

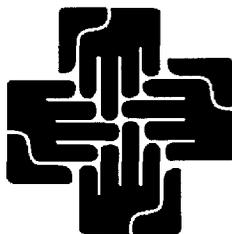
**WORLD RELIEF NICARAGUA  
SÍ-A-PAZ CHILD SURVIVAL PROJECT  
DETAILED IMPLEMENTATION PLAN**

**September 30, 1996 to September 30, 2000**

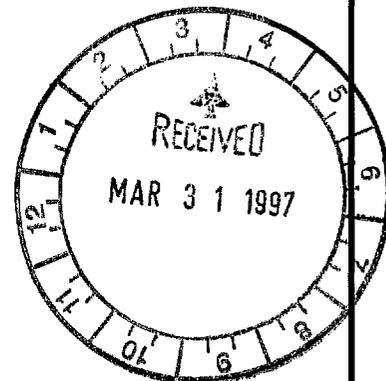
**Río San Juan and South Atlantic Autonomous Regions**

**Cooperative Agreement No: FAO-0500-A-00-6029-00**

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**World Relief**



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## LIST OF ACRONYMS

BF	Breastfeeding
CCDP	Community Contraception Distribution Post
CHW	Community Health Worker
DCM	Diarrhea Case Management
EBF	Exclusive Breastfeeding
E(E)C	European (Economic) Community
EPI	Expanded Program of Immunizations
FP	Family Planning
GM	Growth Monitoring
GMC	Growth Monitoring and Counseling
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
HIS	Health Information System
INEC	National Institute of Statistics and Commerce
KPC	Knowledge, Practices and Coverage
LOP	Life of Project
MAS	Ministry of Social Action
MCH	Maternal and Child Health
MINSA	Ministerio de Salud
MSH	Management Sciences for Health
NCHS	National Center for Health Statistics
NHC	National Health Campaign
NIC	National Immunization Campaign
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PHC	Primary Health Care
RAAS	South Atlantic Autonomous Region
RSJ	Río San Juan
SILAIS	Local Integrated Health Attention System
TBA	Traditional Birth Attendant
WR	World Relief
WRN	World Relief Nicaragua

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**DIP TABLE A: FIELD PROGRAM SUMMARY**

PVO/Country: World Relief/Nicaragua

Cooperative Agreement No.: FAO-0500-A-00-6029-00

Program Duration (from/to mm/dd/yy): 09/30/1996--09/30/2000

**1. PROGRAM EFFORT AND USAID FUNDING BY INTERVENTION**

Intervention	% of Total Effort (1)	USAID Funds in \$ (2)
Immunization	15 %	\$ 150,000
Nutrition/Micronutrients	25 %	\$ 250,000
Breastfeeding Promotion	20 %	\$ 200,000
Diarrhea Case Management	20 %	\$ 200,000
Pneumonia Case Management	%	\$
Malaria Control	%	\$
Maternal and Newborn Care	%	\$
Family Planning	20 %	\$ 200,000
HIV/AIDS Prevention	%	\$
Others (specify)	%	\$
<b>Total</b>	<b>100%</b>	<b>\$ 1,000,000</b>

(1) Estimate the percentage of total effort (from USAID and PVO match funding) the program will devote to each intervention to be implemented.

(2) Estimate in US dollars (not in percent) the amount of USAID funding (excluding PVO match funds) the program will devote to each intervention.

**2. BENEFICIARY POPULATION PER YEAR**

Population Age Group	Estimated Number of Beneficiaries
Infants (0-11 months)	4,647
12-23 Month Old Children	4,368
24-59 Month Old Children	10,017
<b>Total 0-59 Month Olds</b>	<b>19,032</b>
<b>Women (15-49 years) (3)</b>	<b>29,045</b>
<b>Total Beneficiaries</b>	<b>48,077</b>

(3) Potential beneficiaries are the individuals eligible to receive USAID Child Survival funded services, to whom the program will provide services intended to benefit primarily that individual. Women (ages 15 - 49) should only be included as beneficiaries if the program includes a goal of reducing maternal mortality through improved emergency obstetric care or if the program includes interventions for family planning or for HIV/AIDS.

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TABLE B. Program Goals and Objectives.

Program Objectives and measurable Indicators by intervention	Measurement Methods for Objectives	Major Inputs	Major Outputs	Measurement Methods for Outputs
<p><b>DIARRHEA</b></p> <p>1. <u>Objective:</u> Increase from 36% to 55% numbers of children with diarrhea who receive ORT.  <u>Indicator:</u> Children 0-23 months with diarrhea in the last 2 weeks who will have received ORT (ORS, Recommended Home Fluids such as rice water, breastmilk, and coconut water.)</p>	<p>-KPC Survey (Baseline, Mid-Term, and Final)                      -HIS (family record)                      -Quarterly reports</p>	<p>1. Training of community health volunteers and mothers on diarrhea control/management                      2. Training of WRN and MINSA staff on updated norms and practices                      3. Implementation and equipping of Base Houses at the community level with ORS and as Oral Rehydration Units.</p>	<p>1. Network of volunteers trained in control/management of acute diarrheal diseases                      2. Communities will have Base Houses established                      3. Reduction of Dairrhea Case load at Health Center level as more cases are managed at home and Base House level.                      4. Increase in number of children who receive ORT during diarrhea.</p>	<p>1. Workshop attendance sheets                      2. Reports on number of Base Houses established                      3. Number of MINSA staff members monitoring activities                      4. MINSA report on Epidemiological Surveillance</p>
<p>2. <u>Objective:</u> Increase from 61.3 to 70% the percentage of mothers who know it is important to give an increased amount of food for at least two weeks after diarrhea.  <u>Indicator:</u> Mothers of infants/ children (less than 24 months), not being exclusively breastfed, who had diarrhea in the past 2 weeks and who were giving their children the same amount or more food than usual afterwards.</p>	<p>-KPC Survey (Baseline, Mid-Term, and Final)                      -HIS                      -Quarterly reports                      -Focus groups                      -In-depth Interviews</p>	<p>1. Train WRN and MINSA staff to encourage mothers to feed their children more for 2 weeks after diarrhea.                      2. Training mothers of the importance of giving more food to a child recovering from an illness, particularly diarrhea.</p>	<p>1. Trained MINSA/WRN staff and volunteers.                      2. Mothers trained in the importance of giving more food to a child recovering from diarrhea.                      3. Increased number of children getting food after a diarrhea episode.</p>	<p>1. Reports from Base Houses in the project area                      2. Reports: cases treated and cases referred to Center.                      3. Quarterly reports                      4. Attendance sheets from workshop on the control of acute diarrheal episodes                      5. Direct observation</p>
<p>3. <u>Objective:</u> Increase from 41% to 60% the percentage of mothers who know that it is important to give children the same amount or more food during diarrhea.  <u>Indicator:</u> Mothers of infants/children (less than 24 months) not being exclusively breastfed, who had diarrhea in the past two weeks and who were giving their children the same amount or more food as usual.</p>	<p>KPC Survey (Baseline, Mid-Term, and Final)                      -HIS                      -Quarterly reports                      -Focus groups                      -In-depth Interviews</p>	<p>1. Train WRN and MINSA staff to encourage mothers to feed their children more during a diarrheal episode.                      2. Training mothers of the importance of giving more food to a child during an illness, particularly diarrhea.</p>	<p>1. Trained MINSA/WRN staff and volunteers.                      2. Mothers trained in the importance of giving more food to a child during diarrhea.                      3. Increased number of children getting food during a diarrheal episode.</p>	<p>1. Reports from Base Houses in the project area                      2. Reports: cases treated and cases referred to Center.                      3. Quarterly reports                      4. Attendance sheets from workshop on the control of acute diarrheal episodes                      5. Direct observation</p>

<p>4. <b>Objective:</b> Increase from 12.4% to 40% the percentage of mothers who know at least one sign/symptom of dehydration.  <b>Indicator:</b> Mothers of children 0-23 months who know at least one sign of dehydration.</p>	<p>-KPC Survey (Baseline, Mid-Term, and Final)  -Interviews  -Focus groups</p>	<p>1. Training volunteers, mothers and Base House workers on the signs and symptoms of dehydration.</p>	<p>1. Volunteers and community members trained on the signs and symptoms of dehydration.  2. Increase in the number of mothers who know at least one sign of dehydration.</p>	<p>1. Interviews with mothers  2. Reports from training workshops with community personnel.  3. KPC survey</p>
<p><b>FAMILY PLANNING</b></p> <p>5. <b>Objective:</b> Increase from 54.7% to 65% of women who aren't pregnant, do not want another child in the next 2 years or are not sure, who are using a modern family planning method.  <b>Indicator:</b> Mothers of children 0-23 months of age who are not pregnant, do not want another child in the next two years or are not sure, who are using a modern family planning method.</p>	<p>-KPC Survey (Baseline, Mid-Term, and Final)  -HIS (family record)  -Quarterly reports</p>	<p>1. Training in Family Planning for: volunteers, TBAs, individuals, WRN and MINSA personnel  2. Coordination of activities with MINSA and PROFAMILIA to open more Community Contraception Distribution posts  3. Develop Family Planning strategy.</p>	<p>1. Network of volunteers and MINSA and WRN staff trained in family planning.  2. Increased number of women using modern family planning methods.  3. Establishment of 40 additional Community Contraception Distribution posts in the most remote areas (to extend family planning promotion to family level).</p>	<p>1. Workshop attendance sheets  2. HIS  3. Referral and counter-referral forms  4. Focus groups  5. MINSA's report on family planning  6. In-depth interviews</p>
<p><b>NUTRITION- PREVENTION OF VITAMIN A DEFICIENCY</b></p> <p>6. <b>Objective:</b> Increase from 0.5% to 50% the proportion of children 6-59 months of age who receive a vitamin A dose every 6 months.  <b>Indicator:</b> Children 18-23 months who received at least 2 or 3 doses of vitamin A (by card). (KPC survey table- children 18-23 months, giving 1,2 or 3+ doses of vitamin A. Report overdose. Correct answer is 2 or 3 doses.)</p>	<p>-KPC Survey (Baseline, Mid-Term, and Final)  -HIS (family record)  -Quarterly reports</p>	<p>1. Training in prevention of vitamin A deficiency and in vitamin A supplementation for children: WRN and MINSA staff, TBAs, pregnant women, volunteers.  2. Supplementation of children 6-11 and 12-59 months with vitamin A capsules (100,000 IU and 200,000 IU, respectively)  3. Coordinate with MINSA to track vitamin A given out at Health Campaigns, and to give vitamin A to 6-11 month olds.</p>	<p>1. Network of volunteers/TBAs and MINSA and WRN staff trained on the prevention of vitamin A deficiency and in vitamin A supplementation for children  2. Increased number of children 6-59 months who receive two (therapeutic) doses of vitamin A annually.  3. MINSA tracking vitamin A given at Health Campaigns, and following up on defaulters.</p>	<p>1. Workshop attendance lists.  2. Growth monitoring card  3. HIS (family registers)</p>

<p>7. <b>Objective:</b> Increase from 1.1% to 20% the percentage of mothers who receive one dose of vitamin A dose within one month post-partum.  <b>Indicator:</b> Mothers of children 1-23 months who received vitamin A within one month postpartum after the birth of their youngest child.</p>	<p>-KPC Survey (Baseline, Mid-Term, and Final)  -HIS (family record)  -Quarterly reports</p>	<ol style="list-style-type: none"> <li>1. Training in prevention of vitamin A deficiency, prevention and in vitamin A supplementation for postpartum women: WRN and MINSA staff, TBAs, pregnant women, volunteers.</li> <li>2. Training of pregnant women on the importance and sources of vitamin A.</li> <li>3. Health volunteers and TBAs trained to distribute vitamin A to women within one month postpartum.</li> </ol>	<ol style="list-style-type: none"> <li>1. Network of volunteers/TBAs and MINSA and WRN staff trained on the prevention of vitamin A deficiency and in vitamin A supplementation for children.</li> <li>2. Increased number of mothers receiving one dose of vitamin A within one month post-partum.</li> </ol>	<ol style="list-style-type: none"> <li>1. Workshop attendance list</li> <li>2. HIS (family register)</li> </ol>
<p><b>BREASTFEEDING PROMOTION</b></p> <p>8. <b>Objective:</b> Increase from 6% to 14% the percentage of mothers who breastfeed exclusively for the first six months.  <b>Indicator:</b> % infants less than 6 months exclusively breastfed.</p>	<p>-KPC Survey (Baseline, Mid-Term, and Final)  -HIS (family record)  -Quarterly reports</p>	<ol style="list-style-type: none"> <li>1. Training breastfeeding counselors and volunteers in exclusive breastfeeding and support groups.</li> <li>2. Up-dating MINSA and WRN staff on the norms and know-how related to exclusive breastfeeding.</li> <li>3. Education of pregnant and post-partum women on exclusive breastfeeding.</li> <li>4. Training of TBAs in exclusive breastfeeding.</li> <li>5. Initiate baby Friendly hospital for staff and personnel of Bluefields Hospital and health Center.</li> <li>6. Organize breastfeeding support groups in Urban Bluefields.</li> <li>7. Train and supervise a project promoter to liase hospital and health center with support groups.</li> </ol>	<ol style="list-style-type: none"> <li>1. Network of volunteers trained in exclusive breastfeeding</li> <li>2. MINSA and WRN staff updated on norms regarding exclusive breastfeeding</li> <li>3. Increased number of children exclusively breastfed during first six months of life.</li> <li>4. Increased number of women successfully referred to a support group after delivery.</li> </ol>	<ol style="list-style-type: none"> <li>1. Workshop attendance lists</li> <li>2. Mothers</li> <li>3. Key informants</li> <li>4. Midwives'/TBAs' report</li> <li>5. Register of number of women referred to or in a support group.</li> </ol>

<p><b>NUTRITION- Growth Monitoring and Counseling</b></p> <p>9. <u>Objective:</u> Increase from 48% to 75% the % of registered children who have been weighed according to MINSA protocols in the past three months. <u>Indicator:</u> % children 0-23 months who have been weighed according to MINSA protocols.</p> <p>10. <u>Objective:</u> Increase from 0% to 70% of registered children being weighed, % of those not gaining weight who received nutritional counseling and had catch-up growth/gained weight. <u>Indicator:</u> % registered children 0-23 months who have been weighed and are not gaining weight who received nutritional counseling and had catch up growth.</p>	<p>-HIS (family record) -Quarterly report</p>	<ol style="list-style-type: none"> <li>1. Training of volunteers on how to counsel women with malnourished children.</li> <li>2. Up-dating MINSA and WRN staff on norms regarding nutritional counseling and child growth charts.</li> <li>3. Education of mothers, with an emphasis on mothers with malnourished children, on recommended nutrition practices</li> <li>4. Promotion of family gardens.</li> <li>5. Equipping volunteers in base houses with scales to weigh children.</li> </ol>	<ol style="list-style-type: none"> <li>1. Network of volunteers trained in nutrition with an emphasis on nutritional counseling</li> <li>2. MINSA and WRN staff trained in nutritional counseling and growth charts.</li> <li>3. Increase in mothers with malnourished children who are given nutritional counseling.</li> <li>4. Increase in number of children who have catch-up growth.</li> <li>5. Increased number of family gardens established.</li> <li>6. Increased number of children weighed per MINSA protocols.</li> </ol>	<ol style="list-style-type: none"> <li>1. Workshop attendance lists</li> <li>2. HIS (family register)</li> <li>3. MINSA report on GMC</li> <li>4. Number of family gardens established</li> </ol>
<p><b>IMMUNIZATIONS</b></p> <p>11. <u>Objective:</u> Increase from 69 to 80% the percentage of children 12-23 months who are completely immunized. <u>Indicator:</u> % children 12-23 months who are completely immunized (by card).</p>	<p>-KPC Survey (Baseline, Mid-Term, and Final) -HIS (family record) -Quarterly reports</p>	<ol style="list-style-type: none"> <li>1. Training of volunteers, mothers, and MINSA and WRN staff on EPI/VPDs.</li> <li>2. Donation of 8 refrigerators to MINSA to strengthen the cold chain.</li> <li>3. Develop a strategy to take advantage of possible lost opportunities.</li> <li>4. Follow-up on children with incomplete immunizations.</li> <li>5. By doing a census, to allow MINSA to accurately forecast vaccine needs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Network of volunteers, mothers, and MINSA and WRN staff trained and updated on EPI.</li> <li>2. Strengthened cold chain.</li> <li>3. Increased number of children completely immunized.</li> </ol>	<ol style="list-style-type: none"> <li>1. Workshop attendance lists.</li> <li>2. HIS (family register)</li> <li>3. Quarterly reports</li> <li>4. MINSA's EPI report</li> </ol>
<p>12. <u>Objective:</u> Increase from 18% to 40% the percentage of pregnant women 10-49 years who received at least two doses of tetanus toxoid before the birth of their youngest child. <u>Indicator:</u> Mothers of children 0-23 months of age who received at least 2 doses of TT before the birth of their youngest child (by card).</p>	<p>-KPC Survey (Baseline, Mid-Term, and Final) -HIS (family record) -Quarterly reports</p>	<ol style="list-style-type: none"> <li>1. Training volunteers, mothers and TBAs on EPI and TT.</li> <li>2. Establishment and strengthening of the cold chain.</li> <li>3. Follow-up on women with incomplete vaccination.</li> <li>4. Develop strategy to take advantage of lost opportunities to vaccinate women with TT.</li> </ol>	<ol style="list-style-type: none"> <li>1. Network of volunteers and mothers trained in EPI.</li> <li>2. Increased number of women receiving at least two doses of tetanus toxoid.</li> </ol>	<ol style="list-style-type: none"> <li>1. Workshop attendance sheets</li> <li>2. HIS</li> <li>3. MINSA's report on EPI</li> </ol>

## **A. TABLE A: FIELD PROGRAM SUMMARY**

For Table A: Field Program Summary please see pages immediately after the Table of Contents.

## **B. TABLE B: PROGRAM GOALS AND OBJECTIVES**

For Table B: Program Goals and Objectives, summarizing the program's overall goal and measurable objectives for each intervention, please see pages immediately after Table A.

## **C. PROGRAM LOCATION**

### **C.1 Location Maps**

See Appendix A for maps of the project area.

### **C.2 Location Description**

History of the project site: The Project site is located in the buffer and agricultural development zones of the SÍ-A-PAZ ("Yes to Peace") Forest Reserve Project in Southeastern Nicaragua. Created in 1990 as a part of the peace process, SÍ-A-PAZ consists of the Indio Maíz Forest Reserve, a buffer zone adjacent to the forest reserve, and an agricultural development zone (including semi-urban areas). The entire area lies within the Department of Río San Juan (RSJ) and the South Atlantic Autonomous Region (RAAS) and covers a total of 34,880 square kilometers.

Up to 30 years ago, most of the project site was rain forest. Government land reform programs of the 1960s produced rapid deforestation and settlement of the northern and western segments. By 1980, settlers were scattered over much of the region. The civil war of the 1980s forced many of the settlers to serve as soldiers on both sides of the conflict or to move as refugees to Costa Rica or as displaced people to government-designated villages. After the war ended in 1990, the area was rapidly repopulated and continues to serve as a population safety valve for the pacific coastal and northern areas of the country. Spontaneous settlement has occurred so rapidly that people are now beginning to settle in the forest reserve itself. Approximately 35% of the beneficiaries served by the project live in the peri-urban areas of San Carlos (RSJ) and Bluefields (RAAS). Remaining beneficiaries live in extremely small rural settlements scattered throughout the area. Most are subsistence farm families. However, the high level of rainfall and poor clay soils make agriculture a difficult enterprise. Many families live in very inhospitable conditions, hours away from the nearest road, with little in the way of social or economic infrastructure. Isolation and difficult access characterize the entire region.

The SÍ-A-PAZ Child Survival Project is located in southeastern Nicaragua within the Departments of RSJ) and the RAAS. Although these departments share a common border, there are no roads or highways directly linking the two. The project area is bordered by the North Atlantic Autonomous Region in the north, the Indio-Maíz Forest Reserve and the Caribbean Sea in the east, Costa Rica in the south, and the Department of Chontales and Lake Nicaragua in the west. The project will serve 64 communities in RAAS and 112 communities in RSJ.

Although the RSJ and RAAS Departments lie in the same geographic area, there are some cultural and socioeconomic differences. Economically, in both RSJ and RAAS, people are involved in subsistence agriculture, basic grains production, fishing, and to a lesser degree, cattle

raising. The capital cities are commercial ports; one on Lake Nicaragua and the other on the Atlantic Ocean. The location of RAAS' capital city of Bluefields on the ocean has led to a greater development of commercial activities there; however, unemployment in the region remains a problem.

The predominant religions are Roman Catholicism and Evangelical, although there is a large presence of the Moravian Church in the RAAS.

Status of women: women are relegated to household tasks and child rearing. The educational level of women is lower than it is for men. Men, as heads of households, are literate in order to function in commercial activities. Overall literacy level in the region is 49.52%.

Ethnically and culturally, inhabitants of the region are primarily mestizos, although in the RAAS there are several other ethnic groups, including miskitos, sumos, ramas, garífonas and creoles. Together, these ethnic groups make up 48% of the RAAS population. Each ethnic group has its own language and unique customs although the majority speak English and Creole. As area coordinators and project promoters have been recruited from the regions they are from and will be working, cultural diversity is not expected to pose a problem.

Potential geographic constraints: Río San Juan is accessible via roads (136 km of roads are maintained in decent condition), via Lake Nicaragua with Granada and other municipalities, and via the San Juan River. The RAAS is accessible from RSJ via an 83 km stretch of the Escondido River. It is accessible from Managua by air to Bluefields. All other project communities located in the RAAS can be reached from Bluefields only by transport on the river, on the ocean, or more likely, a combination of the two. Bluefields itself has only 14 km of paved roads within the city limits.

Communities are dispersed throughout the region and homes within these communities are also widely dispersed. These communities are accessible by boats, canoes, or on foot. During the winter months, accessibility greatly decreases as the rivers are filled to near capacity. The RAAS and RSJ Departments are regularly affected by tropical storms and hurricanes which provoke out-migration. There is no direct communication between RSJ and RAAS; the projected road has yet to be built by the Japanese. Passage through the mountains is possible via small roads, although not recommended.

RSJ is politically dependent on a regional delegate named by the central government. RAAS has a governor who is elected by popular vote, due to their separate political development and special status. RAAS was never colonized by Spain, rather it was a British protectorate until the 1860s. English language and customs remain.

Estimates of morbidity and mortality causes and rates.

The infant mortality rate in Nicaragua is 46/1000 live births. Under five mortality rate is 60/1,000. Nicaragua has the second-highest infant mortality rate compared to other Central American countries. (Guatemala has the highest at 67/1,000.) (Source: *State of the World's Children*, UNICEF 1997.)

The principal causes of infant mortality are neonatal deaths (37%), dehydration due to diarrhea (33%), acute respiratory infections (17%), and malnutrition (4%). Neonatal mortality is correlated with age of mother and spacing of births; the principal cause is hypoxia/asphyxiation. (Source: *MINSa document: Planificación y Programación A o 1997: SILAIS Río San Juan, San Carlos, 1996*). Reporting of deaths is incomplete so analysis is not possible at this time.

Maternal mortality in Nicaragua is 150/100,000 live births; the most frequent causes are hemorrhaging, infection, eclampsia, and abortion. Maternal mortality is very high in RSJ, 930/100,000, and in the RAAS, 346/100,000. The most frequent causes of maternal mortality in the project area are similar to those at the national level (hemorrhaging, infection and eclampsia) (Source: *Sistema de Vigilancia de Mortalidad Materna. MINSa, 1995.*)

Nicaragua's total fertility rate of 4.8 is among the highest in Central America, and the fertility rate among adolescents is the highest in Central America. (Source: *State of the World's Children, UNICEF 1997*).

#### Current health infrastructure

Nicaragua's Ministry of Health is referred to in Nicaragua as MINSa; this document will use MINSa. (MINSa= Ministerio de Salud). MINSa has the country divided into 17 Local Integrated Health Attention Systems (hereafter referred to as SILAIS). The project area has two SILAIS, one for RSJ and the other for the RAAS. Every SILAIS functions at four levels: hospital, health centers (HC), medical posts or health posts attended by nurses, and base houses.

Patients are referred to the hospital if their problems cannot be resolved by a HC. Hospitals are the only resource in the region with basic specialty areas, such as Gynecology and Obstetrics, Pediatrics, Surgery and Internal Medicine. If there are specialists working in the region, there is usually only one per region/SILAIS.

Health centers provide treatment for common problems or conditions such as: assisting in child birth, providing prenatal and postnatal care, and immunizations. HCs also provide technical support to the health posts in each municipality.

Health posts provide immunizations (if they have a viable cold chain), oral rehydration salts (ORS), prenatal care, assist in delivering babies to women that MINSa has classified their pregnancies as "low-risk," malaria treatment, and child growth monitoring. Health posts are usually attended by an auxiliary nurse who also assists the health volunteers (locally referred to as brigadistas) at base houses.

A Base House is located in the home of a health volunteer, traditional birth attendant (TBA), or a malaria volunteer. A base house functions as the grass-roots level health unit in the community. It is run by community health volunteers, not MINSa personnel, although in many cases MINSa personnel train these volunteers. MINSa provides each base house with ORS, educational materials, anti-malaria medication, and materials to prevent the spread of and treat cholera. They are supplied with chlorine (to disinfect water), ORS to treat cholera, and in base houses where there is an individual specially trained in IV liquids, that base house has IV infusions, needles, tubes, etc. for emergencies.

In the RAAS project area, there is 1 hospital, 7 HCs, 13 health posts, and 4 base houses. In the RSJ project area there is 1 hospital, 7 HCs, 27 health posts, and 43 base houses. Actually, only the HCs in the urban areas of Bluefields and San Carlos have supplies of necessary materials and resources to provide adequate health care.

### Health personnel

In RSJ, a total of 40 auxiliary nurses will be involved in the project (two health posts have neither nurses nor physicians, only auxiliary nurses, and there are generally two auxiliary nurses per post, although some posts have more than two). Auxiliary nurses will be involved in the project by helping train volunteers in interventions and the project's educational strategy (participatory methodology). Auxiliary nurses already have most of the basic knowledge, and only need refresher training. What will be new to the auxiliary nurses is learning how to transfer health knowledge to the community (adult learning principles that form the basis of the project's educational strategy). Auxiliary nurses are usually local inhabitants that stay in the area; it was decided that the most sustainable strategy was to train them. Nurses and physicians tend to be from bigger cities and don't usually settle in the region after their years of social service are completed. Eight municipal educators will also be very involved in the project, working closely with promoters to train and supervise volunteers and auxiliary nurses, and assist them in their duties.

Nurses and physicians will be trained in child survival so that they will know what the auxiliary nurses and municipal educators are doing with the volunteers and so that they will support them in the time spent training and supervising volunteers and working with the project promoter. Project interventions will be: Immunizations, nutrition (including infant and child nutrition, growth monitoring, home gardens and vitamin A), breastfeeding promotion, diarrhea case management, and family planning.

## **D. PROGRAM DESIGN**

### **D.1 Summary of Overall Program Design**

This project will improve the health and survival of 32,973 children and 29,045 women in two of Nicaragua's seventeen health districts (called SILAIS). Project staff will provide and facilitate training for health staff and personnel and volunteers in the hospitals, health centers, health posts and base houses of the two districts. Project staff will supervise the health promoters' activities of 600 volunteers whom they will train. Project staff will engage health staff from the health centers and posts in the formative supervision and continuing education of the health volunteers (brigadistas) to assure that the care and health promotion that they provide will be sustained by MINSA after the project terminates.

The training will enable staff, personnel, volunteers and mothers to protect the health and survival of children and women through five categories of health activity:

1. Care of children with diarrheal disease.
2. Practice of family planning.
3. Breastfeeding promotion.
4. Improvement of children's nutrition, including prevention of micronutrient deficiencies (vitamin A, iron and iodine).
5. Immunizations of children and women.

MINSAs staff and personnel currently provide health care in fixed facilities. The vast size of the two districts and severe difficulties of transportation and communication make it difficult for the district population to attend the fixed facilities for the care they need. Through the volunteers, much care can be extended to the community level and families can be taught how to care for themselves.

Recent MINSAs reports and an October 1996 health survey of the two districts confirm that diarrheal disease and malnutrition are frequent among the children, fertility rates and maternal mortality rates are high and that childhood diseases, controllable by immunization, have not been reported recently. Immunization rates among children and women are relatively low, however, so the risk of epidemics of immunizable diseases is high.

The project targets children aged 0-23 months and women of childbearing age as its specific beneficiaries. High risk populations especially targeted by the 5 interventions include:

### **1. Diarrheal Diseases**

Children aged 0-23 months

### **2. Practice of Family Planning**

Women of childbearing age.

(Designating this target does not indicate that appropriate efforts will not be made to engage men of childbearing age in practicing family planning.)

### **3. Improvement of Children's Nutrition**

Counseling for appropriate feeding during weaning:

- children 6-11 months

counseling for nutritional rehabilitation:

- mildly, moderately and severely malnourished children 6-59 months

Referral of severely malnourished children to hospital

### Prevention of Micronutrient Deficiencies

#### Vitamin A:

- women during the first months post partum
- children aged 6 months to 59 months

#### Iron:

- women who are pregnant
- infants aged 0-11 months

#### Iodine:

- all ages and both sexes, Nicaraguan law requires the iodination of all salt that is sold within the country.

### **4. Breastfeeding promotion.**

Exclusive breastfeeding:

- infants 0-5.9 months

Continued breastfeeding:

- children 6-23 months

## 5. Immunizations

- women of childbearing age who have had less than 5 TT immunizations or have no card to prove immunizations
- children aged 0-23 months who are incompletely immunized for their age

The program design was developed from lessons learned and relationships built with MINSA officials during the previous CSP. Given WRN's previous experience, the program's design is to work hand in hand with RSJ and RAAS SILAIS. (See signed agreements in Appendix B.) From the beginning, the project involves and trains MINSA staff that will be there after the 4 year project ends. (Please see section D.5.2. for a description of WRN's previous experience working with MINSA; WRN trained 2,000 additional volunteers in between CS grants.)

The project will train 81 MINSA staff members in six major child survival interventions and will extend and strengthen a network of 600 health volunteers who will be organized and incorporated directly into MINSA's existing health structure. The two area coordinators (one for each area) will coordinate with MINSA personnel and the SILAIS director to implement and develop the interventions in the various project communities.

Process by which eligible women, children and newborns will enter and participate in the program: Women and children residing within the health districts enter the population when they are identified and counted and registered by the health volunteers. Participation in the program is not dependent, however, upon registration as health services are open even to casual visitors to the districts. Newborns registered by health volunteers either at birth, during home visits by the volunteer or when the infant is brought for immunization or other service. The family register and census will be updated quarterly. Other avenues for mothers and children to become involved in project activities include: National Health Campaigns (NHC), community meetings (e.g. church, school, health posts, HCs), and health unit activities (e.g. child growth monitoring and development sessions).

At the first community meetings coordinated with MINSA, project staff will explain to mothers about the project, its objectives, the baseline results, the educational methodology that will be used and what the project hopes to achieve. Volunteers will also be recruited at these initial meetings.

