nursing Division, the Director of the Malaria Research Centre, the Director of Health for Guadalcanal Province, the Chief Paediatrician from the Central Hospital, the CMO, MCH/FP Unit, the CDD Programme Coordinator, the FSP Technical Adviser, and the FSP Country Director. The Committee provided a sound technical and supervisory body to support project activities at the National level. In addition, the Committee had access to an informal network of technical expertise to draw upon as and when required. The Committee met five times during the first year. It reviewed and revised the draft National Policy on Diarrhoeal Diseases for Solomon Islands.

Training:

CDD training has been well integrated with other training activities carried out by the MCH/FP Unit, in particular training on Acute Respiratory Infections (ARIs). In April 1993 the Project Coordinator conducted a two week training of trainers (TOT) workshop on CDD and ARI. Thirty seven participants took part including national and provincial level MHMS trainers, Nursing School staff, and other interested parties from the NGO sector. Participants were provided with training materials on how to conduct CDD training in their respective places of work, in particular during nurses refresher training programmes at the provincial level. The emphasis in training was on proper case management, and how to advise care givers on caring for children with diarrhoea. It proved unnecessary for the project to develop training

⁸ See Appendix A.

materials as World Health Organization (WHO) was able to provide these.

Table 3 Summary of project activities

Year 1 11/91 - 11/92	Year 2 11/92-11/93 [§]	Year 3 11/93-10/94
<ul style="list-style-type: none"> ● National Diarrhoeal Disease Control Committee formed and met five times ● Baseline survey and data analysis[#] ● Review of draft National Policy on Diarrhoeal Disease for Solomon Islands ● Training schedule planned 	<ul style="list-style-type: none"> ● 37 participants at 2 wk. TOT workshop[#] 	<ul style="list-style-type: none"> ● Integrated community workshops held in Malaita, Guadalcanal, and Western Province[#] ● 33 SIDT Trainers attended TOT workshop[#] ● 35 SIDT Trainers attended refresher course[#] ● 86 village workshops held in 6 Provinces by SIDT Teams[#] ● 30 nursing students received lecture from CDD Coordinator
<p>Training Refresher courses⁹.</p> <ul style="list-style-type: none"> ● 197 Registered Nurses, 95 Nurse Aides[▲] and 13 VHWs trained ● Development of CDD Health Information System 	<ul style="list-style-type: none"> ● 16 RNs, and 28 Nurse Aides trained <p>IEC</p> <ul style="list-style-type: none"> ● Radio spots for two months on importance of continued feeding, when to take child to clinic and importance of referral for dysentery cases[#] ● 10 mins. radio talk on diarrhoea running for two months 	<ul style="list-style-type: none"> ● 206 RNs, 111 Nurse Aides and 18 VHWs trained¹⁰ <p>IEC materials[#]</p> <ul style="list-style-type: none"> ● Series of 5 posters on ORS mixing ● 1 general poster on home care ● 1 diarrhoeal booklet on home care messages x 2000

§ FSP TA/Project Manager left in May 1993, funds were suspended until February 1994.

USAID funded activities.

▲ Nurse Aide and VHW figures are likely to be underestimated.

An extensive training/refresher training programme for Registered Nurses (RNs), Nurse Aides, and Village Health Workers (VHWs) has been implemented across the country. CDD training was given high priority during refresher training courses held in 1991, prior to the official project start date, but has been intensified since.

⁹ Prior to the CDD Project start date, in 1991, MHMS prioritized CDD in refresher courses for health workers. Funding was provided by UNFPA.

¹⁰ 4 RNs refresher courses funded by USAID in 1994.

Refresher courses for RNs, Nurse Aides and VHW's are held on an annual basis at the provincial level, depending on availability of funds. Training for RNs takes place over a two week period. One week is given over to MCH activities, which includes CDD, and the following week, training is dictated by Provincial needs. A one week refresher training is given to Nurse Aides and VHWs, however some Provinces combine RN and Nurse Aide training. Table 3 also presents training coverage for each category of health worker over the duration of the project. Funding for refresher training has, in general, been provided by the UNFPA, however project funding has covered 4 RN refresher training courses this year. Appendix B contains the syllabus for refresher training courses for RNs for 1991 and 1993.

The availability of funding for training courses from alternative sources, other than USAID, facilitated the continuation of a number of CDD training during the period when funding was suspended.

Revised training curricula have been produced for Nurse Aides (through the Rural Health Project supported by the EEC) and VHWs (with assistance from SCF Australia). The CDD Coordinator provided input into the CDD component for both manuals. The larger curriculum for RNs is currently under review by a team from the World Bank. However, Solomon Island College of Higher Education (SICHE), and School of Nursing staff have received training on CDD, and have revised lecture content accordingly. The Programme Coordinator has also provided teaching on CDD to student nurses at the School of Nursing.

Community Outreach:

Proper case management of children with diarrhoea must begin at home. However, to date training has largely been restricted to MHMS health workers with limited involvement of community based groups. Since funding resumed in February 1994 efforts to address the lack of outreach activities have been stepped up. Provincial level MHMS staff in Malaita, Guadalcanal and Western Province have held integrated village level workshops covering all aspects of MCH, including CDD. The estimated population reached to date through the MHMS integrated village level workshop programme is 400. During a National workshop for Family Planning Coordinators held this year, CDD/ARI lesson plans were discussed for community and women's group meetings to be held under the community Integrated

Programme. Therefore, these are indications that this component will soon reach a sizably larger population.

In February 1994 the CDD Project Coordinator provided an introductory session on CDD activities to SIDT Field Officers, Training Officers, and Women's Programme Leaders (see Appendix C for Organizational structure). In April a TOT workshop was held, by the CDD Coordinator, on home care messages. Thirty three SIDT Training Officers, Field Officers, and Women's Programme Leaders representing all nine Provinces, attended the training session. Participants were provided with guidelines on how to teach home care messages to Mobile Teams, and were given copies of the SAVE¹¹ "Child Health Series, Caring for your Child - Diarrhoea" leaflet, produced by SCF Australia, and a poster, produced by the MHMS HED, funded by SPC/AIDAB. Participants returned to their respective Provinces and conducted one week workshops on diarrhoea and home care messages for Mobile Team Members.

Mobile Teams began conducting village level workshops in June 1994. Workshops last approximately three days. To date seven Centres from six Provinces have provided reports on activities carried out during June and July. Table 4 shows coverage by province for this period.

Table 4 SIDT Mobile Team workshop coverage.

Centre	Workshops	Population	Period
Ankelo - North Malaita	18	754	June and July
Northern Guadalcanal	18	766	June and July
Western Province	6	205	June
Makira Province	3	169	June
South Malaita	28	1,387	June and July
Chiosuel	5	254	June
Central	8	221	June
Total	86	3,756	

Reports received up until 31 August 1994.

¹¹ SAVE means *to know* in Pijin and is also the name given to IEC material series produced by SCF Australia.

Research shows that careful instructions through face to face demonstrations of measuring and mixing ORS is an important factor in teaching mothers and care givers correct preparation¹². Reports from both SIDT teams and from the integrated community level workshops held by MHMS personnel, highlight the appreciation of mothers and care givers to being shown correct mixing techniques. Although included as an important step in training on advising mothers, practical demonstration of correct mixing continues to be given low priority at health facilities.

IEC:

IEC activities, including production of educational materials has been poor. For two months in 1993 radio spots covering issues such as the importance of referral for dysentery, continued feeding during diarrhoeal episodes, and when to take a child to the clinic, were produced by the project in collaboration with the HED, and Solomon Island Broadcasting Corporation. In addition MHMS funded a series of 10 minute radio talks on aspects of diarrhoea, and home-care messages which was broadcast for a period of approximately two months in 1993 and 1994. These programmes are part of a series covering MCH topics.

In the last month, the project has produced a series of 5 posters illustrating correct mixing of ORS, a general poster on home care, and a booklet on home care messages. The booklet on home care messages has been produced with assistance from SCF Australia, and will replace the current SAVE diarrhoeal leaflet, to bring it in line with the draft National Policy on Diarrhoeal Diseases. Quantities of these materials is limited however, which will in turn limit distribution coverage.

ORT "Corners":

Construction work on a permanent structure for the ORT corner began in March 1993 in Central Hospital, Honiara, and was scheduled to be complete in May 1993. A member of staff from the PHC Division was identified to set the Corners up. To date no ORT Corner is operating in Solomon Islands. Staff at Central Hospital have been waiting and are anxious to see the establishment of an ORT Corner as soon as possible. A permanent structure is

¹² Population Reports, 1985, Oral Rehydration Therapy (ORT) for Childhood Diarrhoea, Series L, No 2.

regarded as unnecessary by the Chief Paediatrician for Central Hospital. A site has been chosen in the outpatients area, and a table and chair bought in order to establish an easily accessible ORT Corner.

A3. Intended vs. Actual accomplishments

Three factors are identified as having been critical to the timely and effective implementation of project activities. Without a doubt, the dominant factor effecting general execution of project activities has been the untimely departure of the FSP TA/Project Manager. This not only removed technical expertise and managerial guidance prematurely, but reduced project staffing to one. Secondly, the subsequent suspension of funds severely curtailed the Programme Coordinator's ability to continue activities as set out in the DIP. Thirdly, as a result of these events, the project has not been fully operational for its proposed duration. Constraints, such as the relative inexperience of the Programme Coordinator and his lack of managerial, planning and organizational skills exacerbated the difficulties experienced by the project.

Implementation of activities may have been slightly behind schedule prior to the departure of the FSP TA/Project Manager. However, rather ironically, he described what was to be his last month with the CDD Project as the "one of the most productive months to date". Indeed work had begun on a number of activities, including initiating contact with the Women's Interest Section and other community based groups, and construction of an ORT Corner in Central Hospital, Honiara.

National Policy on Diarrhoeal Disease:

Although several reviews of the draft National Policy on Diarrhoeal Diseases took place in the first year and a half of implementation the Policy remains to be adopted. It is suggested that finalization of the National Policy on Diarrhoea will help to standardize recommended case management of diarrhoea throughout Solomon Islands. For example, although, as a result of the baseline survey, it was decided not to recommend sugar-salt solution (SSS) as a home treatment therapy, some health workers continue to include it as a recommended treatment. Training on SSS was also included in the first training of SIDT Mobile Teams given by the Programme Coordinator this year. The current draft does require some revisions. For

example, as a result of analysis carried out on isolation of *Shigella spp.*, and corresponding antibiotic sensitivity patterns, standard treatment administered in Solomon Islands was shown not to be the most effective. Such findings should be included in the draft prior to its submission to cabinet.

Training:

Training of 12 doctors in proper case management of CDD patients has not occurred, however it is recognised as an important activity by both the CMO, MCH/FP Unit and the CDD Programme Coordinator.

ORT "Corners":

The delay in setting up ORT "corners", initially in Central Hospital, Honiara, and then in hospitals in Malaita and Western Province stems, in part, from the original proposal. Steps to establish an ORT corner¹³ entailed sites identification, preparation of guidelines for operation, establishment of a monitoring system, delegation of responsibility, training, arrangement of educational materials, and establishment of an evaluation method. ORT corners were implicitly defined as physical structures.

Work began on a structure for an ORT corner in Central Hospital, Honiara in March 1993. The PHC Division, MHMS, agreed to provide one member of staff on an "as need basis", to develop educational materials and provide information and practical assistance, and later assist in establishing corners in Malaita and Western Province. However the untimely removal of technical expertise and managerial guidance left the Programme Coordinator with no assistance as to how to proceed in establishing operational guidelines, and monitoring and evaluation methods, as required. No further work has been done on establishing ORT corners.

The Chief Paediatrician at Central Hospital is keen to see an ORT corner established, and regards construction of a special area unnecessary. She has requested a table and chair, and identified a site in the outpatients area from which the ORT corner can operate. New IEC materials are currently being distributed, which will assist nurses in transferring home care

¹³ See CDD Project Monthly Report, March 1993.

messages to care givers.

Community Outreach:

More than 80% of Solomon Islands population reside in rural villages of less than 200 persons. The majority of these villages are located 10 kilometres away from the next population centre. The adult illiteracy rate is 70% and it is estimated there are over 100 languages spoken. Many in the workforce, including health care professionals are undertrained for the positions they hold. The high cost of providing services to a scattered, isolated, rapidly growing population, and the dire shortage of trained and qualified staff often means outreach services are inadequate. Despite provision of an average of 9-10 % of total Government recurrent outlays for public health services, many Provincial health facilities suffer from staff shortages, inadequate maintenance, and a lack of operating expenditures. These problems can be traced to an urban and curative bias to public health expenditures. Indeed, health expenditures are two to four times higher in Honiara, and Guadalcanal Province, than in any other. The Central Hospital alone accounts for 30% of MHMS outlays¹⁴. The 475 RNs are the backbone of the health system in the Provinces, and heavy reliance is placed on their clinical and practical skills. Nurse aides form another important category, and Village Health Workers (VHWs) operate at the lowest level. The dropout rate of VHWs, however, is very high¹⁵, and therefore their involvement has limited potential.

Although the involvement of SIDT has provided the project an alternative channel to the formal health system through which to access villages, the exclusion of other networks such as women's groups and other NGOs from the project, is regarded as a constraint, and increases risk of duplication concerning CDD community level interventions. SIDT Mobile Teams provide information and education on a wide range of issues from deforestation to immunization. CDD activities therefore run a risk of being replaced by other more pressing issues. Involvement of other community based groups, in particularly those with a focus on health issues, would lead to greater sustainability of CDD activities at the community level.

¹⁴ The World Bank 1993, Solomon Islands : Country Economic Memorandum, vol 5.

¹⁵ Chevalier C., et al. 1992

The Women's Interest Section of the Ministry of Youth, Sports and Women in Development, runs workshops and training programmes for women's groups in rural areas on income generation, potable water and personal hygiene information, and expressed interest in being involved with CDD activities. This network is easily accessible, and is already providing information to women at village level on improved hygiene etc.