The project is designed so that mothers will actively participate through community education sessions, food preparation demonstrations, home visits, and family gardens. Another way to reach women is through existing organizations like churches, schools, parents' associations, health posts, HCs, etc.

World Relief implements an extensive program to engage the families of the two districts in sustainable agriculture. This helps the families to become stable residents of the land which they have cleared because the crops promoted by the program do not deplete the soil. This has a profound effect on health as it does not require the family to move at the usual 4-6 year interval in order to slash and burn a new area of the rain forest.

Non-BHR funded activity: WRN receives funds from an individual private donor to subsidize the cost of sterilizations. WRN had an agriculture program that is reaching the end of its funding cycle in December 1997. WRN has some agriculture activities in Punta Gorda and hopes to use contacts from these activities to facilitate the CS project.

## **D.2 Collaboration and Formal Agreements**

WRN plans to collaborate with MINSA at the central and local SILAIS level. Building on relationships and lessons learned in the previous project, this CS project has been developed with collaboration with MINSA as an integral part of the project's strategy. The MOH (called MINSA in Nicaragua) is divided into autonomous SILAIS (local MINSA offices) for each district. The project will collaborate with 2 SILAIS during the project; the SILAIS for Río San Juan is in San Carlos, and the SILAIS for RAAS is in Bluefields.

The project will involve local level MINSA staff by training project and MINSA staff together at the beginning of each intervention. (See training schedule in workplan, section D.6 for details.) The project will work closely with auxiliary nurses and municipal educators at the health post and HC level to train and supervise health volunteers and TBAs, and assure a lasting network of health workers for the life of the project and sustainability after the project ends. Base houses will be strengthened and created in distant areas that may not have one. Base houses and health volunteers are already part of MINSA's strategy. MINSA personnel at Central and local SILAIS levels are pleased to work with the project; in meetings with the two SILAIS, MINSA workers expressed great enthusiasm because this project was developed with them in mind. The project will work closely with MINSA on all interventions, such as EPI, vitamin A distribution, family planning, diarrhea case management, breastfeeding promotion and growth monitoring and counseling (GMC).

Agreements with SILAIS RSJ and RAAS: (See Appendix B for copies of signed agreements.)

### **WRN commits to:**

1. Training MINSA volunteers, auxiliary nurses responsible for health posts, municipal educators, and physicians working at health units, in the CSP interventions and in participatory educational methodology of the program.
2. Donation of some materials and supplies such as vitamin A capsules, refrigerators, multivitamins, scales, cups and utensils for diarrhea treatment.
3. Implementation of the Community Health Information System (Family Registers) in the project area.

### **MINSA commits to:**

1. Provision of appropriate and adequate maintenance and care of any donated materials and equipment.
2. Reporting to WRN how donated supplies were disbursed.
3. Supplying, monitoring, and supervising the base houses, on a periodic basis.
4. Facilitation of time-off to MINSA personnel for training and carrying out project interventions.
5. Monitoring and supervision of trained volunteers in collaboration with WRN staff.
6. Implementation of the Community Health Information System in the project area in collaboration with WRN.

These formal agreements have already been signed by both SILAIS. There will be no financial exchange between WRN and MINSA, but knowledge transfer is a cornerstone of the project. The project will help with some needs (GM/EPI cards, donated vitamin A capsules, refrigerators for EPI cold chain, etc.). By bringing in training on all key interventions and initiating the breastfeeding promotion program in Bluefields, the project will be strengthening MINSA in their ability to provide health education and training efforts to their communities.

WRN Agreement with PROFAMILIA: (See appendix B for a copy of the signed agreement.)

The project will promote family planning in all project communities, and collaborating with PROFAMILIA is a major part of the whole strategy. PROFAMILIA will continue supplying and monitoring the Community Contraception Distribution Posts (CCDP) monthly. WRN will also work to increase FP access by opening other posts in needy communities with low FP access. PROFAMILIA and WRN will train at least 40 new volunteers who will sell subsidized family planning methods to women at the community level.

WRN private donor funds can pay for sterilizations done by PROFAMILIA staff at the regional hospitals (Bluefields or San Carlos). WRN and PROFAMILIA will provide counseling to individuals who wish to be sterilized. PROFAMILIA plans to open a clinic in Bluefields and another in San Carlos to improve reproductive health services (e.g. Papanicolaou, prenatal care, laboratory exams, gynecological visits, and contraceptive supplies) offered in the area.

**WRN commits to:**

1. Collaborating in the recruitment of individuals to become volunteer distributors of contraceptives.
2. Collaborating in the opening of CCDP.
3. Assisting PROFAMILIA in the training of CCDP volunteers.
4. Identification of couples who wish to use family planning methods.

**PROFAMILIA commits to:**

1. Training of CCDP volunteers.
2. Providing counseling to individuals who wish to use temporary or permanent FP methods.
3. Supplying, monitoring, and supervising of CCDP

There will be no financial exchange between WRN and PROFAMILIA, nor will there will be transfer of knowledge (since neither organization is going to provide training to members of the other organization, but rather both together will train volunteers).

No other organization will be subcontracted to provide services.

Communities/leaders/organizations contacted during DIP development.

Los Chiles Community Committee: Blas Pineda, José Angel Ramos, Teodoro Jirón

MINSA Central (in Managua):

Ligia Saavedra, Nutrition Department; Mirna Zelaya, Micronutrients; Dr. Blanca Benard, Integral/integrated Attention for Children; Dr. Blanca Ulmos, Department of Integral/integrated Attention for Children; María Teresa Villagra, EPI Department; Dr. Dionys Fuentes,

Department of Integral/integrated Attention for Women; Dr. Patricia Barahona, Department of Integral/integrated Attention for Women; Angela Rosa Pera, SILAIS Managua.

#### MINSA, RÍO SAN JUAN:

Daniel Medina, Dr. William Alvarez, Dr. Aristeo Jirón, Marí de Jesús Hernández, Pablo Padilla, Mayela Quijano.

#### MINSA, RAAS:

Dr. Sonia Dora, Epidemiologist; Dr. Ricardo Taylor, sub-director SILAIS; Dr. Jorge Torres, Director SILAIS; Dr. Saavedra, Bluefields Municipal Director; Dr. Rodriguez, Bluefields Municipal Epidemiologist; Miguel Medina, Department of Community Participation; Nurse Bacon, In charge of nursing, SILAIS; Dr. Sosa, Administration; Mrs. Wilson, statistician; Dr. Fernández, Education

### **D.3 Technical Assistance**

#### Technical Assistance from MINSA Central

The project is designed to integrate with MINSA personnel and respect its hierarchy and training styles. Therefore from the initial training and throughout the project, MINSA Central technical experts will be contracted to conduct initial 3 day training workshops for project staff and MINSA Health Center (HC) and Health Post staff in the project areas.

The following experts will be called in to train in their speciality area:

Dr. Blanca Ulmos and Dr. Blanca Benard, integrated child care component; Ninoska Cruz, nutrition and exclusive breastfeeding; Dr. Dionys Fuentes, Department of Integral/integrated Attention for Women; Dr. Patricia Barahona, Department of Integral/integrated Attention for Women.

Follow-up training sessions for each component will be coordinated with staff from the regional SILAIS offices.

#### Technical assistance from WRN country office:

The WRN Regional Administrators will be trained in accounting and office management by WRN main office staff in Managua: Ninoska Alegría and Marling Tiffer.

### **D.4 Detailed Plans by Intervention**

#### **D.4.a Immunizations**

##### **D.4.a.1 Incidence and Outbreaks**

MINSA carries out epidemiological surveillance for six vaccine-preventable diseases: polio, measles, neonatal tetanus, pertussis, diphtheria and tuberculosis. Although the possibility of an outbreak exists for any of these six because of low vaccination coverage, MINSA currently reports on only the first three diseases. Formerly, these diseases were common in Nicaragua, but no cases have been reported in the past 2 years. In a personal interview, María Teresa Villagra, of the EPI Division at MINSA's central office, reports that as of January 1997, there have been no outbreaks of vaccine-preventable diseases in Nicaragua in the past two years.

MINSA's strategy of continuous epidemiological surveillance requires two types of notification: Daily notification for all suspected and confirmed cases. This notification is obligatory and must be delivered daily to the higher health unit (e.g., a health post would send this information to the HC) along with the appropriate specimen (for example, for polio cases, a fecal specimen would be sent, for measles a blood specimen would be sent).

Weekly notification of negative findings. This report consists of a weekly statement, "There have been no cases of (polio), (measles) or (neonatal tetanus) during this week."

#### D.4.a.2 Baseline Coverage Estimates

According to the data from our baseline survey (WRN, 1996), immunization coverage for children 12-23 months of age in the project area is as follows: EPI access: 86.7% of children 12-23 months of age; 69% of the children 12-23 months of age were completely immunized; there was a 9.2% dropout rate; and 18% of mothers had received two or more doses of TT in their previous pregnancy (WRN, KPC Baseline survey, 1996).

BCG	80.0%
OPV3	77.0%
DPT1	98%
DPT3	78.8%
Measles 1	78.8%
Measles 2	23.9%
% completely immunized	69%
Dropout rate for DPT	9.2%
Maternal TT*	18% (by card)

\*71 mothers out of 226 had cards, and of those 71, 48 had at least 2 doses TT.

MINSA provided the following 1996 data on immunization coverage for each of the regions in the project area. These data are derived from reports of the numbers of children aged 0-11 months immunized during 1996 with the relevant vaccines. The results and analysis are apparently flawed by the MOH's use of INEC population estimates rather than an actual census.

	<u>RAAS</u>		<u>RSJ</u>	
BCG	3,472	132%	2,902	120%
OPV3	2,681	102%	2,823	117%
Measles	2,534	97%	2,435	101%
DPT3	2,388	91%	3,138	130%
DPT Dropout		25%		-24%
EPI Dropout		20%		4%
Women TT2	5,816	36%	9,230	125%
TT Dropout		9%		4%

Equations used to derive the above percentages are as follows:

Dropout from DPT= (DPT1-DPT3)/DPT1

Dropout from program= (DPT1-Measles 1)/DPT1

Population data on children under one year of age in 1996, according to INEC (National Institute of Statistics and Commerce), are 2,625 for the RAAS and 2,417 for RSJ. However, María

Teresa Villagra, of the MINSA EPI Division at MINSA's central office in Managua, stated that these data underestimate the population and result in a falsely high estimate of EPI coverage. It is unclear what flaws in data gathering or data management led to the spuriously high DPT3 coverage rate and the negative DPT dropout rate.

Eighteen percent (18%) of all the women surveyed had received two or more tetanus toxoid vaccines (by card), although 48 of the 71 women with cards (67.6%) had received 2 or more doses of TT. It is very likely that TT coverage is higher than indicated by the KPC survey, which requires a card for proof. Significantly, 34% of mothers reported never having had a maternal card, which could indicate they never even received prenatal care, or a TT during their pregnancy. (See Appendix C for copies of immunization cards.) In the recent national health survey among mothers with a child 5 years of age or younger, 78.3% had received at least one tetanus toxoid vaccine (PROFAMILIA, 1993). Since MINSA policy is to give 2 doses of TT to each pregnant woman, it is likely that after several children mothers may have received 5 doses for lifetime immunity, although since they do not keep their cards, this cannot be stated with any assurance.

#### D.4.a.3 MOH Policies

MINSA's EPI policies follow guidelines established by WHO and PAHO. The goal of this program is to reduce infant morbidity and mortality caused by vaccine-preventable diseases in Nicaragua. Strategies to expand immunization coverage include the following:

1. Systematic (daily) immunization services available at HCs and health posts with an adequate cold chain.
2. Taking advantage of lost opportunities.
3. Catching at-risk and drop-out cases through home visits.
4. Home visits during outbreaks of suspected or confirmed cases to collect specimens for laboratory analysis and to immunize the population surrounding the cases.
5. National Immunization Campaigns which are held three times per year.

Women should receive at least 2 doses of tetanus toxoid at least 2 months before delivery and should receive a booster during each subsequent pregnancy until they have had 5 doses of TT. Five doses of TT over a period of several years are adequate to immune a woman to tetanus for the rest of her life. (Source: *Manual para Promotores Integrales de Salud*, MINSA-GTZ, 1995).

#### Vaccination schedule used by MINSA (MINSA-GTZ)

Immunization	Dose	Age given	Interval	Booster
BCG	1	newborn-4 years.	--	None
Anti-Polio	3	1 month-4 years. Oral dose, (2 or 4 drops)	4-8 weeks	3 times per year for all children 1- 4 years of age, for a total of 12 doses
DPT	3	1 month-4 years.	4-8 weeks	one per year until three doses are completed.
Measles	1	9 months-4 years.	--	None
Tetanus Toxoid	2	10 years-49 years	4-8 weeks	one year after the second dose or in the next pregnancy.

#### D.4.a.4 Knowledge and Practices

The baseline survey carried out in the project area (WRN, 1996) indicated the following baseline figures for children 12-23 months of age: access to the EPI program, 86.7%; completely immunized 69.0%; mothers who knew that their child should receive the measles vaccine at 9 months of age, 19.9%; mothers who knew that TT administered during pregnancy protects the mother and child, 33.5%. In comparison, the 1992-93 National Survey found that 74.8% of children aged 9-59 months were fully immunized. (PROFAMILIA, 1993.)

Eighty-one percent (81.6%) of all mothers surveyed had an immunization card for their youngest child, 11.7% stated that they had lost their child's card, and 6.8% had never had a card. Ninety five (95) of the 113 mothers with children aged 12-23 months (84%) reported that their child had received at least one vaccination. Of all mothers surveyed (266), 246 (92.5%) stated their youngest child had received at least one vaccination.

Among all the women surveyed, 19.9% identified nine months as the age when their youngest child should receive the measles vaccine. One-third of the women correctly identified the main reason why a pregnant woman should be vaccinated against tetanus. Forty-two percent did not know how many vaccines against tetanus a pregnant woman should receive.

Eighteen percent (18%) of all the women surveyed had received two or more tetanus toxoid vaccines (by card). The project will encourage mothers to keep their maternal care/TT cards with their child's growth card, which they were more likely to keep (68.8%).

These data suggest that the project should support MINSA in its efforts to increase the administration of immunizations to children and pregnant women, educate women about the proper timing of the first measles vaccination, the importance of keeping the immunization card, and the importance of tetanus toxoid vaccinations which benefit the pregnant woman and her unborn child.

#### D.4.a.5 Approach

The principal barriers towards achieving total coverage, according to the MINSA Central EPI office, are the following:

1. Insufficient number of health personnel to follow up on defaulters at the family level every day, and to carry out a stricter control.
2. Poor/insufficient population/census data
3. Lack of transportation services or equipment to systematically reach the most distant communities

Our project will address these barriers by:

1. MINSA and WRN staff will be trained by an EPI specialist from MINSA's Central office. Then trained personnel will replicate the training session for volunteers who in turn train mothers in community education sessions.
2. Updating the census information by conducting a census, with yearly updates, for the entire

project area.

3. Donating 8 refrigerators to improve the cold chain in the two SILAIS where the project will be implemented. Assisting with transportation as necessary and possible, coordinating with MINSA personnel to maximize transportation funds available to MINSA and the project.

In an interview with MINSA personnel in RAAS, they identified specific obstacles, peculiar to their area:

1. Very high cost/lack of frequent transportation (for example: a round trip to Punta Gorda uses 110 gallons of gasoline costing about \$3 per gallon). Consequently, only the required 3 EPI campaigns a year are carried out in this remote area. People can arrange their own transport to their nearest HC/post with a cold chain if they want EPI services aside from these campaigns.
2. Cold chain problems, some refrigerators need repair and some need to be replaced.
3. Lack of syringes for BCG immunizations. (These syringes are particularly expensive and fragile, thus most likely to be broken.
4. Armed bandits (ex-revolutionaries) in two communities (El Tortuguero and La Cruz de Río Grande) are a problem for the RAAS SILAIS/MINSA staff working in these two communities. However, these communities are not in the project area and therefore do not, at present, present any danger or obstacle to the project.

In RSJ, María Luisa Vindel identified the two main constraints in the RSJ region as being lack of transport to reach the farthest communities and inaccessibility to most communities during the rainy season.

Overall quality of the immunization program is judged to be good, considering the difficulties in access. Coverage in urban areas is very good, but rural areas are very difficult to cover, especially in the rainy season.

#### Planned Immunization Component

Volunteers will receive a 24-hour training module in EPI, including: EPI components (polio, diphtheria, pertussis, tetanus, measles, tuberculosis), modes of disease transmission, prevention, signs, individuals susceptible to each of the EPI components, immunization schedule, activities which the health volunteer can engage in when faced with a dosage problem, management of immunization cards, importance of TT for pregnant women, importance of keeping immunization cards, detection of cases, notification of cases, and the HIS/family register the volunteers will use for this intervention.

Promoters, MINSA personnel, area coordinators, and staff from WRN's central office will take part in an initial 24 hour training session which will cover the above topics as well as MINSA's norms. Refresher training sessions for the promoters will be done on an annual basis by the area coordinators, and for the volunteers will be carried out by the health promoters (MINSA-GTZ, 1995; Manual de Vigilancia Epidemiológica, SILAIS Managua, 1997).

The area coordinator, in coordination with the municipal educator, will evaluate the training sessions for the promoters and volunteers. Additionally, the promoters and MINSA personnel will evaluate the education sessions which the volunteers impart to the mothers. Refresher training sessions for the promoters will be done on an annual basis by the area coordinators, and

refresher training for the volunteers will be carried out by the health promoters.

PVO and MINSA roles in education, community mobilization, vaccine administration are:

Education: PVO provides funds for training and will train both MINSA and project staff, to enable them to train and keep up the volunteer network of trainers. PVO and MINSA will work together in community mobilization, with the main advantage of the project's presence being that trained and mobilized volunteers can conduct community promotion and education of EPI campaigns at the neighborhood and household level. MINSA conducts radio messages, megaphone announcements, poster advertising, etc., and project staff and volunteers will help with these advertising and promotion efforts. Vaccine administration will be carried out solely by MINSA personnel, although PVO personnel will assist at EPI sessions by helping process mothers, filling out cards, and encouraging defaulters to attend the EPI session.

Monitoring and improvement of the quality of the EPI services will be conducted jointly by PVO and MINSA staff involved in EPI campaigns. MINSA appreciates the project's assistance, knowing it improves coverage rates and helps assure quality of EPI services. If a problem occurs with cold chain integrity or some aspect of EPI services, WRN will work with MINSA to rectify the situation.

The project will also monitor the quality of education with supervisory checklists (see Appendix D), HIS (family register, reference sheets), immunization cards, and monthly and quarterly reports.

The program will coordinate its activities with MINSA through monthly meetings between area coordinators and MINSA auxiliary nurses and municipal educators and special meetings held with MINSA for EPI campaigns. WRN has already been coordinating with MINSA for the 3 health (EPI) campaigns throughout the year. There are no differences between the norms and protocols that MINSA has established and those to which the project will adhere.

Program beneficiaries can receive immunizations throughout the year at fixed facilities, such as the hospital, the HCs, and health posts that have a cold chain. The provision of immunizations is guaranteed by MINSA, and there have not been any problems with vaccine supply in the project area. All health units need to plan a year in advance for the resources they will need: vaccines, syringes, cotton, alcohol, cold boxes, and documentation forms. Each SILAIS has to buy the vaccine it will need for its area out of its own budget. The project's census will enable MINSA to correctly estimate the population of the project area.

The program plans to reach high risk populations by home visits to known defaulters (identified through the family register). See Appendix E for a copy of the family register. Also, assisting MINSA in their efforts to reach distant communities, and helping with some tangible improvements to the cold chain, hopefully will benefit the most distant and under served communities.

MINSA staff do not at present have realistic measures to protect themselves from blood-borne illnesses. To avoid contamination and cross-infection of patients, MINSA provides one syringe per vaccine per patient. After being used, syringes are returned to be counted and destroyed.

However, there are no safety procedures in effect to protect the individuals who are responsible for collecting and counting the syringes. WRN will provide education aimed at improving the safety of this procedure.

#### D.4.a.6 Individual Documentation

See Appendix C for copies of child's growth/EPI card and woman's TT card, and the prenatal care card which also tracks TT for pregnant women. The program will be using these cards, and the volunteers will also keep track of the 30 families assigned to them through the family registers.

The documentation system that will be used consists of the following:

- 1-Growth development and immunization card for children under 5 years of age
- 2-Prenatal care card to monitor TT vaccinations for pregnant women who attended prenatal care programs
- 3-Immunization cards for women of reproductive age who are not pregnant

This documentation will be given to the women (of fertile age, or pregnant and receiving prenatal care) or to the mothers for their children. MINSA will continue educating communities on the importance of safeguarding the cards. Whenever a woman visits any MINSA program (e.g. prenatal care, growth monitoring) she is asked to show her and her child's immunization, prenatal care and GM cards.

Reliability of the card supply: MINSA Central claims MINSA can supply 100% of the cards needed for children under one year of age. Replacement cards for 25% of people is also factored into supplies. As experience proves that growth cards are usually in short supply, the Project will follow the implementation of their policy closely and supply more cards if necessary. The project will encourage local SILAIS and MINSA Central staff to adequately plan in order to provide the needed supply of cards for both SILAIS in the project area. As the project will be carrying out a census in the project area and the family register information (and consequently the census information) will be updated on a quarterly basis, we will be able to provide these updated data to the SILAIS and MINSA staff so that they can better plan for the number of cards that will be needed in the communities.

During national campaigns, MINSA EPI personnel register vaccines given on census EPI forms and individual cards, then when they go back to MINSA and put on clinical records. If a mother loses a card, the "Card System" [Sistema de Tarjetero] at MINSA keeps track of vaccines administered at a health unit. Therefore, if a mother loses her card, any immunizations registered via the Card System can be replaced.

Women's TT is registered on two cards; a prenatal care card has a spot for TT vaccinations, and MINSA's goal is to make sure every pregnant woman has at least 2 doses of TT. There are also immunization cards for women of reproductive age who are not pregnant, and therefore not attending prenatal care. These cards have places to mark TT received. Prenatal care cards are different from child's growth cards and are not always kept together. (The KPC Baseline survey found that only 71 out of 266 women surveyed had their prenatal/TT coverage cards, whereas

217 of 266 mothers had their child's EPI/Growth card.) The project will emphasize to the mother the importance of her card, and urge her to keep all the cards together.

#### D.4.a.7 Dropouts--Children

Major causes of dropouts are: constant migration, inaccessibility of distant communities, refusal of some religious groups to be vaccinated, and opportunities lost by the health system.

Strategies to reduce the numbers of dropouts include: MINSA staff follow up on defaulters through home visits. They have also begun taking advantage of possible lost opportunities by checking the EPI cards of all clients at a MINSA facility and vaccinating them on the spot. (Previously they required appointments to save vaccines by having all children come in for vaccines on the same day.) The project will help by following-up on and encouraging defaulters to attend EPI sessions. The project will ensure and strengthen the cold chain as necessary. The project will help by providing trained volunteers to help during the National Health (EPI) Campaigns, by mobilizing communities and helping with processing patients (paperwork, registers) during campaigns.

#### D.4.a.8 Dropouts--Women

According to the baseline KPC, 17% of mothers believed TT protected the child only, and 7% believed TT protected the mother only. Only 33% of mothers answered that TT protects both the mother and child, and 42% did not know, or answered something else. Lack of knowledge can account for some of the lack of coverage. However, 91 mothers who knew to answer 2 or 2 or more TT were needed, yet only 48 women had a card with 2 doses of TT recorded. This indicates a gap between knowledge and practice, although lost cards were also common and probably also a factor (104 of 266 women lost cards). Messages about the importance of TT vaccinations for all adults, and that TT during pregnancy benefits both mother and child, will be stressed. Also, the importance of valuing and keeping her card, for her sake, will be emphasized.

That women do not value their own immunizations is also a cause for dropouts. Most women do not attend EPI sessions unless they are pregnant and are attending prenatal care.

Strategies to increase TT coverage among women of reproductive age: MINSA has various activities such as NHCs, vaccination of reproductive age women in schools, and home visits.

#### Strategies for increasing demand for TT:

1. Education of groups of women in the community using participatory methodology.
2. Identification of women of reproductive age during home visits, educating them about the importance of TT vaccination and then referring them to nearest health unit for vaccination.
3. Advertising the upcoming NHCs in communities through radio and posters placed in popular areas such as schools, HCs and stores.

#### D.4.a.9 Population

The beneficiary population for immunizations is estimated to be:

Communities	Population	Live Births/ year	0-23 month olds	total births years 2,3,4	Women fertile age
Punta Gorda*	1,782	71	137	213	445
Urban Bluefields	36,292	1,452	2,8174	4,356	9,073
Kukra hill	14,201	568	1,102	1,704	3,550
Río San Juan	63,908	2,556	4,959	7,668	15,977
TOTALS	116,183	4,647	9,015	13,941	29,045

\*after 15% population cut negotiated before cooperative agreement was signed, and as a direct result of 23% cut in budget from proposal. Part of the Punta Gorda population was cut (see section H for description of population and intervention changes).

Estimated number of visits calculated to reach full coverage by 12 months is about 5. The women the program will target for TT are women of childbearing age, with an emphasis on pregnant women. Estimated number of women the program will target for TT is 29,045.

#### D.4.a.10 Cold Chain Support

The primary obstacles towards a continuous and effective cold chain in RAAS include the following: three refrigerators in the area which are out of service and which need to be replaced; MINSA's inability to reach areas with difficult access out of the project area; and the lack of syringes for injecting BCG.

The program does not have a protocol for monitoring vaccine temperature, it is MINSA's responsibility and well done. (See Appendix F for the MOH's vaccine temperature monitoring protocol.)

The project will provide 8 refrigerators to the two SILAIS in the project area to strengthen the cold chain for both. MINSA checks temperatures morning and night and maintains a written record of the temperatures. MINSA issues a report immediately on any period of time when temperatures were not within the safe range and what was done to protect the vaccine or destroy it if exposure to high temperatures was prolonged.

There are no reports on vaccine efficacy, at the district or national level. If developing such a report is a MINSA priority, then WRN will work with them in doing so.

#### D.4.a.11 Surveillance

MINSA is in charge of the epidemiological surveillance of EPI. WRN will train health volunteers on detecting and referring all suspicious febrile cases to the health system. The report, samples (e.g. blood, feces) and follow-up of suspected or confirmed cases will be exclusively done by MINSA.

In the event of disease outbreaks, WRN will provide support in the field for the Plan Barrido (Barrier Plan--home visits to identify source of infection and contain it) and for education in communities on basic EPI messages. Additionally, WRN will provide transportation for MINSA personnel and some needed equipment.

The project will not be carrying out its own EPI disease surveillance activities per se. EPI disease surveillance activities are not specific project objectives/interventions because the number of cases is very low to justify having our own surveillance system. Additionally, MINSA is involved in EPI disease surveillance on a daily or weekly basis (as described in D.4.a). Nevertheless, the project volunteers will be trained in recognizing the signs and symptoms of vaccine-preventable diseases. In the event that someone presents with these symptoms, the volunteers will be referring said person to the nearest health unit (and that health unit, in turn, will be able to report the case as suspected or confirmed to the SILAIS).

#### D.4.a.12 Community Support/Sustainability

Community support is provided by: the trained community health volunteers who work with MINSA in identifying defaulters and implementing the Plan Barrido in the event of suspected cases. The volunteers' involvement in detecting suspicious cases constitutes a "disease surveillance activity." During the National Immunization Campaigns, the volunteers also organize secondary school/high school students in groups to make home visits to remind mothers of the date for the campaign. Additionally, they assist the vaccination posts to organize the people who arrive, to look for their names in the census, to write down the immunization information on the census and on the cards, and also to administer the vaccines if they have been trained to do so.

Community support also consists of hospitality (lunch) provided by the community to the EPI worker who arrives at a distant location and has taken all day to travel to the community. Local leaders and health volunteers will promote the EPI session among the community. They also assist with vaccine transportation, and in the most distant communities, they will go to the closest health unit to pick up the person(s) who will be administering the vaccines and bring them, along with the vaccines, to the community. There are no plans for cost recovery initiatives because communities cannot afford to pay for these services. A bartering system is widely used because people rarely have cash on hand.

#### D.4.a.13 Other Issues

##### Staff Experience:

WRN staff have extensive experience in working with MINSA in EPI National Health Campaigns and in training health personnel, volunteers, and promoters in EPI.

There are no differences between the norms and protocols that MINSA has established and those to which the project will adhere.

##### Resources:

1. *Manual for Integrated Health Promoters*, MINSA-GTZ, 1995.
2. *Notification of cases of vaccine-preventable diseases*, Manual of Epidemiological Surveillance, SILAIS Managua, 1997
3. *Baseline Survey*, WRN, 1996
4. *EPI Essentials: A Guide for Program Officers*. John Snow, Inc., August 1989.

## D.4.b Nutritional Improvement

### Nutritional Improvement for Infants and Children

#### D.4.b.1 Nutrition Status

All children surveyed were weighed, so Baseline KPC data for the % of malnourished children in the project area is available. Based on the weight for age\* indicator, survey children were classified as well-nourished (56.0%), at-risk for becoming malnourished (32.7%), moderately malnourished (9.7%), and 1.6% as severely malnourished (WRN, KPC survey 1996). These figures are similar to MINSA estimates, with 20% of children under six years of age at-risk for becoming malnourished and 13% malnourished to some degree.

\*Weight-for-age is used to identify populations that currently have or have had nutritional problems. However, a limitation of this indicator is that it does not allow one to distinguish between a tall, malnourished child and a short, well-nourished or obese child (O'Donnell et al, 1994). Despite this caveat, weight-for-age is a frequently used measure in health and nutrition surveys.

The weight-for-age data are an indication of the nutritional status of the children, suggesting that 11.3% of the children were calorie-deficient recently or at one time, because of insufficient food intake or incomplete nutrient utilization due to infections or lack of needed nutrients. Effective integration of the child survival components (e.g. educating mothers about micronutrient-rich foods, treatment of diarrheal diseases, vitamin A supplementation, timely immunizations, improving maternal health in the prenatal period, and effective family planning) can improve the nutritional status and health of the child 0-23 months of age and beyond.

The following information is taken from a World Bank publication, The Who, What and Where of Poverty in Nicaragua, 1993. Table: Malnutrition among children under 5 by poverty group and geographic area.

malnutrition indicator	extremely poor		poor		non-poor	
	urban	rural	urban	rural	urban	rural
height for age (chronic)	28.0%	41.1%	18.1%	31.0%	12.7%	19.4%
weight for age (underweight)	18.6%	18.6%	10.4%	15.4%	5.7%	8.8%
weight for height (acute)	4.6%	1.8%	1.7%	2.3%	1.1%	1.0%
<b>total (any form)</b>	<b>34.5%</b>	<b>44.4%</b>	<b>22.0%</b>	<b>35.1%</b>	<b>14.3%</b>	<b>22.1%</b>

Measurement of poverty (for table):

poverty line = the level of total per capita monthly (30 day) expenditures at which an individual attains the minimum daily caloric requirement.

extreme poverty line = the level of per capita food expenditures required to obtain the daily minimum caloric requirement. This is the cost of the minimum daily adult requirement of calories. Below this level of expenditures, individuals cannot maintain the needed level of caloric consumption even if total income is spent on food.

Chronic: < -2 SD from NCHS gender-specific reference median

Underweight: < -2 SD "

Acute: < -2 SD "

"Of all children under the age of 5, 28% suffer from some form of malnutrition."

### Regional differences in malnutrition

Atlantic region: 23.3% of urban and 34.8% of rural children under five are suffering from some type of malnutrition

Southern region: 15.9% of urban and 30.6% of rural children under five are suffering from some type of malnutrition.

Seasonality of hunger exists in the project area due to dependence on harvest for income and food. The months right before winter (Jan-May) are when the harvest is sold for money to pay debts and buy necessary materials. Consequently, afterwards if there is no food stored or money left to buy food, then hunger can occur. The government does not provide means for post-harvest storage of grains or support for grain prices (i.e. the Nicaraguan government does not subsidize grain production). WRN's Agriculture Program in this area is promoting the use of silos for the post-harvest storage of grains, but not all farmers can purchase the silos. What can be promoted among women is the post-harvest storage of grains in plastic bags. The consequence of farmers producing crops for export is that, for example, the parents view the harvest as a means of gaining income to buy "better" food, such as processed foods (e.g. Maggi Soups, powdered drinks, crackers, Gerber baby food). And they tend to not value the abundant fruits and vegetables that they grow. In some cases, the children will not be offered the fresh fruits and vegetables grown on the farm.

No differences exist in between male and female children in preferential feeding. Micro distribution follows standard practice of feeding adult males, then siblings from oldest to youngest, and then the mother eats whatever is left over. (Source: Lijia Saavedra, Dept of Nutrition, MINSA Central, *personal communication*, Feb 1997)

### Food availability and food security in the program area

Food availability and food security are affected by the lack of adequate post-harvest management, for example due to a lack of silos for post-harvest storage. Additionally, erratic climactic changes also affect the harvest, which in turn affect food availability and food security.

"The percentage of children with moderate and severe undernutrition exceeds 20% in Regions I, II and VI [north west Nicaragua] and nears 20% on the Atlantic Coast. This signals levels of food insecurity which go beyond the areas which have traditionally been hardest hit by undernutrition. The above data signal a need to focus a variety of development efforts, including employment generation and food security interventions, on the poorer areas of the country where undernutrition is most severe."

Source: Nicaragua 2000: Challenges for developing a stable, democratic, prospering society. USAID, Managua, 1995

D.4.b.2 Current Beliefs and Practices

Infant/Child Feeding Practices	6-11 months	12-17	18-23	24+
# times children fed each day	Given only liquids in the morning, the mid-morning "fresco", a fruit juice is important. At lunchtime a little meal is given, usually from the mother's plate, whatever she is eating. In the afternoon only liquids are usually given (but not fruit juices- considered "cold" and bad for the stomach. Many mothers also give powdered milk if they can afford it, or breastmilk. Some mothers give an additional meal in the afternoon, but this is not the norm.	once they can walk, are fed 3 times a day just like adults. Not much effort given to add additional mealtimes, although older kids who can ask for food can find it.		
Diet Quality/ Composition (major nutrients and micronutrients)	Liquid from boiled meat/ vegetables (believe nutrients are in the juice, not the substance.) mashed potatoes tortilla and cheese eggs and fish strained (mashed) beans Tend to be high carbohydrate foods, although rice usually has oil added.	eat same foods as the rest of the family		
Quantity	mashed up little mouthfuls, continue breastfeeding, only give a meal at lunchtime, believe AM and PM foods too heavy. Give "fresco" at 10 AM	Give plenty of food, usually can't eat it all.		
Preparation	Same food as for adults, not much hygiene, mashed up with fingers	Same food as adults		
Ways children are fed	While still a baby fed by hand, eat from the mother's plate while she eats	Not supervised, given own plate, eat on floor, with hands (not utensil), don't teach how to use spoon		

Mothers are not typically absent during the day. If they are, primary care givers according to the KPC survey are relatives (38.4%), closely followed by older siblings (19.7%), although often the child will go with the mother (27.7%). Twenty one percent (21.4%) of the mothers work outside the home, primarily as maids or selling food.

Cultural beliefs Fruits are considered "cold" and therefore not suitable for consuming in the afternoon or when a child has a cold (believe the person's stomach will catch a chill). Examples of cold foods are: citrus, bananas, coconut water, pineapples. Foods that shouldn't be eaten in the afternoon include watermelon and other fresh fruits. "Hot" foods include: avocado, peanuts and cacao. Hot foods are also rich in fat; the adult reasons if these foods feel "hot" in their stomach (called "gastritis") then they are hot.

This care for hot and cold foods given to children is only commonly taken for children up to about 12-14 months of age. Once they can walk, they are not treated in a special manner.

There is a lot of faith in imported, packaged foods, like "Maggi" soup (instant bouillon cubes). Also, powdered cow's milk is considered an essential part of a child's diet. They consider that the baby hasn't eaten if they don't have milk added to the meal. To make the milk last, mothers also dilute it with water; as long as it is white, it is considered adequate.

Feeding children during and following illness. Based on the KPC baseline survey (WRN, 1996) in the program area, women who indicated that their youngest child had diarrhea in the two weeks prior to the survey were then asked with what frequency they gave the child breastmilk, other fluids, and semi-solid or solid foods. 75.6% of women provided more or the same amount of breastmilk to the child during the diarrhea; 67.2% provided the child with more or the same amount of fluids (other than breastmilk); and 41.4% provided the child with more or the same amount of solid or semi-solid foods. Notably, women were more likely to maintain or increase liquid feedings than to maintain or increase feedings of solid or semi-solid foods. This trend is consistent with the trend observed in the 1992-1993 national health survey (PROFAMILIA, 1993).

All the survey women were asked what the most important actions are that a mother should take when her child is recovering from a diarrheal episode. 15.7% indicated that they should provide more food than usual, and 12.7% indicated high calorie foods. Messages about increased foods and breastmilk during and after illnesses will be stressed by the project. (Please see Appendix G for a list of nutritional messages/curriculum that will be used by the project. These optimal nutritional practices/messages were presented by Ellen Piwoz during the 1995 Latin America Regional Workshop.)

#### D.4.b.3 MOH Policy and Nutrition Activities in Area

National government policies/programs that affect nutritional status of infants and children at the community level:

Exclusive breastfeeding promotion--to provide complete nutrients for the first six months of life, iron supplementation of children at health units will begin with children six months of age. Iron will be given to children who go to the health unit for growth and development monitoring. Mothers are given a bottle with iron in liquid form which lasts approximately one month.

Vitamin A supplementation of children 1 year to 10 years of age, twice per year, through NHCs; supplementation of mothers within one month postpartum with vitamin A, which in turn improves the vitamin A status of the breastfeeding child.

Supplementation of pregnant women with iron, folic acid and multivitamins through NHCs and health units, to improve the nutritional status of the fetus, and the newborn child.

Nationwide salt iodization helps to prevent or decrease the incidence of goiter and cretinism

*Source:* Yodo: Documento Técnico, MINSa, 1996.

In 1969 the government proclaimed the National Salt Iodization Law, for the iodization of salt for human and animal consumption. Potassium iodate was established as the adequate compound for fortification, based on its stability. Salt iodization was begun in 1978.

Immunizations help to prevent vaccine-preventable diseases and help stop the poor nutrition-disease cycle which makes less well-nourished children more prone to diseases which exacerbate their nutritional status and make them more susceptible to diseases.

Child growth and development monitoring. Children are routinely weighed and their weights charted on their personal Road to Health Charts. Children whose growth is not considered adequate are referred for individualized care which includes nutrition counseling.

Diarrhea case management. Mothers of children with diarrhea are taught to use ORT and to feed their child during and after the illness with smaller, more frequent feeds, and high calorie foods. The regular practice of these two behaviors will help to prevent malnutrition among these children. During the NHCs, ORS packets are distributed per family to ensure that mothers have ORS on hand when a family member becomes ill with diarrhea.

Maternal and newborn care (prenatal care, postpartum care): Improved prenatal care can help prevent low birth weight babies who have increased mortality and morbidity rates and who sometimes have difficulty initiating breastfeeding. Improved postpartum care helps decrease maternal morbidity and mortality which in turn help ensure that the infant has a reliable source of breastmilk. Family planning, by increasing birth spacing, helps to ensure that young children are not prematurely or abruptly weaned from the breast when a younger sibling is born.

Deworming of children older than one year of age: During the NHCs two tablets of 200 mg each of albendazole are given to the child. This helps decrease the parasite load which has such a deleterious effect on children's nutritional status.

The National breastfeeding policy was developed by MINSA in conjunction with Wellstart. The former Breastfeeding Director, Ninoska Cruz, recently was removed from her position as Nicaragua changed governments in November 1996. With the elections many MINSA staff at director levels were replaced with other appointments. Ninoska Cruz, still the most qualified person in Nicaragua, will be available to our program for training in exclusive breastfeeding and nutrition.

#### D.4.b.4 Program Approach

The program will monitor and improve the quality of intervention activities by:

Supervisory checklists, for monitoring the quality and content of messages provided by the promoters to the volunteers and by the volunteers to the mothers in the community during training sessions. (See Appendix D for supervisory checklists.) The promoters will be trained in the management of family gardens and nurseries and in mothers taking full advantage of the gardens and nurseries. Quality of home gardens and food demonstration activities will be monitored by the area coordinator and the agriculture technician during monitoring visits. Auxiliary nurses and municipal educators at the health posts will also assist in evaluating the quality and content of health messages and the quality of the growth monitoring sessions in the areas where these activities are carried out. The purpose of monitoring these activities is to then be able to improve any components that require improvement.

The project's strategy for improving children's nutritional status includes the following components:

- Detection of at-risk or malnourished children via growth monitoring/the family register and appropriate counseling for their parents.
- Promotion of family gardens
- Food (esp. vitamin A rich foods) cooking/preparation demonstrations
- Supplementation of children and postpartum women with vitamin A
- Promotion of Iron/folate supplementation for Pregnant women during prenatal care
- Promotion of breastfeeding and exclusive breastfeeding to 6 months
- Promotion of immunization of children with special attention to avoid missed opportunities.
- Promotion of adequate nutrition during and after illness
- GMC of children in distant communities where there is no health unit in order to detect at-risk or malnourished children, monitor them, and provide frequent nutritional counseling to their mothers
- Improve family food security by teaching home gardening and supplying training, seeds, fruit trees and tools.
- Encourage parents to store adequate supplies of beans and cereals that they produce in abundance. (Reportedly the families tend to sell all their harvest immediately and buy it back in small amounts at a higher price.
- Correlate child growth monitoring data with season of weighing. Attempt to relate seasonal changes in weight gain with seasonal availability of food, seasonal changes in intensity of parent's workload, and seasonal changes in incidence of certain infectious diseases.
- Improve use of low cost nutritious local foods and garden produce through cooking demonstrations.
- Postpartum, exclusive breastfeeding to 6 months will be promoted, and mothers will be given a vitamin A supplement within one month postpartum, to insure that her breastmilk will be rich in vitamin A.
- Home gardens, especially of fruits and vegetables that are rich in vitamin A and iron, will be encouraged and practical assistance given to mothers. Later, cooking demonstrations with the foods in their gardens will encourage them to eat more vegetables.
- Train parents in appropriate complementary feeding, beginning at 6 months which includes more frequent feeds for children (5 times a day), and foods rich in vitamins and with added fat. In the diarrhea component, appropriate feeding during and after an illness will be taught.

The program will coordinate nutrition interventions with existing nutrition and MCH activities in the area by being involved in all the strategies listed immediately above in section D.4.b.4, which extend MINSA activities outlined in section D.4.b.3. to the community level. The project will work closely with MINSA in all aspects of the nutrition interventions, by facilitating training for the Baby-Friendly hospital in Bluefields, and by training exclusive breastfeeding support groups. The project also will strengthen and support the following MINSA interventions: vitamin A capsule distribution, growth monitoring and effective, adult-learning principles-based nutritional counseling.

MINSA's current existing nutrition interventions are limited to hospital care of severely malnourished children who are referred by HCs. Increased growth monitoring of children in more remote areas by WRN will result in some increase of referrals but most families will be taught to rehabilitate their malnourished children with locally available foods, using their own resources.

Strategies to increase caloric intake in vulnerable children include:

- Promotion of exclusive breastfeeding to 6 months and breastfeeding through 24 months
- Sharing educational messages about appropriate complementary feeding (in particular, messages about frequent feedings (5 times/day), high calorie foods (adding oil), increased feeding during and after an illness, etc. See Appendix G for complete list of nutritional messages.
- Home garden production of vitamin A-rich fruits and vegetables through the home gardens.

Nutrition messages that will be delivered to improve the content and frequency of complementary feeding to small children during the weaning period include:

Source: *Nutrición: Para brigadistas de salud.* Project Hope/MINSA/WRN/USAID, 1993

- The appropriate way to wean a child.
- Gradually introducing other foods until the child stops breastfeeding on his own
- Never use substances so that the child will detest the breast, such as chili, garlic, onion, etc. Do not separate the child from the mother
- By the time a child turns one year old, he should be receiving the same food as the rest of the family.

Source: *Para la vida: Un reto de comunicación.* UNICEF/UNESCO/OMS, 1989

- By the age of six months, the child needs other foods in addition to breastmilk
- A child under three years of age needs food five or six times a day
- A child under three years of age needs a small amount of extra fat or oil added to the family's ordinary food
- All children need foods rich in vitamin A

Source: *Prácticas nutricionales recomendadas, Piwoz, Ellen, Ideal Nutritional Practices, Appendix E of Fifth Annual Latin American Regional PVO Workshop Report, Cerro Verde, El Salvador, 1995.*

- Complementary foods should be offered after a child has breastfed
- Complementary foods should be fed using appropriate utensils such as cups and spoons.
- Bottles should not be used.
- Breastfeeding continues well into the second year of life or beyond and is an important source of nutrition (often provides > 50% of total calories at this age).
- Gradually increase the quantity of food, frequency of meals offered per day, and the variety of foods which a child is offered.
- Appropriate local foods that are energy-dense, and rich in protein and micronutrients (vitamin A, C, iron, zinc, especially).
- Feed Complementary foods and snacks 5 times daily by 12 months of age.

- Child is consuming family foods in second year of life
- Child is supervised while feeding
- First foods should be offered beginning at about 6 months of age. Between 6 and 9 months, infants are learning about food and how to chew, eat, and swallow, so they need to be exposed to a variety of foods, tastes, and textures (purees, semi-solids, fruits, vegetables).
- Feed small amounts of food frequently.

Source: *Manual de Alimentación y Nutrición: Guía para docentes, líderes comunales y gremiales*, MINSA, 1991

Before introducing a new food to the child, one must wait a few days until the child has become accustomed to the new food. This is important in the child's acceptance of new foods and in being able to immediately identify any foods which cause an allergic reaction in the child.

We will also promote the basic messages for ill children and for those who are recovering from an illness (see Section D.4.d.7).

The program will develop and strengthen existing base houses to be the community support systems to reinforce behavior change. When a mother seeks help or information from a volunteer at a base house, they will re-emphasize the basic health messages (including the nutrition/breastfeeding messages) which have been disseminated community-wide. Through the repetition of the health messages, and the positive change in the children's health that the mother will observe based on following the advice given at the base houses, the mother's behavior changes will be reinforced. Additionally, cooking demonstrations and home visits will be implemented, in which basic nutrition messages will be reinforced to those individuals in charge of preparing the child's food.

The program will monitor and improve the quality of intervention activities by:

Process indicators such as checklists for supervision of training sessions given by the health promoters (See Appendix D), direct observation, and key informant interviews, the project's HIS (family register, reference sheets), qualitative evaluations such as in-depth interviews and focus groups with project beneficiaries. Additionally, activities will be monitored through monthly and quarterly reports and with reference sheets, depending on the number of children who are classified as malnourished or at-risk for becoming malnourished. Impact and knowledge gains will be monitored via mid-term and final evaluations and the final KPC. There will be annual refresher training sessions for the volunteers, health promoters, area coordinators, and the project's central team.

Training sessions in child nutrition: MINSA and WRN staff receive a 3 day training session from MINSA Central specialists, Dr. Blanca Benard and Dr. Blanca Ulmos, of the Integrated Care of Children Program. Training workshops will be organized, funded and facilitated by the Project. This initial training session will be facilitated by staff from MINSA's central office. Subsequent refresher training sessions will be carried out annually by a team from the project's central office and the area coordinators. Once the staff are trained, they will replicate the training session for the health promoters and volunteers who will then present the information to women in the project communities.

The health volunteers will be trained in the intervention for a total of 24 hours. The training session will cover the following topics: care of the healthy child, good child nutrition, stimulation of the child, prevention of diseases, nutrition-related diseases, how to interpret child growth chart, recommendations for the monitoring of child growth and development, practical exercises (e.g. recommendations for the monitoring of the child's weight), breastfeeding, nutrition during the weaning process, nutrition for the sick child, the importance of good nutrition, nutrition for the pregnant and lactating woman, and training on the nutrition component of the HIS (SILAIS-MINSA, 1995).

The health promoters are indigenous to their assigned area and periodically move to coordinate with MINSA staff. They will be expected to work five days per week, with additional weekends for training sessions. Area coordinators and MINSA staff will evaluate the health promoters' effectiveness in training health volunteers. Promoters and MINSA staff will jointly evaluate the educational sessions that the volunteers will carry out with women in the community.

There are no differences between the norms and protocols that MINSA has established and those to which the project will adhere.

### References

1. *Baseline Survey*, WRN, 1996
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6. King, FS, Burgess, A. *Nutrition for Developing Countries*. Second Edition, ELBS with Oxford Press, 1992.
7. *Growth Monitoring and Promotion: Behavioral Issues in Child Survival Programs*, Office of Health, USAID. Ann Brownlee.
8. Piwoz, Ellen. *Ideal nutrition practices*. Appendix E in the Report on the Fifth Annual Latin America Regional PVO Child Survival Workshop, Cerro Verde, El Salvador, 1995.

## **Growth Monitoring, Counseling, and Follow-up**

### D.4.b.5 Approach to Growth Monitoring, Counseling, and Follow-up

MINSA does provide growth monitoring/promotion services. Weight, height and age are measured, although only weight and age are used to evaluate growth. MINSA uses PAHO, WHO and UNICEF weight-for-age percentile tables and growth curve graphs. The GMC card and percentile tables will be used to detect weight gain or the lack thereof.

To decide if a child is at risk, MINSA and project staff use a percentiles table, because it is more sensitive to small differences than a graph alone, especially if there has been an inadequate amount of growth. For example, a child that weighs 8.5 kg at 8 months is in the 40% percentile

but if he weighs 9.0 kg at 10 months, he has not actually improved. Although there was a weight gain, according to the percentile table the child fell back into the 30% percentile. GM tables and percentiles are explained to the mother at the growth monitoring session.

The priority group for GMC is children under 1, although children are weighed up to 24 months. There is a separate graph for children 2-5 years of age, on the right side of the same card used for 0-11 months. Once the child reaches 24 months of age, the norm is for the child to be weighed every 6 months (instead of every 3 months, which is the norm for children under 24 months). These differences (in how many times per year the child should be weighed) are reflected on the same growth monitoring card. (See Appendix C for examples of cards.)

National standards for growth monitoring are: weight for age.

Age groups:

Children under 1 year of age- norms are that all children under one year of age should be weighed every month, to catch a problem early and avoid permanent damage to the child's development. (They are considered a priority group.)

Children 12-23 months- norms are that of children under 5 years, the focus should be on children under 2 years. They should be weighed every three months, if they are of satisfactory growth, but children at risk for being malnourished should be weighed monthly. All children are weighed whenever they go to the HC with any other problems.

Children 24-60 months- weighed every six months and whenever they are ill.

Current growth monitoring activities in the project area:

According to the Baseline KPC survey, nearly 70% of mothers had their youngest child's growth monitoring card, although 19.2% were never given a card, and 12% had lost it. A review of cards showed that 69.4% of the children who had cards had been weighed in the three months prior to the survey. Of all children surveyed, only 47.7% had been weighed in the past 4 months.

Project strategy will address the underserved 52% of project beneficiaries (children that don't have cards plus those who have cards but have not been weighed in the last 4 months) by extending GMC training to volunteers, who can reach out to these most distant populations. Also, by equipping and training volunteers and MINSA personnel in growth monitoring and especially appropriate nutritional counseling, this will help widen the frequency and impact of GMC. Program efforts will complement MINSA's efforts and will be implemented in cooperation with MINSA. MINSA will weigh children at health posts, centers and hospitals, and health volunteers will weigh children who live in distant communities or are GMC defaulters at base houses equipped with scales.

How frequently are young children weighed?: MINSA norms indicate that a child under 12 months should receive 4-12 weighings. Children under 1 are to be weighed every month; children 12-23 months, every 3 months; and children 24-59 months, every six months. However, the number of times that the child actually gets weighed depends on the mother, whether or not she brings the child to get weighed. A mother can get discouraged if she doesn't receive other services when she brings the child to get weighed, so she may not bring her child to an appointment and/or she may not follow the advice that is given to her. Up until 1 year of age, children are usually brought in monthly and mothers receive a bottle of ferrous sulfate (liquid

drops), a month's supply. Mothers are very fond of this service and when it is discontinued, they lose interest in getting children weighed. There is also a belief that after 1 year of age the child has passed the "danger age" and is less likely to be brought in for weight or get special treatment. MINSAs admits that compliance with such an intensive monitoring program is difficult for them, working as they do in fixed facilities. The project's recruitment and training of volunteers will facilitate more contacts between families and the health services, particularly in GMC.

An at-risk child under one year of age is weighed monthly or every two weeks, depending on how the health worker perceives the progress of the child. The person in charge of carrying out the child growth monitoring activities is the nurse or auxiliary nurse.

MINSAs nurses evaluate child development at HCs using the poster developed by the Latin American Perinatology Center of PAHO/WHO. The poster is entitled "Schematic evolution of the development up to 5 years of age." This instrument analyzes four areas of behavior/conduct: motor, coordination, social and language. It includes 65 skills that are evaluated and covers the children from birth through 5 years of age. This instrument evaluates development patterns related to: what to expect from the child, when and at what ages to expect different behavioral achievements, listed from the easiest to the most complex. A child is considered slow or at risk when, after evaluating her development with 90% of low-risk children, she has not achieved the behavioral milestone for her age group. However, this evaluation is not sufficient to diagnose the child's problem.

Child development activities are carried out by MINSAs nursing staff with competence to evaluate child development at the HC and hospital level. While carrying out the child growth and development monitoring, nursing staff also counsel the mother on how to deal with different problems that they have with their child. If the problem is considered serious, the child is referred to the closest HC or hospital. Project staff will not be involved in this child development evaluation, except to educate mothers about the benefits of taking their children to HCs for this evaluation.

Other activities which complement the child growth and development monitoring sessions are iron and vitamin A supplements for the child older than 6 months and immunizations for children from 0 to 4 years, 11 months.

Source for the above: *Manual de instrumentos e instructivos de la atención integral a la niñez. Dirección general de atención integral a la mujer, la niñez y la adolescencia. May 1996.*

Level of compliance in attendance and counseling is low, constraints are as follows:

One of the difficulties which MINSAs staff face is that even though GM is a MINSAs norm, MINSAs staff do not always comply with MINSAs GM norms. MINSAs personnel do not always tell the mother what the child's weight is nor do they give any nutritional counseling. Generally, the child's weight is not graphed on the growth card, so a valuable teaching tool remains unused and the mother has no knowledge of the weight/nutritional status of her child. Another problem is mothers expect to receive something (e.g. medicine, vitamins, etc.) when they attend GM activities. If the health staff have nothing to offer, mothers have little incentive to return.

The project strategy to overcome these constraints and the role of the project in weighing children, interpreting growth patterns, and providing nutritional counseling are as follows:

1. Strengthen and complement MINSA's GMC efforts by educating and carrying out educational campaigns to update health personnel on the content and GMC norms.
2. Training a network of health volunteers to educate mothers with children under 5 years of age (with an emphasis on under ones) on the importance of GMC.
3. Educate mothers (through volunteers) on interpreting their child's growth chart.
4. Counseling mothers (through volunteers) to share key nutritional messages on breastfeeding, complementary feeding and feeding a sick child. (Please see Appendix G for the Ideal Nutritional Practices that will be taught.)
5. Motivate mothers to establish family gardens in order to improve the family's diet, especially for children under 2 years of age.
6. Carry out demonstrations on the preparation of underutilized, available nutritious foods.
7. Promote Breastfeeding and Exclusive Breastfeeding to 6 months.
8. Carry out GMC campaigns for mothers and children in isolated communities with no access to health services.

The program will train and supervise health workers by: using the same project strategy of training MINSA and project personnel concurrently in GMC principles. Then, MINSA and project staff will jointly train and supervise volunteers. Volunteers will then educate mothers of children under 5. They can visit homes, as well as carry out educational and GMC sessions in communities with difficult access to health services but who have a small group of mothers that can be gathered together. The educational activities are a series of participatory exercises, which take into account the participants' characteristics, the knowledge mothers already have about growth monitoring and nutrition, and especially, which inspire group reflection and help mothers to evaluate their experience and practices. See section E.3. for supervision plan.

The project will monitor the quality of service delivery through: supervisory checklists (see Appendix D) and direct observations of volunteers by the WRN promoter and MINSA auxiliary nurse. The volunteer will be trained by the promoter and auxiliary at the closest health unit in appropriate GMC techniques (including practice sessions to improve their technique) and how/where to write these down correctly on the growth monitoring card. They will also be trained on how to explain to mothers the nutritional status of their children. Whenever possible, weighing sessions will be scheduled on days when promoters or auxiliary nurses will be coming to the community (e.g. to supervise an educational session with a group of mothers, to oversee the family gardens, etc). The project will carry out qualitative evaluations of program impact five times over the course of the project. The data generated during these evaluations will be used to monitor the effectiveness of the nutrition intervention.

Quality control for weighing: Volunteers in the farthest communities will regularly weigh children in their community. They will receive training and supervised practice in correctly weighing children. The first weighing sessions will be monitored by a promoter or auxiliary nurse. GMC techniques will also be reviewed in yearly refresher training sessions. In these refresher training sessions, the volunteers will be observed in their weighing techniques and adjustments will be made/suggested as needed.

Quality control for counseling mothers: The same schedule as described above for weighing: Volunteers will be trained initially and will practice their counseling skills. They will be observed in their initial sessions with mothers and periodically thereafter by promoters or auxiliary nurses who visit the community. They will be observed again, in practice sessions, during the yearly refresher trainings. During all of these interactions between the volunteer and promoter or auxiliary, the volunteer's counseling skills will be improved as needed.

MINSA and the project volunteers will be weighing children. The project will provide health volunteers GMC training and nutritional counseling education, as well as hanging scales (Salter or Detecto brand).

The children most likely to be malnourished are:

1. Children whose weight-for-age percentile decreases between two measurements [Note: the nurse auxiliary keeps track of children's weight in two ways: percentiles for their records and simply graphing weight for the child's card. Therefore, from the mothers' point of view, at-risk children will be those whose weight does not increase or else decreases between two measurements]. This also summarizes the project's definition of growth faltering. Basically, if in two consecutive weighing sessions the child does not gain weight or loses weight, the child will be identified as growth faltering. This information will be written on the child's growth monitoring and immunization card.
2. Children with repeated episodes of diarrheal diseases or acute respiratory infections
3. Children under 2 years of age whose mother is pregnant
4. Children who are orphaned or whose mother is single
5. Children whose growth and development is not being monitored
6. Children who are not fully immunized for their age
7. Children under 2 years of age who are not being breastfed

The project will focus on children under 5 years of age, with an emphasis on children under 1 year of age and children who are at-risk for becoming malnourished or already suffering from a degree of malnutrition. They will be referred to the HC as appropriate.

The project's criteria for determining growth faltering is: If in two consecutive weighing sessions the child does not gain weight or loses weight, the child will be identified as growth faltering. This information will be written on the child's growth monitoring and immunization card.

The program plans to reach these children by: Providing nutritional counseling to mothers of at-risk or malnourished children and referring them to HCs as appropriate; monitoring of the nutritional status of each child who doesn't already go to MINSA. Volunteers will be trained to weigh children, supervised by the auxiliary nurse and health promoter. Children under one year of age should be weighed every month. Well-nourished children 12-23 m, are weighed every 3 months. Well-nourished children 24-59 months are weighed every 6 months. And any child, of any age, that is at-risk or malnourished, is weighed every month. The first weight noted in the family register will be considered the baseline and once the results are classified, they will be analyzed by the volunteers with the mothers. The volunteers will be taught to classify the results of the baseline data.

If the child's weight falls below the "road to health" lines on the card, the child will be classified as malnourished and will be referred to the closest health unit; the mother will be given special counseling, and the child will be weighed in one month.

If the child's weight falls within or above the "road to health" lines, the child will be classified as normal, the mother will be encouraged to continue feeding the child as she does and will be asked to bring the child to the volunteer's home in 3 months in order to be weighed again.

If the results are normal, the mother will be congratulated and encouraged to continue adequately feeding and caring for her child. If on the contrary the results show a child at-risk for becoming malnourished, mothers will be counseled on adequate and appropriate feeding practices (as described above). If the child is classified as malnourished, she will be referred to the auxiliary nurse at the HC or hospital, using referral and counter-referral sheets.

The project will identify growth faltering kids promptly; as soon as the child's weight is recorded and compared to previous weights, the volunteer can determine whether or not the child is growing or faltering. If the child is growth faltering, the mother will be given a counseling session with specific messages, and the mother and child will be referred to the closest HC.

The project will attempt to determine the cause of growth faltering by:

Volunteers will ask mothers if the child has had a recent illness (which could have caused the child to become anorexic and lose weight). Volunteers will also ask how the child was fed during the illness and recovery period. If the child has not been ill, the volunteer will ask the mother about the types of foods that the child was fed in the previous week and the times per day that the child is fed. If a child less than 6 months of age is already receiving complementary food, the volunteer will encourage the mother to breastfeed more often and to stop giving other foods and liquids until the child is 6 months. If a child is older than 6 months of age, the mother will be encouraged to provide the child with a greater diversity and frequency of food available in the community, about 5 or more meals per day.

The project's follow-up strategy is: The project will refer the mother and child to the closest health unit with one of the project's referral sheets (see Appendix H). Within a week of this referral, the volunteer will make a visit to the home of the child. The volunteer will ask the mother about the recommendations she received at the health unit and encourage her to follow these recommendations. Additionally, the volunteer will encourage the mother to bring the child to the volunteer's home or to the base house within approximately one month's time, in order to be weighed. (The health volunteer may decide to ask the mother to bring the child back in 15 days.) If the child still does not gain weight, the child will be referred to the health unit again. If the child does gain weight, the mother will be asked to bring the child to the volunteer's home the following month to monitor the weight. If the child gains weight at this second weighing, the mother will be asked to bring the child in 3 months to be weighed (i.e. the child is now assumed to be gaining weight normally).

Effectiveness will be monitored via the GMC component of the family register which will indicate the number and percentage of nourished, at-risk or malnourished children. We expect that the percentage of children at-risk and malnourished will diminish. Effectiveness can also be

examined during quarterly meetings when project objectives and achievements are discussed. Family registers will be evaluated and updated quarterly and discussed during planning meetings which will be held with health promoters and MINSA staff based on project results.