Danchurchaid, a Danish NGO, works in collaboration with Solomon Island Christian Association on a Village Education Programme. The Village Education Programme has been operating since 1989. Its broad aim is to improve living standards by providing communities with a greater understanding of common health problems and how to solve them, and by teaching communities to better manage food resources to improve health and income generation activities. Programme objectives include:

- improvement in the diet of children and mothers;
- raising awareness of the importance of local food resources;
- improvement of hygiene practices to reduce the number of diarrhoea cases;
- promotion of "supsup" gardens, and thereby improve soil conservation and prevention of pests;
- contribute to the prevention of malaria.

The Village Education Programme operates through a similar structure to SIDT, holding 3 day village level workshops. The Programme also conducts one week training courses at village or Provincial levels, for community based resource persons such as leaders of church groups, teachers, women's groups, and nurse aides. Training courses are also held for students attending Rural Training Centres. The Village Education Programme produces a diarrhoeal fact sheet, which is distributed to communities and groups (see Appendix D).

The Village Education Programme has carried out a qualitative investigation of its community level interventions, which may prove to be a useful tool for future community level interventions carried out by MHMS. Collaboration with the Village Education Programme would provide the MHMS opportunity to work with a specifically health oriented outreach programme, share technical expertise and field experience concerning CDD community level interventions, and reduce the risk of duplicating efforts.

It was originally anticipated that community based activities would also involve the

rehabilitation of water tanks, in collaboration with Soltrust. However Soltrust reports no rehabilitation activities have taken place. Until access to water and sanitation services are improved diarrhoeal diseases will not disappear from Solomon Islands.

Provincial Supervisors:

Provincial supervisory posts for Malaita, Guadalcanal and Western Province were not established by the project as originally anticipated. Indeed project activities have not focused in the three Provinces, but have instead been implemented country wide. During development of the DIP, USAID advised FSP to concentrate activities in the three Provinces because it was FSP's first health programme in Solomon Islands. However, later involvement of SIDT provided the MHMS with a cost effective network of community based Mobile Teams which operate in every Province in Solomon Islands. Focusing on three Provinces therefore was not regarded as appropriate.

Social Marketing:

Discussions with SOMARC, referred to in the DIP, to encourage a social marketing campaign of ORS through local retail stores has not been pursued by the project.

In a country which has a culturally acceptably, widely available, sterile equivalent of ORS¹⁶, in the form of coconut water, a social marketing campaign to increase awareness and use of ORS may not be cost effective, nor appropriate. Solomon Islands does not have the capacity to manufacture its own ORS and currently receives packets from UNICEF. Establishing a sustainable method of distributing packets would also be problematic in terms of logistics.

The aim of proper case management at the household level is to use available home fluids to prevent dehydration and to recognize when the disease progresses and ORS is needed to treat dehydration. Coconut water is readily available throughout Solomon Islands at the household level, and ORS packets are available only at health facilities.

¹⁶ Kuberski,T., Roberts, A., Linehan, B., Bryden, R., Teburae, M., 1979 Coconut Water as a Rehydration Fluid, New Zealand Medical Journal, August, pp 98-100.

The baseline survey indicated 52.1% of children with diarrhoea received coconut water, whilst only 4.2% received correctly prepared ORS. In addition, those children who were given coconut water received on average a higher intake of fluid overall. The behavioural change demanded for success of an ORS social marketing campaign by rural mothers is therefore considerable: acquiring the packet; acquiring proper mixing devices and skills; time, trouble and expense to acquire boiled water, or the cleanest water available; administering and continuing to administer ORS to a child who may not like the taste; and continuing to administer ORS whilst the child has diarrhoea. In reference to the last point, the final evaluation found some health workers provide mothers with ORS, advising them that ORS will stop diarrhoea. With these factors in mind adoption of a social marketing approach to ORS may therefore not be an appropriate strategy for Solomon Islands.

HIS:

During the first year of project implementation, the FSP TA/Project manager designed a CDD Health Information System (HIS) template to provide continuous monitoring data on project activities and key indicators. However, the HIS has not been operational. In the last project progress report made to FSP and USAID in March 1993, it is reported that data would be entered into the CDD HIS and that the 1992 data analysis completed in May 1993. The Programme Coordinator's computer skills are limited, and as he was not involved sufficiently in development of the HIS he has been unable to utilize the system as a monitoring tool.

The EEC HIS provides monthly updates on incidence of watery and bloody diarrhoea and related mortality from clinical records. However, the Programme Coordinator does not feel confident interpreting the data provided. Analysis of data provided for the final evaluation, by the EEC HIS suggest difficulty in using EEC HIS data, specifically as a useful project monitoring tool.

The EEC HIS reports very low incidence rates of both watery and bloody diarrhoea (See Appendix E) over the last three years, compared with the incidence rate of reported in the national survey. This is explained by the fact that EEC HIS data is based on clinic records only. However, incidence rates for diarrhoea are susceptible to further under reporting due to problems with case definition. The EEC HIS demands that the "dominant disease" be

reported. Therefore, if a child presents with malaria and diarrhoea, diarrhoea will not be reported. Comparing data from the National survey with data from the EEC HIS suggests massive under reporting of diarrhoeal related morbidity. This is compounded by problems linked with case definition and reporting of dominant diseases, however it is also likely that many children with diarrhoea in Solomon Islands simply do not visit clinics. This underlines the urgent need for effective community outreach programmes, which reach beyond the structure offered by the health system.

IEC:

The lack of IEC materials is also regarded as a constraint, particularly for outreach activities. Provincial level MHMS staff who have conducted integrated community/village level workshops require IEC materials to strengthen health education efforts. Similarly, SIDT Mobile Teams commented on the lack of material available for distribution, when they visit villages.

Staffing:

Staffing has been an ongoing problem for the project¹⁷ and was exacerbated by the untimely departure of the FSP TA. The FSP TA and an office accountant were the only staff specifically hired for the project. The Programme Coordinator is employed by the MHMS, and any additional assistance was to be made up by MHMS when it was required. However, due to the shortage of trained staff, especially in key technical areas such as training, supervision, HIS, and health education within MHMS, support for the project in terms of additional personnel has not materialized. For instance, negotiations with the Primary Health Care (PHC) Division to assist in national project activities, especially community based education, have not been followed through.

Shortage of trained staff within the Ministry is one of the factors which has led to the Programme Coordinator being made responsible for activities concerned with ARI. He therefore has had to juggle his time between the two programmes.

The events that followed the departure of the TA and the uncertainty regarding future funding

¹⁷ See p4 Annual Report 1992.

created an environment in which it was very difficult for the Project Coordinator and CMO, MCH/FP Unit to plan future activities. Although funding resumed in February 1994 planning remained difficult, until relatively recently, as the MHMS was not provided with the requisite budgetary information. Inflexibility on part of the donor regarding a no cost extension, despite events, has added to the difficulty of planning activities and expenditure.

A4. Unintended Benefits

As identified in the Annual Report 1992, the quality of the baseline survey and the epidemiological expertise the FSP TA brought to the MCH/FP Unit added strength to the performance of the Unit as a whole. The baseline survey provides the most up to date analysis of diarrhoeal incidence rates in the Pacific region.

The FSP/TA provided assistance to other departments within MHMS. For example, with assistance from the Programme Coordinator, he reviewed the laboratory data on isolation of *Shigella spp.*, with a corresponding review of antibiotic sensitivity patterns. The analysis found that *Shigella flexneri* is not sensitive to the standard treatment protocol offered in Solomon Islands¹⁸. The standard treatment protocol has not yet been officially modified. The TA also provided support to the PHC Division and SCF Australia in data analysis.

The MCH/FP Unit regards the involvement of SIDT as extremely important in terms of expanding outreach activities in general, especially health education activities. The link has provided opportunity to move beyond the formal health structure, which is recognised as inadequate to serve the range of curative and preventive health care needs of communities, alone. The Mobile Teams provide a mechanism through which to provide community level interpersonal communication, identified as an important mechanism for promoting behavioural change. It is hoped that the link with SIDT will also provide the MHMS with access to other organisations and groups operating at the community level.

The sudden departure of the FSP TA and the subsequent suspension of funds forced the

¹⁸ Co-trimoxazole recommended as treatment for dysentery in Solomon Islands, however as a result of the analysis carried out by the FSP TA, ampicillin or chlorophenicol are more appropriate treatments for *Shigella flexneri*.

MHMS to consider the risk involved in reliance on one donor.

A5. FINAL EVALUATION SURVEY

Methodology

A follow-up representative sample survey, as indicated in the DIP, was beyond the scope of this evaluation, due to time, logistical, and financial circumstances. Furthermore, a survey of this nature was regarded as inappropriate given the stage of implementation of project activities, particularly at the community level.

A questionnaire, based on the *Rapid Knowledge, Practice and Coverage Questionnaire*¹⁹ outlined in the USAID Final Evaluation Guidelines, was administered among 598 care givers with children under 5 years of age. These women comprised market women in Honiara, mothers/care givers resident in Honiara, interviewed in their homes, and mothers/care givers interviewed in their homes, in villages to the east and west of Honiara.

All women interviewed either worked in, were resident, or lived within 50 kilometres from, and within easy access of the capital. Results are therefore restricted to a very select group of women/care givers, and no inferences may be made regarding generalizations to the wider population. It is also recognised that potential for bias arising from design of the questionnaire, and interviewer bias, are a constraint to data analysis. Villages and women interviewed were not chosen at random, but rather for ease of access and availability.

Amendments were made to the Final Evaluation survey required by USAID. First, the questionnaire was conducted among mothers/care givers of children under five years of age, rather than of those less than 24 months. This change was made to conform with the target population of the project (children under five years of age), and also, given the time frame for the survey, to increase the chance of achieving a large enough sample. Second, in an attempt to make the questionnaire more culturally appropriate, and more clearly understood by the enumerators, question 7 regarding treatment for diarrhoea, was changed to include coconut water and traditional or "custom" medicine. Due to the inexperience of the enumerators and

¹⁹ See Appendix G.

the time available for training, it was decided to use the mothers/care givers definition of diarrhoea for the survey, and no distinction was made between watery and bloody diarrhoea episodes.

Enumerators received approximately one day of training, which included a pretest of the questionnaire. Supervision of enumerators was not possible because of the shortage of trained personnel. The survey was carried out over a period of four days.

Results and Discussion

Although several potential areas for bias arose during the survey, findings are similar to those of the national diarrhoeal survey conducted in 1992. However as indicated previously, this project could not realistically be expected to have precipitated massive impact.

Incidence and attack rate

The two week incidence rate, (based on what the mother/care giver reports as diarrhoea), was 197 per 1000 (95% CI: 165 - 229). Using the two week incidence and adjusting this for season, the seasonally adjusted attack rate²⁰ was estimated at 4.2 cases per child per year (95% CI: 3.6 - 5). This compares with an attack rate of 4.1 cases per child per year (95% CI: 3.1 - 5.1) in 1986²¹, and an attack rate of 3.5 cases per child per year (95% CI: 2.8 - 4.2) in 1992²².

Analysis of two week incidence rates suggests a difference between populations to the east of Honiara (N = 118), and the remaining sample population (N = 480). An incidence rate of 132 per 1000 is estimated for east of Honiara, whilst an incidence rate of 215 per 1000 is estimated for the remaining sample.

This difference may be due to the fact that populations in villages surveyed to the east of

²⁰ See Appendix A for formula for calculating adjusted rate.

²¹ MHMS, 1986, survey conducted by WHO and UNICEF.

²² 1992 National Diarrhoeal Diseases Survey.

Honiara work for Solomon Island Plantation Limited, which provides health facilities and housing for its employees.

Oral Rehydration and Treatment

Of all the children with diarrhoea (n = 117) in the last two weeks, 53% of mothers/care givers reported using coconut water, whilst 52.1% said they gave their child traditional or "custom" medicine. The national baseline survey conducted in 1992 found 52.1% received coconut water. 44 or 37.6% of mothers/care givers, questioned in the final evaluation survey, reported giving their child ORS, and only 5 or 4.3% children received SSS. No questions were asked on correct mixing of either solutions. Overall, data suggests 82.1% or 96 mothers/care givers administered a recommended ORT (either coconut water, SSS, or ORS) to their child during a diarrhoeal episode. Multiple answers were possible for questions concerning ORT.

Mothers/care givers were asked about breast feeding patterns during diarrhoeal episodes. Of children with diarrhoea, 36.8% were no longer breastfed. Of 74 children still breast feeding, 66 or 89% continued to be breastfed during diarrhoeal episodes. In the national survey, 94.6% of breast fed children continued to receive breast milk.

The final evaluation survey found that 108 or 92.3% children received fluids, other than breast milk, during an attack of diarrhoea, 73 or 67.6% received more fluids than usual. 111 or 95% of children received solid/semisolid foods, other than breast milk during diarrhoea, whilst 64 or 57.7% received more than usual.

All mothers/care givers were asked about what actions a mother should take if a child has diarrhoea. Of 598 mothers questioned only 15 or 2.5% of mothers/care givers did not know what appropriate action to take, and less than 1% thought they should stop giving fluids or food to a child during diarrhoeal episodes. Responses to a question concerning actions a mother/care givers (N = 596) should take when a child is recovering from diarrhoea revealed only 2.5% or 15 mothers/care givers did not know what action to take.

Differences in the use of traditional or "custom" medicine were observed between those

surveyed in villages to the east of Honiara, and the rest of the sample population. For question 11, only 6 or 5.1% of mothers/care givers reported using traditional or "custom medicine, in the "other" category, in populations to the east of Honiara, while, 17.3% or 83 mothers/care givers, in the rest of the sample population, identified "custom" medicine as a treatment action a mother/care giver should provide to a child during a diarrhoeal episode.

For question 12, a higher percentage of mothers/care givers to the east of Honiara, identified "giving food with high caloric content after diarrhoea" as an important action (76.3% vs. 62.9%). Fewer mothers/care givers to the east identified "custom" medicine as playing an important role in a child's recovery from diarrhoea.

Health seeking behaviour

Multiple answers were possible for questions concerning health seeking behaviour. 77.8% or 91 mothers/care givers of children with diarrhoea in the last two weeks, reported seeking advice concerning their child's diarrhoea. 65.9% or 60 mothers reported seeking advice from a health post or clinic, whilst 62.6% or 57 mothers sought advice from sources outside the formal health structure (friends, relatives, traditional healer, or traditional birth attendant). Only 33 or 5.5% of all mothers/care givers questioned in the survey were unable to identify any symptom which would cause them to seek advice for their child's diarrhoea. Whilst, 61.2% or 366 mothers/care givers were able to identify two or more symptoms which would cause them to seek advice for their child's diarrhoea.

General

The final evaluation survey results suggest further analysis should be undertaken to establish a clearer understanding of behavioural factors which may be important to address in community level CDD education. For instance, "custom" medicine appears to be an important treatment for, and after, diarrhoea. Investigations should be carried out on the usefulness of "custom" treatments, and any risk enhancing behaviour associated with "custom" treatment be discouraged. Greater knowledge and understanding of practices would facilitate the development of effective IEC messages, and overcoming other constraints care givers face in providing appropriate care.

Results may suggest variation in diarrhoeal incidence between different localities. Further analysis should be done on the national baseline data to establish whether this observation is real, and further investigation made into establishing possible risk factors.

ORS Distribution

It is not possible to draw conclusions regarding the trend of ORS usage from the final evaluation data. However, previous surveys suggest ORS use rates have been decreasing in recent years.

Distribution data on ORS collected by the Solomon Island National Pharmacy (SINP) indicate usage of ORS is rapidly declining. Requests for ORS from hospitals/clinics/health centres through provincial level pharmacies determine the quantity of ORS distributed by SINP. Distribution of ORS therefore may be used as a proxy indicator of actual usage. In 1992, it was estimated that 8,000 ORS packages were used per month. In 1993, this figure had dropped by 50 % to 4,000 per month. ORS packets are readily available across Solomon Islands through health facilities. Procurement of ORS for 1994, from UNICEF, is only 20,000 packets²³.

B Project Expenditures

This activity was outside of the Terms of Reference assigned to the consultant. It is understood that FSP Headquarters will review this aspect of the project.

- B1. Pipeline analysis of project expenditure**
- B2. Compare with DIP, explain over and under spends**
- B3. Were finances handled properly**
- B4. Were lessons learned about project expenditures**

C LESSONS LEARNED

- The need to indigenize the skills of expatriate technical advisors was highlighted by the

²³ Data from UNICEF, and SINP.

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05-Dec-94

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COUNTERPART**CHILD SURVIVAL**

PDC-0500-G-00-1075-00

Grant Term September 15, 1991 to September 14, 1994

PIPELINE ANALYSIS

Through 9/30/94

PROJECT ELEMENTS	EXPENDITURES 09/15/91 - 09/14/94			GRANT BUDGET			BUDGET REMAINING 9/30/94		
	USAID	PVO MATCHING	TOTAL EXPENSES	USAID	PVO MATCHING	TOTAL BUDGET	USAID	PVO * MATCHING	TOTAL REMAINING
Salaries & Fringe	263,385	29,969	293,354	263,969	27,630	291,599	584	(2,339)	(1,755)
Consultants	16,721	12,980	29,701	16,622	2,580	19,202	(99)	(10,400)	(10,499)
Travel	65,692	13,173	78,865	65,346	0	65,346	(346)	(13,173)	(13,519)
Equipment		22,000	22,000	0	22,000	22,000	0	0	0
Supplies & Other	59,069	74,226	133,295	57,360	89,650	147,010	(1,709)	15,424	13,715
Indirect Costs	90,372	34,004	124,376	96,670	34,004	130,674	6,298	0	6,298
TOTALS	495,240	186,352	681,592	499,967	175,864	675,831	4,727	(10,488)	(5,761)

project. For example, the FSP TA did not take adequate measures, and this factor was exacerbated by his untimely departure, to impart managerial and administrative guidance to the Programme Coordinator. A further example was in the development of the CDD HIS which has remained unused as the skills were not transferred to local end users. While it is necessary to utilize foreign consultants, the project has learned that a large component of technical assistance must involve skills transfer;

- The selection of impact indicators which are not monitored through the CDD HIS proved to be of limited value. In the absence of routine data collection there remains the need to attract a significant amount of resources to undertake a follow-up survey to determine if the project has met its objectives;
- The sustainability of donor-assisted programmes was called into question by this project. The abrupt departure of the executing agency and the subsequent withdrawal of funding by the donor caused considerable disruption to project implementation. While it is difficult to draw a lesson from this experience, observers suggest that the Ministry may attempt to seek multiple funding sources;
- The baseline survey provided conclusive evidence of the widespread use of coconut water as a ORT fluid and the extremely limited use of correctly administered ORS and SSS in cases of diarrhoea. This finding called into question the costs and benefits of social marketing of ORS in this environment.

II PROJECT SUSTAINABILITY

A. Community Participation

Lack of community outreach by MHMS is recognised as a constraint in the DIP. To overcome this constraint, the project sought to work through the Women's Interest Section²⁴, MHMS, to involve the network of women's groups and clubs operating at the community level. However, to date women's groups have not been involved in project activities, despite

²⁴ The Women's Interest Section was originally located within the MHMS, however it is now part of the Ministry of Sports, Youth and Women in Development.

expressions of interest on their part during the initial stages of implementation. As a result, many of the intended benefits of using this network, such as the monitoring of ORT use, have not been fulfilled.

The first annual project report emphasizes the need for community activities to expand, and highlights the need to address this gap in the second year of implementation. During the first few months of 1993, prior to the departure of the TA, contact was made with community based groups interested in collaborating in CDD project activities. However, it has not been until this year that community outreach activities have begun to be addressed.

This year project outreach has been expanded through both the MHMS structure and through the involvement of the NGO network. In June, SIDT Mobile Teams began conducting workshops on diarrhoeal home care messages and ARIs.

It is widely recognised that project activities must be more active at the community level, and that the health care structure alone cannot address this need. Effective expansion of outreach activities must involve the network of NGOs, women's groups and other community groups operating at the village level.

A1. Interviews with Community members

Not applicable.

A2. Effective Activities

MHMS staff in Malaita report considerable interest, particularly among women, in the integrated village level workshops they have carried out this year. Women have expressed the importance of workshops, because when they visit health facilities the health workers are often too busy to offer more than diagnosis and treatment. Little time is available to cover aspects of prevention, danger signs, and in relation to ORS, correct mixing techniques.

Similarly, interviews with SIDT staff involved in training of field workers, the Field Coordinator for the SEI! Theatre Group, and analysis of activity reports from Mobile Teams, report interest and appreciation of members of the community, especially mothers, for the diarrhoeal related

activities. Practical demonstrations of mixing ORS were particularly highlighted as being an important and effective mechanism for teaching correct mixing of ORS.

The MHMS is currently conducting a nation wide survey both among health care workers and beneficiaries in order to prioritise needs.

A3. Community Health needs

During FSP's direct involvement with the project no community level activities were implemented. However, contact was made with groups and organisations operating at the community level, such as Danchurchaid (DCA), and the Women's Interest Section, MHMS. These contacts were not followed through by MHMS, due to uncertainty of funding and later, the subsequent involvement of SIDT.

This year Provincial level MHMS staff in Malaita, Guadalcanal and Western Province have conducted integrated community/village workshops providing health education on CDD, ARI, and family planning, amongst others. The Programme Coordinator has also strengthened links with the Health Education Division (HED) MHMS, not only providing Health Education staff with training on home care messages, and how to recognize signs of dehydration, but also training on techniques for effective message transfer. The HED has played an important role in expanding outreach activities through their programme of health education in Rural Training Centres²⁵. Rural Training Centres have identified health and hygiene related activities as an area they wish to expand on in the future.

FSP's collaboration with SIDT not only meant funds were once again available to the MHMS for project activities, but also provided the MHMS an opportunity to expand its outreach programme through an existing structure of community based Mobile Teams. Through collaboration with SIDT, project activities at the community level are, at least in part, sustainable. SIDT offers a mechanism through which to reach villages through a network of over 200 village based resource persons who come together to form Mobile Teams of about

²⁵ Rural Training Centres provide vocational training, in subjects such as sewing, cooking, administration, basic health and hygiene etc, to individuals who may have had little or no formal education. Students range from 16 to 23 years of age.

3-4 people. Mobile Teams operate throughout Solomon Islands and hold educational workshops, organize village meetings, and assist in making decisions about certain issues affecting villagers. They also provide an important link between communities and decision makers based in Honiara.

In February 1994 the CDD Programme Coordinator provided an introductory session on CDD activities to SIDT Field Officers, Training Officers, and Women's Programme Leaders (see Organizational structure). In April the first TOT session on home care messages was held by the CDD Coordinator. Thirty three SIDT Training Officers, Field Officers, and Women's Programme Leaders representing all nine Provinces, attended the training session. Participants were provided with guidelines on how to teach home care messages to Mobile Teams, and were given copies of the SAVE²⁶ "Child Health Series, Caring for your Child - Diarrhoea" leaflet, produced by SCF Australia, and a poster, produced by the MHMS Health Education Division, funded by SPC/AIDAB. Participants returned to their respective Provinces and conducted one week workshops on diarrhoea and home care messages for Mobile Team Members.

Mobile Teams have not traditionally been concerned with providing information on specific health issues. The SIDT Field Training Officer and Field Programme Director emphasized the fact that Teams do not conduct meetings and workshops in villages on any issues, unless they have attended appropriate training sessions. All Mobile Team members throughout the Provinces attended the CDD training workshops. They were provided with copies of leaflets and posters to use as reference and teaching aides. IEC materials were not however, in sufficient supply to be distributed to communities visited by the teams.

During the workshops, Mobile Teams include practical demonstrations on correct preparation of ORS. Prior to these workshops, teams approach health facilities for ORS packets. Initially health workers were reluctant to provide SIDT teams with ORS packets because they were not informed of their involvement with the CDD Programme. However, the CDD Coordinator has now informed MHMS personnel regarding this matter and it has apparently been resolved.

²⁶ See Appendix D for original SAVE leaflet and recently revised version funded by USAID.

Mobile Team reports indicate mothers are keen to learn about the correct mixing of ORS because they say this is often not shown to them by MHMS staff.

A recent external evaluation of the Village Education Programme implemented by Danchurchaid²⁷, which works at the community level through a similar structure to SIDT found practical demonstrations were the most effective method for transferring knowledge and messages. Practical demonstrations overcome barriers such as adult illiteracy, currently at 70%²⁸, and language, of which there are over 100 in Solomon Islands.

Instruction on the correct preparation of Sugar-Salt Solution (SSS) was included in the initial training session for SIDT Training staff and Field Officers. However, during the refresher training conducted in July 1994, this information was retracted. Analysis of baseline survey data indicated only 2.3% of children with diarrhoea received SSS, and furthermore none of the mothers knew how to prepare it correctly. It was therefore recommended that SSS not be promoted in Solomon Islands as an oral rehydration fluid. This is outlined in the draft Policy for Control of Diarrhoeal Diseases and Operation Plan (see Appendix F). This policy is reflected in the revised edition of the SAVE²⁹ diarrhoeal leaflet, produced by CDD project in collaboration with SCF Australia.

In summary a number of initiatives are attempting to provide care-givers with the knowledge of correct diarrhoea case management. However activities would be more sustainable if information given to care givers was consistent, and moreover concentrate on actively promoting the use of coconut water as an effective ORT.

A4. Community participation

Findings from the National Diarrhoeal Disease survey guided the design and objectives of the CDD Programme. The survey was representative and therefore community level knowledge

²⁷ May 1994, Solomon Island Christian Association, External Evaluation of Village Health Education Programme, Final Report.

²⁸ The World Bank 1993, Solomon Islands: Country Economic Memorandum, Vol 5.

²⁹ See Appendix D.

and practice relating to diarrhoeal disease in Solomon Islands is very much reflected in the objectives and activities. However direct community level participation has been weak, and involvement of community based groups restricted to SIDT Mobile Teams.

A5. Health Committees

The Child Survival Project did not set out to work directly with Village Health Committees. Nevertheless through training of Village Health Workers (VHWs) involvement of Village Health Committees may have been an unintended benefit, because VHWs are encouraged to initiate Committees in the communities where they work. However, a survey conducted in 1992 by the MHMS Primary Health Care Unit, with SCF Australia on VHW³⁰, found Village Health Committees were unpopular among villages and very few were active.

A6. Not applicable.

A7. Not applicable.

A8. Not applicable.

A9. Not applicable.

B. ABILITY AND WILLINGNESS OF COUNTERPART INSTITUTIONS TO SUSTAIN ACTIVITIES

The MHMS regards the CDD programme as a priority concern and is anxious to see activities continue. The CMO, MCH/FP has already submitted proposals to other funding agencies for continued support, and in addition has submitted a proposal to the MHMS for the programme to be included in the MHMS recurrent health budget.

Commitment to CDD project activities is illustrated by the activities carried out by the MHMS prior to the project start date, during the period funds were suspended, and its continued support, in terms of personnel. SIDT Mobile Teams have integrated CDD home care messages into their workshop activities, which will continue over the long term.

³⁰ See Chevalier C., Lapo A., O'Brian J., Wierzba T., 1993 "Why do Village Health Workers drop out", in World Health Forum, Vol 14, No. 3, pp258-262.

B1. Persons interviewed

MHMS National Level

Dr Nathan Kere, Permanent Secretary of Health, MHMS.

Dr Junilyne Pikacha, CMO, MCH/FP Unit, MHMS. Responsible for overseeing project activities.

Mr Winston Pitakomoki. CDD Programme Coordinator, MCH/FP Unit, MHMS.

Dr Elizabeth Rodgers. Chief Paediatrician, Central Hospital, Honiara.

Mr Amos Lapo, Senior Nursing Officer for Training, Primary Health Care Division (MHMS). Facilitator of CDD TOT. Assisted with revision of VHWs curriculum, with SCF Australia.

Mr John Muaki, seconded from Nursing Division (MHMS), working with Rural Health Project funded by EEC, involved in Nurse Aide training and revision of curriculum.

Mr Peter Wale, Medical Statistician (MHMS), provides assistance to EEC HIS.