The project will reach these groups through education of mothers and of the people who are in charge of taking care of the child the majority of the time. These individuals will be reached via educational group campaigns, home visits, services provided at the base houses, food preparation campaigns, and the establishment of family gardens.

MINSA does not have a strategy for the nutritional recuperation of a child. The HCs and posts offer to mothers the Growth and Development Monitoring Program which is limited to measuring the weight and height of the children. The most recent MINSA norms include nutritional counseling. The project will also be making a special effort to train and oversee MINSA staff in nutritional counseling, knowing that this is commonly an area of weakness in GMC programs. When a child is found to be severely malnourished, the child is referred to a regional hospital where the staff are trained to provide adequate treatment for children presenting kwashiorkor or marasmus. Nevertheless, MINSA's protocol, which is currently being revised, recommends the following: monthly weighing of children who are malnourished or at-risk for becoming malnourished, and weighing every 3 months of well-nourished children (Methodological Guidelines for Training Integrated Health Promoters, SILAIS-MINSA, 1995). The type of scale that is used has a watch face, with a 25 kg capacity (spring balances).

#### Mechanism for providing feedback to staff and the community

The family register will track children's nutritional and immunization status; these results can be summarized and shared as follows: the health volunteer will share it with community members and will use the information to make community-level decisions. The results will be graphed by the promoters and volunteers and will be displayed in public places so that the volunteers can see the results of their work and so that the beneficiary population can appreciate changes in the growth faltering among children less than 5 years of age. This activity will be done every 6 months. (See Appendix K for an example of creative ways information has been fed back to communities in the previous project, using hand-drawn diagrams.)

The area coordinator, auxiliary nurse and health promoter will summarize these results and share them with SILAIS personnel during technical meetings. They will also provide to SILAIS personnel in charge of the different programs the results and achievements for each program component. This will be done on a quarterly basis so the results can be included in official SILAIS reports.

In communities where homes are spread out, home visits will be done by health volunteers and will be supervised by the auxiliary nurse and promoter. For this activity, sheets will be developed which contain basic messages and drawings so they will be understandable by mothers.

See Appendix C for a copy of the growth monitoring card used. This card is kept by the mother and given to health personnel when the mother seeks health services. The cards are provided by the Ministry of Health and are given to mothers immediately after the newborn receives her first

growth monitoring and immunization (for hospital births), or during the first visit that the mother makes to the health unit (for home births). If a mother loses her card, it will be replaced by the Ministry of Health, when they have cards. The project will complement MINSA's management and supply of cards since the KPC showed need for strengthening this activity. The project's census will help MINSA accurately represent the population and predict the need for cards. World Relief Nicaragua will provide cards to all children under the age of five years in the project areas through community household registration, and will encourage mothers to safeguard the cards. World Relief Nicaragua also will train health workers and encourage government policy makers to ensure that all children under two years are weighed and that weights are recorded on the child's growth monitoring card. Professional health workers need to be trained to better coordinate PHC activities to assure that children are weighed and that weights are recorded.

## **Micronutrient Interventions**

### D.4.b.10 Program Approach to Micronutrients

#### Estimates of the prevalence of xerophthalmia, anemia, and goiter/cretinism in children and pregnant/lactating women:

The National Micronutrient Deficiency Survey (MINSA, 1993) indicated that 31% of children under 5 years of age were moderately or severely deficient in vitamin A. Although the Micronutrient survey does not provide data for the project area, it did suggest a similar prevalence of vitamin A deficiency in rural areas. A recent national study on micronutrient deficiencies, two out of every three children were classified as vitamin A deficient or at-risk for becoming deficient (MINSA, 1994). The Micronutrient survey and MINSA's 1993 Annual Report cite vitamin A deficiency as a serious public health problem. Authors of the survey report estimate that infant mortality could be reduced by 23% if the diet was supplemented with an appropriate quantity of vitamin A.

Serum retinol measurement Source: *National Survey of Micronutrients Deficiency in Nicaragua, 1993.* MINSA, 1994.

	Serum Retinol Level	% children aged 12-59 months
National average	23.8 microg/dl	--
Slight or moderate deficiency	20.1-30 microg/dl	35.8%
Moderate deficiency	10.1-20 microg/dl	23.4%
Severe deficiency	<10.0 microg/dl	7.9%

Eye exams were carried out on children. None of the children examined presented signs or symptoms of vitamin A deficiency (i.e. none of the children were classified as XN-XF) Source: *personal communication with Ligia Teresa y Llescois, Coordinator of Nutrition Surveillance, MINSA Central, 13 Feb, 1997.*

"In 1989, the national survey on goiter and the nutritional status of school-age children found a goiter prevalence of 3.9% in children age 6-14 years." Source: *Plan Maestro de Salud 1991-1996, MINSA, 1991.*

National prevalence of iron deficiency in children (ferritin levels below 12 microg/L) is 36.1% (12-59 months of age). *Source: "Evaluación de la deficiencia de yodo en la población escolar de Nicaragua" MINSA, 1990.*

Total prevalence of anemia among children 12-59 months of age is 28.5% based on hemoglobin levels  $\leq 10.0$  g/dl. The prevalence of anemia among adult women was estimated using the cutoff point of 12 g/dl of hemoglobin. The national prevalence of anemia among adult women is 33.6%, based on survey of mothers of pre-school children.

WRN's baseline KPC study was carried out in the project area October 1996, and demonstrated that only 0.5% of children 6-23 months of age received two doses of vitamin A in the year prior to the survey, according to their EPI/Growth Monitoring card. Only 1.1% of mothers had received vitamin A supplementation post-partum (by card). Finally, 98.4% of the children 6-23 months of age were reported to receive at least one type of vitamin A-rich food, although quantity and quality were not measured. It was interesting that of all the foods given to children, green leafy vegetables were given least, less than 20% of children in most age groups had received green leafy vegetables, and only 12.4% of children surveyed overall were receiving green leafy vegetables.

National standards for micronutrient supplements for children, pregnant women and lactating women: *Source: Norma técnica de suplementación con vitamina A: Jornada Nacional de Salud, MINSA, 1995.*

Children 6-12 months of age: 100,000 IU

Children between 1 and 10 years of age: 200,000 IU

Presentation: Bottles of 500 capsules with 200,000 IU of vitamin A and 40 IU of vitamin E per capsule

Dosage: Children between 6 and 12 months of age, 2 drops ( $\frac{1}{2}$  pearl);  
Children between 1 and 10 years of age, 1 pearl capsule

Recommendations for administration of vitamin A:

- Vitamin A capsules will be distributed every 6 months to children between 6 months and 10 years of age.
- Be sure the child consumes the total dosage.
- For children 6-12 months of age, the capsule should be cut with a sharp sterilized object and two drops (approximately  $\frac{1}{2}$  of the pearl capsule) should be dropped into the child's mouth, the rest should be discarded.
- Pre-school age children who cannot swallow the capsule should break it, and let all of the contents fall into the child's mouth.

Management of vitamin A:

- Maintain the bottles closed and in a dark place.
- Maintain the bottles at room temperature. They should not be frozen or refrigerated nor exposed to high temperatures.
- For storage purposes, remember to put them away in the order in which they arrived so that the oldest bottles are used first.
- Read bottles of each new shipment of vitamin A to make sure the dosage is the same.

Contraindications:

Vitamin A should not be administered to girls older than 10 years of age (risk of possible pregnancy) or to a pregnant women because vitamin A in a high dose has a teratogenic effect on the fetus.

Supplementation with ferrous sulfate and folic acid: pregnant women

*Source: Norma técnica de suplementación con sulfato ferroso y Ácido fólico: Jornada Nacional de Salud, MINSA, 1995.*

Iron/folate supplements are tablets with 60 mg of elemental iron equivalent to 300 mg of ferrous sulfate (FeSO<sub>4</sub>). The folic acid comes in 5 mg tablets each.

Dosage: Two tablets of ferrous sulfate every week (8 tablets monthly). One tablet of folic acid every week (4 tablets monthly)

Pregnant women will be encouraged to attend prenatal care visits, where they receive Iron/folate (8 tablets of ferrous sulfate and 4 tablets of folic acid). The dosage does not change, it is the same for every month of pregnancy. Women get a two months' supply at a time of the visit, and MINSA is the only free supplier. Mothers can buy vitamins at a pharmacy, if they can afford it.

Recommendations for its administration:

With ferrous sulfate, eat foods that provide a rich source of vitamin C, such as orange, lemon, guava and tomato juices. Do not ingest ferrous sulfate with coffee or tea because these drinks impede its absorption.

Micronutrient supplements are included in the essential drug supplies. Iron and folate are on health post and HC basic medications lists (see Appendix J, basic medications list). MINSA has sufficient quantities of Vitamin A for prevention distributed during the NHCs, and with WRN supplying additional vitamin A capsules, there will be a sufficient amount for prevention and treatment purposes.

Who will receive micronutrient supplements, when and under what conditions, and purpose of supplementation:

The Child Survival Project will support MINSA's efforts to distribute vitamin A capsules to children 6-72 months, and distribute capsules only to remote areas and to women within one month postpartum.

WRN-trained TBAs and health volunteers will provide capsules to postpartum women (within 1 month), 6-11 month olds, and children living in very remote communities. The remainder of children 6-72 months will be served by MINSA during NHCs, and the project will collaborate with MINSA during these campaigns, assisting them in community mobilization, marking vitamin A on the EPI/GM cards, and finding defaulters. The project staff will establish a contract with RAAS and RSJ SILAIS to allow volunteers to distribute vitamin A.

Source and reliability of vitamin A: Sight and Life, a private NGO funded by Hoffman La Roche based in Switzerland, has agreed to supply the project with all the vitamin A capsules needed (See Appendix I for letter.)

Vitamin A supplementation (who, when and under what conditions):

- One dose of 100,000 IU will be given to infants 6-11 months of age every 6 months
- One dose of 200,000 IU will be given to children 1-5 years of age every 6 months
- A one-time 200,000 IU dose will be given to women within one month post-partum, as soon after birth as possible.

Current MINSA services, protocols and practices.

MINSA's strategy for the past three years has been to provide vitamin A capsules twice a year to children 6-72 months of age during the NHCs. These campaigns are the only time when a child has access to MINSA vitamin A supplementation efforts. The project will train volunteers to give vitamin A, during NHCs and during GMC sessions. In the previous project, volunteers were successfully trained to distribute and monitor vitamin A distribution to children 6-72 months and to women within one month postpartum. Children attended to by the volunteers will be supplemented with vitamin A twice per year. Each supplementation will be written on the child's EPI card to avoid double dosing in case the child also attends the NHC. In order to monitor vitamin A distribution, MINSA has designed a card with a space to note the date that the vitamin A supplement was administered. MINSA also has plans to work with sugar producers to implement a vitamin A sugar fortification program, eventually.

MINSA's strength in vitamin A distribution is its integration into EPI programs but its weakness is it fails to reach 6-11 month olds, postpartum women, or children who come to a MINSA HC. Vitamin A donated by Sight and Life will be given to MINSA, and should improve MINSA's opportunities for coverage.

Details of supplement distribution

Source: *Documento Técnico: Vitamina A.* MINSA 1996.

Prevention:

Infants 6-11 months: 1 capsule of 100,000 IU (one dose only); given with measles vaccine  
Children 1-5 years: 1 capsule of 200,000 IU (every six months); given systematically during National Campaigns. (MINSA used to not have enough vitamin A to also give out at HCs, but with the vitamin A the project will bring, they will now have sufficient quantities for all populations that require vitamin A supplementation.  
Post partum women: 1 capsule of 200,000 IU (one dose only); given immediately post partum.

Treatment:

Measles: Immediately after diagnosis

Infants 6-11 months: initial dose is 1 capsule of 100,000 IU followed by 1 capsule of 100,000 IU the following day

Children 1-5 years: initial dose of 1 capsule of 200,000 IU followed by 1 capsule of 200,000 IU the following day

Xerophthalmia: Immediately after diagnosis

Infants 6-11 months: initial dose of 1 capsule of 100,000 IU; followed by 1 capsule of 100,000 IU the next day; followed by 1 capsule of 100,000 IU four weeks later

Children 1-5 years: initial dose of 1 capsule of 200,000 IU; followed by 1 capsule of 200,000 IU the next day; followed by 1 capsule of 200,000 IU four weeks later

Other diseases:

Severe malnutrition: for children 6-11 months, 1 capsule of 100,000 IU; for children 1-5 years 1 capsule of 200,000 IU

Acute diarrhea or prolonged diarrhea: for children 6-11 months, 1 capsule of 100,000 IU; for children 1-5 years 1 capsule of 200,000 IU.

Deworming of children older than two years of age via the NHCs. Two tablets of 200 mg each of albendazole are given to the child, three times per year.

Source: *Jornadas Nacionales de Salud*. MINSA, 1995.

Prevalence of anemia and hookworm The only data we have on anemia prevalence is at the national level. For children, 12-59 years, 28.5% had hemoglobin levels < 10 g/L. For adult women, 33.6% had hemoglobin levels less than 12 g/dl. MINSA collects data on parasitic infections all together; it is not possible to know the prevalence of hookworm infection alone.

Program strategy for dietary approaches to micronutrient deficiencies:

- Promotion of breastfeeding as a source of vitamin A and iron for infants, and encouraging women to grow vitamin A-rich fruits and vegetables in home gardens.
- Providing food preparation demonstrations of micronutrient (iron and vitamin A) rich recipes using locally available foods
- Encouraging women to prepare vitamin A-rich meals for their families
- All the salt in Nicaragua is iodized; promotion of iodized salt is not a special effort.

Vitamin A-rich foods available in the project area include: ripe plantain, papaya, mango, zapote, pejibaye, [ayote], green leaves (e.g. cilantro, [hierba buena], spinach), eggs, fish, and breastmilk. The consumption of these foods has been enhanced by the family gardens project established by WRN. The promotion of family gardens will be strengthened and extended to the new project areas where in addition to the planting of vitamin-A rich foods, demonstration sessions will be carried out to promote the identification and preparation of these foods, especially to mothers with malnourished children.

Counseling and quality control issues. Supervisory checklists will be used to control the quality of the training sessions given by the promoters to the volunteers (see Appendix D). Mothers' learning will be evaluated by the KPC survey during Midterm and Final evaluation, as well as through continual qualitative analysis of the gardens. (See Appendix L for the simple classification system that was developed, per technical review suggestion, to assess the nutritional balance and value of each garden.) Continuous supervision will be provided by promoters, auxiliary nurses, and to a lesser extent, municipal educators, as they visit volunteers, and during formal annual refresher training sessions. The program will monitor and improve the quality of the home gardens intervention by having 2 trained agronomists on staff to provide constant supervision and training as needed.

The project will monitor micronutrient supplements received through the EPI/GM cards. Volunteers will review the child's card and refer the child to a health unit if they note that a child did not receive vitamin A during the NHCs (whose date the volunteers will know because they will have worked during the campaign); they will refer the child to the nearest HC in order to

receive vitamin A (from the stores that WRN has donated). Growth monitoring cards with a place to track vitamin A have just been adopted, and still have to be distributed in the project area. GMC card supply is irregular, and the project may have to help assure a supply of cards for the project area, and negotiate with the SILAIS to include GMC cards in their budgets.

MINSA provides ferrous sulfate to children during NHCs and during growth monitoring sessions at the health unit. Volunteers will review cards and if they find a child who did not receive ferrous sulfate during the past three months, they will refer the child to the nearest health unit in order to attend a growth monitoring session and consequently receive ferrous sulfate. There is no problem with supply of ferrous sulfate. Ferrous sulfate comes in liquid form in a bottle. Mothers are taught to give their child 10 drops each morning "with the morning fresca" (fruit juice). Iron supplementation is very popular with mothers and remains a strong motivating factor to have them bring their child in to be weighed during the first year of life. If children are getting weighed, they will receive ferrous sulfate.

Iron/Folate for pregnant women: Unlike the child growth monitoring cards, prenatal care cards do not have a labeled place to write down whether or not the woman received ferrous sulfate/folic acid supplementation. We will ask staff at the health units to write "ferrous sulfate/folic acid" in the "observations" section of the card when a woman receives the supplementation. Volunteers will review women's prenatal care card. If a woman has not received an iron/folate supplement in the previous three months, she will be referred to the nearest health unit to receive prenatal care, and consequently receive the iron/folate supplement.

The project will also use open-ended interviews and direct observations to evaluate why women do/do not attend prenatal care services, which in turn result in their not receiving iron/folate supplements. The project will also evaluate knowledge of iron-rich foods available in the community. If women do not eat iron-rich foods available, why not?

#### Other issues- vitamin A

The initial training session (12-16 hours) for MINSA/WRN staff, and then for volunteers, will cover the following topics: vitamin A deficiency, signs presented by a vitamin A deficient individual, causes of vitamin A deficiency, how to avoid vitamin A deficiency, sources of vitamin A, at-risk groups, management of supplements, family garden strategy, food preparation demonstrations, dangers of dosing a pregnant woman with a (teratogenic) high dose of vitamin A, training in the vitamin A component of the HIS.

The health promoters are indigenous to the area in which they will be working and will move periodically to different communities within their assigned area in coordination with MINSA staff. They will work five days per week including training times. Area coordinators and MINSA staff will evaluate the health promoters' effectiveness in training health volunteers. Additionally, the promoters in coordination with MINSA staff will evaluate the educational sessions that the volunteers will carry out with women in the community.

There is no conflict with MINSA's and WRN policies, but MINSA presently does not:

1. Provide vitamin A supplements to women within one month postpartum, although it is a MINSA norm. So few women deliver at a health post and until now vitamin A supplies have been limited to distribution during National Health Campaigns.
2. Educate community on the importance of vitamin A/promote vitamin A-rich foods.
3. Allow volunteers to administer vitamin A (although given the project's previous experience/success in training volunteers, WRN will be allowed to train volunteers to give vitamin A.)
4. Administer vitamin A to infants less than one year of age, although the MINSA norm is children 6 months and up. MINSA staff do not like to give half-doses of vitamin A capsules because they fear overdose and believe a breastfeeding child is getting some vitamin A. Vitamin A supply problems will be solved by the project's donated supply. The project will encourage MINSA staff to integrate vitamin A/ EPI and give the first dose of vitamin A at 9 months when the measles vaccine is given. WRN plans to train MINSA staff in norms for both EPI and vitamin A, and hopes to influence practice so it agrees with policy.
5. Follow-up children who have not received vitamin A supplements.

Reasons why MINSA norms and actions differ:

1. Staff are not well paid, motivated or trained (e.g. in providing counseling).
2. Medications and supplements are paid for by the SILAIS budget. SILAIS priorities are medications for epidemic diseases (such as cholera, malaria, dengue) and priority diseases (diarrhea, leishmaniasis), over vitamin A supplements for the post-partum woman, for example.
3. Nationwide training of MINSA staff in micronutrients began recently, so few MINSA personnel understand the importance of supplementing children and women with vitamin A.

Intervention-specific experience/training of staff: Project staff are experienced in vitamin A supplementation, from the previous project. Training for MINSA staff and project promoters will be carried out by vitamin A technical experts.

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Months of the year when vitamin A rich foods are available in the project area.

x = when vitamin A rich food is available in project area

xx= A-rich foods are more abundant than other times of the year

Vitamin A Rich Food	Month of the Year											
	J	F	M	A	M	J	J	A	S	O	N	D
Fish	xx	xx	x	x	x	x	x	x	x	xx	xx	xx
Mango		x	x	x	x							
Papaya	xx	xx	xx	xx	x	x	x	x	x	x	x	x
Ayote								x	x	x	x	x
Spinach					x	x	x	x	x	x	x	x
Cilantro					x	x	x	x	x	x	x	x
Spearmint					x	x	x	x	x	x	x	x
Pejibaye	x	x	x	x	x	x	x	x	x	x	x	x
Zapote				x	x	x						
Eggs	x	x	x	x	x	x	x	x	x	x	x	x
Ripe plantain						x	x	x	x	x	x	x
Cassava leaves									x	x	x	x
Radish leaves	x	x	x	x	x							
Cantaloupe	x	x	x									
Marañon			x	x	x							
Breastmilk	x	x	x	x	x	x	x	x	x	x	x	x
Cow's milk	x	x	x	x	xx	x						
Curd	x	x	x	x	xx	xx	xx	xx	xx	xx	x	x
Cream	x	x	x	x	xx	xx	xx	xx	xx	xx	x	x

Months of the year when Iron-rich foods are available in the project area.

x = when vitamin A rich food is available in project area

xx= A-rich foods are more abundant than other times of the year

Iron-rich Food	Month of the Year											
	J	F	M	A	M	J	J	A	S	O	N	D
Ayote								x	x	x	x	x
Spinach					x	x	x	x	x	x	x	x
Cilantro					x	x	x	x	x	x	x	x
Spearmint					x	x	x	x	x	x	x	x

Cassava Leaves									x	x	x	x
Radish leaves	x	x	x	x	x							
Breastmilk	x	x	x	x	x	x	x	x	x	x	x	x
Kidney Bean		xx	xx							x	x	
Pigeon Pea	x	x	x									

## Home Gardens

### D.4.b.12 Program Approach to Home Gardens

The purpose of home gardening activity is household nutritional improvement for families and children. Mothers will be encouraged to sell only surplus foods that cannot be stored. The project staff's goal is to establish at least 1,500 additional family gardens throughout the project area; 750 in RAAS and 750 in RSJ, with an emphasis on mothers with at-risk or malnourished children. Gardens will be for people with enough land, will and time to work in them.

The program will emphasize the production of micronutrient-rich foods, in particular vitamin A-rich foods: *dark green leafy vegetables such as:* cassava leaves, radish leaves; *dark green or deep yellow vegetables such as:* ayote, chiltoma, spinach; *fruits such as:* marañón, mango, papaya, zapote and iron-rich foods (dark green leafy vegetables such as spinach and cassava leaves). Additionally, the project will promote protein-rich foods such as pigeon peas and avocado as a calorie-dense food. Some of the green leafy vegetables are perennials in the community and all of the fruit trees are perennials.

The project's strategy to encourage household consumption of garden products includes: Food/cooking demonstrations using home garden products. The previous project found that when mothers used foods grown in their own gardens, they were more likely to eat them. The Home Gardens component added a tangible element/benefit to the project which was appreciated by the mothers. It helped them see the project as providing not only education about foods to eat, but practical assistance in the form of seeds, training and some supplies. Participatory educational techniques used will be to allow mothers to actually grow and cook the foods in their own/their neighbors' homes. All women will be invited to participate in the home gardens activity, and an emphasis will be placed on mothers with at-risk or malnourished children. These children will be identified through the GM data.

#### Program inputs for gardening supplies and agricultural expertise.

Every woman involved in this strategy will be expected to have a small patch of land as close as possible to her house that has adequate/proper soil and water supply. All the project promoters will be trained by the project's agricultural engineer, Julio Salgado, a university-trained agricultural engineer with years of experience in promoting home gardens.

All of the fruit and most of the vegetables that will be promoted for gardens are already commonly eaten, with the exceptions of: spinach, cassava leaves, ayote and radish leaves. These foods will require special preparation demonstrations carried out by the promoters, in which they will teach mothers to prepare foods which are being grown/promoted in the garden. They will

also teach mothers simple food preservation techniques, such as pickled foods and marmalades. The RSJ WRN staff have received training in food preservation methods. Food/cooking demonstration sessions will also include basic nutrition messages about vitamin A, exclusive breastfeeding and appropriate complementary foods.

An average of 20 fruit trees in a garden can guarantee a vitamin A supply for at least six months. Vegetables can be harvested only during the dry season, with the exception of spinach and yucca, which, along with fruit trees, can be grown (i.e. have seeds planted) and harvested throughout the year. The project will place a strong emphasis on fruit trees.

Plans to monitor and evaluate the activity: The agricultural technician hired by the project will monitor the gardens in coordination with the promoter to evaluate problems with the gardens and nurseries. The promoters will visit nearby gardens twice per month and distant gardens every 1-2 months. Visiting the farther away communities is costly for the promoters. When they visit the gardens, they will identify those gardens that have special problems that require assistance by the agronomist. The agronomist will then make visits to these "problem" gardens. The project will buy the materials and equipment necessary at a discount through contacts already established by the WRN Agriculture Project. Training in home gardens will be provided by the 2 WRN agronomists hired to technically backstop the home gardens initiatives. These are trained agronomists with years of experience in sustainable agriculture and promoting home gardens.

Process indicators that will be used to monitor quarterly project activities include an assessment of the number of family gardens that include vitamin A-rich fruits or vegetables, and a comparison of that data with a child's GM data. Monthly statistical sheets will report on activities carried out in the gardens and the number of women trained in agricultural techniques and food demonstrations. This activity report will be sent in the project's quarterly reports. (See Appendix L for a copy of the nutritional balance index for evaluating each garden.)

#### D.4.b.13 Other Issues

Staff experience. WRN staff have extensive experience in training promoters and volunteers in infant and maternal nutrition, GMC, micronutrients and in promoting home gardens. To strengthen the nutritional counseling component of all these activities, staff will be trained by a nutritionist to better focus nutritional messages aimed at women with malnourished children. The project will consider the use of a nutrition consultant during the first year to provide technical assistance as the project develops.

### **D.4.c Breastfeeding Promotion**

#### D.4.c.1 Knowledge and Practices

Current breastfeeding practices in the impact area:

The baseline KPC survey found that 94.7% of women had initiated breastfeeding, although only 53.4% were breastfeeding at the time of the survey. Forty-eight percent (48%) of the women initiated breastfeeding in the first hour after delivery. National averages were exceeded, as nationwide 91.9% of women initiate breastfeeding and 40.5% do so within the first hour after

birth. Only 6.1% (5/82) of the 82 children in the 0-5 month age group in the survey were being exclusively breastfed, and over 90% were introduced to liquids other than breastmilk. Younger infants were also fed other non-breastmilk foods including soft foods (64.9%) and fruits (45.9%). Notably, 35.3% of the women surveyed believed that mothers should begin introducing foods to the infant before four months of age. Among infants 6-9 months, 93.2% were being fed solid or semi-solid foods, as recommended. Across all age groups, the type of food least often consumed by the children was green leafy vegetables.

Five percent (5.3%) of all mothers surveyed failed to initiate breastfeeding. The KPC did not determine why mothers who did initiate breastfeeding stopped doing so and when. Among all the children in the survey, the percentage who were being breastfed declined with increasing age. Among women with children 20-23 months of age, only 21.4% were breastfeeding at the time of the survey. In contrast, the use of other types of milk remained fairly constant across the age groups. When women left home to work (21.4% of mothers surveyed), most of them left their youngest child with relatives (38.4%) or older siblings (19.7%). Twenty-seven percent of mothers took their youngest child with them when they had to leave the home.

Picado's Breastfeeding Research (see Appendix M for complete copy of research paper) yielded valuable information about Breastfeeding knowledge and practices that will be used in the development of the breastfeeding promotion strategy. Key statements are outlined below.

Most Nicaraguan women breastfeed, but studies have found only a small proportion breastfeed exclusively, and many wean their infants before three months of age.

The high value and positive view of breastmilk as a food for infants is universal, for many different reasons: it prevents illness (especially diarrhea); it's cleaner; it helps with birth spacing; it is more economical; it promotes a child's growth; it promotes a better mother-child relationship; and, very importantly, it is the only food a sick child will take.

Exclusive breastfeeding is rare because it is not a part of the cultural norms for infant feeding, and exclusive breastfeeding as recommended by the Ministry of Health is not a concept understood by the mothers or other participants such as fathers or grandmothers. To feed "only breastmilk" is not viewed positively, and many attitudinal barriers exist toward this behavior, such as:

1. The belief that mother's milk alone cannot sustain the infant.
2. Breastfeeding too much can make the mother thin, and if a mother has a poor diet, she cannot breastfeed, or her milk is inadequate or insufficient. In general, mothers do not perceive that they have any control over their own milk production except through what they eat. (Mothers believed milk forms from the mother's blood, and blood in turn is made from what the woman eats and drinks. That is why a mother who breastfeeds "too much" becomes weak, since the baby is "sucking her blood"; therefore, a mother with a poor diet "cannot have milk.")
3. The belief that feeding only breastmilk predisposes an infant to refuse other foods later; the refusal by the mother to feed frequently and on-demand; and the mother's feeling uncomfortable with the idea that the infant is completely dependent on the maternal presence, as required of exclusive breastfeeding.

The most common breastfeeding practice is combining breastmilk with other foods or beverages. Pre-lacteal feedings are common. . . other beverages such as water, "fresco" and milk (are added) to the infant's diet about two weeks after birth. The time of introduction of food varies, but usually by three months infants are receiving a variety of foods. Rural women supplement breastmilk with sugared herbal teas as well as cow's milk, but usually delay food until the third or fourth month.

Several factors contribute to these practices, and become barriers to exclusive breastfeeding:

1. Attitudes toward other milk and breastmilk supplements: Cow's milk in different forms (whole powdered milk, infant formula, fresh pasteurized, or fresh, non-pasteurized) is also valued highly as an infant food, and supplementing breastmilk with other milk is considered compatible and necessary.

2. Factors that motivate the early introduction of water and "fresco" or teas: There is a strong belief that infants feel thirst just as adults, and therefore need water. Other motivations include: fresco "refreshes" the stomach; water is needed because of the heat; the infant expresses a desire for water, and "likes" it; it is needed for the infant's urinary system; and the infant must become "accustomed" to it. Rural women offer herbal teas to supplement breast milk if they are too poor to obtain cow's milk.

3. Factors that motivate the early introduction of foods: Food must be introduced early because after a certain age, it is believed that milk does not "sustain," and a child needs food to grow well. Mothers and other family members also interpret different infant behaviors as the child "asking" for food or "wanting" food. There is a strong belief in the need to accustom infants to a variety of foods from an early age on, motivated by the fear that the child will refuse food later.

Information that may help in developing a strategy/identifying factors that encourage acceptance of EBF:

How are mothers who are exclusive breastfeeders different?

Exclusive breastfeeders were strongly committed to only breastfeeding, and believed a mother should put the baby's need over her own; their principal motivation was the baby's welfare. . . . Other differences included: a more trusting and positive view of what health workers say; and a better ability to cope with the frequent, on-demand feeding pattern of the breastfed baby or other situations such as a crying baby.

"Traditionalists" belonged to families that had a tradition of exclusive breastfeeding, and did not have the custom of using bottles. It was the natural thing to do. It appears that these type of women are in the minority. "Innovators" learned about exclusive breastfeeding through community groups, the health system or other women and were motivated by the desire to "experiment" or do something different. In most cases these women had to overcome family opposition, even insults, to keep their commitment to exclusive breastfeeding. Some were also motivated by a negative experience with a previous child who had been bottlefed. During the course of lactation, these mothers formed a strong commitment to exclusive breastfeeding, since they felt that their expectations of having a healthy, well-nourished baby without having to spend on extra milk were confirmed.

Among the mothers who breastfed exclusively over three months, there were exceptions that did not fit either of the previous categories. These were mothers who practiced exclusive breastfeeding because of economic hardship. Although they would prefer to feed supplements as well, they were unable to do so because of economic hardship.