Mr Bolton Hebala, EPI Coordinator, MCH/FP Unit. Supervisory role in National survey.

Mr William Munepolo. Head of School of Nursing, SICHE. Responsible for training of Registered Nurses.

Ms Mary Gavin. Health Training Adviser, MCH/FP Unit, employed by SCF Australia.

MHMS Provincial Level

Dr Graham Stewart-McBride, Director of Health, Malaita Province.

Sister Elizabeth Ilo, Nursing Officer, Honiara Municipal Authority. Responsible for clinics in Honiara, was supervisor during National survey, and assisted in final evaluation survey.

Mr Moses Leoniki. Primary Health Care/Training Officer, Malaita Province. Responsible for health worker training in Malaita, involved in integrated village level workshops, covering MCH issues.

MR Oliver Oli. Health Education Officer, Malaita Province. Involved in integrated village level workshops.

Ms Marylyn Iro. Family Planning Coordinator, Malaita Province. Involved in integrated village level workshops.

MHMS Community Level

Mr Ben Hari. Senior Nursing Officer in Charge. CDC clinic, East Guadalcanal.
Ms Ethel Koavi. Registered Nurse, Visale Clinic, West Guadalcanal. Received CDD training.
Mr Brian Saoba. Registered Nurse/Microscopist, CDC clinic, east Guadalcanal.

Solomon Islands Development Trust

Dr John Roughan, FSP Representative, Advisor to SIDT. Community Development Specialist.

Mr Francis Iro, Field Coordinator for Action Team Theatre Group (SIDT). Theatre group performs plays on diarrhoea, and improved hygiene.

Mr Leven Raspinh, Field Programme Director (SIDT). Responsible for overseeing SIDT Mobile Team activities.

Mr Phillip Rongotha, Training Officer (SIDT). Responsible for Mobile Team training.

Foundation for the Peoples of the South Pacific

Mr Bernard Hosie, Ass. Executive Director.

Ms Kathy Fry, Regional Director.

Ms Suellen Eschenbach, Regional Health Coordinator. Took part in a mid-term evaluation.

Mr Willis Eschenbach, Regional Health Coordinator, assisted in analysis of final evaluation survey data.

Other

Ms Jane Paterson. Health and Nutrition Officer, UNICEF. Supplies ORS to Solomon Islands.

Mr Simon Bourne. Chief Pharmacist, Solomon Island National Pharmacy. Responsible for procurement and distribution of ORS.

Ms Sara Siloko, IEC Officer, SCF Australia. Provided support for revised booklet on home care messages.

Mr Lars Lindhert, Programme Manager, Danchurchaid, Village Education Project. No direct involvement with CDD programme, but involved in similar activities at community level.

Ms Elizabeth Stewart-McBride. Involved in health workshops for Catholic women's groups in Malaita Province.

Mr Geoff Banford, Consultant working with Rural Training Centres in Solomon Islands.

Women in Fue village.

B2. Links with other key health development agencies

The formation of the National Diarrhoeal Disease Control Committee, a multi-sectoral committee comprising a representative from the Health Education Unit, and Nursing Division, the Director of the Malaria Research Centre, Director of Health for Guadalcanal Province, a Paediatrician from the Central Hospital, CMO, MCH/FP Unit, the CDD Programme Coordinator, the FSP Technical Adviser, and the FSP Country Director provided a sound technical and supervisory body to support project activities at the national level. In addition the Committee had access to an informal network of technical expertise to draw upon as and when required.

The Committee met five times during the first year of implementation. However since the departure of the FSP TA, and in the period during which funds were suspended, no meetings between all members of the Committee have been formally convened. Meetings that have occurred have been on an ad hoc basis and have not involved all Committee members. Both the CDD Programme Coordinator and CMO, MCH/FP Unit recognize the valuable input and support the Committee provided to the project over the first year and half of activities.

The Programme Coordinator expressed the difficulty he experienced in implementing project activities on his own, without technical support and guidance, following the TA's premature departure. Reactivating the National Diarrhoeal Disease Control Committee would provide the Programme Coordinator this assistance.

Over the duration of the project strong linkages with other departments within the MHMS have developed, including the Health Education Division (HED), the Primary Health Care Division (PHCD), the Nursing Division, and in particular those departments situated within the MCH/FP Unit, such as the Nutrition Unit. This year the Programme Coordinator provided training to Health Education staff in the Health Education Division (HED) MHMS, on both home care messages and on techniques for effective message transfer. The HED has developed a number of IEC materials for the project, including radio spots, and most recently a series of posters illustrating correct mixing of ORS, and have revised the SAVE leaflet on diarrhoea.

The Programme Coordinator has provided teaching assistance to the Nursing School situated in Solomon Island College of Higher Education (SICHE). Regular contact has continued with SCF Australia regarding the revision of the SAVE diarrhoea leaflet. Links with the EEC through, in particular, the Rural Health Project and Health Information System (HIS) are ongoing. WHO have provided assistance with training materials, and UNICEF continues to supply ORS to Solomon Islands.

Links with community level health development agencies is recognised as weak, and is identified as the key thrust for future CDD programme direction, by both the Programme Coordinator and CMO, MCH/FP Unit.

B3. Local institutions involved in sustaining activities

From the outset, the Programme Coordinator, Winston Pitakomoki, has been viewed as the primary agent in sustaining project activities. This, however, has lessened over the duration of the project with increasing involvement of other groups and organisations.

The key institutions to sustain project activities beyond the period of funding are those currently executing activities. These include: MHMS, in particular the MCH/FP Unit, HED, PHCD; Nursing staff, and hospitals/health centres/clinics/posts; the SICHE School of Nursing; SIDT; SCF Australia; and the Rural Training Centres. These institutions will continue to provide curative and preventive services, information, training, and support to CDD activities at national, provincial and community levels.

B4. Not applicable.

B5. Transfer of skills

Strengthening the capacity of local MHMS staff, in particular the CDD Programme Coordinator, to carry out project activities effectively, was viewed as an integral part of the project and its long term sustainability. On-the-job training for the CDD Coordinator was to be carried out by the FSP TA and would include training in organization of tasks necessary for running the project, monitoring of project activities, and collection, interpretation and distribution of surveillance data. The CDD Programme Coordinator feels the training he

received during the period the TA was engaged with the project, was inadequate for his preparation to run the programme alone. The time period prior to the departure of the FSP TA was insufficient to prepare the Programme Coordinator to implement project activities unaided. In particular his position would have benefited from further training in managerial, organizational, administrative and computer skills. Plans to send the CDD Coordinator for training at CDC in Bangladesh were not followed up.

The Programme Coordinator has had to develop managerial, administrative and training skills necessary to implement planning activities, very much on his own. SCF Australia provided funds for the CDD Coordinator to attend a basic computer course, and in 1992 WHO funded the Coordinator to attend a training workshop, "Guidelines for Conducting Clinical Training Courses at Health Centres and Small Hospitals". The workshop provided the Coordinator with training materials and a grounding in training techniques and skills, which have been instrumental to project implementation.

Nurses involved in the Baseline survey as enumerators received comprehensive training in administering a relatively complex questionnaire investigating not only knowledge and practice associated with diarrhoeal disease, but also related child mortality. In addition a maternal mortality survey was also attached to the diarrhoeal disease survey. SIDT MTM involved in the Final Evaluation Survey received approximately one day of basic training in interview techniques, recording responses, and the importance of collecting correct data.

B6. Ability to continue to provide resources

The CDD Coordinator's position held by Mr Winston Pitakomoki is a permanent position within the MCH/FP Unit. Training will continue on a regular basis, due to the integration of training programmes and the ongoing availability of funds from other donors such as UNFPA, and also MHMS. Involvement of the HED has increased sustainability of CDD activities beyond the period of funding, through commitment of staff and funding to carry out integrated health education activities, with will include CDD activities.

SIDT has integrated CDD activities into its regular workshop programme, and provides a sustainable structure through which CDD activities will continue.

B7. Effective activities

The MHMS considers activities concerning training and retraining of health workers an effective intervention, but recognizes the importance of increasing outreach activities which extend beyond the formal health structure to include networks operating at the community level.

B8. Phase over of responsibilities

Responsibility for all project activities, including expenditure has been controlled by local institutions, namely MHMS and SIDT, since February 1994. The departure of FSP's TA/Project Manager at such short notice meant there was no phase over of responsibilities, but rather the MHMS was left to continue project activities as best it could.

B9. Financial Commitment

The MHMS funds the post of Programme Coordinator, and provides opportunity for integrated training through other categorical programmes. In addition MHMS provides office space etc.

B10. Success/Failure of commitment

The MHMS has honoured commitments made, as high priority is given to addressing CDD.

B11. Assistance with design, implementation etc.

The MHMS has been instrumental in all stages of the CDD programme cycle, albeit financial management, however the mid-term evaluation did not take place. Other agencies to assist in programme design include SCF Australia and WHO.

SIDT agreed to represent FSP for the remainder of the project, and has been collaborating with MHMS in implementation of community level activities since February 1994. SIDT Mobile Team Members assisted in the final evaluation survey, and the FSP Representative was a member of the final evaluation team.

C. ATTEMPTS TO INCREASE EFFICIENCY

C1. Reduction of costs and increase in efficiency

Project activities have been well integrated into other MCH training activities. For instance

CDD refresher training were combined with training on ARI, EPI and family planning etc, and the costs split between departments, and therefore funding sources.

Similarly involvement of SIDT provided a cost effective mechanism through which to reach the household level, and combine CDD activities with ARI training. The involvement of SIDT increased productivity at the community level through utilisation of an existing network of Mobile Teams.

C2. Reasons for success or failure of attempts to increase project efficiency

A major obstacle to project efficiency was undoubtedly the removal of technical and managerial expertise at short notice. Also, suspension of funding created an environment in which it was difficult to plan activities.

Success in increasing efficiency can be traced to the overall integrated nature of the CDD programme with other MHMS activities, not least, within the MCH/FP Unit.

C3. Not applicable.

D. COST RECOVERY ATTEMPTS

D1. Not applicable.

D2. Not applicable.

D3. Not applicable.

D4. Not applicable.

D5. Not applicable.

E. HOUSEHOLD INCOME GENERATION

E1. Not applicable.

E2. Not applicable.

E3. Not applicable.

E4. Not applicable.

F. OTHER

F1. Sustainability activities

From the start the project has been fully integrated into MHMS activities and has formed the core of the National CDD programme, as originally proposed. Indeed had the project not been institutionalized within the MHMS structure, events that occurred during 1993 may have been more disruptive to programme development.

The assignment of a National Diarrhoeal Disease Coordinator by the MHMS to work with the FSP TA/Project Manager in executing activities has been key to project sustainability. The later involvement of SIDT has greatly increased sustainability of community level activities through integrating CDD activities with a well established and experienced network of community based resource persons, who carry out educational workshops.

F2. Satisfactory implementation of sustainability activities

The lack of involvement of community based groups such as women's, and church groups, referred to in the DIP as key to project sustainability is regrettable. Steps were taken during the first year and a half to involve these groups, including other NGOs working at the community level. However, these initial links were never followed through. Although the involvement of SIDT has enhanced project development at the community level, the failure to involve specifically health oriented community groups has perhaps reduced overall impact of project activities.

Nevertheless, it must be emphasized that the involvement of SIDT has benefited implementation of CDD activities in a number of ways, many of which have been referred to above. SIDT's involvement effectively replaced the epidemiological expertise, provided by the FSP TA/Project Manager, with technical expertise in community development³¹, and this has formed a significant factor in overall sustainability efforts.

³¹ Dr John Roughen, SIDT Adviser and FSP Representative is a Community Development specialist.

F3. Qualitative indications of a change in sustainability of project benefits.

FSP has had no direct involvement in project activities since May 1993 and therefore has no qualitative data on which to indicated change in sustainability potential of project benefits. Nevertheless the MHMS is increasing efforts to expand community level activities through both the formal health structure and through collaboration with SIDT.

SIDT has included CDD education in village level workshop activities, and will continue to provide CDD information to care givers.

III Evaluation Team

1. Ms. Megan Douthwaite
Independent Consultant
2. Mr Winston Pitakomoki
CDD Programme Coordinator
MCH/FP Unit
Ministry of Health and Medical Services
Honiara,
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3. Dr John Roughan
FSP Representative
Solomon Islands Development Trust
Honiara
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A2. Author

All sections of the report other than sections B1 through B4, concerning project finances were written by:

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RECOMMENDATIONS

Policy

- The National Diarrhoeal Disease Control Committee should be reconvened and tasked with incorporating revised treatment protocol for Shigella into draft National Policy on Diarrhoeal Diseases;
- The Minister of Health should submit draft National Policy on Diarrhoeal Diseases to Cabinet for adoption;

Monitoring

- The present evaluation was unable to assess impact in terms of project objectives as the data which are collected in the comprehensive Solomon Island EEC HIS are not representative and are susceptible to massive under-reporting. Routine information is also required for monitoring and programme management functions. The Programme Coordinator should be shown how to use the CDD HIS developed by the FSP TA, and this should be operationalized to facilitate both the monitoring of project activities and a number of key impact indicators.

Improvements will have to be made to the comprehensive Solomon Island EEC HIS as well, if the CDD HIS is to benefit from this system. This aspect of the project requires further study and when the HIS is next reviewed, a number of improvements should be considered. These might include, for example, monitoring of ORS treatment given at health facilities. Further refinement of the HIS should consider home based records. If the MHMS is considering adopting UNFPA/WHO Maternal home based records, CDD should be included;

- Given the difficulties in monitoring WHO/UNICEF recommended CDD indicators and the current weakness of the HIS in this regard, it is recommended that funding be sought to conduct a repeat national survey in 2000 to determine impact, or, in keeping with the Policy for Control of Diarrhoeal Diseases and Plan of Operation, CDD surveys should be conducted every 2 and a half years in combination with EPI and ARI surveys;

Training

- The project envisioned training 12 physicians in case management. This critical component, which was not implemented, should be urgently addressed. WHO should be approached for technical assistance and UNICEF for financial support to this end;
- In light of the high drop out rate among Village Health Workers, the project should not rely on further training of VHWs but should instead place greater emphasis on the training of the leadership of appropriate community organizations;
- The Coordinator should develop a training plan for the trainers who have received training and provide them with adequate support and supervision to undertake training of community leaders;
- The Programme Coordinator should accompany SIDT Mobile Teams to assess effectiveness and impact of CDD message transfer at the household level;
- Greater emphasis should be given to preventive messages, and on the important role of safe water and improved sanitation in the reduction of diarrhoeal diseases. This would enable communities to make informed choices regarding community development priorities;

Community Participation

- The ultimate aim of this project is behavioural change at the household level. Therefore, the logical framework of the project placed a great deal of importance to the involvement of community based groups outside of the formal health structure. Perhaps the weakest component of the project has been activities in the area of community outreach. Consequently, there is a need to prioritize the development of linkages between the CDD Coordinator and, at a minimum, the following groups: Women's Interest Section of the Ministry of Youth, Sports and Women, and Danchurchaid;
- The Programme Coordinator should familiarize himself with the evaluations carried out

by Danchurcaid on the Village Education Programme so as to draw upon their experience in community level work

IEC Materials

- The production of IEC materials drawing upon the various media remain a critical and underimplemented aspect of the project. Greater attention, including budgetary allocations, should be given to IEC development. The Programme Coordinator should strengthen links with the SCF Australia Information Officer who is currently experimenting in this area. Consideration could be given to approaching UNICEF's Social Mobilization in this regard;
- Although increasing emphasis is being put on production of IEC materials insufficient quantities have been produced for sustainable national dissemination;
- Greater consideration should be given to drawing upon existent dissemination networks for increased IEC coverage.

Service Delivery

- Practical demonstrations on correct mixing techniques of ORS should be given greater priority by health workers. The importance of practical demonstrations to care givers should be repeatedly emphasized throughout training and refresher courses;
- The Programme Coordinator should consider reopening negotiations with Primary Health Care Division so as to solicit their support for the establishment of ORT Corners in all Provincial Hospitals;
- Given the acceptability, affordability, accessibility and efficacy of coconut water as an ORT fluid, the programme should promote it on an equal footing with ORS;
- Serious consideration should be given prior to the adoption of the proposed activity to encourage a social marketing approach to ORS, in the light of acceptability, accessibility and efficacy of coconut water;

Administration

- Further training in word processing should be provided to the Programme Coordinator to facilitate project communications, documentation and monitoring;
- The Ministry of Health and Medical Services should consider establishing the post of Assistant Programme Coordinator to assist with maintenance of the CDD HIS and communications;
- The Programme Coordinator needs to accord higher priority to reporting and administration activities (keeping files, activity reports etc);

Further study

- The baseline survey did not elicit information on care givers understanding of the etiology, social meaning and traditional / "custom" treatments surrounding diarrhoea. Moreover, the final evaluation survey indicated the high rate of use of traditional or "custom" medicine in the treatment of diarrhoea. This area deserves further investigation for its potential impact on the success of CDD interventions and communications strategies and messages.

APPENDIX A

Executive Summary

In May-June 1992, the Ministry of Health and Medical Services and Foundation for the Peoples of the South Pacific, Solomon Islands conducted a national diarrhoeal diseases survey. The purpose of the study was to: (1) determine the incidence of diarrhoea among children under five years, (2) assess home treatment practices for diarrhoea and (3) estimate diarrhoea associated mortality among children. Researchers sampled 4020 children from 40 clusters representing the entire country. Surveyors interviewed guardians in their homes about new diarrhoea cases in the last two and any case in the last week. Information on diarrhoea in last two weeks was used to estimate incidence rates. Among cases in the last week, surveyors asked questions on feeding, fluids, ORT, referral and drug treatments. All interviewees were also questioned on childhood mortality and diarrhoea associated deaths among under 5's.

The attack rate for diarrhoea was 3.5 attacks per child per year. The most common fluid given for the prevention and treatment of dehydration was coconut water. The proportion of children receiving packaged ORS was 28.3% in 1986, but only 12.6% in this survey. This difference was statistically significant. Of the 12.6% of children who received ORS, only 1 out of 3 received correctly prepared ORS. Few children received sugar salt solution and none of these fluids were mixed correctly. Most likely children received insufficient quantities of any rehydration fluid. Of children who were breastfeeding, 95% continued to receive breast milk. Of those on solids, 66% continued to be fed. About 29% of cases were correctly managed. The proportion of childhood deaths from diarrhoea was estimated to be 14% with 1.7 deaths per 1,000 children per year due to diarrhoea. With 65,000 children under 5 years in the Solomon Islands, this is equivalent to 111 deaths.

To further reduce the mortality from diarrhoeal diseases, an effective national health education campaign is needed. This campaign should include, among other things, additional training for all health workers and the production of education materials. Use of sugar salt solution and coconut water needs to be further reviewed for use in Solomon Islands.

Seasonal Adjustment for Annual Attack Rate

To adjust the annual attack rate for season, the unadjusted attack rate for the two week period is multiplied by an adjustment factor. The adjustment factor is one half the number of cases in the month the study was completed divided by the total number of cases for the year. We used June as the study month. The incidence for the two week study period is multiplied by the adjustment factor or $.1127 \times .0322 = 3.5$ attacks per child per year. To obtain, 95% confidence intervals, the upper and lower confidence intervals for the unadjusted figure is multiplied by the same adjustment figure.

Diarrhoea Cases By Month For 1991^a Statistics Unit, Ministry of Health and Medical Services

Months

Age:	Jan	Feb	Mch	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
<1 yr	366	197	177	142	205	197	238	223	263	216	260	193	2677
1-4 yrs	761	547	480	512	543	437	694	726	645	689	536	597	7167
Total	1127	744	657	654	748	634	932	949	908	905	796	790	9844

2 WEEKS INCIDENCE = $.1127$ or $453/4020$

ADJUSTMENT FACTOR = $(634 \times .05) / 9844 = .0322$

seasonally adjusted to 3.5 attacks per child per year or $.1127 / .0322$

lower 95% confidence interval = $.0897 / .0322$ or 2.8

upper 95% confidence interval = $.1357 / .0322$ or 4.2

APPENDIX B

MATERNAL CHILD HEALTH TRAINING SCHEDULE
FOR NURSING REFRESHER COURSES

1991

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8.00 to 9.00	WELCOME MCH/FP WORK 1990	CDD TREATMENT OF DIARRHOEA PT, CHECK FOR OTHER PROBLEMS	SCHOOL HEALTH Examining Child and vaccination schedule.	OBSTETRICS Labour - Normal Cervicograph.	NUTRITION Ways to improve Nutrition
9.00 to 10.00	MATHS Review of basic calculations for targets.	CDD CONTINUE	SCHOOL HEALTH Healthy living in School	OBSTETRICS Labour - Abnormal Cervicograph	NUTRITION Group Discussion
10.30 to 12.00	PRE-TEST	CDD PREPARE ORS SOLUTION VIDEO, MAKING THINGS CLEAR	TARGET oriented programming	OBSTETRICS Identification of prematurity & SGA Video: Low Birth Wt	EPI. Tet Tox for Preg Mothers
1.00 to 2.30	CDD Introduction HOME CARE	CDD RECORDING AND REPORTING	FAMILY PLANNING Clinic records Follow up system for drop-outs.	OBSTETRICS Postnatal visits. Mothers Health Book	POST TEST
3.00 to 4.00	CDD ASSESS DEHYDRATI STATUS. VIDEO ASSESSMENT OF DEHYDRATION	CDD SUMMARY VIDEO. LIKLIK GERM	FAMILY PLANNING Importance of FP Review of plan of action	OBSTETRICS REPORTING S/B N/N & MATERNAL MORTALITY	EVALUATION CLOSING.

MATERNAL CHILD HEALTH WEEK - NURSES REFRESHER COURSE 1993

2nd WK

Time	Monday	Tuesday	Wednesday	Thursday	Friday
8.00 am 9.00 am	Opening Programme Pre Test	Ante natal History Taking Calculate EDD	School Health Programme	E P I coverage cold chain	C D D Case management (case studies)
9.00 am 10.00 am	Community Health Diagnosis	Labour Cervicograph	School Health Immunisation	E P I Integrated disease surveillance	C D D Case management (video)
B R E A K					
10.15 am 12.00 pm	Community Health (continue)	Labour (continue)	School Health (continue)	E P I (continue)	Advising Mothers Introduction
L U N C H					
1.00 pm 2.00 pm	Disability	Family Planing Filing system	Nutrition Growth Monitor Anaemia	C D D Introduction Survey Result	Advising mothers (continue)
B R E A K					
2.15 pm 4.00 pm	Disability	Family Planing (continue)	Nutrition Breast feeding	C D D Case management leaflet review	Advising Mothers (continue)

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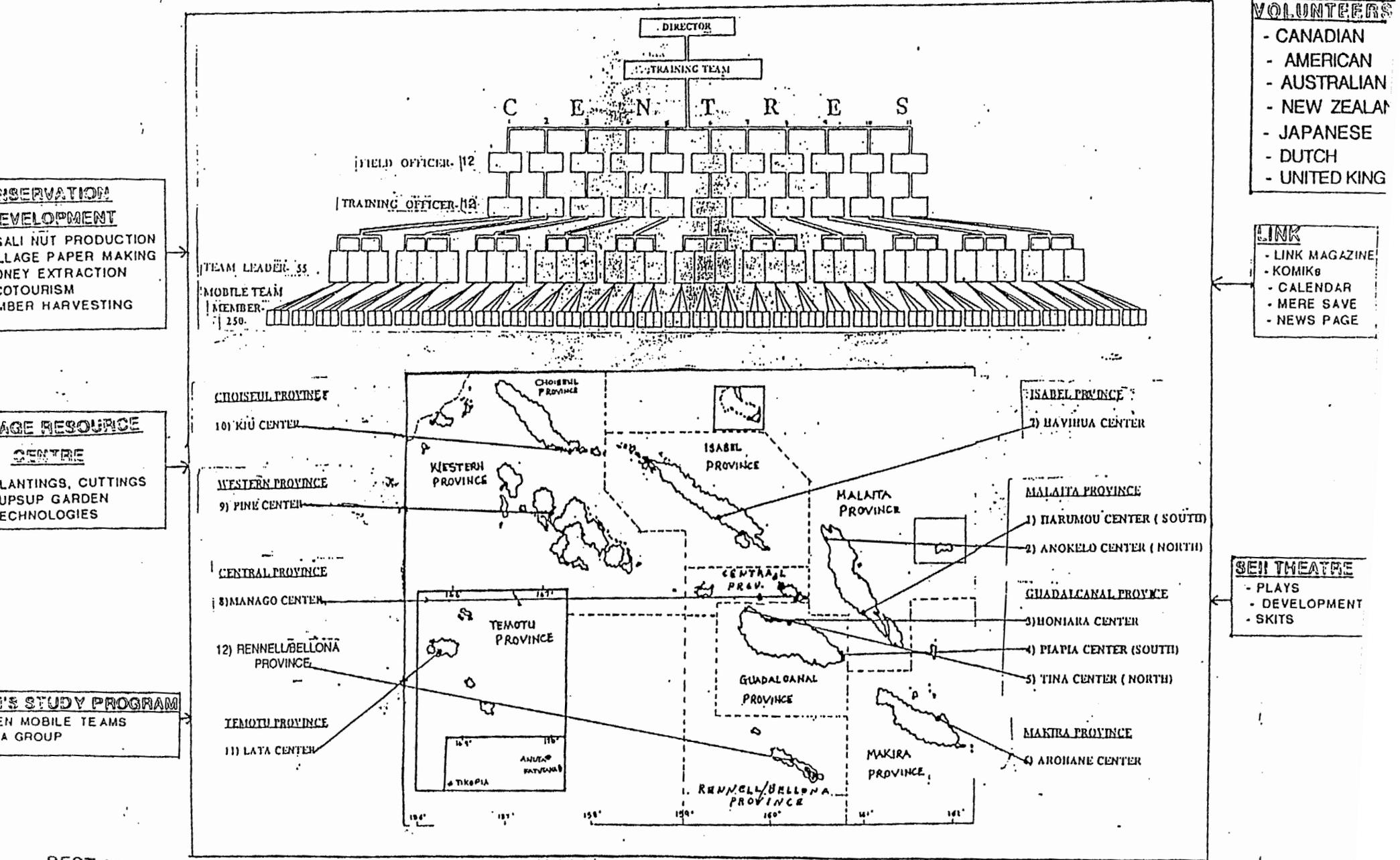
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APPENDIX C

DEVELOPMENT TRUST

LINKS TO THE VILLAGER



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APPENDIX D

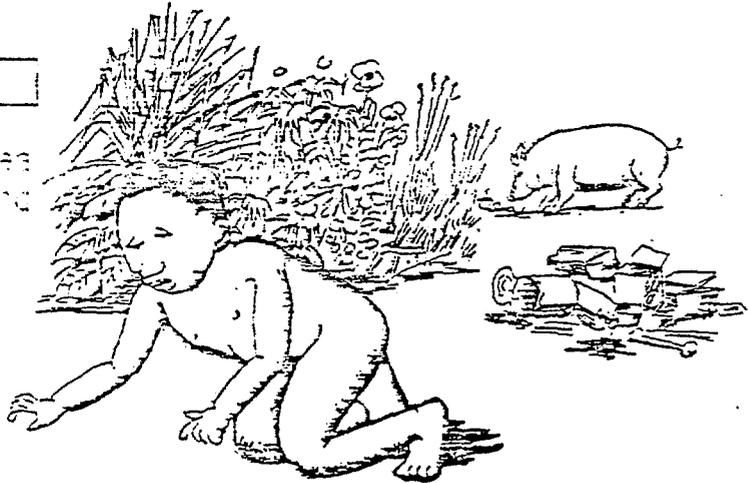
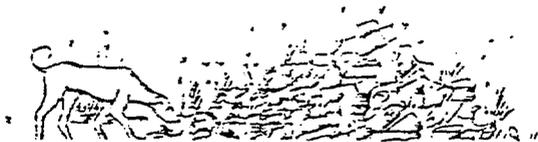
NUTRITION FACT SHEET

DIARRHEA

Diarrhea is widespread in many tropical countries, also Solomon Islands. It is the fourth most common cause of death among infants and children under three years in the world.