#### D.4.c.2 MOH Protocols, and Breastfeeding Related Activities in the Area

MINSAs policy regarding breastfeeding promotion. The Ministry of Health promotes exclusive breastfeeding through 6 months. MINSAs Prenatal Care norms include counseling women on exclusive breastfeeding, putting the child to the breast immediately after birth, different breastfeeding positions, care of nipples, production and quality of milk, and nutrition for the lactating woman. MINSAs offers counseling through health units that provide prenatal care, and this counseling is usually done by the auxiliary nurse. However, we have already seen how access to prenatal care is difficult for many women as they must overcome long distances, the rainy season and lack of transport.

Wellstart has provided technical assistance to Nicaragua and trained MINSAs Central National Breastfeeding Coordinator, and assisted MINSAs in writing the national breastfeeding policy (see Appendix F for the cover page of the Spanish MINSAs normas. However, as yet, in Managua MINSAs has developed only 2 breastfeeding support groups serving 3 Baby Friendly hospitals. There are 11 Baby Friendly hospitals, mostly in the Pacific region of Nicaragua; however, there are no Baby Friendly hospitals in the project area, although Bluefields Hospital has plans to initiate the certification. La Leche League is not in Nicaragua. The National Breastfeeding Coordinator, trained by Wellstart, was recently transferred from that position because of the change in government. She is still an employee of MINSAs however, and is available to the project to do training.

One policy that might discourage breastfeeding is that the Nicaraguan Social Security office/administration (which provides health care to its members) provides infant formula in powder form for six months to all children whose mother or father receives health care from the Social Security office. In some ways, this results in women stopping breastfeeding once they return to work; for women who do not work, this precludes them from exclusively breastfeeding. This policy is in effect mostly in the urban areas, not rural areas.

#### D.4.c.3 Approach

WR proposes to increase breastfeeding (BF) by:

1. Training MINSAs and WRN staff on breastfeeding (auxiliary nurses, municipal educators, area coordinators and promoters)
2. Training volunteers in breastfeeding (health volunteers, midwives)
3. Training/education of mothers in project communities on BF & exclusive BF
4. Promoting the baby friendly hospital initiative in urban Bluefields by training all MINSAs personnel and starting exclusive breastfeeding (EBF) support groups in the communities.

WRN decided on this approach based on training received from Wellstart, and that the hospital in Bluefields was interested in becoming a Baby Friendly Hospital. The project will be working in urban Bluefields, a city large enough to have breastfeeding support groups that women can attend easily, unlike the more distant communities which have very dispersed populations. In addition, Bluefields has enough trained nurses and women who could be trained to become breastfeeding advisors, promote breastfeeding, and lead support groups.

Factors which support the success of this approach towards increasing BF are as follows:

1. MINSA is strongly promoting BF and exclusive BF throughout the country
2. Women in the project area already breastfeed their children, although not exclusively.
3. MINSA has highly qualified staff who can provide assistance and training on BF to anyone who provides the workshop setting, and can extend, to the home and community level, the training that MINSA can provide.
4. Project staff have already received training from Wellstart in EBF and support groups, and the project's health educator is in close contact with a trainer for support group volunteers in a World Vision EBF program that includes support groups.
5. The hospital in Bluefields is already interested in pursuing the baby-friendly hospital initiative and may also be open to promoting/supporting EBF support groups.

Factors which may inhibit BF in the project area are the following:

1. Lack of human and economic resources to provide training in the community, specifically project areas such as Punta Gorda and other communities in RSJ.
2. The myths and beliefs that mothers have about EBF (lack of information).
3. In the urban areas, women breastfeed for a short duration of time because they need to work outside the home (non-supportive work environment).
4. The early introduction of complementary foods and common use of prelacteals.
5. Mass media promotion of breastmilk substitutes which cannot be properly monitored by MINSA because of lack of resources to do so (commercial pressures).
6. Lack of BF support groups in the project area (social barriers).
7. RSJ hospital and SILAIS are not yet convinced of the need for more effort in BF promotion. The hospital in RSJ is not interested in becoming a baby-friendly hospital at this time.

Wellstart's Planning Manual for Community-Based Breastfeeding Support notes that comprehensive breastfeeding programs should address obstacles by focusing on three elements: policy, health services, and community support. Each element listed below will show in parentheses which element this aspect of the project is addressing.

The project will diminish these disadvantages by:

1. Helping to train MINSA staff and health volunteers who work in the project area. (health services)
2. Educating the whole population on BF through the radio, posters and through home visits and community meetings in order to counterattack the negative effects of artificial milk promotion. (Community support)
3. Helping MINSA to apply the BF promotion law which states that all lactating women have the right to one hour less of work so they can breastfeed their child. (policy)

4. Promote the baby friendly hospital initiative in the urban areas of the project, specifically Bluefields, in the following way: (health services)
  - a. Coordinate with the SILAIS director and Bluefields hospital director to accept and welcome the baby friendly hospital initiative.
  - b. Finance the training of qualified MINSA staff on the baby friendly hospital initiative (specialists, neonatal nurse, auxiliary nurses, municipal educators).
  - c. Provide technical support to the Bluefields hospital in the restructuring of its services in order to comply with the strategy.
  - d. Finance the purchase of some equipment which will be required to implement the strategy (breast pumps, cups, spoons).
  - e. The project will fund a health promoter who will work jointly with a MINSA staff member in order to promote the support groups.
  - f. The project staff and MINSA staff will jointly monitor the support group strategy.

Program activities in breastfeeding promotion will complement existing MINSA policies, although the project will be taking a leading role in promotion of exclusive breastfeeding to six months of age, and in the development of breastfeeding support groups in urban Bluefields. Whenever possible, the project will work to initiate programs with MINSA staff to assure their ownership of and participation in the activity.

The program will promote exclusive breastfeeding through EBF support groups that will be started in urban Bluefields (population of 60,000). There are no plans at present, given limitations in time and finances, to spread support groups throughout the project area. Wellstart's Planning Manual, section 3-2, I. notes that when selecting communities, the following issues should be considered: accessibility, demography, community organization, support and sustainability. Due to the widely dispersed population in the rest of RAAS and RSJ, and the reluctance of RSJ hospital to become Baby Friendly, the project has decided to target urban Bluefields for its accessibility, a large enough community to have mothers with infants, key community and hospital-based personnel willing to support the program, and the greater possibility of sustainability through the hospital and SILAIS after the project ends.

The project's final goal and objective for EBF by 6 months in urban Bluefields project area is 14% exclusive BF by 6 months of age (MINSA's goal).

As noted in the Picado research on BF practices in Nicaragua, "Promoting exclusive breastfeeding implies introducing a new behavior, that is very different from current infant-feeding practices. Since the mother's negative view of exclusive breastfeeding is shared by other family members, messages and educational efforts must include them as well."(pg. 5) Entire communities will be reached with BF messages through posters, radio messages, and banners in mass media.

Some important points from the Picado research that will be incorporated into the project efforts include:

1. Messages and educational efforts must include family members as well.
2. Importance of thoroughly explaining what exclusive breastfeeding means (no other liquids, foods, milks, at all).

3. Mothers need to believe they have control over their milk production, and overcome the concept that "breastmilk is not sustaining."
4. Make sure educational messages give the right impression. Try to raise the mother's caloric intake, but be cautious with messages about "a variety of foods," as they may cause a mother who subsists on tortillas and corn to doubt the quality of her milk.
5. Interpersonal, woman-to-woman approaches are important. Using women's groups and volunteers to give messages may be more effective than health workers.
6. In continuing to reinforce and support the generally positive view of breastfeeding in Nicaragua while trying to create positive attitudes toward exclusive breastfeeding, two messages may be important: "exclusive breastfeeding is more economical than introducing other milk and foods, and that a sick baby still takes to the breast."

In the urban areas of Bluefields, supplementary feeding is a serious problem which the project will face, because more mothers work outside the home and use bottles and supplementary foods. The project will promote EBF through 6 months of age and BF through 2 years of age. WRN will support MINSA in the baby friendly hospital initiative in urban Bluefields, and develop a network of breastfeeding counselors from hospital staff, health promoters, community leaders, mothers and other volunteers. The counselor's job is to form, lead and monitor support groups within the hospital or HC as a part of their daily activities. These counselors will visit mothers at prenatal and well-baby clinics, encourage them to attend the hospital-based support groups, serve as technical resource, and promote other needed changes within the hospital.

In the rural communities, we will be promoting BF through messages, such as those described above. The main BF advisor at the rural level will be the TBA because she attends births and gives counseling/advice to pregnant women. As TBAs promote prenatal care, they can take the opportunity to promote BF and EBF. The project will promote the use of utensils such as cups and spoons instead of bottles, to avoid infection through a dirty bottle/nipple and nipple confusion.

MINSA is the main promoter of BF. The project will interact with MINSA through the area coordinators to jointly promote BF. Although, as noted above, the hospital in Bluefields is in the process of registering for Baby Friendly status, and with the project's assistance, hope to facilitate the process. WRN will play a leading role in encouraging the promotion of EBF to 6 months on a greater scale.

#### Supervisory plan:

The quality of BF counseling will be supervised by the MINSA auxiliary nurse and the WRN health promoter. During a supervisory/support visit, the breastfeeding advisor will provide guidance and support to staff, an opportunity for two-way exchange of information, an opportunity to enhance the skills and knowledge of the volunteer, monitor program activities, and to facilitate linkages with others.

The primary supervisor will be the breastfeeding advisor, a special promoter position dedicated solely to promotion of breastfeeding, training counselors and overseeing the development and work of the support groups. Other supervisors trained in the EBF strategy include: interested hospital and MINSA staff, other project promoters, auxiliary nurses, and municipal educators.

These supervisors will be given special training in skills related to advising and training the breastfeeding counselors. A supervisory checklist will guide the supervisory session, but not limit it. (See supervisory checklists in Appendix D). Supervisors will also write follow-up reports that will serve as project updates, monitoring tools, and planning guides. Please see section E.3. for greater details on the Project's Supervision plan.

Monitoring and Evaluating the program: The program will be monitored regularly through the Health Information System (see section F and Table B for indicators and monitoring objectives.)

Key indicators will include:

% of mothers exclusively breastfeeding

% mothers in a breastfeeding support group

% mothers continue breastfeeding to 2 years of age.

Key activities that will be monitored include:

% pregnant women identified by a health volunteer and counseled on infant feeding in the last month.

% mothers of children under 6 months of age identified by a health volunteer or staff member who was counseled on infant feeding in the last month.

% mothers of children under 6 months of age who participated in a support group in the last month.

Methods of supervision include: supervisory checklists, interviews with program participants, staff and health workers, family registers, and training attendance sheets. Please see section F.1 for more detail on the Project's Supervision Plan.

Strategies for working mothers include promoting EBF support groups and messages such as: Breastmilk can be expressed manually, and expressed breastmilk can be kept at room temperature for up to 8 hours, without any danger to the child.

Also, mothers need to be educated on an important piece of legislation that is not well known that allows all working women one hour off of work each day to breastfeed her child. MINSA is abiding by this law for their employees, but many other businesses and lactating women are ignorant of this BF promotion law.

#### D.4.c.4 Other Issues

Staff experience: Corina Rodriguez has received Wellstart's EBF training, and has extended this training to the MINSA level in Managua this past year. (See resume for Educational Specialist in Appendix N, showing training received in past 2 years, particularly in Breastfeeding Promotion.)

Training: MINSA and WRN staff will be trained by MINSA personnel trained in Breastfeeding Promotion. This initial training (24 hours) will be facilitated by Ninoska Cruz. Topics include: nutrition during pregnancy, preparation of nipples for breastfeeding, exclusive breastfeeding in the first 6 months, breastfeeding as soon as possible after childbirth, production and good quality of milk, breastfeeding myths, care for the lactating mother, feeding with breastmilk when the mother is absent, types of nipples, nutrition for the child after 6 months of age, and the HIS regarding breastfeeding. A special emphasis will be placed on MINSA's breastfeeding norms

and protocols. Once the team members are trained, they will replicate the training session for the volunteers who, in turn, will educate mothers in the community on this topic. The volunteers' training session is 16 hours and covers everything listed above except MINSA's BF norms.

Refresher training will be provided annually to the health promoters by the area coordinators and project staff from the central office. Refresher training for the volunteers will be carried out by the promoters and health personnel, under the supervision of the area coordinators.

The health promoters are indigenous to the area in which they will be working and will move periodically to different communities within their assigned area as coordination with MINSA staff requires. They work five days (40 hours) per week including training time. Area coordinators and MINSA staff will evaluate the health promoters' effectiveness in training health volunteers. Additionally, the promoters in coordination with MINSA staff will evaluate the educational sessions that the volunteers will carry out with women in the community.

Instruments used to monitor this intervention include: supervisory checklists for training sessions given by the health promoters, direct observations, interviews with key informants, and in the mid-term and final evaluations.

There are no differences between the norms and protocols that MINSA has established and those to which the project will adhere.

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### **D.4.d Diarrhea Case Management**

#### **D.4.d.1 MOH Protocols**

The project will train WRN and MINSA health staff in the adequate management of diarrheal disease cases. MINSA's current system for the evaluation and treatment of diarrheal cases is to treat with ORS a child who reaches an Oral Rehydration Unit or health post. If necessary, the child is referred to the physician at the HC; who can examine and treat the child. The plan for the adequate management of a child with diarrhea is outlined in the "Manual for the care of a child with an acute diarrheal disease in the home and at the Oral Rehydration Unit." See Appendix F for a copy of MINSA's protocols on the management of dysentery and persistent diarrhea.

## MINSA protocols (translated from the Spanish):

- I Prevention of dehydration
- II Treat dehydrated patients in an adequate and quick manner
- III Continued feeding

It is important to correctly distinguish between prevention and treatment of dehydration. Home fluids are only useful in the prevention of dehydration. To treat dehydration, use oral rehydration salts (ORS). Currently, there is no medication that can diminish or stop diarrhea, securely and efficiently. Antibiotics are not efficient against the majority of microorganisms which cause diarrheal diseases and can aggravate the diarrhea or make the patient sicker. The indiscriminate use of antibiotics increases their resistance by some diarrhea-causing germs.

### I. HOME TREATMENT OF DIARRHEA

- 1. INCREASE liquids and offer ORS
- 2. GIVE the patient sufficient food
- 3. TAKE the patient to a health worker if she does not improve

### STEPS TO TEACH FAMILIES

When you teach how to prevent diarrheal diseases or how to treat them at home, you should:

- 1. Select the appropriate time. For example, teach about ORS and home treatment to a mother when her child has diarrhea. Information on prevention can be shared at another time, when the child is healthy.
- 2. Keep in mind the community members' beliefs about diarrhea and what they consider is good to prevent it or treat it. Relate your advice to the practices that they use and use words they can understand.
- 3. Show the family what they can do (e.g., how much liquid the patient should drink after passing a stool or urinating)
- 4. Use teaching materials that are familiar to the community members (e.g., show how to prepare foods for a child during the weaning period, using ingredients which are available and easy to obtain, and using common and appropriate utensils to measure water and to prepare the oral rehydration salts.
- 5. Allow the family to practice what they have learned and observe how they do it (e.g., let them administer liquids to the patient with a spoon and observe them). Practice will help them to remember correctly what they have learned. If they still need help, you can provide it to them.
- 6. Ask the family to say in their own words what it is that they have learned, so we can be sure they remember it
- 7. Find out if they have questions or doubts and try to answer them
- 8. Ask them if they have any problems with following the explanations/instructions that they received. Listen to what they say and try to find solutions to the problems they state.
- 9. Explain that diarrhea is a disease which generally lasts several days and that it is not necessary to use medication and that the most important thing to do is to avoid dehydration and continue to feed.

### II. EVALUATE THE STATE OF HYDRATION/DEHYDRATION OF THE PATIENT

The purpose of this classification is to diagnose the state of hydration in order to facilitate the correct management of the patient with diarrheal disease at all attention levels. . . . When the replacement of liquids lost due to diarrhea is done orally, it is not as important to determine the precise volume which will be administered. There are several homeostatic mechanisms which can avoid the administration of an excess of liquids. The most important one being thirst. As the hydration progresses and the water and electrolyte deficit is corrected, there is a decrease in thirst, until it disappears, which prevents the patient from consuming a greater quantity of ORS than is necessary. Therefore, in order to use ORT, it is not important to establish a classification of the hydration state based on the intensity of losses. It is more useful to operationally classify based on the therapeutic actions possible.

### III. CORRECTLY TREAT THE PATIENT SUFFERING FROM DIARRHEAL DISEASE IN ACCORDANCE WITH THEIR HYDRATION STATE

Dehydration is treated with ORS. The way in which to correctly prepare it is a skill which all health workers and people in charge of patient care should possess. There is also a guide that goes into further details on these points, the outline is described here:

- 1 How to correctly prepare ORS
    - Ingredients
    - Concentration of ingredients in mmol/l units
    - Steps to proper ORS
  - 2 Using the adequate treatment plan
    - Plan A-to prevent dehydration
    - Plan B-to treat dehydration
    - Plan C-to quickly treat shock due to dehydration
- How to carry out each of these treatment plans  
How much ORS should be given after passing stool or urinating

Source: *Manejo del paciente con diarrea, MINSA/OPS/OMS, 1995)*

Home-available fluids recommended by MINSA include breastmilk, ORS, cereal-based liquids, coconut water, plain boiled clean water, and fruit juices.

#### D.4.d.2 Incidence and Distribution

The annual number of diarrheal episodes per child under 5 years of age is estimated at 3.3. (Source: Unidad # 1 del Curso profesional para médicos y enfermeras de actualización en el control de las enfermedades diarreicas y cólera INCAP/OPS; this source makes reference to the EPI Bulletin (boletín epidemiológico OPS 1991). In interviews with the SILAIS of both RSJ and RAAS, MINSA personnel confirmed the rate of 3 episodes per child per year.

The highest morbidity rate is among children less than 2 years of age. At the national level, the incidence of diarrhea cases in children less than 5 years of age in the past two weeks, according to a national survey was 19.6%. In the child less than 1 year of age it was 24% and in the child less than 2 years of age it was 25% (Source: *Informe final de encuesta nacional sobre el manejo efectivo de casos de diarrea en el hogar, Julio de 1996*).

Diarrhea morbidity is highest during the rainy season (May- November), with peak incidence months in May and October; especially in the tropic humid regions such as RSJ and RAAS. The Baseline KPC survey was done during October and reported that 30% of the 266 children aged 0-23 months had experienced an episode of diarrhea during the previous 2 weeks.

SILAIS in RSJ and RAAS didn't have figures for what proportion is dysentery or persistent diarrhea. They do have norms for antibiotic therapy, but antibiotic-resistance has not been reported.

#### D.4.d.3 Knowledge and Practices

Among the survey children, 30.1% had diarrhea in the two weeks prior to the survey. In comparison, a survey reported the national prevalence at 17.6% (PROFAMILIA, 1993). The following percentages of survey women followed feeding practices that are recommended by the Ministry of Health for diarrhea management: 75.6 who were breastfeeding breastfed the same amount or more than usual, 67.2 provided the child with the same or more fluids (other than breastmilk) than usual, and 41.4 provided the child with the same or more solid and semi-solid

foods than usual. Notably, women were more likely to maintain or increase liquid feedings than to maintain or increase feedings of solid or semi-solid foods. This trend is consistent with the trend observed in the 1992-1993 national health survey (PROFAMILIA, 1993). To treat the diarrhea, 35.9% of survey women provided an oral rehydration therapy, and 26.9% with ORS).

An approximately equal percentage of women sought help for their child's diarrhea from relatives or friends (30.5) as from the HC or post (31.7). When asked about feeding the child recuperating from diarrhea, 61.3% of women indicated they should provide an increased quantity of food. Approximately 38.7% of the mothers in the survey reported giving their child medicine for the diarrhea. Few mothers in the survey (12.4%) stated signs or symptoms related to dehydration as those that would cause them to seek advice or treatment for their child's diarrhea. Signs and symptoms most frequently mentioned were prolonged diarrhea (greater than 14 days- 19.3%), fever (11.9%), vomiting (12.8%). World Relief Nicaragua will place special emphasis on the use of ORT to treat diarrhea and on the dangers of using medicines for diarrhea.

These results suggest that future programming efforts should be directed towards disseminating information on the recommended uses of solid and semi-solid foods for the child with diarrhea and for the child recuperating from diarrhea, the preparation and use of oral rehydration therapies, and identification of the signs of dehydration.

According to MINSAs policy, antibiotics are prescribed only by Physicians, however, in reality other health personnel such as nurses also prescribe antibiotics. Antibiotics are recommended only in the event of dysentery or cholera. Under other conditions, they are ineffective and should not be prescribed. Anti-parasitic medicine should be used only for Amebiasis after treatment of Shigella-caused dysentery has failed or in case trophozoites of *E. histolytica* are found in the feces. In the event of Giardiasis, anti-parasitic medicine should be used when the diarrheal disease has lasted 14 days or cysts or trophozoites are found in the feces or in duodenal fluid. Anti-diarrheal medication or anti-emetics are not recommended for the treatment of diarrhea. For common diarrhea, only ORS is recommended.

(Source: *Manejo del paciente con diarrea, programa salud materno -infantil, control de enfermedades diarreicas agudas, Ministerio de salud, Nicaragua OPS/OMS, Diciembre 1995*).

Currently, there are private pharmacies in the urban areas of the project area that indiscriminately sell many medications; this activity is not controlled by the Ministry of Health. Generally, mothers who have access to these pharmacies go and buy unprescribed anti-diarrhea and deworming medicine. Many pharmacy owners are not formally trained to prescribe medication; however, they do so anyway, since there is no monitoring by the Ministry of Health. Additionally, even small home-based stores (pulperías) sell these types of medicine, especially anti-diarrhea medicine. Many pharmacies are run by MINSAs personnel after hours.

#### D.4.d.4 Approach

The project's protocol of home management of diarrheal diseases in infants and children, and for the management of more severe cases including persistent diarrhea and dysentery is the same as MINSAs protocols, see section D.4.d.1.

Intervention specific training:

MINSA and WRN staff will be trained on the norms on diarrhea and on the strategy used to reach mothers whose children are less than 5 years of age. For the initial training, the project will contract Dr. Blanca Ulmos and Dr. Blanca Benard, of the Department of Integral Attention to Children and Adolescents, MINSA Central. Volunteers deemed able to manage and treat diarrhea cases will be selected and trained. Health promoters and auxiliary nurses (with assistance from the municipal educators) will conduct the volunteer training, and they in turn will be supervised by Project Area Coordinators and other MINSA staff.

Volunteers will provide assistance to children with diarrhea by setting up the volunteer's home as a "Base House," equipped with a 2L pitcher, large spoon, ORS, small and medium cups, tablespoons and teaspoons, pan for boiling water, and MINSA's table for evaluating the hydration state. The project plans to equip 100 base houses in the project area.

In community meetings, community members will learn about the importance, purpose and function of a base house. Emphasis will be placed on the early identification of cases and of signs and symptoms of dehydration.

Training of mothers will be carried out by the volunteers, who are supervised by the project's promoters and counterpart MINSA staff (auxiliary nurses). The trainings will be held through informal talks to small groups of mothers and in workshops in the community. In order to train/educate mothers on the diarrhea component, we will take advantage of sites where health services are provided, and preexisting organizations such as church meetings and monthly school meetings. Volunteers will keep workshop participants attendance lists, so that they know who has not received training in a certain intervention. The format used for delivering the educational messages will be reviewed constantly in order to reach and visit those women who for whatever reason were unable to attend the workshops or educational meetings.

For cases of common or viral diarrhea, the PAHO/WHO standard treatment of diarrhea that MINSA uses will be followed.

Plan A: In the home

Plan B: Base house/health post

Plan C: Health center

Every mother who has a child with diarrhea should visit the base house to evaluate their state of hydration/dehydration. The volunteer at the base house will decide if the child should go home and be treated by the mother (Plan A). The volunteer will instruct the mother in how to prepare and administer ORS, will share information on hygiene, treatment during and after diarrhea, and the use of other fluids (ORT) for continued hydration during the diarrheal episode.

The volunteer will also show the mother how to recognize signs of dehydration and about the recuperation of the child via rehydration. This will be done by a simple demonstration which consists of filling a bag with water, drawing a child on it and showing how the bag dries up by putting a hole in it and how it returns to normal when the bag is filled with water again. This is an exercise which is used to establish mothers knowledge and awareness towards the use of ORT to prevent dehydration.

If the child is under 6 months of age, the mother will be encouraged to breastfeed and not give other additional fluids except ORS. If the child is over 6 months of age, the mother will be encouraged to continue breastfeeding during and after the diarrhea. When appropriate, prevention messages about how breastmilk is clean and exclusive breastfeeding to 6 months can prevent diarrhea will be shared.

If a child falls under Plan B, the volunteer at the base house will have the sick child in their home for 4 hours, since in this case the child will have presented some signs of dehydration. Mothers will be directly taught how to identify the signs of dehydration. Mothers will be shown how to prepare and administer ORS, and she will be given ORS based on the age of the child. If the child is less than a year old, the child will be given ½ cup of ORS after passing a stool. If the child is 1-9 years old, one cup of ORS will be given after passing a stool. If the child is older than 10 years, then she will be given as much ORS as she wants.

If during these 4 hours the child is not vomiting, drinks the ORS, and dehydration signs disappear, then the child can return to her house with Plan A. If the signs of dehydration continue and the child is not drinking the ORS well, then the child will be referred to the closest health unit. The volunteer will make this decision on an hourly basis (ie. won't wait four hours before referring the child to the health unit if child is not responding in the first hour of treatment).

Plan C involves a referral to the health post. Here the volunteer's role will be to prepare one liter of ORS, and show the mother how to administer it as they travel to the health post.

A tally will be kept of all the children who are attended and what plan (A, B or C) was used at the base house. In addition to reporting the supplies which have been used and those which remain, a monthly report will be given to the health promoter and to MINSA on the activities carried out.

Volunteers will be trained to identify and refer a child to a health unit who has dysentery or persistent diarrhea. In this case, the Base House can provide education and ORS to mothers. It is the responsibility of the Base House volunteer to make home visits to mothers whose child has had diarrhea in order to evaluate the child's hydration state, and to refer the child to a health unit if the child's condition has deteriorated.

The project's educational strategy consists of training project staff together with MINSA staff, and then for WRN and MINSA jointly to recruit, train, motivate and supervise health volunteers.

The DCM intervention will be phased in during the first intervention phase in RSJ (3rd quarter of year 1) and during the third intervention in RAAS (during the 1st quarter of year 2). See workplan for details.

The program will reach high risk groups through community meetings, home visits, parent meetings at schools, visits to different churches, visits mothers make to the Base House, and by referrals made by health units or volunteers.

The Project will train MINSA personnel with an emphasis on adult participatory methods used to transmit knowledge. The project does not plan to train/supervise private practitioners or retailers. MINSA does not have adequate control over private pharmacies, since they don't have enough staff pharmacists to supervise them.

Diarrhea Case Management at the community level will be improved as the base houses are implemented, monitored and supervised in the community. The project does not have a relationship that allows project staff to supervise MINSA personnel, except in the management of referrals and counter-referrals between MINSA health posts and the base houses. It is believed this supervision is not necessary as the quality of the management of diarrheal diseases (dysentery and persistent diarrhea) is good where there are health services. The Ministry of Health has enough medicines for the treatment of cases and medication for dysentery and persistent diarrhea are on the essential medications list. (See Appendix J for a list of essential medications for health posts, HCs and hospitals)

#### D.4.d.5        ORS

The program will promote the use of ORS packets through trained volunteers at base houses. To guarantee the supply of ORS in the community, Project staff will coordinate with MINSA in providing ORS packets to base houses through MINSA and WRN staff. Currently, MINSA has sufficient quantities of ORS to treat cases and equip the Base Houses. The availability of ORS at the community level for mothers will depend on MINSA supplies. ORS is free and available at health posts, health centers and hospitals.

Mothers will be trained in the preparation of ORS, following the norms and procedures established by MINSA. Volunteers will provide educational demonstration sessions in the community as well as individual instruction in the base houses as needed.

#### D.4.d.6        Home Available Fluids

The project will promote the use of home-based fluids such as rice water and coconut water. One difference will be to teach mothers to not add sugar to the rice water that is already commonly prepared to give child with diarrhea. Salt is already sometimes added to the rice water. Coconut water is another widely-available fluid that can safely be used to prevent dehydration. Mothers with infants less than 6 months of age will be encouraged to exclusively breastfeed, or to give ORS, but not additional liquids. Breastmilk will be promoted as a clean, nutritious home available fluid for sick children.

#### D.4.d.7        Health Education

The Project's communication strategy is to train MINSA staff (nurses, auxiliary nurses) and WRN staff in participatory communication techniques and methods. Municipal educators, who already have received some training in educational methodology, will participate in the training and consider it refresher training. MINSA staff will develop facility-based communication strategies, but the focus of the project is community-based communication, directly to mothers. Trained MINSA/WRN staff will use these techniques and methods in training volunteers in the

communities. A list will be kept of all the workshops which are carried out and of all the participants who attend them. Another opportunity for communication is when a mother brings her child to a Base House.

Messages given to mothers regarding how to administer ORS, breastmilk or other liquids to their child with diarrhea are the following. (Source: *Facts for life*)

1. To prevent too much liquid being lost from the child's body, breastmilk, fresh fruit juice, green coconut water or water should be given to the child every time a watery stool is passed. If nothing else is available, give water from the cleanest possible source (if possible brought to a boil and then cooled).  
Between a quarter and a half of a large cup for a child under the age of two; between a half and a whole large cup for older children.
2. The drink should be given from a cup (feeding bottles are difficult to clean properly and pathogens may be introduced). If the child vomits, wait for ten minutes and then begin again, giving the drink to the child slowly, small sips at a time.
3. Breastmilk and extra liquids should be given until the diarrhea has stopped. This will usually take between three and five days. Extra foods should also be given during and after the diarrheal episode.
4. If a child is exclusively breastfed and has diarrhea, the mother should continue breastfeeding. If the child is dehydrated, the mother should give ORS and breastmilk, not additional fluids.
5. You should not wait until diarrhea has progressed to the point of dehydration before beginning ORT. Increased liquids should begin as soon as diarrhea begins.

Messages that will be given to mothers on when they should take their child to a health worker or institution/health unit are as follows:

1. Trained help is needed if diarrhea is more serious than usual.
2. Parents should seek help from a health post or HC without delay if the child becomes dehydrated. Some signs of dehydration are: sunken eyes, extreme thirst, no tears when the child cries, has a fever, will not eat or drink normally and vomits frequently, passes several watery stools in one or two hours, passed blood in the stool (a sign of dysentery).  
If a child has any of the above signs, qualified medical help is needed quickly. The doctor or health worker will give the child a drink made with ORS. In the meantime, keep giving the child liquids.

Health workers and volunteers will use participatory methodology to train mothers, in small groups and individually on home visits while filling out the family register, at a Base House, or while helping her rehydrate her child in an Oral Rehydration Unit.

The educational sessions will be organized according to the way in which families are distributed in the community. When the volunteers have been trained in diarrhea in a workshop, and are ready to implement the intervention in their communities, then mothers will be trained each month, in groups. After mothers have received the initial training, they will be followed up, depending on the incidence of diarrhea cases. Greater emphasis will be placed on DCM during the beginning and end of the winter season because that is when diarrhea incidence and morbidity rates are highest.