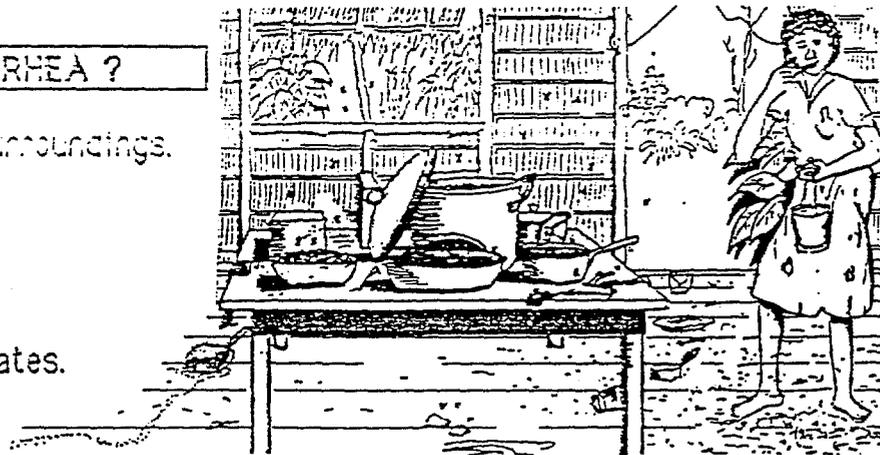
WHO GET DIARRHEA ?

Everybody can get diarrhea. But diarrhea is most dangerous to small, pikinini and underweight pikinini.



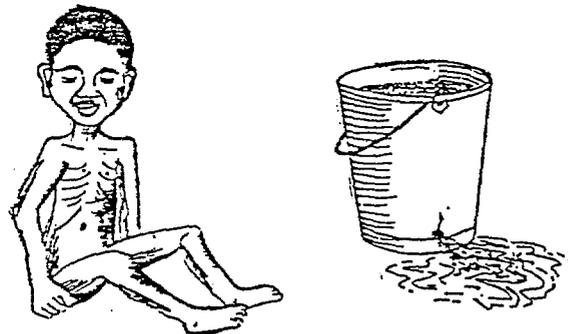
WHAT CAUSES DIARRHEA ?

- Infections due to dirty surroundings.
- The food is not clean.
- Unclean water
- Dirty cups, spoons and plates.



WHY IS IT DANGEROUS ?

Diarrhea is dangerous because, like a leaking bucket, the child will loose a lot of water from the body. Just like the bucket will dry up also the body of the child will dry up. When diarrhea is severe the child may die.



WHAT EVERY MOTHER SHOULD KNOW ...

HOW TO MAKE AND GIVE ORS AT HOME

Mix 1 packet of ORS with 1 litre of water. (1 litre is the same as 5 coffee cups). If you don't have any ORS packets, you can still make it yourself using salt and sugar.

Mix 1/2 a teaspoon of salt
and 2 tablespoons of sugar
with 1 litre (5 cups) of water.



1. Let the child drink as much as she can.
2. The child should drink one cup full after every diarrhoea stool is passed or 1 cup of drink every 2 - 3 hours.
3. If the child vomits after drinking, wait 10 minutes and then give her more to drink.
4. If the child is still breastfeeding, then feed her the ORS by spoon but still continue breastfeeding at the same time.
5. Make sure the spoons, cups and container for the drink are clean.

For more information contact Health Workers at Rural Health Centres, Clinics and hospitals.

"SAVE" Project

Save the Children Fund Australia

P O Box 1149, Honiara, Solomon Islands.

Telephone: 23842.



CHILD HEALTH! SERIES

CARING FOR YOUR CHILD



DIARRHOEA

DIARRHOEA

Diarrhoea or **belli run** is a common illness in Solomon Islands, especially among children. Diarrhoea is dangerous because it can cause a child to lose a lot of water from his body. If the water is not replaced the body can dry up and that is when a child can die.

CAUSE

Diarrhoea is caused by germs that enters the body through:

- drinking dirty water or eating dirty food
- eating with dirty hands
- dirty house or area
- eating and drinking with dirty cups, plates and spoons.



DANGERS OF DIARRHOEA

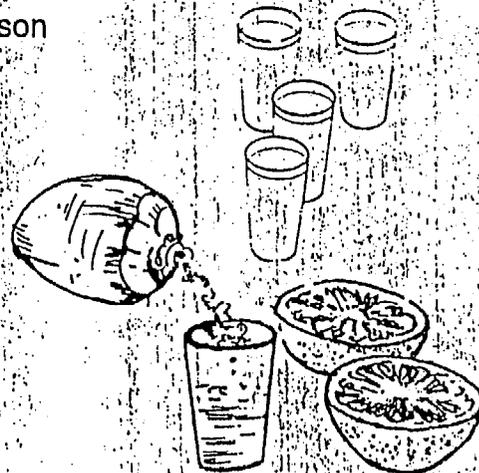
There are two main causes of death due to diarrhoea.

1. Dehydration - this is when the child's body loses a lot of water and becomes dry.
2. Malnutrition - this is when a child has diarrhoea often, loses weight and his body becomes thin.

TREATMENT

You must replace the water the person lost by giving plenty to drink and eat.

1. As soon as diarrhoea starts, give your child plenty of fluids like:
 - green coconut water
 - fresh fruit juice
 - clean water
 - cool weak tea
 - oral rehydration solution (ORS)
 - sugar /salt drink.



One of the fluid drinks should be given when the child is thirsty but fluids must be given each time a loose stool is passed in order to replace water that the child is losing.

2. Give your child plenty of food:

- breastfeed often
- food as potatoes, yam, taro, fish, eggs, coconut and meat.
- fruits and vegetables.



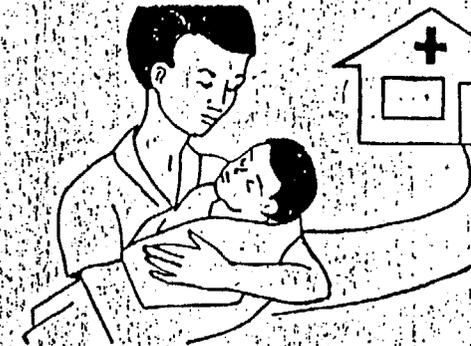
IMPORTANT

Take your child to the nearest clinic to the nurse if the child:

- passes many watery stools
- is very thirsty.
- has fever
- has blood in the stool
- has dark yellow urine
- losses weight
- does not get better in 3 days

PREVENTION

- continue breastfeeding your child until he reaches two years; do not use feeding bottles.
- eat clean and fresh food. Wash both your hands and the child's before eating and after toilet.
- have your child immunized against measles at 9 months of age.
- use only clean spoons, cups and plates.
- prevent flies, rats and cockroaches from having contact with food.
- do not give your child cooked food that has been stored for more than one day.
- use a proper toilet
- keep your child from swimming or playing near toilet areas.



Take him to a clinic or hospital if he is still after 24 hours

4. YOU CAN PREVENT DIARRHOEA BY :

- giving only breastmilk for the first 4 - 6 months and continuing to breastfeed for the first year. Do not bottle feed
- introducing clean, nutritious weaning foods at 4 - 6 months
- giving your child freshly prepared and well cooked food and clean drinking water
- keeping cooked food away from flies
- keeping plates, spoons and cups clean and away from flies
- having your child immunised (nila) against measles
- having all family members wash their hands with soap after going to the toilet and before eating or preparing food
- having all family members use a proper toilet
- quickly throwing away the stool of a young child in the toilet

Produced for: The Diarrhoea Project,
Ministry of Health and Medical Services
Honiara

Funded by: USAID

Produced by: SAVE Project, Save the
Children Fund Australia, PO Box 1149,
Honiara

Artist: Marcellin Maetarau



HOW TO TREAT DIARRHOEA AT HOME



Diarrhoea can kill a child when the body
up (dehydrates). But you can prevent

1. GIVE THE CHILD PLENTY TO DRINK



As soon as diarrhoea starts, you must give your child plenty to drink all the time. Good drinks include:

- plain water
- coconut water
- breastmilk (if the child is still breastfeeding)
- supsup with a lot of water or coconut milk
- ORS (Oral rehydration Solution)

WHY GIVE A CHILD PLENTY TO DRINK?

Diarrhoea causes a child's body to lose a lot of water and other important fluids. The body can dry up which can cause your child to die.

IT IS IMPORTANT THAT ANY DRINK WHICH IS GIVEN TO THE CHILD MUST BE CLEAN

2. FEED THE CHILD WITH:

fresh foods such as vegetables, meat and fish cooked in lots of water or coconut milk and encourage the child to drink the soup water

fresh fruit juices or bananas

as much of any good food that the child wants six or more times a day

very well mashed food so it is easier to digest

one extra meal each day for one week after the diarrhoea stops



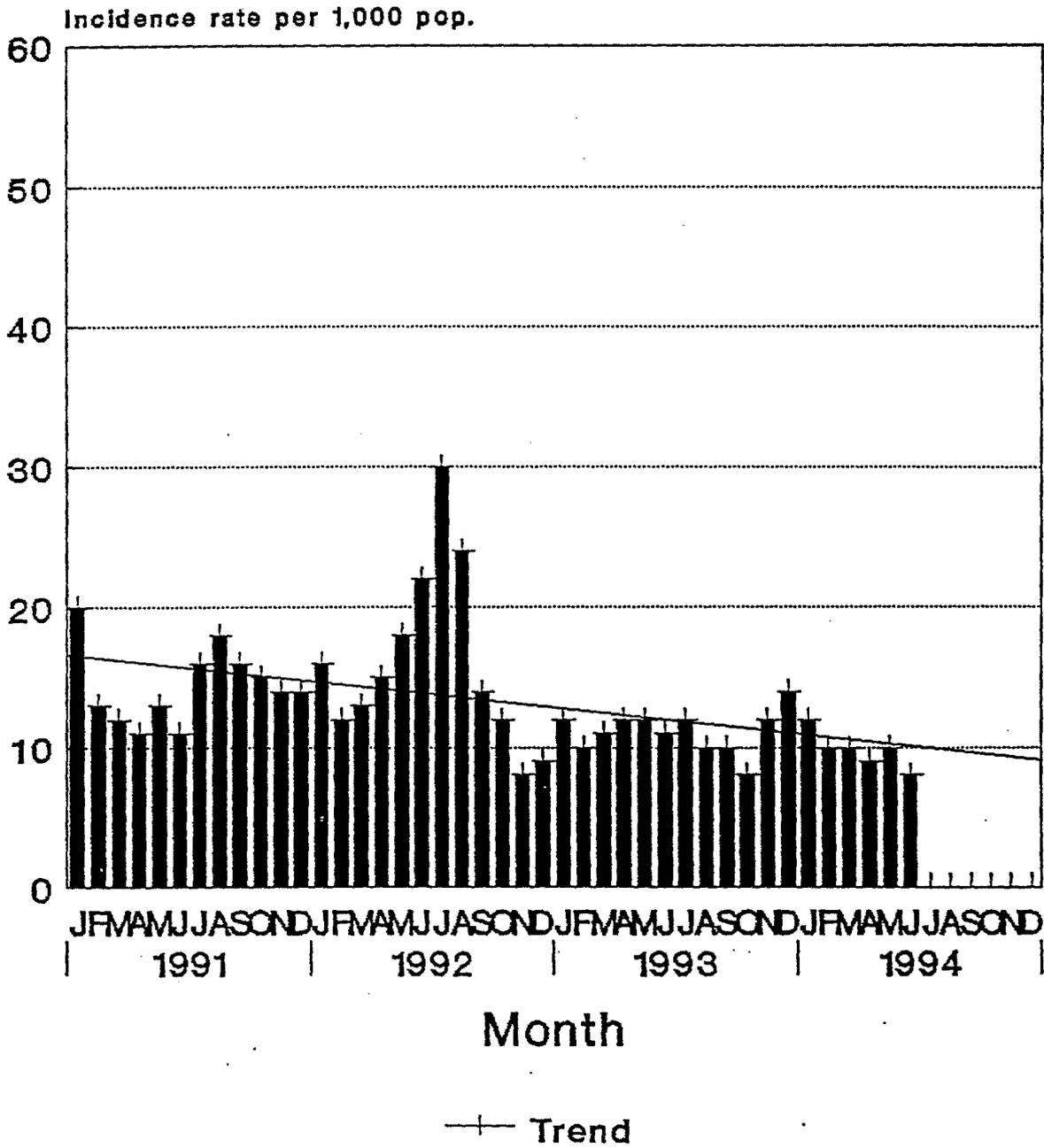
3. TAKE YOUR CHILD TO THE CLINIC IF THE CHILD:



- passes many stools (is very thirsty)
- has sunken eyes
- has blood in the stools
- does not eat or drink
- has fever
- does not seem to be getting better

APPENDIX E

Incidence rate of Diarrhoea in Under Five population in Solomon Islands



APPENDIX F

DRAFT

Policy for
Control of Diarrhoeal Diseases
And
Plan of Operation

Date: 25 March 1993

Prepared by:
Maternal and Child Health Unit
Ministry of Health and Medical Services
Honiara, Solomon Islands

CDD Programme Policies

1. Preamble

A cluster survey conducted in 1992 showed that control of diarrhoeal diseases is a priority programme in the country. Each child under 5 was attacked 3.5 times per year with diarrhoea. Diarrhoea was also responsible for 14% of all childhood deaths.

Although some efforts have been given to this programme, there is much to be done. Improved case management is the primary strategy for decreasing diarrhoea mortality in children under 5 years of age. Environmental, behavioral and socioeconomic changes will lead to reduction in morbidity.