The quality of the health education will be monitored through supervisory checklists, used by Health Promoters, Nurses, Auxiliary nurses, and Municipal educators, see appendix D and section E.3 for the Supervision Plan.

The project will measure what mothers have learned about DCM through feedback demonstrations that mothers will do after they have been trained. For example, they can enact socio-dramas showing how to prepare ORS, how much to give to a child based on their age, and when to go to a health post. During the training period, trainers will ask key questions. The Base House volunteer can also measure knowledge directly when the cases are presented, by supervising the child's mother as she prepares and administers ORS.

Educational materials that were used in the previous program's diarrhea component will be readapted.

Two educational sessions are required to reach the desired level of knowledge and practices, in addition to a demonstration session so that mothers can have the opportunity to prepare and administer ORS. Two refresher sessions annually will be needed to evaluate what has been learned and to emphasize the most important points that they may have forgotten. Nine contacts total will be required with each mother throughout the life of the project.

#### D.4.d.8 Prevention

The health messages will be disseminated to the general population during community meetings. Since grandmothers are frequently the caretakers, they will especially be invited to attend the meetings. Mothers will be taught about basic hygiene. General prevention messages will be adapted from the following (Facts for Life):

- Illnesses can be prevented by washing hands with soap and water after contact with feces and before handling food.
- Illnesses can be prevented by using latrines.
- Illnesses can be prevented by using clean water/exclusively breastfeeding to 6 months of age.
- Illnesses can be prevented by boiling drinking water if it is not from a safe piped supply.
- Illnesses can be prevented by keeping food clean.
- Illnesses can be prevented by burning or burying household refuse.
- Exclusive breastfeeding for infants <6 months can prevent illnesses

The project does not plan to construct latrines or water supplies for project areas. When there are community initiatives for latrine/water projects, the health promoters will be responsible for contacting and coordinating with the leaders organizing the work. Two organizations in the project area conducting development programs include FONIF (Fondo para la Niñez y la Familia- funds for children and families) and FISE (Fondo de Inversion Social de Emergencia- funds for investing in social emergencies).

#### D.4.d.9 Other Issues

Staff experience: WRN Project staff (area coordinators, director, education specialist) have experience and knowledge in DCM but will also be trained in DCM norms by MINSA Central staff: Dr. Blanca Ulmos and Dr. Blanca Benard, who are both in charge of Integral Attention to the Child.

Training: The volunteers will be trained 16 hours on DCM, including the following topics: definition, causes, groups most affected, complications, dehydration, demonstrations on the preparation and administration of oral rehydration solution, prevention of diarrhea, activities which the volunteer can carry out, feeding practices for the child with diarrhea, and reporting for the HIS. In the section on feeding the child with diarrhea, we will emphasize the promotion of breastfeeding; for children under six months of age, exclusive breastfeeding will be promoted and for children older than six months, breastmilk and appropriate complementary family foods will be promoted. The initial training session will be facilitated by the Area Coordinator and health promoters. Subsequent follow-up training sessions will be facilitated by the health promoters.

Health workers, Area Coordinators, health promoters, and MINSA personnel will be trained on MINSA's DCM norms and protocols (PAHO-WHO, 1996). The initial 24 hour training session will be facilitated by MINSA Central staff.

The health promoters are indigenous to the area in which they will be working and will move periodically to different communities within their assigned area in coordination with MINSA staff. They will be expected to work five days per week except when receiving training. Area coordinators and MINSA staff will evaluate the health promoters' effectiveness in training health volunteers. Additionally, the promoters in coordination with MINSA staff will evaluate the educational sessions that the volunteers will carry out with women in the community.

Supervision: Instruments used to monitor this intervention include supervisory checklists (see Appendix D), direct observations, HIS (family register, reference sheets), and qualitative evaluations such as in-depth interviews with project beneficiaries. Additionally, activities will be monitored through monthly and quarterly reports and referral sheets, depending on the number of children with diarrheal diseases.

Differences: There are no differences between the norms and protocols that MINSA has established and those to which the project will adhere.

#### References:

1. *Manual of the Acute Diarrheal Diseases Program*, PAHO-WHO, 1996
2. *Manual for the promotion and development of Base Houses*, MINSA, 1995
3. *The management and prevention of diarrhea: Practical Guidelines*. Third Edition. World Health Organization, Geneva, 1993.

#### **D.4.e Maternal and Newborn Care**

Due to the lack of transportation and resources for emergency obstetric care, the project has decided that its efforts can be used more effectively by focusing on increasing access to family planning and promoting family planning. By preventing pregnancies, project staff hope to impact the maternal mortality in the region. The project will keep a strategy on tetanus toxoid for women (see the immunization section, D.4.a). and maternal iron/folate supplements (see nutrition intervention, section D.4.b). Please see section H, for more details on the rationale for dropping maternal care.

#### **D.4.f Family Planning**

##### **D.4.f.1 Baseline Information**

Among the 192 women who were neither pregnant nor who wanted to have a child in the next two years, 54.7% were using a modern family planning method (WRN Baseline KPC Survey, 1996). This percentage is on par with the percentage of women in the national health survey who did not want another child and who were using modern family planning methods (55.7) (PROFAMILIA, 1993).

Out of 266 mothers surveyed, 27 (10%) were already pregnant. Of those who were not pregnant (239), 41 (17%) wanted another child in the next 2 years. Of the remaining 192 mothers who did not want another child in the next 2 years, or were not sure, 111 (58%) were using a modern method of family planning, which means 42% of women were not using a modern method of family planning.

The main methods used by women in the current study included tubal ligation, pills, and intra-uterine devices (IUDs). The prevalence of contraceptive use among these women is as follows: female surgical sterilization, 32.5%; injections, 8.1%; contraceptive pills, 29.7%; IUDs, 21.6%; condoms, 2.7%; exclusive breastfeeding 0.9%; rhythm method, 0.9%, and abstinence, 3.6%. The data suggest that there is a large unmet need in the project area.

The most recent Family Planning study conducted by PROFAMILIA in 1992-93, does not give information on drop out rates. They list reasons why women stop using contraception, but not % of women who stop using FP methods.

Mothers are not very happy with the quality of family planning services in the project area. MINSA rarely has enough supplies or a great variety, and PROFAMILIA, although subsidized and fairly low cost, still charges for FP methods. Access is poor for all women who live farther from the roads/ cities and towns. WRN can increase quality of access and FP counseling by working with PROFAMILIA to train FP providers in greater depth.

##### **D.4.f.2 Current Family Planning Services and Constraints**

The fertility rate in the project area has been estimated at 5.7%. In USAID's report "Nicaragua 2000," this high fertility rate was described as a "serious public health and demographic problem." Additionally, it stated that "young women, who are poorly educated, of low

socioeconomic status, and who live in the rural areas are most in need of family planning and health service" (USAID Nicaragua, 1995). Most of the women of reproductive age in Nicaragua are young; 23.2% are between 15 and 19 years and 21.1% are between 20 and 24 years of age (PROFAMILIA, 1993).

Current Family Planning Services: The Ministry of Health offers family planning services in hospitals, HCs and health posts in the project area. Each SILAIS's provisions are filled from the central level/offices; generally on a monthly basis but also on an annual basis. These are distributed by each SILAIS warehouse to the HCs and posts depending on the population of women of fertile age who regularly use a family planning method.

Access to family planning services is limited in the project area. MINSA is the largest single provider, although other organizations also provide these methods/devices: pharmacies in urban areas, private clinics and PROFAMILIA. PROFAMILIA provides family planning counseling, contraceptive devices/methods, and coordinates with other NGOs that are involved in promoting family planning. It is important to emphasize that MINSA and PROFAMILIA are the project's principal counterpart for the promotion of family planning. PROFAMILIA has better provision of supplies and when MINSA has supply problems, people receive supplies from PROFAMILIA's CCDPs.

PROFAMILIA has plans to open clinics and CCDP in the project area, and to offer other services such as Papanicolaou tests, prenatal care, sexual education, and family planning counseling. Project area data indicates that 37.5% of eligible couples in the mountainous regions use modern family planning methods (PROFAMILIA, 1993).

MINSA's network of services is not very extended in the regions because of geographic inaccessibility and lack of supplies. It is important to point out that popular religious beliefs constitute a factor which limits the use of family planning methods; another limiting factor is widespread "machismo," especially in the rural areas (ADRA, 1994).

The number and types of trained providers of FP methods: 12 physicians, 20 nurses, 80 auxiliary nurses, 8 municipal educators, and 22 PROFAMILIA volunteers (who distribute at CCDPs-usually their own homes.)

Available counseling and referral systems: Auxiliary nurses, nurses, and physicians provide counseling services for women to help them decide which FP method to use. WRN Promoters and PROFAMILIA and project volunteers will also promote available FP methods and counsel mothers on FP methods, with referral to the HCs or hospitals as needed.

Currently, the Ministry of Health promotes and provides five modern family planning methods which are available in the program area: oral contraceptives, IUDs, injections (Depo Provera), condoms, and surgical sterilizations. Pills and condoms are available at the health posts. These plus injections and IUDs are available at the HCs. All of these plus the surgical sterilizations are available at the regional hospitals. RSJ has an OB-GYN trained in the Minilap technique and RAAS has 3 OB-GYNs and one GP trained in Minilap and in obstetrical surgeries.

These methods are available at the health units without cost to the consumer/person. Nevertheless, there is not always a good supply of all FP methods and the methods that are available are not always well accepted by the mothers. For example, Lofemenal (the only OC available--a low-dose pill that is not very popular) and the IUD (not well-accepted) because of adverse reactions such as bleeding and pain. As an example of the inadequacy of supply, in January of 1997, the RAAS SILAIS only received 40 doses of Depo Provera for a population of 60,000 people.

In addition to MINSA services, PROFAMILIA promotes family planning services in the project area. In the RAAS they have a network of CCDPs in urban Bluefields (they train a volunteer to distribute contraception which are available at low cost: pills for one month, 6 cordobas, condoms 0.50 Córdoba, and Depo provera 20 cordobas). PROFAMILIA, a Nicaraguan NGO offering subsidized Family Planning Services, offers IUDs at its clinics however neither of the two departments in the project area (RSJ, RAAS) have a PROFAMILIA clinic. PROFAMILIA has demonstrated an interest in opening clinics in San Carlos and Bluefields and WRN has repeatedly encouraged them to do so.

The surgical sterilizations are available at the regional hospital and are carried out by MINSA or PROFAMILIA. The surgeries performed by PROFAMILIA cost 75 Cordobas plus the laboratory exams and transportation.

During the previous CS project, RSJ invited PROFAMILIA to visit the area and up until now, 15 CCDPs have been established in urban and rural communities which are accessible via the road or the river. That is not the case for faraway communities which are inaccessible by automobile or boat; consequently, mothers who live in far-away communities have difficult access to family planning methods.

In the San Carlos hospital, surgical sterilizations are carried out in coordination between PROFAMILIA and WRN bi-monthly or monthly depending on the demand. Sterilizations are promoted among women who already have all the children they want.

When a woman who lives in a distant community wishes to use family planning, she goes to the closest health post where she is given information and counseling about available methods. Culturally, in most of the rural project areas, women let men make the final decision about whether or not to use contraception. Men do not typically decide which type of method to use, except when deciding on a surgical sterilizations.

#### Constraints

1. MINSA does not have a continuous and constant supply of family planning methods which discourages women from family planning. However, PROFAMILIA's CCDPs can satisfy contraceptive needs in communities when there are no methods available at the health posts.
2. Educating women about family planning is not a significant obstacle because when you explain to them the risk factors associated with more than 4 pregnancies, they are motivated to family plan. The obstacle in many cases are that men in rural areas are very "machista" and women generally comply with their wishes.
3. Accessibility to health posts is definitely a constraint for the most distant communities.

#### D.4.f.3 Approach

1. The project will promote family planning in all project communities, primarily by actively promoting the use of methods available at the health posts and increasing access in distant communities through collaboration with PROFAMILIA'S CCDPs. The project seeks to increase demand for FP and also to concurrently fill that demand by increasing access through PROFAMILIA's distribution posts. The project plans to actively help PROFAMILIA recruit and train 40 more distributors, especially in rural areas where access is a problem for women.

Promotional campaign activities will be carried out in concert with PROFAMILIA's strategies. WRN has coordinated with MINSA to carry out radio campaigns and develop banners to promote the prevention of maternal and perinatal mortality through birth spacing. WRN has also coordinated with PROFAMILIA to implement radio campaigns/programs to promote family planning. PROFAMILIA will provide the project with posters they have developed to promote family planning.

2. The project will educate about family planning techniques using adult learning principles which include: Q & A, problem posing, showing examples of different methods available in the area, explanations of how they work, and the indications and contra-indications for each method. Project staff will promote FP to all women, and follow up on women and couples who are interested/already using FP. Individuals who wish to use a method only available at a clinic will be referred by the health volunteer and/or the TBA to the health post or health center.

The initial FP training for WRN staff (Area Coordinators and Promoters), and MINSA staff (Municipal Educators, Nurses and Auxiliary Nurses) will be done by Dr. Dionys Fuentes and Dr. Patricia Barahona, who are in charge of the FP Program at MINSA Central. This training session will be replicated by the promoters and auxiliary nurses for the health volunteers using participatory techniques and then will be replicated by the health volunteers for the mothers also using participatory techniques. See Appendix O for FP curriculum and selected pages from the Training Manual for FP.

3. Project volunteers will also identify individuals/couples who want family planning services. Once identified, they are counseled by the volunteer, and referred to the closest MINSA health post/ PROFAMILIA CCDP to obtain FP methods.

If a woman or man choose surgical sterilizations, they are counseled by MINSA or PROFAMILIA staff and women are referred to the HC for a pregnancy test. (Laboratory exams are carried out at the regional hospitals in the project area for MINSA-referred women. PROFAMILIA-referred women are referred to regional hospitals or private laboratories for these laboratory exams).

If pregnancy is suspected, a urine exam (gravindex) is performed at the regional hospital or private laboratory. Surgical sterilizations are done periodically (monthly or bi-monthly depending on demand), at the regional hospital in coordination with PROFAMILIA.

4. Project volunteers that are also PROFAMILIA distributors will distribute FP methods.

Project staff believe that MINSA and PROFAMILIA's network is viable, and a better use of project resources will be to strengthen their networks while concurrently increasing demand for services in the project area. The Project will encourage volunteers to become distributors for PROFAMILIA, and has set an output goal of adding 40 distributors in the project area, which will cover a total of 4,716 women in the project area who are presently without access. Project staff believe that these efforts in family planning will result in a 25% - 50% decrease in maternal mortality in the project areas, by increasing access and preventing pregnancies in the most distant rural areas. According to maternal mortality figures, this would mean up to 46 deaths that could be prevented over the next three years.

Facilitating PROFAMILIA's network extension in the area is a sustainable, low cost way to ensure that women have increased access to FP methods. Although PROFAMILIA supplies are subsidized, the cost may still be too much for the poorest women. WRN will be working on a strategy to see what can be done for these women through MINSA (which is supposed to give out FP supplies for free). Possibilities include outreach clinics conducted by MINSA staff, or PROFAMILIA supplying MINSA with supplies for women who cannot pay.

5. WRN will not be maintaining a constant supply of FP methods from its own funds, as PROFAMILIA has been reliable in the past. MINSA supplies are more erratic and of less quality, and the project hopes to work with MINSA on various levels to improve FP supplies in the area. PROFAMILIA supplies, although good, can only remain in place as long as the Contraceptive Post distributors have funds to buy the contraceptives to sell. Credit is only extended on the first round of supplies given to the distributor.

The project will be in the position to oversee/promote PROFAMILIA's efforts to establish a network in the project area. WRN receives funds from a private donor (who only funds sterilizations specifically), to subsidize the cost of sterilizations for needy women who have received counseling from PROFAMILIA.

The quality of services provided by the volunteers at the CCDPs will be monitored and supervised by PROFAMILIA who will also stock the posts with FP methods on a monthly basis. Refresher training sessions for these volunteers are done annually by PROFAMILIA. Project staff will also be monitoring the quality of education, counseling skills and access in the project area (whether by MINSA or PROFAMILIA) and collaborate with these agencies to improve access/quality of FP services.

The project will use the family register for monitoring FP activities. The register will indicate if the woman is planning or not, and which method is being used. If the woman wishes to use FP she can be referred by the health volunteer or TBA to the closest health post with a referral sheet. The family register will be updated quarterly and the results will be shared and discussed with the auxiliary nurses responsible for the health posts, the health volunteers, and community leaders. On a monthly basis, we will be able to know the number of individuals who are referred from the communities to the health posts for family planning services.

A strategy for improving the stocking/provision of temporary methods in the most distant communities will be to schedule with PROFAMILIA when they will visit and stock the CCDPs. WRN will then notify health volunteers of these dates so they can purchase the methods directly from PROFAMILIA and sell them in the more distant communities where they work.

When the project trains women in FP, husbands or male partners will also be invited to attend. If anyone needs more information, they can ask at training/educational session. If neither the health volunteer nor the promoter can answer, they will be referred to a health unit.

Volunteers who distribute FP methods will be able to refer any person who has an adverse reaction to any method to the health posts and HCs. Additionally, any doubt which the person might have about using the method can be addressed at the closest health unit.

Relationship between approaches implemented through community-based workers (PROFAMILIA distributors) and those carried out by clinic-based practitioners (MINSAs): The WRN project hopes to be a bridge between PROFAMILIA distributors and MINSAs by training both MINSAs personnel and PROFAMILIA distributors and health volunteers in FP methods, counseling techniques, and by helping organize a promotion campaign for the entire project area. These approaches are complementary. MINSAs provides services free, and has clinics to provide some services that remain otherwise unavailable (IUDs, sterilizations), however, PROFAMILIA equips local distribution posts with pills, condoms and other more desirable FP methods. The project hopes to increase the number of women who are using FP and who have access to FP by working with both community-based distribution posts and with MINSAs clinic-based practitioners.

The project's FP intervention will be linked to government FP programs and policies in an organic way. WRN project staff have developed a FP intervention and entire CS project that is built on training MINSAs and WRN staff and volunteers, to insure agreement from the start. WRN project shares MINSAs's FP policies (outlined below). By training MINSAs level staff and volunteers to work together, and leaving behind a network of trained volunteers answerable to local level MINSAs auxiliary nurses and municipal educators, the project hopes to increase and expand the FP counseling available in the project area.

MINSAs's FP policies are:

- Promotion and use of family planning methods.
- Provide family planning attention/services to couples referred by the health volunteers or midwives.
- Provide attention/services to couples at high reproductive risk who are referred or who are detected during consultation for health conditions other than family planning.
- Provide education to individuals and couples about family planning methods.
- Incorporate the family planning content in the education provided to health workers, health volunteers and TBAs.

Basic Messages that will be Incorporated in the Project's Family Planning Education Activities:  
(Source: *Facts for Life*, 1993)

- Becoming pregnant before the age of 18 or after the age of 35 increases the health risks for both mother and child.
- The risk of death for young children is increased by up to about 50% if the space between births is less than 2 years.
- Having more than four children increases the health risks of pregnancy and childbirth.
- There are many safe and acceptable ways of avoiding pregnancy. Family planning services can give couples the knowledge and the means to plan when to begin having children, how far apart to have them, and when to stop.

These messages were used in the previous project and were tested on groups of mothers. They will be tested again in the new project area, and redefined for changing needs.

D.4.f.4 Other Issues

Staff Experience: WRN project staff responsible for monitoring this intervention component have experience in FP promotion, and in training MINSA and volunteer health personnel. The entire staff will also be trained in new FP norms that MINSA is revising in 1997.

How the program will coordinate/complement existing organizations:

At the central office level, the project director will maintain contacts and coordinate with PROFAMILIA including signing an agreement/contract between WRN and PROFAMILIA (see appendix B for signed agreement). In each region, Area Coordinators will coordinate with the closest PROFAMILIA office.

At the field level, promoters and health volunteers will coordinate with MINSA staff to educate individuals concerning the reasons why they should plan their families, and will refer women who wish to plan their families to the nearest HC/post that can provide them the relevant services and supplies.

WRN will continue its coordination with an individual donor who provides funds to subsidize the laboratory exams and surgical sterilizations for couples with limited economic resources.

Training: The intervention will begin with a 24 hour FP training sessions for promoters, MINSA personnel, area coordinators, and WRN project staff. FP specialists from MINSA's central office, Dr. Dionnys Fuentes and Dr. Patricia Barahona who facilitate training in family planning.

Health volunteers will receive 16 hours of training in family planning. Training topics include: importance of family planning, when pregnancy is possible, birth spacing, temporary and permanent family planning methods, paternal responsibility, prevention of cervical-uterine cancer and breast cancer, and the use of the HIS for the family planning component (Source: *Methodological Guidelines for Training Promoters, SILAIS-MINSA, 1996*)

PROFAMILIA staff will train, monitor and supervise individuals in the CCDPs. Promoters, municipal educators, and auxiliary nurses will provide yearly 8-hour refresher training sessions in family planning. When promoters visit health volunteers for other reasons they will take advantage of the opportunity to share family planning information.

Health promoters are indigenous to the area in which they will be working and will work in different communities in their assigned area. They will work five days per week, including training days. Area coordinators and MINSA staff evaluate the health promoters' effectiveness in training health volunteers through supervisory visits. Promoters and MINSA staff will evaluate the educational sessions that the volunteers will carry out with women in the community.

Differences from MINSA: There are no differences between the norms and protocols that MINSA has established and the project.

References:

1. *Manual of the Prenatal Care Program*, MINSA, 1995.
2. *DIP*, ADRA, 1994
3. *Nicaragua 2000, Challenges for developing a stable, democratic, prospering society*. USAID Nicaragua, 1995.
4. *The Nicaraguan Family Health Survey 92-92*, PROFAMILIA, 1993
5. *Methodological Guidelines for the Training of Promoters*, SILAIS-MINSA, 1996

## **D.5 Innovations Which May Be Scaled Up**

1. Home Gardens and education/ cooking demonstrations, focusing on nutrient-rich, under-utilized foods which are available in the community. WRN was the first organization in RSJ to promote family gardens with an emphasis on micronutrient-rich foods. WRN has held discussions with MINSA but no agreements have been reached at the national level, and no funding has been made available. MINSA thinks it is a good idea, but cannot adopt it as a program under its aegis. Home gardens are sustainable at a family level, because crops and perennials will last some time, but as a strategy to improve food security, it will only continue while the project is in the area.

2. Trained Health volunteers: During the previous WRN program, from 1992-1995, WRN served a population of 75,000 people by implementing a system of health volunteers to extend the health prevention and promotion activities of the health posts to the neighborhood level. In 1996, after the completion of the project, WRN was invited by the Managua SILAIS to participate with them in implementing the volunteer system to reach 1,000,000 people in the marginal communities of Managua.

To accomplish this training, WRN staff used Training of Trainers (TOT) methodology to enable all SILAIS staff to become trainers, facilitators, and supervisor/motivators. SILAIS staff learned to train auxiliary nurses who learned how to recruit, train and supervise volunteers.

Various materials/equipment were developed for these training sessions: (which will also be used for this project) A Manual for Integrated Health Volunteers, A Trainer's Guide to for training Integrated Health Volunteers in PHC., and Visual Aids (Flip Charts) used in community information, education and communication activities. The materials were paid for with a gift from GTZ. And MSH paid the costs of training the 2,000 volunteers in 1996.

WRN and MINSA staff trained 500 facilitators (MDs, nurses, auxiliary nurses and educators from the HCs and health posts) which in turn trained 2,000 Integrated Health Volunteers from May-December, 1996 in 136 health units all over Managua. Trained volunteers in turn educate their communities and refer ill persons to HCs. Other MINSA Districts in Nicaragua are also interested in implementing this strategy for training volunteers, but presently lack funds.

Additionally, MINSA Managua and WRN provided the same training to other NGOs in Nicaragua and they are now working with other MINSA staff in other SILAIS; using TOT methodology to recruit, train, motivate and supervise volunteers in other SILAIS. The principal obstacle to scaling up volunteer programs is that MINSA has not yet included funds to train, supervise and maintain volunteers in their national or district budgets. Therefore the program is currently feasible only when there are PVOs to pay for training and materials.

## D.6 Schedule of Field Program Activities

ACTIVITY	RESPONSIBILITY	LOCATION	Year 1				Year 2				Year 3				Year 4			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1. Initial Planning meeting: WRN staff and MINSA personnel, (SILAIS & Health Post Directors)	RAAS: Corina & Darlene RSJ: Nancy & Maria Luisa	Health centers & posts		X														
2. Training in child survival & participatory methodology WRN key staff (director, health educator, and 2 area coordinators) train MINSA staff (Health Eds. Nurses, Auxiliary Nurses, MDs)	RAAS: Corina & Darlene RSJ: Nancy & Maria Luisa	RAAS SILAIS: Bluefields RSJ SILAIS: San Carlos & Sabados			X													
3. Identify & recruit health volunteers from communities.	Promoters & Area Coordinators	All communities			X													
3a. Initiation of establishment of base houses	Promoters & Nurse Auxiliaries	Farthest communities				X												
4. <u>Initiation of the First Phase of training:</u> the First Intervention (note each SILAIS is leading with a different intervention). RAAS: Nutrition/Breastfeeding RSJ: Diarrhea Case Management WRN key staff to facilitate training for MINSA staff and project promoters. MINSA staff refers to : MDs, Nurses, Auxiliary Nurses, & Municipal Educators	Ninoska Cruz & Xochilt Pavón, MINSA Central contracted for Nutrition/Breastfeeding training  Dr. Ulmos & Benard, MINSA Central contracted for Diarrhea Case Management training.	RAAS SILAIS Bluefields  RSJ SILAIS San Carlos			X													
4a. Initiation of first intervention: Training of volunteers in first phase: RAAS: nutrition and breastfeeding RSJ: Diarrhea Case Management.	Promoters, Area Coords, Educators, Nurses & Aux Nurses.	Health Centers and Health Posts.			X													

<p>4b. Initiation of First Intervention: Education of mothers/communities.</p> <p>Supervision of educational workshops/ training sessions in first intervention given by volunteers, promoters, nurses, and auxiliary nurses. Training also given in Health information system and in recording data for the first intervention. (Nutrition/BF in RAAS and Diarrhea in RSJ).</p>	<p>Volunteers</p> <p>Supervisors: Promoters, Educators, Nurses &amp; Aux. Nurses (To supervise volunteers) Promoters, nurses, aux nurses; (to supervise promoters, nurses, aux nurses) area coordinators and municipal educators.</p>	<p>Communities</p>			X														
<p>4c. Census &amp; begin family registers. Volunteers provided with registers, and helped to register their 30 families. Volunteers had been trained in how to record data on family register for the first intervention (Nutrition/BF in RAAS and Diarrhea in RSJ).</p>	<p>Volunteers, Promoters, Auxiliary Nurses &amp; Area Coordinators</p>	<p>Homes in project area</p>			X														
<p>5. <u>Initiation of the Second Phase of training: Second Intervention</u></p> <p>RAAS: Family Planning RSJ: Nutrition/Breastfeeding</p> <p>WRN key staff to facilitate training for MINSAs staff and project promoters.</p>	<p>Dr. Fuentes &amp; Barahona, MINSAs Central invited to train in Family Planning.</p> <p>Ninoska Cruz &amp; Xochilt Pavón, MINSAs Central invited to train in Nutrition/Breastfeeding.</p>	<p>RAAS SILAIS Bluefields</p> <p>RSJ SILAIS San Carlos</p>			X														
<p>5a. Training volunteers in second intervention and in collecting data for family registers in second intervention. RAAS: Family Planning RSJ: Nutrition/ Breastfeeding</p>	<p>Promoters, Area Coordinators, Educators, Nurses &amp; Auxiliary Nurses</p>	<p>Health Centers and Health Posts</p>			X														

<p>5b. Initiate second intervention: Education of mothers/community</p> <p>Initiate supervision of 2nd intervention and continue supervision of 1st intervention.</p> <p>Initiation of one-on-one refresher training and follow-up of second intervention topics during supervision of home visits of the volunteers, promoters, nurses and aux nurses</p>	<p>Volunteers Supervisors: Prom. Educators, Nurses &amp; Nurse Aux.</p> <p>Promoters, nurses, aux nurses, area coordinators, municipal educators</p> <p>(To supervise volunteers) Promoters, nurses, aux nurses; (to supervise promoters, nurses and aux nurses) area coordinators and municipal educators</p>	<p>Communities</p>				X													
<p>6. <u>Initiation of Third Phase of Training:</u> Third intervention</p> <p>RAAS: Diarrhea RSJ: Family planning</p> <p>WRN key staff to facilitate training for MINSA staff and project promoters.</p>	<p>Dr. Blanca Ulmos &amp; Dr. Blanca Benard, MINSA Central, invited to train in Diarrhea.</p> <p>Dr. Fuentes &amp; Barahona, MINSA Central, invited to train in Family Planning.</p>	<p>RAAS SILAIS Bluefields</p> <p>RSJ SILAIS San Carlos</p>					X												
<p>6a. Training volunteers in third intervention and in collecting data for third intervention: RAAS: Diarrhea RSJ: Family planning</p>	<p>Promoters, Area Coordinators Educators, Nurses &amp; Auxiliary Nurses</p>	<p>Health Centers and health posts</p>					X												

<p>6b. Initiation of third intervention: Education of mothers/community</p> <p>Initiation of one-on-one refresher training and follow-up of third intervention topics during supervision of home visits of the volunteers promoters, nurses and auxiliary nurses</p> <p>Initiation of home gardens training for promoters and WRN project staff</p> <p>Initiation of home gardens training to small groups of mothers.</p>	<p>Volunteers Promoters</p> <p>Supervisors: Prom. Educators, Nurses &amp; Aux Nurses (To supervise volunteers) Promoters, nurses, aux nurses; (to supervise promoters, nurses, and aux nurses) area coordinators and municipal educators</p> <p>Julio Salgado and other WRN Agricultural Engineer Promoters, with help of Ag. Engineers.</p>	<p>Communities</p> <p>Communities</p> <p>WRN Offices, Bluefields, San Carlos</p>		<p>X</p> <p>X</p> <p>X</p>			
<p>7. <u>Initiation of Fourth Phase of Training:</u> Fourth intervention</p> <p><u>RAAS and RSJ:</u> Vitamin A/ Growth Monitoring and nutritional counseling (Have already received training in nutrition/ breastfeeding in first and second phases of training)</p> <p>WRN key staff to facilitate training for MINSA staff and project promoters.</p>	<p>MINSA Central staff, Project key staff</p> <p>MINSA Central staff, Project key staff</p>	<p>RAAS SILAIS, Bluefields</p> <p>RSJ SILAIS, San Carlos</p>		<p>X</p>			
<p>7a. Training volunteers in fourth intervention and collecting data for it in the family registers.</p>	<p>Promoters, Area Coordinators Educators, Nurses &amp; Aux Nurses</p>	<p>Health centers and health posts</p>		<p>X</p>			

<p>7b. Initiation of fourth intervention: Education of mothers/community</p> <p>Initiate supervision of 4th intervention and continue supervision of 1st, 2nd and 3rd interventions</p> <p>Initiation of one-on-one refresher training and follow-up of 4th intervention topics during supervision of home visits of the volunteers, promoters, nurses, and aux nurses</p>	<p>Volunteers</p> <p>Supervisors: Prom. Educators, Nurses &amp; Aux Nurses</p>	<p>Communities</p>		<p>X</p>				
<p>8. <u>Initiation of Fifth Phase of Training:</u> Training in fifth intervention</p> <p>RAAS and RSJ: Immunizations.</p> <p>WRN key staff to facilitate training for MINSA staff and project promoters.</p>	<p>RAAS SILAIS staff</p> <p>RSJ SILAIS staff</p>	<p>RAAS SILAIS, Bluefields</p> <p>RSJ SILAIS, San Carlos</p>		<p>X</p>				
<p>8a. Training volunteers in EPI and collecting data in family registers.</p>	<p>Promoters, Area Coordinators Educators, Nurses &amp; Aux Nurses</p>	<p>Health Centers and Health Posts</p>		<p>X</p>				
<p>8b. Initiation of fifth intervention Education of mothers/community</p> <p>Initiate supervision of 5th intervention and continue supervision of 1st, 2nd, 3rd and 4th interventions</p> <p>Initiation of one-on-one refresher training and follow-up of fifth intervention topics during supervision of home visits of the volunteers, promoters, nurses and aux nurses</p>	<p>Volunteers Supervisors: Prom. Educators, Nurses &amp; Aux. Nurses</p>	<p>Communities</p>		<p>X</p>				
<p>Volunteer Promotion Ceremony</p>	<p>Area Coordinators &amp; Promoters</p>	<p>Bluefields &amp; San Carlos</p>		<p>X</p>				

Health Information System fully functioning	Director, Area Coordinators, & Promoters	Communities							X										
<u>Refresher trainings:</u> (8 hours long, one per year in each topic area): Nutrition/Breastfeeding; Growth Monitoring/Vit A; Family Planning; Immunizations /Diarrhea	Promoters, Area Coordinators & Educators	Health Centers and Health Posts							X	X	X		X	X	X		X	X	X
Meetings with MINSA (every quarter)	Area Coordinators	SILAIS offices: Bluefields and San Carlos			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Meetings with PROFAMILIA	Area Coordinators	Bluefields, San Carlos	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Community feedback (twice per year)	Promoters & brigadistas	Communities							X	X		X	X		X	X			
Brigadista meetings (twice per year)	Area Coordinators & Promoters	Bluefields & San Carlos								X		X	X		X	X			
Training in qualitative evaluation methods for promoters	Nancy & Corina	WRN offices: Bluefields & San Carlos								X									
Qualitative evaluations	Area Coordinators	Communities								X		X	X		X	X			
Evaluation of all WRN staff: Director, educator, area Coordinators. & promoters (every 6 months)	Immediate supervisor	WRN offices							X			X			X				
Phase over of activities and volunteers to MINSA	Promoters, Auxiliary Nurses, Area Coordinators	Communities, health posts and health centers														X	X	X	

## E. HUMAN RESOURCES

### E.1 Organizational Chart

See appendix P for organizational charts.