At this stage, the programme should focus on increasing use of effective case management and educating the communities, especially care takers, about home therapy and when to seek medical assistance. Education should be done individually, in small groups, in large groups and through campaigns. A number of methods will be required to educate persons including radio shows, theatre groups, church groups, schools and from health staff. Education will be accomplished with the assistance of the Health Education Division, Primary Health Care Division, Women's Development Division, other divisions in the MHMS, other related Ministries and Non-governmental Organisations (NGO's).

2. AIM

2.1 To reduce the morbidity and mortality of diarrhoeal diseases in children under 5 years of age.

3. OBJECTIVES

The following objectives are based on the 1992 national diarrhoeal disease survey. The objectives are:

- 3.1 To increase the percent of children receiving oral rehydration therapy (i.e. coconut water or packaged ORS) from 60% to 80% of all cases by 1998.
- 3.2 To increase the percent of guardians making ORS correctly from 33% to 60% by 1998.
- 3.3 To insure that 95% of all mothers continue to breast feed during an attack of diarrhoea through 1998.
- 3.4 To increase the percent of guardians which continue to feed children solids during an attack from 66% to 85% by 1998.
- 3.5 To decrease the percent of children who received antibiotic therapy for watery diarrhoea from 6% to 2% by 1998.

- 3.6 To increase the number of caretakers from 40% to 65% who know at least two reasons to refer a child with diarrhoea to health personnel by 1998.
- 3.7 To increase the proportion of children with diarrhoea who receive correct management for diarrhoea (i.e., increased fluids and continued feeding) from 28% to 40% by 1998.
- 3.8 To increase the proportion of the population with access to ORS from ??% to ??% of the population by 1998.
- 3.9 To annually evaluate the progress made in the control of diarrhoeal diseases in the country.

4. STRATEGIES

4.1 Home Therapy.

Family members can prevent dehydration and provide early treatment in the home to a child with diarrhoea. They should give the child with diarrhoea increased amounts of fluids and continue to feed him/her.

Continue to breast feed a child with diarrhoea.

The recommended fluid for home therapy is green coconut water, and ORS packets. If green coconut water or ORS packets are not available, use fresh fruit juice or water.

It is important that a child with diarrhoea continue to be given food. Recommended food includes mixtures of staples such as sweet potato, pumpkin, fish and green leafy vegetables, cooked in coconut milk. Fruits such as ripe banana, pawpaw, oranges, and mangoes should also be given.

Family member should seek medical treatment from a clinic, area health centre or hospital for a child with diarrhoea if the child has any of these signs:

- *passes many large amounts of watery stool
- *is very thirsty
- *has sunken eyes
- *does not eat or drink normally
- *seems not to be getting better
- *passing no urine
- *has blood and/or pus in stools

Families should seek treatment at the nearest health facility or go to a nearby health worker. ORS would be made available to the public in all health facilities.

Sugar salt solution will not be recommended as a rehydration fluid because:

too complicated to prepare and use. The 1992 national survey showed no mother in the Solomon

Islands could make sugar salt solution correctly.
In many cases the mixture was too concentrated.

sugar salt solution has not been effective in other countries even after extensive education campaigns (i.e., Bangladesh).

all urban persons and most rural villagers will have access to ORS or coconut water. Where access is limited, then other household fluids can be substituted.

4.2 ORS Use.

ORS packets will be of a one-litre size and clearly indicated as "Oral Rehydration Salts" and be of one brand if possible to avoid confusion.

ORS should be given in health facilities and by community health workers to all diarrhoea cases. Mothers should be taught how to give a child with diarrhoea increased fluids and to continue to feed the child and be shown how to mix and give the solution.

Outpatients should be given enough packets of ORS for the diarrhoea episodes. About 2 one litre packets.

ORS will be provided free of charge at all government health facilities and by village health workers.

ORS must be freshly made each day. Discard already mixed ORS after 24 hours.

See Annex A for case management chart (i.e. how much and how often).

4.3 Intravenous/Nasogastric Use

If a child with diarrhoea has dehydration and is unable to drink, a nasogastric tube should be inserted and ORS given before an IV drip.

Nasogastric tubes should always be available in clinics and health centres. Intravenous fluids should always be present where appropriate.

Recommend solution for IV-therapy is half strength Darrow's solution. If unavailable use dextrose saline or normal saline.

Continue to breast feed a child on IV therapy. Give a child on nasogastric tube expressed breast milk. If the child is on solids, feeding should be continued.

In areas where referral is difficult, all nursing staff should be able to provide nasogastric tubes or intravenous fluids for

severely dehydrated children. Children with severe dehydration must receive rehydration with nasogastric tubes or intravenous fluids before referral.

See Annex A for case management chart (i.e. how much and how often).

4.4 Use of Drugs

The use of antibiotics for treatment of diarrhoea is usually not appropriate and should be avoided.

Where there is blood in the stool, the health worker should treat for Shigella dysentery and give Chloramphenicol four times a day for seven days. If there is no response to chloramphenicol in two days then refer to hospital for further management. A recent analysis of 1992 data from the laboratory at Central Hospital shows the sensitivity patterns of *Shigella* spp. to various antibiotics. See annex B.

Use antimalarials for children with diarrhoea and fever.

Antidiarrhoea drugs should not be used.

4.5 Prevention (See Annex C for strategies).

If implemented along with oral rehydration therapy, these interventions could markedly reduce the rates of both morbidity and mortality due to diarrhoea disease among young children. They are:

- *breast feeding
- *improved weaning practices
- *use of plenty of clean water
- *hand washing
- *use of latrines
- *proper disposal of children's stools
- *measles immunisation
- *reduction in malnutrition

4.6 Training

All health staff and community health workers currently in the field should be retrained through refresher course, workshops and supervisory tours according to the above policies before 1995.

All curriculums for preservice training at the school of nursing or initial community health worker courses should reflect the above policies.

4.7 Establish Oral Rehydration Corners.

Oral rehydration corners should be established at national and provincial hospitals, area health centres and clinics. This

should be used for teaching purposes of the health workers and care givers as well as for treatment of mild to moderate dehydration.

4.8 Community Awareness Education

Education of the community should be done individually, in small groups, in large groups and through campaigns. A number of methods will be required to educate persons including radio shows, theatre groups, church groups, schools and from health staff. Education will be accomplished with the assistance of the Health Education Division, Primary Health Care Division, Women's Development Division, other divisions in the MHMS, other related Ministries and Non-governmental Organisations (NGO's).

5. POLICY OF IMPLEMENTATION

The CDD programme should be implemented as an integral function of the general health care services at the national and provincial level and through private health services.

Health education to improve the general awareness of the community of the importance of prevention of dehydration and continued feeding as well as the important preventive strategies should be continuously carried out by health educators, all health workers, teachers and all other responsible people.

Given the unique abilities of NGOs to provide outreach services, NGOs should be involved in the planning and implementation of CDD activities in both urban and rural communities.

The national policy implementation, review and programme implementation shall be coordinated by the MCH/FP Unit and reported to the office of the Undersecretary of Health Improvement of the Ministry of Health and Medical Services. The provincial activities be coordinated by the Director of Health and Medical Services in the province.

Central and provincial pharmacies shall provide adequate supplies of ORS for nurses and community health workers and they should order sufficient supplies regularly. Nasogastric tubes and IV fluids for nurses and doctors to use in severely dehydrated children must also be made available to clinics, health centres and hospitals. Chloramphenicol should also be made available for the treatment of dysentery caused by *Shigella spp.*

6. DISEASE SURVEILLANCE AND OUTBREAK CONTROL

Provincial hospitals and are health centres should be used as sentinel surveillance sites for diarrhoeal disease to provide a more complete picture of morbidity and mortality and child on quality of case management, personal communication and

education and quality of routinely reported data.

Outbreaks of diarrhoea should go through the Director of Medical and Health Services and the national CDD coordinator or CMO of MCH Unit who shall inform the Undersecretary of Health Improvement.

Control of outbreaks should be organised and managed at the provincial level with support from the national level as required.

7. MONITORING AND EVALUATION

Improvement in the efficiency of the reporting system is required. Accurate reporting of diarrhoeal diseases are essential for monitoring and evaluation of the CDD programme. CDD surveys should be conducted every 2.5 years preferably in combination with EPI or ARI programme, to evaluate the CDD programme.

Mortality due to or associated with diarrhoea must be recorded and reported at clinic, provincial and national levels.

8. RESEARCH

The Solomon Islands has a unique social, environmental and human ecological. Thus, health policy makers and program implementers have unique challenges to the development of effective interventions not found in other areas of the world. Thus, limited research, when resources permit, will be required to advance the understanding of the microbiology, epidemiology and implementation of diarrhoeal disease control. Specific requirements include:

- a. identifying causative pathogens and, when appropriate, antibiotic sensitivity patterns of pathogens, such as, Shigella spp. . This should occur in provinces as well as urban areas.
- b. determining knowledge, attitudes and practices of rural and urban persons toward both the prevention and treatment of diarrhoeal diseases.
- c. examining the epidemiology of diarrhoeal diseases specifically defining those at highest risk of morbidity and mortality.
- d. conducting operations research on educational methods best suited for changing health practices related to both the prevention and treatment of diarrhoeal diseases.

TARGETS AND SUBTARGETS BY 1994

I. Targets

a) Mortality reduction

By 1998, reduce mortality due to diarrhoea in children under the age of 5 years from 14% to 10%.

b) Morbidity reduction.

By 1998, reduce the incidence of diarrhoea in children under the age of 5 years from 3.5 to 3.0 cases per child per year.

II. Subtargets

i) Planning

a) establish a draft national CDD plan of operation by 1994.

b) increase ORS access from ??% to ??% by 1995.

c) increase ORT use to 80% by 1998.

d) Others

1. Prepare CDD Training materials for health workers in-service training programme by January, 1993.

2. Prepare training materials for supervisory skills course by February, 1993

3. Prepare information, education and communications materials for CDD prevention and control by February, 1994.

ii) Training

1. Supervisory Training. By 1995, achieve and maintain a proportion of at least 90% of staff in supervisory position trained in supervisory skills course.

2) Clinical Management Training.

a) By 1995, achieve and maintain a 100% information on CDD for doctors delivering health care, in clinical management of diarrhoeal diseases.

b) By the end of 1995, achieve and maintain proportion of at least 90% of registered nurses, delivering health care trained in clinical management of diarrhoeal diseases.

c) 90% of pharmacy staff, dispensing ORS trained in clinical management of diarrhoeal diseases

d) By 1995 achieve to ...
home care and therapy and to recognise the danger signs and
when to seek medical help.

3. Strengthening of CDD training in nursing schools.

a) by February, 1994, 3 nursing schools with up dated CDD
training materials.

III. Operations/logistics

1. Number of ORS packets to be procured in 1991 in order to
reach ORS targets: 100,000.

2. Oral rehydration treatment corners established by 1995 in
central and provincial hospitals

3. Establish and health information system for CDD by February
1994.

IV Evaluation

1. By 1995, perform 1 comprehensive programme review.

2. by 1993, perform 1 household survey.

APPENDIX G

PVO FSP

COUNTRY SOLOMON IS. FUNDING YEAR 1993-4New or Expansion Project NEW Baseline or Final Survey FINAL

#	INDICATOR (submit results only for indicators that reflect project interventions)	RESULTS Numerator (N) Denominator (D) Percent (P)
1	<u>NUT: Initiation of Breastfeeding</u> - Percent of infants/children (less than 24 months) who were breast-fed within the first eight hours after birth.	N= ___ P= ___ D= ___
2	<u>NUT: Exclusive Breastfeeding</u> - Percent of infants under four months, who are being given only breast milk.	N= ___ P= ___ D= ___
3	<u>NUT: Introduction of Foods</u> - Percent of infants between five and nine months, who are being given solid or semi-solid foods.	N= ___ P= ___ D= ___
4	<u>NUT: Persistence of Breastfeeding</u> - Percent of children between 20 and 24 months, who are still breastfeeding (and being given solid/semi-solid foods).	N= ___ P= ___ D= ___
5	<u>CDD: Continued Breastfeeding</u> - Percent of infants/children with diarrhea in the past two weeks who were given the same amount or more breast-milk.	N= 61 P= 82.4% D= 74
6	<u>CDD: Continued Fluids</u> - Percent of infants/ children (less than 24 months) with diarrhea in the past two weeks who were given the same amount or more fluids other than breastmilk.	N= 100 P= 90.9% D= 110
7	<u>CDD: Continued Foods</u> - Percent of infants/ children (less than 24 months) with diarrhea in the past two weeks who were given the same amount or more food.	N= 95 P= 84.8% D= 112
8	<u>CDD: ORT Usage</u> - Percent of infants/children (less than 24 months) with diarrhea in the past two weeks who were treated with ORT.	N= 111 P= 94.8% D= 117
9	<u>Pneumonia Control: Medical Treatment</u> - Percent of mothers who sought medical treatment for infant/child (less than 24 months) with cough and rapid, difficult breathing in the past two weeks.	N= ___ P= ___ D= ___
10	<u>EPI: Access</u> - Percent of children 12 to 23 months who received DPT1.	N= ___ P= ___ D= ___
11	<u>EPI: Coverage</u> - Percent of children 12 to 23 months who received OPV3.	N= ___ P= ___ D= ___
12	<u>EPI: Measles Coverage</u> - Percent of children 12 to 23 months who received Measles vaccine.	N= ___ P= ___ D= ___
13	<u>EPI: Drop Out Rate</u> - Percent change between DPT1 and DPT3 doses $[(DPT1-DPT3) \div DPT1]$ for children 12 to 23 months.	N= ___ P= ___ D= ___
14	<u>MC: Maternal Card</u> - Percent of mothers with a maternal card.	N= ___ P= ___ D= ___
15	<u>MC: Tetanus Toxoid Coverage (Card)</u> - Percent of mothers who received two doses of tetanus toxoid vaccine (card).	N= ___ P= ___ D= ___
16	<u>MC: Ante-Natal Visits (Card)</u> - Percent of mothers who had at least one ante-natal visit prior to the birth of the child (card).	N= ___ P= ___ D= ___
17	<u>MC: Modern Contraceptive Usage</u> - Percent of mothers who desire no more children in the next two years, or are not sure, who are using a modern contraceptive method.	N= ___ P= ___ D= ___

COMMENTS: ON QUESTION (8), COCONUT WATER, ORS, AND SUGAR-SALT SOLUTION WERE ALL INCLUDED AS "ORT."