### E.2 Health Workers

Total number of health workers by type, including volunteers, that will provide child survival services, status and agency affiliation.

Title	Total Number	Previously Trained	To Be Recruited	Agency Affiliation
Project Director	1	1	0	WRN
Area Coordinator	2	1	0	WRN
Education Specialist	1	1	0	WRN
Health Promoters	15	5	10	WRN
Volunteers*	600	100	500	MINSA
TBAs	80	0	80	MINSA

\*Volunteers=Health Volunteers, Malaria Health Volunteers, and Base House Volunteers

Some of the volunteers were trained by the previous WRN project or by MINSA for a limited number of interventions, largely cholera/diarrhea or malaria projects. (Base Houses were homes of volunteers with an Oral Rehydration. Malaria volunteers worked in malaria treatment programs.)

#### **Duties related to the child survival program for each type of health worker:**

##### Project Director

- 2 Responsible for selection, training, and supervision of the area coordinators and promoters.
- 3 Develop and adapt educational materials to integrate well with MINSA norms.
- 4 Coordinate the implementation, revision, and adaptation of the KPC surveys, detailed implementation plan (DIP), and the health information system (HIS).
- 5 Represent the interests of WRN and establish working relationships with MINSA, PROFAMILIA, and other public and private institutions in the project area.
- 6 Regularly monitor the progress of the project towards achieving objectives.
- 7 Develop annual budgets and to monitor project costs as they relate to the budget.
- 8 Responsible for writing reports to WRN Executive Director and WRC, using the guidelines established by USAID (quarterly and annual reports, financial reports, etc.)
- 9 Coordinate the planning and implementation of internal and external evaluations
- 10 Update project staff on CS best practices and strategies for CS interventions and norms and changes to these practices.
- 11 Monitor the implementation of the participatory methodology in the educational of staff at all levels.

### Area Coordinators

- 1 Participate in recruitment of health promoters.
- 2 Plan and implement project interventions, in coordination with health promoters.
- 3 Promote, support and periodically evaluate project activities, making sure they are following the project DIP and CS best practices.
- 4 Promote and coordinate activities and events that promote the exchange of knowledge, experiences, and resources among staff from WRN, MINSA, and other public or private agencies which are working or who might work in the project area.
- 5 Train, support and supervise health promoters.

### Health Education Specialist

- 1 Design the overall training plan.
- 2 Plan the implementation of the training plan at all levels of project staff.
- 3 Work with other project staff to develop an educational strategy/methodology for each target audience in the project.
- 4 Guide the implementation of the different educational methods developed above.
- 5 Coordinate training schedule with the project areas.
- 6 Periodically evaluate the effectiveness of the educational strategies and activities, and make appropriate adjustments.
- 7 Prepare and submit monthly report to the project director, and an action plan for following month/quarter/year as needed. Prepare and submit other reports as needed.

### Health Promoters

- 1 Organize the community and identify and relate to community leaders
- 2 Train community leaders and volunteers in project interventions
- 3 Provide /assure volunteers a supply of materials needed.
- 4 Supervise and monitor the project activities in their assigned communities.
- 5 Coordinate with other organizations to maximize the project's effectiveness.
- 6 Maintain a record of the volunteers' activities.
- 7 Prepare a report of monthly activities.
- 8 Recruit, train, supervise and monitor volunteers.
- 9 Work with the Auxiliary nurses and municipal educators in their region to interact with the volunteers.

### Community Health Volunteers/TBAs

- 1 Train mothers in the project interventions.
- 2 Write-up small reports on their activities.
- 3 Make home visits to children with diarrhea, malnutrition, and other health problems.
- 4 Guarantee the provision of ORS to mothers who need it.
- 5 Fill out family registers and update them quarterly.
- 6 Assist in training sessions as needed by the project.
- 7 Mobilize their communities for the NHCs.
- 8 Facilitate meetings with their community to resolve their own health problems.

Work hours:

Salaried staff will only work for WRN during the duration of the project. Volunteers will be working for their communities and the project will try to instill in them a sense of loyalty to MINSA, who will continue to oversee them after the project ends.

WRN salaried project personnel will work the hours established by the Nicaraguan Ministry of Work, 40 hours per week. If necessary, staff will be asked to work extra hours. Volunteers will work at least 6 hours per week.

Ratio of health workers to number of families/beneficiaries.

Potential beneficiary population: 117,000 (approx.) (approx. 6 members per family)

Volunteers: 600 + 80 TBAs

30 volunteers per family

50 volunteers per promoter (25 volunteers per promoter and auxiliary nurse)

6-7 promoters per Area Coordinator

2 Area Coordinators under the Project Director and Health Educator

Staffing pattern for CS project area compared to pattern in non-program area:

Staffing pattern is more intensive, but it is hoped that MINSA, being involved from the beginning, will be able to incorporate these trained volunteers after seeing their value in accomplishing their goals. MINSA already has used and trained health volunteers in the past, but not as intensively as the project plans to do.

The project has decided to work with these types and numbers of volunteers because: Experience from the prior WRN project has shown that this type and number of volunteers can be effectively trained and supervised, and adopted by MINSA into their health care system. Also, in order to get full coverage of the entire population, as this is a population-based project, and "no child is left out," it was felt that 30 families per volunteer is what a volunteer could handle.

The project's strategy of incorporating MINSA personnel from the very beginning and training auxiliary nurses and MINSA personnel (including municipal educators) will give the project and its goals credibility and foster acceptance by MINSA personnel. With the auxiliary nurses working side by side with the promoters from the very beginning, the project hopes to in effect double the amount of personnel devoted to volunteer training and supervision, as well as provide a training ground for auxiliary nurses to be ready for the changes at the end of the project.

WRN's experience with training Managua's MINSA staff after the previous CSP has shown that MINSA staff are open to training and new methods, and a satisfactory working relationship has already been established. (See section D.5.2. for a description of how the previous WRN project worked with MINSA.)

The percentage of workers/volunteers that will have to be replaced each year is between 10 and 20%, based on previous experience.

**Reasons for worker replacement are as follows:**

Volunteers may leave willingly: To look for work outside of their communities, because of a lack of vision/ motivation for the project activities, or lack of incentives provided by the project

To minimize volunteers desertion:

- Use participatory methods in the education and training process
- Have semi-annual meetings with all health volunteers
- Provide certificates for fully-trained volunteers, as an affirmation of their importance and the role they play in their communities.
- Provide incentives such as hats and t-shirts.
- Promote the use of referral and counter-referrals to increase their sense of contribution and interaction with the local health care system.
- Provide materials (manuals, notebooks, pencils, and other materials) necessary to develop educational messages.
- Visit and encourage them; and give them feedback on the progress of the project.

Reasons to replace a Salaried worker:

- Voluntary resignation
- Not completing duties
- For abusing privileges
- For not demonstrating aptitude during the trial period
- For defaming the organization or committing immoral acts

### **E.3 Supervision Plan**

The program will monitor and improve the performance of all health workers through periodic evaluations. Each supervisor will evaluate their subordinate every six months, although supervisory visits will be made more often. The project director evaluates the area coordinators and health specialist, the area coordinators will evaluate the promoters, and promoters will evaluate the volunteers.

Supervisory objectives include the following (*partly taken from: Community-based Breastfeeding Support: A Planning Manual, Wellstart, 1996*):

- To guide, support and motivate staff to perform their assigned tasks
- Provide a two-way exchange of information
- Improve worker performance by enhancing skills and knowledge of both supervisor and supervisee
- Monitor program activities, making changes when necessary
- Facilitate linkages with health and other services.
- Supervisory checklists have been developed for all strata of health workers, to monitor specific performance (i.e. a training session). Volunteers and Promoters will be evaluated more often than every 6 months, particularly if they are newly trained, new to the project, or just beginning a behavior (i.e.: growth monitoring, giving nutrition or family planning counseling, etc.)

The supervisors:

Supervisory relationships include the following combinations: a promoter supervises volunteer; Area Coordinator supervises Promoter; MINSA municipal educator supervises nurses and nurse auxiliaries (note that WRN staff and MINSA staff will be working in teams, so it's possible that a WRN coordinator will supervise a MINSA nurse and a MINSA educator will supervise a promoter). Supervisor resources include: Supervisory checklists, a log book, and a follow-up report.

A supervisor will keep a log of every supervisory visit that consists of: the date, purpose of visit (e.g. to supervise functioning of health information system, to supervise the implementation of the nutrition and EPI interventions), recommendations (e.g. to emphasize nutrition messages X, Y and Z), and agreements (e.g. that by the next supervisory meeting volunteer will have improved on problems X and Y that she has been having with fully implementing the HIS). This log will be signed by both parties and will form the basis for the next supervisory meeting, to review the recommendations and agreements and how the volunteer is working towards achieving these.

During the two years of the project, promoters and volunteers will be evaluated monthly, as they learn each new intervention. Supervision will not be limited to only during the educational workshops/ sessions, but also during joint home visits, revision of family registers, supervision of ORS and vitamin A distribution, monitoring of growth monitoring, home gardens, counseling in all interventions, and community meetings, and EPI campaigns.

The ratio of supervisors to health workers was arrived at using the following calculations:

**WRN staff:**

4 core team members (1 Project Director, 1 Educational Specialist, 2 Area Coordinators)

15 promoters (5 Health Promoters in RSJ, 7 in RAAS, 1 Breastfeeding Advisor for Bluefields, 2 Agronomists (1 for RSJ, 1 for RAAS).

680 volunteers/TBAs. (300 health volunteers and 40 TBAs in each area- RSJ and RAAS).

**WRN-trained MINSA personnel:**

8 municipal educators and 80 auxiliary nurses that work with Promoters in training and supervising volunteers.

**Ratio of volunteers to supervisors:**

107 WRN and MINSA staff/ 680 volunteers = 1 supervisor : 6 volunteers.

Every health promoter, supported by auxiliary nurses and municipal educators at the health posts in the promoter's assigned community, is going to work with an average of 50 volunteers.

Each promoter will be working with 3 and 7 health posts.

Each promoter will be supported by 6-15 auxiliary nurses who assist in monitoring and supervising the volunteers in their community.

Each auxiliary nurse will supervise 6-10 volunteers, depending on the number of communities for which she is responsible.

The volunteers will be supervised primarily by the auxiliary nurses and health promoters when the volunteers are giving educational talks. Municipal educators, although fewer in number, will also be involved in training and supervision of volunteers. Each volunteer will be supervised on average 3 times per year, although the supervision will be more intensive in the first two years of the project. Each promoter will be supervised monthly by the area coordinator. (Please see section D.6, the workplan for how supervisory sessions will be worked into the schedule of activities.)

The auxiliary nurses will collaborate in the supervision of the volunteers and they themselves will be monitored and supervised by MINSA's municipal educator (who has also received project training). Auxiliary nurses and municipal educators are long-time residents of the communities, very well known in the communities and often the only locals who have received any formal health training. Project staff believe that working with auxiliary nurses and municipal educators will assist promoters with volunteer supervision, as well as provide a means of continuing the work of the volunteers (supervised by these auxiliary nurses) after the project ends.

Skills that supervisors will need:

Experience in community work  
Technical knowledge  
Interpersonal skills

Training that supervisors will need:

Supervisors will need to be trained in the supervisory process, which includes four stages: preparation and planning; community contacts and observation of activities; mentoring sessions; and follow-up. This philosophy was taken from Wellstart's Planning Manual Table 10.1.

#### **E.4 Community Committees and Groups**

The program will work with existing health committees, community groups or women's groups in the project area. Two years ago the Ministry of Social Action (MAS) developed a strategy of community committees in every community in RSJ. The community committees located in the same geographical area form a microregional committee. There are 17 microregional committees in RSJ.

A community committee is made up of 3-4 leaders chosen by the community, who are in charge of seeking assistance for services or structures which will improve the community's living conditions, such as: potable water or wells, latrines, electricity, health posts, schools, and roads. These committees have been trained by the MAS in: developing and managing small development projects, community development, etc.

WRN will strengthen community committees which are already functioning and will encourage communities that do not have them to form them. Community committees meet with the community on an as-need basis. The project staff will invite committee representatives to participate in these meetings and to discuss the results. In many cases, the volunteer belongs to the community committee.

In the RAAS WRN will contact the MAS staff there to learn whether or not community committees are established in the region. If they are, WRN will work to strengthen them, or encourage the community to form them. Health promoters and area coordinators are responsible for coordinating with the community committees.

A rough estimate of the number of each of these types of groups that will work with the project are at least 20-30. Seven (7) Community health committees (1 per municipality), an unknown number of women's groups (the number will be established after the census and cannot be estimated at this time.) Ten (10) breastfeeding support groups in Bluefields (1 per barrio). Contacts are made informally and based on the need of each community or microregion.

### **E.5 Role of Country Nationals**

Country nationals are involved in every position of the program's management in the field. The Project Director, Dr. Nancy Cano; the Educational Specialist, Corina Rodríguez; the project accountant, Ninoska Alegría; 2 area coordinators, Dr. Darlene Omeir Taylor in the RAAS and María Luisa Vendell in RSJ; 2 WRN regional administrators, 1 in each region, who have accounting/general office support duties. Their responsibilities are discussed in section E.2.

The project will provide further training to the project director and educational specialist in Word Perfect for Windows, Lotus and Epi Info.

The administrators and area coordinators will be trained by WRN personnel from the central office in Managua on accounting, financial management, and use of computers. Planning, budgeting and accounting will be up-dated by Ninoska Alegría, the project administrator/accountant.

### **E.6 Role of Headquarters Staff**

Dr. Warren Berggren is responsible for technical backstopping of the project. Olga Wollinka, Child Survival Grants Manager, is responsible for day-to-day management, financial reporting, quarterly and annual reports, and reports to Warren Berggren as needed.

CS HQ staff will plan on the following monitoring/evaluation visits.

Year one, 2nd quarter: DIP development. 2 weeks  
Year one, 4th quarter: Initiation of the health information system, educational strategy, population census, annual report, training in CS Best Practices as needed. 1 week

Year two, 3rd quarter: Graduation of volunteers, 100% functioning of HIS. 1 week  
Year two, 4th quarter: Mid-term evaluation, 10 days

Year three, 3rd quarter: Meeting with volunteers, meeting with MINSAs, educational strategy, monitor progress towards sustainability, begin writing 3rd annual report. 7 days

Year four, 3rd quarter: Final evaluation, 2 weeks

## F. PROGRAM MONITORING/HEALTH INFORMATION SYSTEM

### F.1 HIS Plan

Program progress will be monitored through a combination of census-based health information system that tracks individual project beneficiaries and activity-based reporting that monitor program activities, training, and services provided to beneficiaries.

The HIS is a decision-making tool to be used at the lowest level possible. From micro-level decisions made by a community health worker to macro-level decisions made by the project director, the HIS is a tool to provide accurate information on progress towards achieving the project's objectives. Each component of the HIS is described below.

#### The Census-based family registers gather the following information:

- General population data per family
- Morbidity data for children under 5 years (diarrhea)
- Immunization status of children under 5 and women's TT
- Track vitamin A doses received
- Nutritional status of the child (growth monitoring, nutrition counseling, home gardens)
- Family planning methods used
- Exclusive breastfeeding <6 months of age

The family register will be the primary source of information for the volunteers' quarterly report. The register also provides baseline data from the beginning of the project, and a method for monitoring, and evaluating the project. The family register will be filled out by the health volunteers and monitored by the promoters and MINSA staff. It will be updated every three months by the volunteers and discussed with MINSA staff at the closest health posts or centers.

#### Referral and counter-referral system sheets

These sheets will be managed by the volunteers in charge of the base houses and will be given to the HCs or posts to submit cases of diarrhea, acute respiratory tract infections, malaria, referrals for family planning, referral for child growth and development monitoring, and to complete the child's vaccination schedule. The counter-referral sheet is returned to the volunteer with recommendations for the mother or child that was attended, so that they can be monitored by volunteer.

Monitoring of this system will be carried out by MINSA staff in the health posts and by the number of counter-referrals which are remitted to the volunteers at the base houses.

#### Activity reports

*Volunteer performance/activities:* This sheet assess the performance of the volunteers in the project, the number of hours that each volunteer has worked, the number of volunteers per area, the date in which the volunteer began working in the community, the data in which they stopped working, and the reason for which they left the project. This sheet tracks the number of hours that each volunteer worked by month and by quarter.

*Workshop attendance sheets/lists:* These are used to evaluate the number of individuals at all levels (e.g. volunteers, mothers, MINSA personnel) who attended workshops or training sessions.

### Life of Project

Project goals, objectives and indicators, and progress made each quarter are tracked in detail on these forms. This quantitative information is used to measure process indicators and to monitor the project.

### Monthly /Quarterly reports

Promoters and area coordinators will report monthly on qualitative and quantitative information. Project director will report quarterly on progress, activities and HIS results for WRC HQ and the local USAID Mission.

### Focus groups, in-depth interviews, and key informant interviews

Reports will be written of most relevant results from these qualitative investigations done in the community.

## **F.2 Data Variables**

The following data variables will be collected monthly and quarterly by:

Health volunteers (HV) using the family registers (FR) and workshop attendance lists (WAL)

Promoters (P) using FRs, activity reports (AR), and referral/CR sheets (R/CR)

Area Coordinators (AC) using to monitor the project: FR, AR, R/CR and WAL

Educational Specialist (ES) using reports from FR, AR, R/CR and WAL

### **I. Community Organization**

1. Promoters will track volunteers trained in each component using workshop attendance lists.
  - A. Immunizations-520
  - B. Infant/Child Nutrition/ Vitamin A-520
  - C. Breastfeeding-520
  - D. Diarrhea Case Management-520
  - E. Family planning-520
2. (HV) Number of health committees created and functioning-7
3. (HV) Number of base houses strengthened/set up by the project-100

### **II. Immunizations (HV) (P) (FR, WAL)**

4. Number of mothers who receive messages regarding the importance of immunizations

### **III. Nutritional practices (HV) (P) (FR, WAL, R/CR, AR)**

5. Number of women who have received message regarding the importance of breastfeeding
6. Number of women with children under 5 who have been identified as high nutritional risk who received messages
7. Number of children 6-59 months of age who received vitamin A
8. Number of post-partum women who have received vitamin A

#### **IV. Diarrhea Case Management (HV) (P) (FR, WAL, R/CR)**

9. Number of mothers who have received messages regarding the prevention and treatment of diarrhea
10. Number of children under 5 years of age with diarrhea who have been treated with ORT

#### **V. Family planning (HV) (P) (FR, WAL, R/CR, AR)**

11. Number of women of reproductive age who received family planning messages/counseling.
12. Number of women of reproductive age using a temporary family planning method
13. Number of women of reproductive age using a permanent family planning method
14. Number of communities with centers for the distribution of contraception which are assisted by the project

#### **VI. Training Sessions (HV) (P) (AC) (ES) (FR, WAL, R/CR, AR)**

15. Number of TBAs trained in the safe clean deliveries, maternal and newborn care- 80
16. Number of health promoters trained- 15
17. MINSA personnel trained in the project interventions- 81
18. MINSA personnel trained in participatory methodology- 81
19. Volunteer personnel trained in HIS- 520

#### **VII. Other activities (HV) (P) (AC) (FR, WAL, R/CR, AR)**

20. Number of home visits to high-risk families
21. Number of meetings with volunteers-12
22. Number of MINSA activities supported by the project
23. Number of MINSA personnel monitoring project activities-81
24. Number of family gardens which include vitamin A-rich foods-1500
25. Number of mothers participating in food preparation demonstrations-12,000
26. Number of breastfeeding support groups established in urban Bluefields- 10
27. Number of additional PROFAMILIA Family Planning distributors in the area: recruited, trained and active- 40

### **F.3 Data Analysis and Use**

Data will be analyzed at the lowest level possible as a realistic basis for decision-making: (i.e. volunteers will analyze and use data for educating mothers, promoters, auxiliary nurses, and municipal educators will analyze information and use it in their areas, area coordinators will analyze and use information to plan training sessions and get needed input, etc.)

Information obtained from the HIS will be shared with MINSA personnel at the health posts and HCs, technical consultants, municipal directors, and SILAIS directors in order to evaluate the progress of the project and to be used in decision-making. The data provided by the volunteers will be returned to the community on a quarterly basis in order to evaluate the community's progress and how the volunteers' work has contributed to the betterment of the health status of the community.

Quarterly reports sent to WR HQ are so the technical backstopping provided by the HQ staff is timely, and based on needs of the project.

The data collected on specific variables will improve the coverage and quality of interventions activities by: Providing accurate information on actual practices and coverage levels, to better inform project decision-makers and health workers on progress made, and by helping the project see where more efforts need to be focused for impact. For example, if TT levels remain low after an educational blitz, then another strategy needs to be developed for impact. Information shared among and within the project can help promote best practices and advertise effective strategies that may be in use/developed by one CHW or promoter, which can and should be adopted by others.

#### **F.4 Other HIS Issues**

All HIS data is kept confidential and never shared by name. The previous project never experienced any problems with the family registers being in the hands of the health volunteers, the importance of confidentiality is stressed in the training.

Materials and equipment needed for the HIS include:

- 2,000 sheets for registering training
- 10,000 referral/counter-referral forms for mothers
- 80,000 referral forms for children
- 5,000 growth monitoring cards
- 1,000 prenatal care cards

The HIS will begun to function from the beginning of the project with the workshop/training attendance lists for the separate interventions that we will begin implementing.

WRN will require no technical assistance during the implementation of the HIS because the WRN staff who will be monitoring the HIS during the life of this project were involved in the development of the HIS for the previous WRN CSP.

### **G. SUSTAINABILITY STRATEGY**

#### **G.1 Sustainability Goals, Objectives, and Activities**

<b>Sustainability Goals</b>	<b>Objectives</b>	<b>Required Activities</b>
<b>General</b> 1. MINSA will continue to promote health activities at the community level.	1. MINSA will supervise and continue training health volunteers and TBAs. 2. Auxiliary nurses and municipal educators will meet regularly with health volunteers.	1. MINSA auxiliary nurses will be trained in participatory education and supervisory methodology for health workers. 2. Auxiliary nurses will supervise and meet regularly with health volunteers.

<p><b>Family Planning</b> 1. Increased and continued access to FP through the establishment of CCDPs in key communities</p>	<p>1. PROFAMILIA will continue to provide FP methods to volunteers at CCDPs.</p>	<p>1a. Inter-institutional coordination MINSA-PROFAMILIA-WRN for creating 40 new Contraception Distribution Posts in communities with no access. 1b. Provision and monitoring of Contraception Distribution Posts by MINSA and PROFAMILIA to improve couples' accessibility to modern family planning methods 1c. Feedback of information from the Contraception Distribution Posts to MINSA via PROFAMILIA</p>
<p>2. MINSA team trained in the monitoring and follow-through of family planning activities.</p>	<p>2. MINSA personnel monitoring (provisions and supervision) the family planning activities</p>	<p>2. MINSA personnel (nurses, auxiliary nurses, and municipal educators) providing periodic feedback to the volunteers at the Contraception Distribution Posts</p>
<p><b>Diarrhea</b> 1. Mothers will use ORT (ORS plus home available fluids- rice water, coconut water, breastmilk , etc.) when her child has diarrhea.</p>	<p>1. Mothers trained in ORT and home available fluids for diarrhea management.</p>	<p>1a. MINSA personnel trained in DCM and supporting volunteers in Base Houses/Oral Rehydration Units. 1b. Establishment and training of a network of health volunteers supported by MINSA. 1c. Health volunteers continue ORT/diarrhea educational activities with mothers, while monitored by MINSA.</p>
<p>2. MINSA will continue to equip/monitor Base Houses in communities equipped as Oral Rehydration Units, where mothers can get counseling and ORS.</p>	<p>2. MINSA will train and supervise volunteers in diarrheal disease case management.</p>	<p>2a. Inter-institutional coordination MINSA-COMMUNITY-WRN for providing ORS supplies to Oral Rehydration Units. 2b. Establishment of 100 Base Houses / strengthening of existing Base Houses. 2c. Base House volunteers trained in diarrhea disease control activities.</p>
<p>3. MINSA staff will monitor diarrhea disease control activities in communities.</p>	<p>3. MINSA personnel monitor (provisions and supervision) the DCM activities of Base Houses.</p>	<p>3. MINSA personnel (nurses, auxiliary nurses, and municipal educators) trained to provide periodic feedback to volunteers at the Base Houses.</p>
<p><b>Vitamin A</b> 1. Mothers incorporating vitamin A-rich foods which are available in the community into family meals, especially those for children 0-59 months of age</p>	<p>1. Families continue to tend home gardens and preparing / consuming vitamin A-rich foods.</p>	<p>1a. Establishment of family gardens with vitamin A-rich fruits and vegetables. 1b. Mothers trained through food-preparation demonstrations how to prepare vitamin A rich foods available in the community.</p>
<p><b>Growth Monitoring</b> 1a. MINSA personnel will offer nutritional counseling to mothers who bring their children in for growth monitoring. 1b. Mothers will interpret their child's GMC card, especially the growth curve and the monitoring date.</p>	<p>1a. MINSA will provide extended GMC services, including nutritional counseling. 1b. Volunteers will train mothers to interpret growth cards.</p>	<p>1a. MINSA personnel trained in GM and nutritional counseling techniques. 1b. Volunteers trained to do GMC, supervised by MINSA staff. includes training in salter scales, GMC cards, and nutritional counseling. 1c. Mothers trained to interpret their child's growth card.</p>

2. Volunteers will recruit children for the child growth and development monitoring program.	2. MINSA personnel will support/ oversee volunteers who are providing GMC services in most distant communities.	2. Volunteers trained in the use of Salter scales and the GMC card used for child growth and development monitoring.
3. MINSA personnel will monitor GMC activities in the community.	3. MINSA will monitor volunteers' GMC activities at least once per quarter.	3. MINSA personnel trained in the monitoring of child growth and development monitoring activities
<b>Immunizations</b> 1. Mothers bringing their children to get vaccinated in a timely manner (on the date stipulated on the child's immunization card)	1. Mothers will interpret the immunization schedule on the infant's immunization card.	1. Mothers and volunteers trained in EPI/ reading the GMC card. 2. 8 refrigerators donated to key posts in order to strengthen the cold chain.
2. Volunteers will interpret the immunization card and refer children to the vaccination posts.	2. MINSA will train volunteers to refer children to be immunized based on the immunization schedule.	2a. Volunteers trained in EPI section of the HIS, so they can refer mothers promptly. 2b. HIS implementation coordination with MINSA.
3. MINSA personnel will monitor / supervise EPI activities.	3. MINSA personnel will monitor EPI activities in the community.	3. MINSA personnel trained in the monitoring of EPI activities.

## G.2 Community Involvement

Beginning with the third quarter of year 1, the project will hold two meetings per year where each community will learn of the project's achievements. During these meetings, WRN will take attempt to discover which activities are sustainable by the community.

Community priorities were discussed in focus groups and interviews with mothers, teachers, church leaders, small farmer associations, local authorities and all levels of MINSA staff. Significant community health problems identified by those participating in these meetings included: diarrhea, pneumonia, lack of family planning, the early age at which females get pregnant (usually before 18), lack of latrines, long distances from health services, inadequacy of health services and lack of food.

The project will encourage public involvement in program activities by training volunteers and educating mothers. Activities that result in improving the health status of their children are very gratifying for mothers. The food preparation/cooking demonstrations and the family gardens initiative also involve entire families and communities.

When mothers see results in the health of their children, they become empowered to seek better health services and/or more educational opportunities. The educational strategy which WRN uses facilitates community action. Please see Appendix K for an example of visual and participatory methods used by volunteers to feedback information on the health of women and children in their communities, as related to achieving health objectives.

### **G.3 Phase-over Plan**

The project plans to transfer the responsibility to supervise all trained volunteers to each SILAIS. The project is responding to a need shared by the directors of both SILAIS in the project area. MINSA has been involved in the project, from the beginning. WRN staff will train MINSA personnel in the educational strategy, project interventions, and in supervisory techniques. This should facilitate ownership of the project; its objectives, volunteers, and methodology. The phase-over of volunteers to MINSA will begin the fourth year of the project.

During the first three years of the project, as MINSA staff receive training and work with the project, MINSA staff will be developing the skills needed to take responsibility for the project. Please see section E.3., for the supervision objectives and supervision plan and how MINSA and WRN personnel will be trained to take on their roles as supervisors.

### **G.4 Cost Recovery**

No cost recovery strategies are being explored.