Following is an analysis of the results from the final survey. Answers to the multiple choice questions have been sorted in decreasing order, in order to allow easier interpretation of the results.

	N (N ^o of Responses)	Mean	95% Confidence Interval
Q1 Mother's Age.			
Age	585	27.7	(27.2—28.1)

DISCUSSION — Analysis showed that the age of the mother was not a significant factor in predicting whether their child would have diarrhoea.

Q2 Child's Age			
Age	596	2.5	(2.4—2.6)

DISCUSSION — Analysis also showed that the age of the child was not a significant factor in predicting whether the child would have diarrhoea.

Q3 Has the child had diarrhoea in the last 2 weeks? (cases per 1.000) (n=598)			
Yes	197 (117/1000)		(165—229)

DISCUSSION — This is an unadjusted rate. Adjusting by the same method used in the baseline study yields an attack rate per child per year of 4.3 attacks per year (95% confidence interval 3.6—5.0). This is higher than, although not statistically different from, the rate in the baseline study, which was 3.5 attacks per year (2.8—4.2).

Q4 Did the mother breastfeed during the diarrhoea? (n=117)			
Child not breastfed.....	43	36.8%	(28.0%—45.5%)
More than usual.....	33	28.2%	(20.0%—36.4%)
Same as usual.....	28	23.9%	(16.2%—31.7%)
Stopped completely	8	6.8%	(2.2%—11.4%)
Less than usual	5	4.3%	(0.6%—8.0%)

DISCUSSION — The results from the baseline study reported "Mothers continued breastfeeding, 94.6% (83.1—99.9)". Thus there is no difference in the current study.

Q5 Did the mother provide fluids other than breastmilk during the diarrhoea? (n=117)			
More than usual.....	73	62.4%	(53.6%—71.2%)
Same as usual.....	27	23.1%	(15.4%—30.7%)
Less than usual	8	6.8%	(2.2%—11.4%)
Child breastfed only	7	6.0%	(1.7%—10.3%)
Stopped completely	2	1.7%	(0.0%—4.1%)

DISCUSSION — The results from the baseline study reported "Percent receiving increased fluids, 30.2% (23.1—37.4)". The current study showed 62.4%, a statistically significant difference.

Q6 Did the mother provide solid / semisolid foods during the diarrhoea? (n=117)			
More than usual.....	64	54.7%	(45.6%—63.8%)
Same as usual.....	31	26.5%	(18.5%—34.5%)
Less than usual	16	13.7%	(7.4%—19.9%)
Child breastfed only	5	4.3%	(0.6%—8.0%)
Stopped completely	1	0.9%	(0.0%—2.5%)

Coconut water.....	62	53.0%	(43.9%—62.1%)
Traditional medicine.....	61	52.1%	(43.0%—61.2%)
ORS sachet.....	44	37.6%	(28.8%—46.4%)
Sugar salt solution.....	5	4.3%	(0.6%—8.0%)
Nothing.....	3	2.6%	(0.0%—5.4%)
Other.....	3	2.6%	(0.0%—5.4%)
Anti-diarrhoea medicine or antibiotic.....	1	0.9%	(0.0%—2.5%)

DISCUSSION — The results for comparable questions were not statistically different from the baseline study, with the exception of ORS use. This may reflect the fact that this survey was done in and around Honiara, rather than nationwide as was the baseline study. Of note is the large number of respondents using coconut water, and the number using traditional medicine.

Q8 Did the mother seek advice or treatment? (n=117)
 Yes 26 22.2% (14.7%—29.8%)

Q9 From whom did the mother seek advice or treatment? (n=91)

Health centre/ clinic/ post.....	60	65.9%	(56.1%—75.7%)
Relatives or friends.....	44	48.4%	(38.0%—58.7%)
Traditional healer.....	12	13.2%	(6.2%—20.2%)
Private clinic/ doctor.....	9	9.9%	(3.7%—16.1%)
Village health worker.....	7	7.7%	(2.2%—13.2%)
General hospital.....	5	5.5%	(0.8%—10.2%)
Traditional birth attendant.....	1	1.1%	(0.0%—3.3%)
Other.....	1	1.1%	(0.0%—3.3%)
Pharmacy.....	0	0.0%	(0.0%—0.0%)

DISCUSSION — Given the relatively large number of respondents seeking advice from traditional healers, CDD education should contain a component aimed at these healers.

Q10 What symptoms would cause you to seek advice or treatment for diarrhoea?

Weakness, tiredness.....	392	65.6%	(61.7%—69.4%)
Fever.....	191	31.9%	(28.2%—35.7%)
Dry mouth, sunken eyes, dehydration.....	177	29.6%	(25.9%—33.3%)
Vomiting.....	133	22.2%	(18.9%—25.6%)
Loss of appetite.....	127	21.2%	(18.0%—24.5%)
Blood in stools.....	87	14.5%	(11.7%—17.4%)
Don't know.....	33	5.5%	(3.7%—7.4%)
Other.....	28	4.7%	(3.0%—6.4%)
Diarrhoea lasting 14 days.....	14	2.3%	(1.1%—3.6%)

DISCUSSION — Although the number responding "Don't know" was small, some of the symptoms are generally unrecognized (blood in stools, diarrhoea lasting 14 days, etc. Training programs need to take this into account.

Q11 What actions should the mother take for diarrhoea? (n=598)

Take child to hospital/health centre.....	290	48.5%	(44.5%—52.5%)
Give more fluids than usual.....	275	46.0%	(42.0%—50.0%)
Start fluids rapidly.....	256	42.8%	(38.8%—46.8%)
Proper mixing/ administration of ORS.....	100	16.7%	(13.7%—19.7%)
Other.....	89	14.9%	(12.0%—17.7%)
Feed more after diarrhoea so child regains weight.....	65	10.9%	(8.4%—13.4%)
Give smaller, more frequent feeds.....	54	9.0%	(6.7%—11.3%)

Stop fluids	3	0.5%	(0.0%—1.1%)
Stop foods	2	0.3%	(0.0%—0.8%)

DISCUSSION — Although the number of incorrect or “Don’t know” responses was small, the necessity of increasing numbers of smaller meals is not generally known.

Q12 What actions should the mother take when the child is recovering? (n=596)

Give food with high caloric content	388	65.1%	(61.3%—68.9%)
More food than usual	275	46.1%	(42.1%—50.1%)
Give smaller, more frequent feeds	134	22.5%	(19.1%—25.8%)
Other	88	14.8%	(11.9%—17.6%)
Don’t know.....	15	2.5%	(1.3%—3.8%)

DISCUSSION — Again, the necessity of increasing numbers of smaller meals is not widely recognized.

GENERAL DISCUSSION — Because of the differences in sample size, location, questions, and design between this survey and the baseline survey, only limited comparisons between the two can be made.

However, despite the small sample size and localized area of this survey, some general conclusions can be drawn directly.

1. The following answers were found to be statistically correlated (z greater than 1.96, alpha less than .05) with a child *not having* diarrhoea. Percentages are given first for the group *without* diarrhea.

- Use of custom medicine during diarrhoea (Q11—11, 17.3% vs. 5.1%, $z = 3.37$, alpha = .001).
- *Not* giving food with high caloric content after diarrhoea (Q12—3, 62.0% vs. 77.8%, $z = 3.23$, alpha = .001)
- *Not recognizing* weakness/tiredness as a reason to seek treatment (Q10—7, 62.9% vs. 76.3%, $z = 2.75$, alpha = .006).
- Use of custom medicine after diarrhoea (Q12—11, 16.7% vs. 6.8%, $z = 2.71$, alpha = .007).
- *Not* taking child to hospital (Q11—8, 46.3% vs. 57.6%, $z = 2.22$, alpha = .03).
- *Not recognizing* fever as a reason to seek treatment (Q10—2, 30.0% vs. 39.8%, $z = 2.06$, alpha = .04).

Of course, these are statistical associations rather than causes.

2. A large number of people still rely on traditional (or as they are known in the Solomons, “custom”) medicines. Future programs need to investigate the usefulness of (or indeed, the damage done by) these medicines, and to encourage those shown to be useful

3. Coconut water should be promoted rather than ORS or ORT. It is already the single most popular treatment for diarrhoea; in addition, a number of problems exist with ORT/ORS solutions, including:

- The cost of packaged solutions may be beyond the budget of many people.

- Solutions are often mixed incorrectly.
- The solutions may be seen as a "medicine" which will cure the diarrhoea, and thus discontinued when they fail to do so.
- Solutions may not be available in more remote areas.

4. The area where people lived had a great effect on the diarrhoea rates. Those to the east of Honiara had 13.2% diarrhoea, the remainder had 21.5%. This is significant at a rate of $z = 2.12$, $\alpha = .03$. The Solomon Islands Plantation Limited is located to the east, and they have provided more clinics and better housing to the people of the area; this may or may not explain the difference. Investigations should be carried out to determine the true reason for the difference in rates. Other statistical differences regarding the eastern group were:

- The eastern group gave more ORS (Q11—4, 26.4% vs. 14.1%, $z = 3.34$, $\alpha = .004$)
- They used traditional birth attendants advice (Q9—7, 7.1% vs. 0.0%, $z = 2.35$, $\alpha = .02$)
- They used less custom medicine (Q10—11, 1.6% vs. 5.5%, $z = 1.90$, $\alpha = .06$)
- They knew to feed more when diarrhoea was finished (Q12—1, 27.9% vs. 21.0%, $z = 1.67$, $\alpha = .10$)
- They used more sugar-salt solution (Q7—4, 11.8% vs. 3.0%, $z = 1.65$, $\alpha = .10$)

5. If it has not yet been done, a more complete analysis of the original baseline survey should be undertaken in order to:

- Discover the reasons for the variations in diarrhoeal rates between the various groups in the Solomons,
- Identify the groups most at risk
- Design area specific trainings focussing on the knowledge which is lacking in particular areas of the country.
- Design group specific trainings focussing on the knowledge which is lacking in particular groups of people.

RAPID KNOWLEDGE, AND PRACTICE QUESTIONNAIRE No.
ON DIARRHOEAL DISEASE

All questions are to be addressed to the mother of a child under five years of age.
Check that the child is NOT attending school.

Interview Date / 9 /94

Reschedule interview /9/94

Interviewer Name

Supervisor

Location Household

Market

Clinic

1. Name and age of mother _____

Name _____ Age(years) _____

2. Name and age of the child, under 5 years of age.

Name _____

Birth date _____ (D/M/YR) Age _____

Diarrhoeal Diseases

3. Has (the name of the child) had diarrhoea during the last 2 weeks ?

- 1. yes..... [0]
- 2. no..... [1]--> go to 10
- 3. don't know..... [9]--> go to 10

4. During (name of child)'s diarrhoea did you breastfeed ?
(read the choices of answer to the mother)

- 1. more than usual..... [1]
- 2. same as usual..... [2]
- 3. less than usual..... [3]
- 4. stopped completely..... [4]
- 5. child not breastfed..... [5]

5. During (the name of child)'s diarrhoea, did you provide (name of child) with fluids other than breast milk ?

(read the choices to the mother)

- 1. more than usual?..... [1]
- 2. same as usual?..... [2]
- 3. less than usual?..... [3]
- 4. stopped completely?..... [4]
- 5. child breastfed only?..... [5]

6. During (name of child)'s diarrhoea, did you continue to provide (name of child) with solid/semisolid foods ?

(read the choices to the mother)

- 1. more than usual?..... [1]
- 2. same as usual?..... [2]
- 3. less than usual?..... [3]
- 4. stopped completely?..... [4]
- 5. child breastfed only?..... [5]

7. When (name of child) had diarrhoea, what treatments, if any, did you use ? (multiple answers possible, record all answers)

- a. nothing..... [1]
- b. ORS sachet..... [2]
- c. coconut water..... [3]
- d. sugar salt solution..... [4]
- e. anti-dairrhoea medicine or antibiotic..... [5]
- h. traditional medicine..... [6]
- i. other (specify) _____ [11]

8. When (name of child) had diarrhoea, did you seek advice or treatment for the diarrhoea ?

- 1. yes..... [0]
- 2. no..... [1] --> go to 10

9. From whom did you seek advice or treatment for the diarrhoea of (name of child)? (multiple answers possible, record all answers)

- a. general hospital..... [1]
- b. health centre/clinic/post..... [2]
- c. private clinic/doctor..... [3]
- d. pharmacy..... [4]
- e. village health worker..... [5]
- f. traditional healer..... [6]
- g. traditional birth attendant..... [7]
- h. relative and friends..... [8]
- i. other (specify) _____ [11]

10. What signs or symptoms would cause you to seek advice or treatment for (name of child)'s diarrhoea?

(multiple answers possible, record all answers)

- a. don't know..... [9]
- b. vomiting..... [1]
- c. fever..... [2]
- d. dry mouth, sunken eyes,
decreased urine output (dehydration)..... [3]
- e. diarrhoea which lasts at least 14 days..... [4]
- f. blood in stools (siti)..... [5]
- g. loss of appetite..... [6]
- h. weakness or tiredness..... [7]
- i. other (specify)_____ [11]

11. What are the important actions you should take if (name of child) has diarrhoea?

(multiple answers possible: record all answers)

- a. don't know..... [9]
- b. start fluids rapidly..... [1]
- c. give the child more to drink than usual..... [2]
- d. give the child smaller more frequent feeds..... [3]
- e. proper mixing and administration of ORS..... [4]
- f. feed more after diarrhoea episode so that
child can regain weight..... [5]
- g. stop fluids..... [6]
- h. stop foods..... [7]
- i. take child to the hospital/health centre..... [8]
- j. other (specify)_____ [11]

12. What are important actions a mother should take when a child is recovering from diarrhoea?

(multiple answers possible, record all answers)

- a. don't know..... [9]
- b. give the child smaller more frequent feeds..... [1]
- c. more foods than usual..... [2]
- d. give foods with high caloric content..... [3]
- e. other (specify)_____ [11]