## **H. BUDGET**

After the proposal was written, but before the cooperative agreement was signed, AID cut the amount of money given to fund this project, which required a cut in total budget of 23%. The target population was reduced by 15%, although where this cut in population was going to take place was not specified. The following table shows that the population cut is taking place primarily in communities in Punta Gorda.

The reason for cutting the population in Punta Gorda is twofold. First, it is farthest away from Bluefields, and is actually closer to the Chontales SILAIS (a different SILAIS from RAAS). Secondly, when project staff contacted the Chontales SILAIS to work together on the DIP, the Chontales SILAIS staff informed WRN that since the EEC is working with Chontales, they did not want to jeopardize that funding. Since WRN was only going to work with a small portion of the Chontales area (the communities in Punta Gorda bordering with the RAAS), it was decided to eliminate those communities that are already being covered by another SILAIS. They did not want WRN to work in only a small area, and the project did not want to work with another whole SILAIS for such a small population. In the interests of keeping the budget reasonable, and still reaching the maximum number of women and children, the 15% population cut agreed to before signing the cooperative agreement was decided to be in this area. (Please see Appendix Q for a copy of letter sent to Ms. Rosella Marshall at the USAID office of Procurement, referring to these changes.) The only difference from this agreement is that funds have been made available to fund 8 refrigerators. WRN will attempt to procure these refrigerators from UNICEF.

There have been changes in interventions selected. After reviewing the baseline survey results and needs in the field, it was decided that 6 planned interventions were too many and resources would be better focused in family planning, nutrition and breastfeeding promotion, diarrhea case management, and immunizations. Per proposal technical reviewer comments, WRN strengthened their efforts in family planning and breastfeeding promotion.

The budget has not been changed substantially, funds that were going to be used for training/supervision/equipment for maternal care, will now be used for family planning, nutrition, breastfeeding promotion, and EPI. It is believed that the project's efforts in family planning will be able to reduce maternal mortality by between 25%- 50%, by increasing access to family planning and averting unwanted pregnancies, particularly in the communities most distant from health services. Please see the family planning section and the program design rationale for further details.

The new population figures and beneficiary population figures per community are as follows:

Communities	Population	0-4 year olds	0-23 month olds	1-4 year olds	Live Births/year	total births years 2,3,4	Women fertile age
Punta Gorda*	1,782	294	137	227	71	213	445
Urban Bluefields	36,292	5,988	2,817	4,580	1,452	4,356	9,073
Kukra hill	14,201	2,343	1,102	1,792	568	1,704	3,550
Río San Juan	63,908	10,544	4,959	8,065	2,556	7,668	15,977
<b>TOTALS</b>	<b>11,6183</b>	<b>19,169</b>	<b>9,015</b>	<b>14,664</b>	<b>4,647</b>	<b>13,941</b>	<b>29,045</b>

Total beneficiaries:

Women of fertile age: 29,045

Children 0-4 years + births during life of project: 33,110

Total potential beneficiaries: 62,155

**ATTACHMENTS**

**Annex I. Response to Proposal Technical Review**

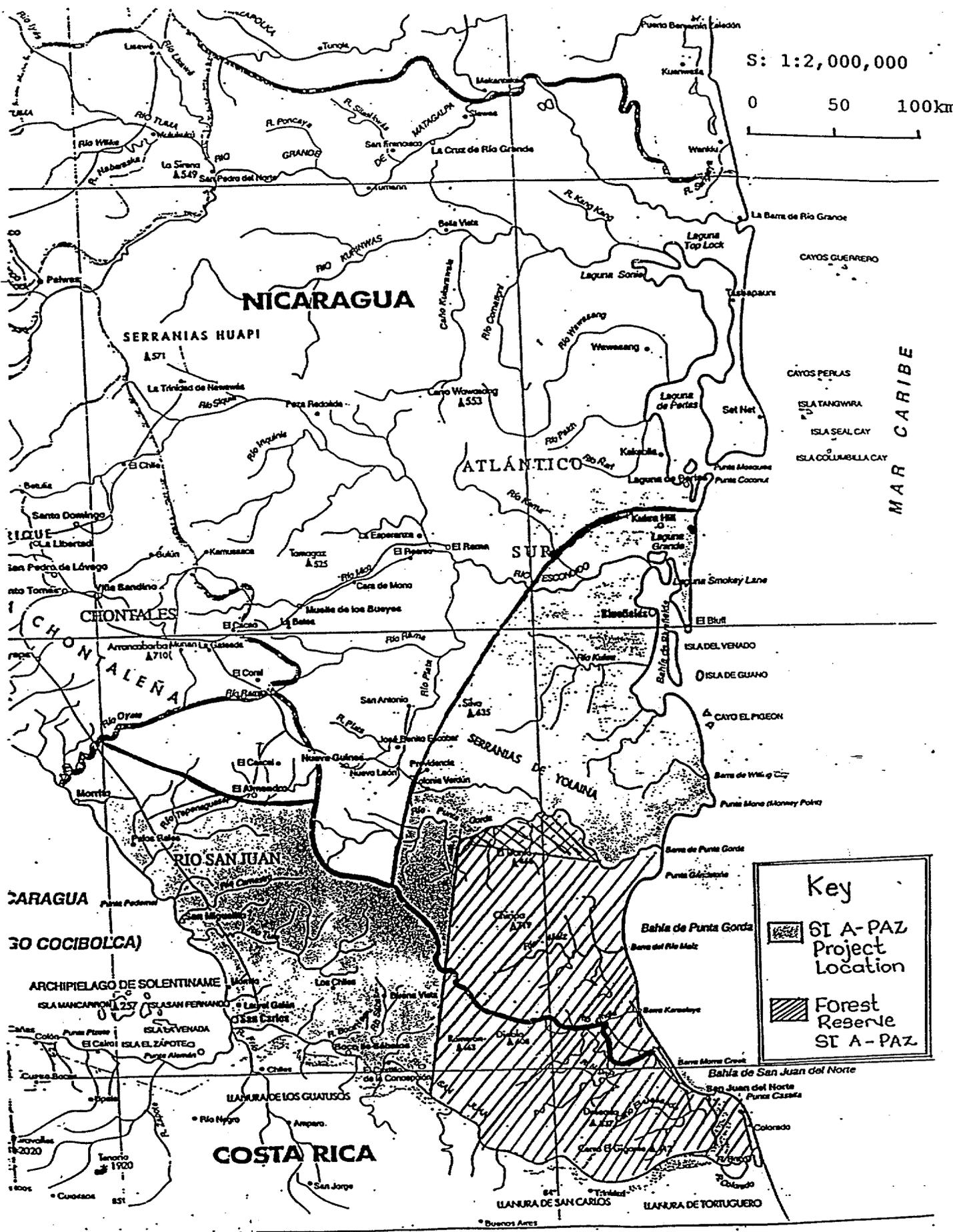
See Appendix R for the response to the proposal technical review.

**Annex II. Baseline Survey Report**

Please see separate document sent with this DIP report.

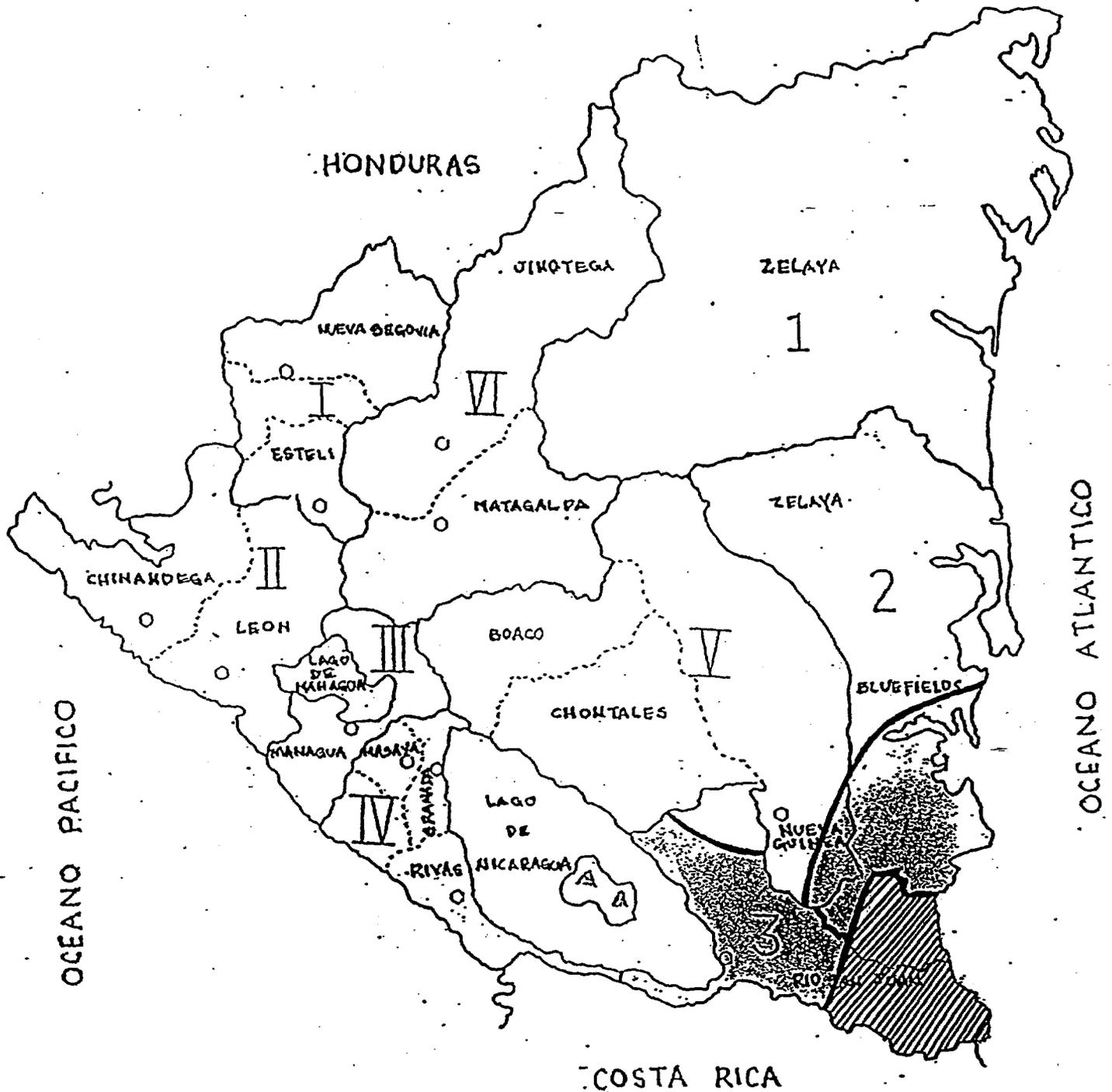
## APPENDICES

- A Maps of Project Area**
- B Agreements with MINSA and PROFAMILIA**
- C EPI/GM Card, Mothers' TT Card, and Mothers' Prenatal Care Card**
- D Supervisory Checklists**
- E Family Register**
- F MINSA Protocols**
- G Ideal Nutritional Practices (by Ellen Piwoz)**
- H Referral/Counter-Referral Sheets**
- I Sight and Life Letter**
- J Lists of Basic Medicines**
- K Creative Ways Information Has Been Fed Back to the Community**
- L Nutritional Assessment of Home Gardens**
- M Breastfeeding Research Paper (by Janet Irene Picado, MS)**
- N Updated Resume of WRN Staff Member**
- O Family Planning Curriculum**
- P Organizational Charts**
- Q Letter to Rosella Marshall**
- R WR Response to Proposal Technical Review**



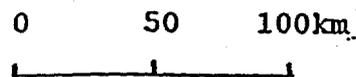
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# NICARAGUA MAP



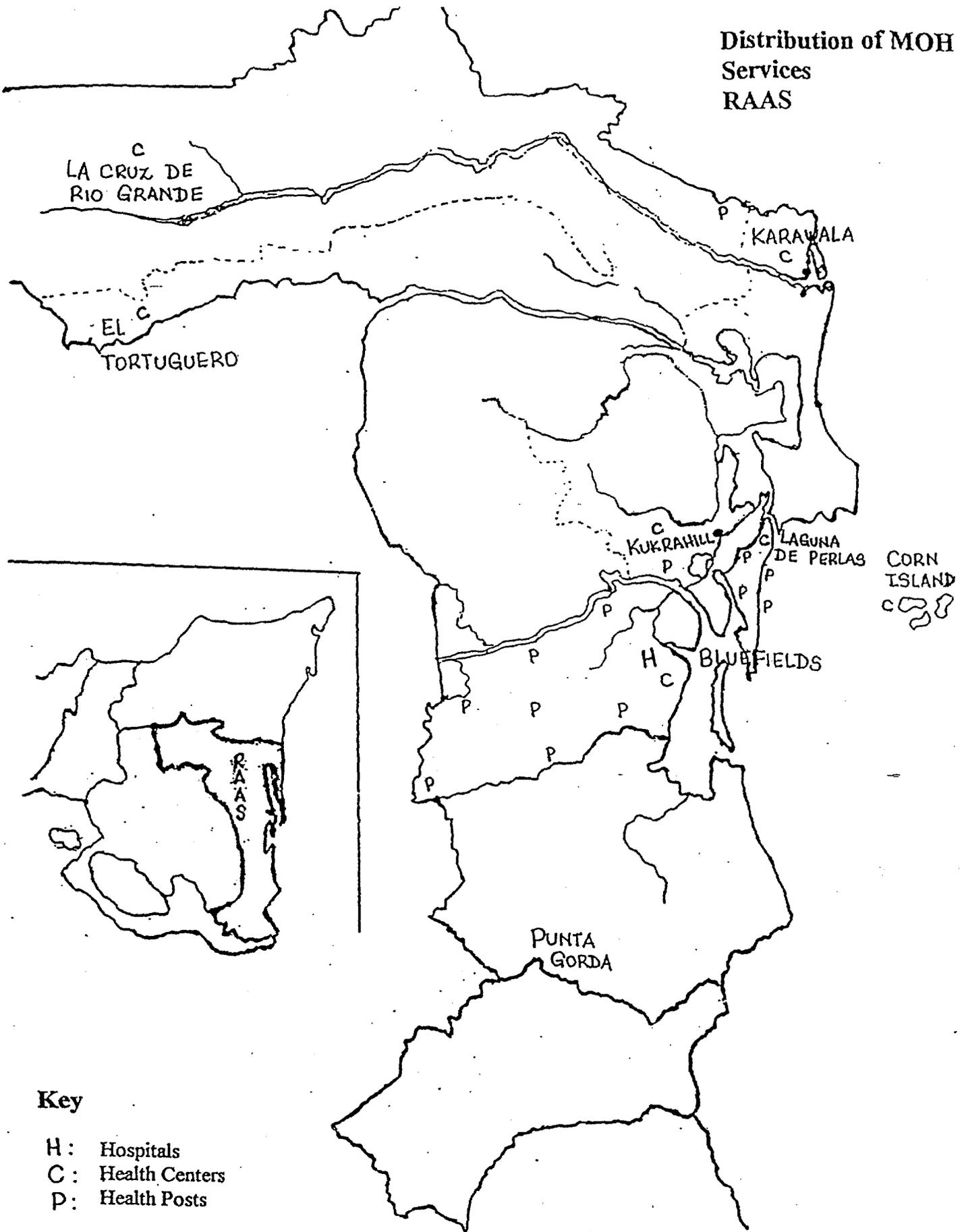
----- DEPARTMENTS  
 \_\_\_\_\_ REGIONS

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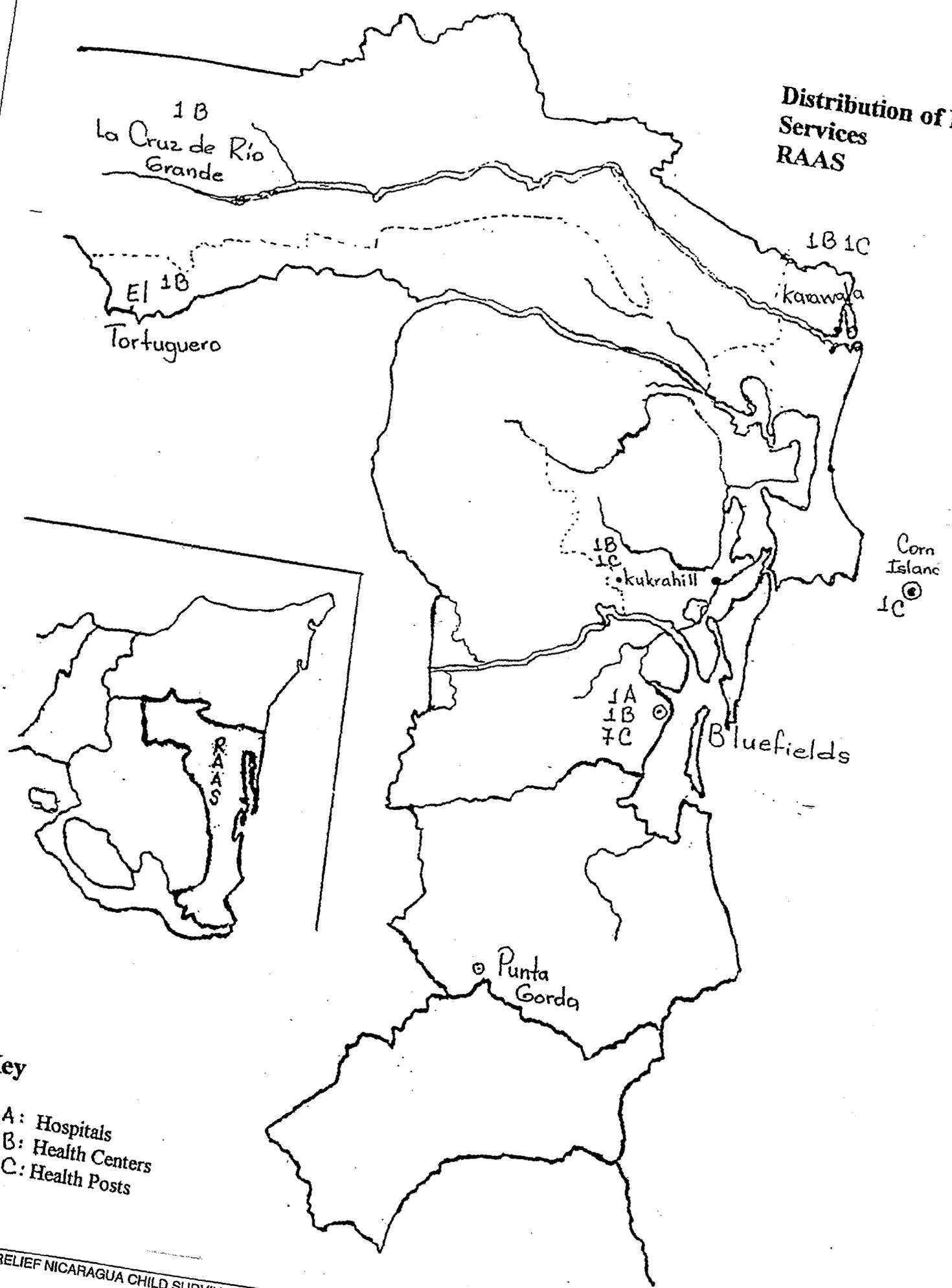


Key	
	SI A-Paz Project Location
	Forest Reserve SI A-Paz

Distribution of MOH Services  
RAAS



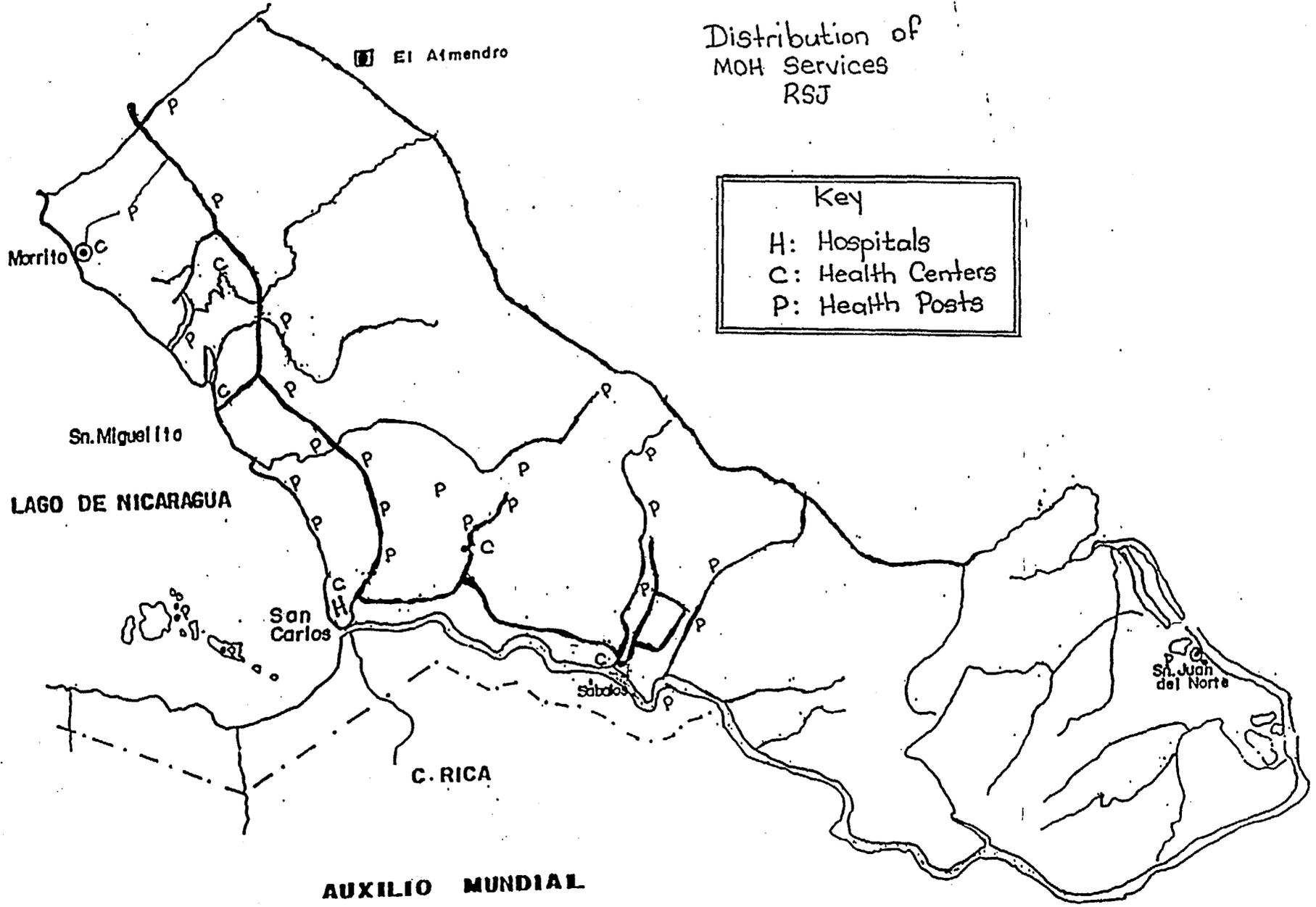
**Distribution of MOI  
Services  
RAAS**



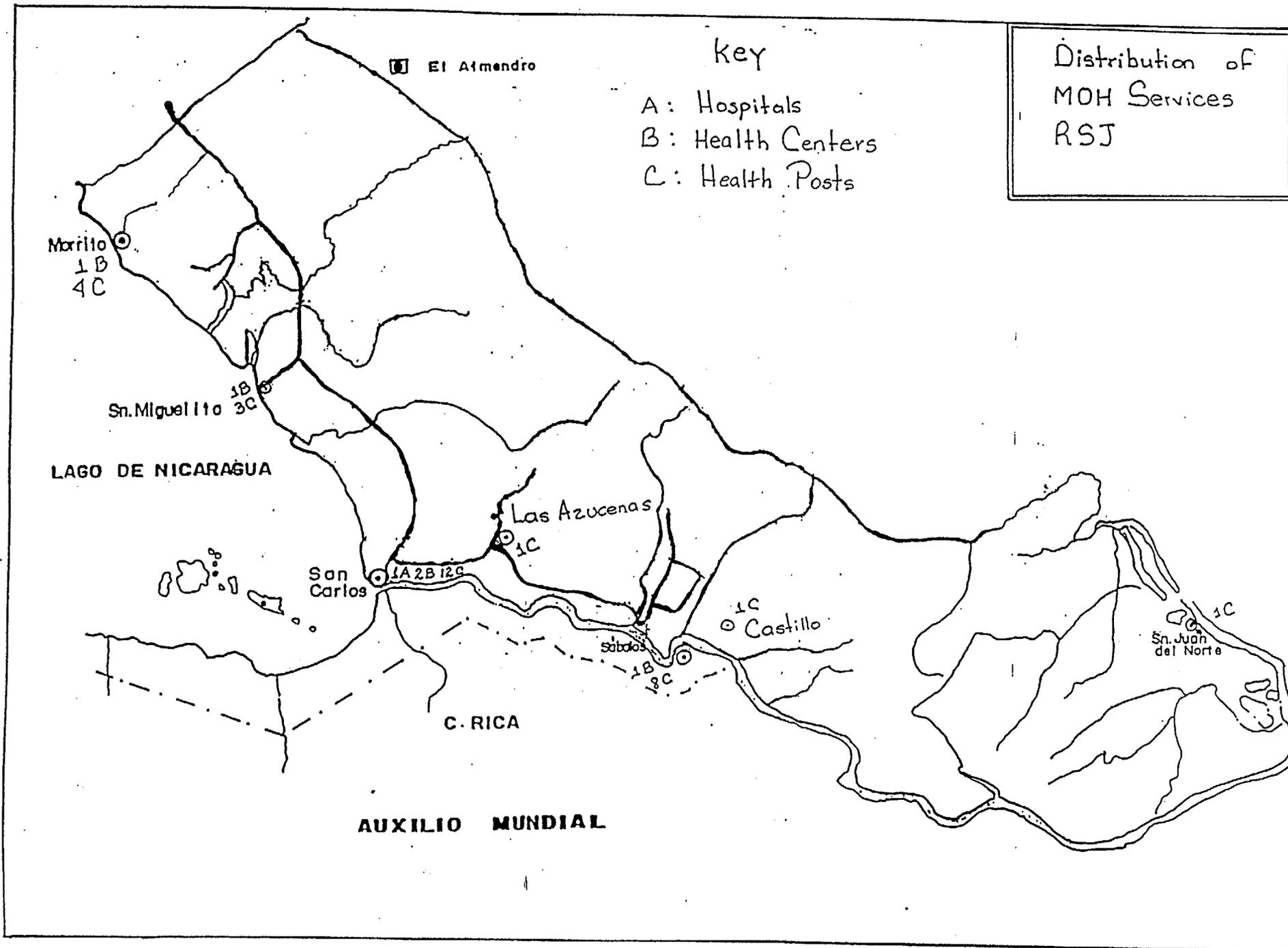
**Key**

- A: Hospitals
- B: Health Centers
- C: Health Posts

95

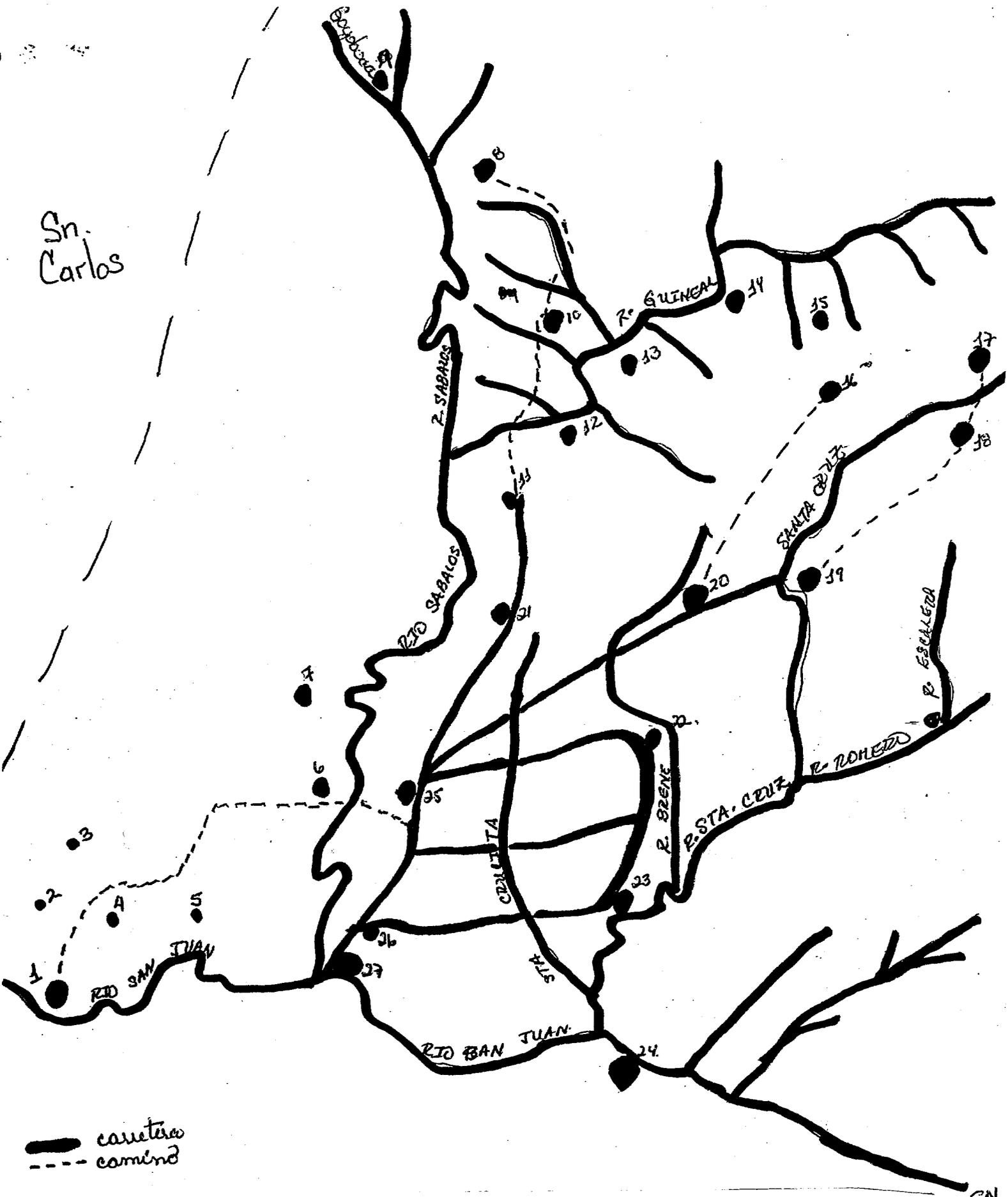


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91

Sn. Carlos



 carreteras  
 caminos

→ SN JUAN NORO

98

# Comunidades del municipio El Castillo.

- 1 - Esperanza # 1
- 2 - El Simón
- 3 - El Arenó
- 4 - Puertón
- 5 - Esperanza # 2
- 6 - Mauricio Gutiérrez
- 7 - Laguna Blanca
- 8 - Guasimo
- 9 -
- 10 - Gordiano
- 11 - Buena Vista
- 12 - El Bosque
- 13 - Nueva Libertad
- 14 - Quezada # 1
- 15 - Quezada # 2

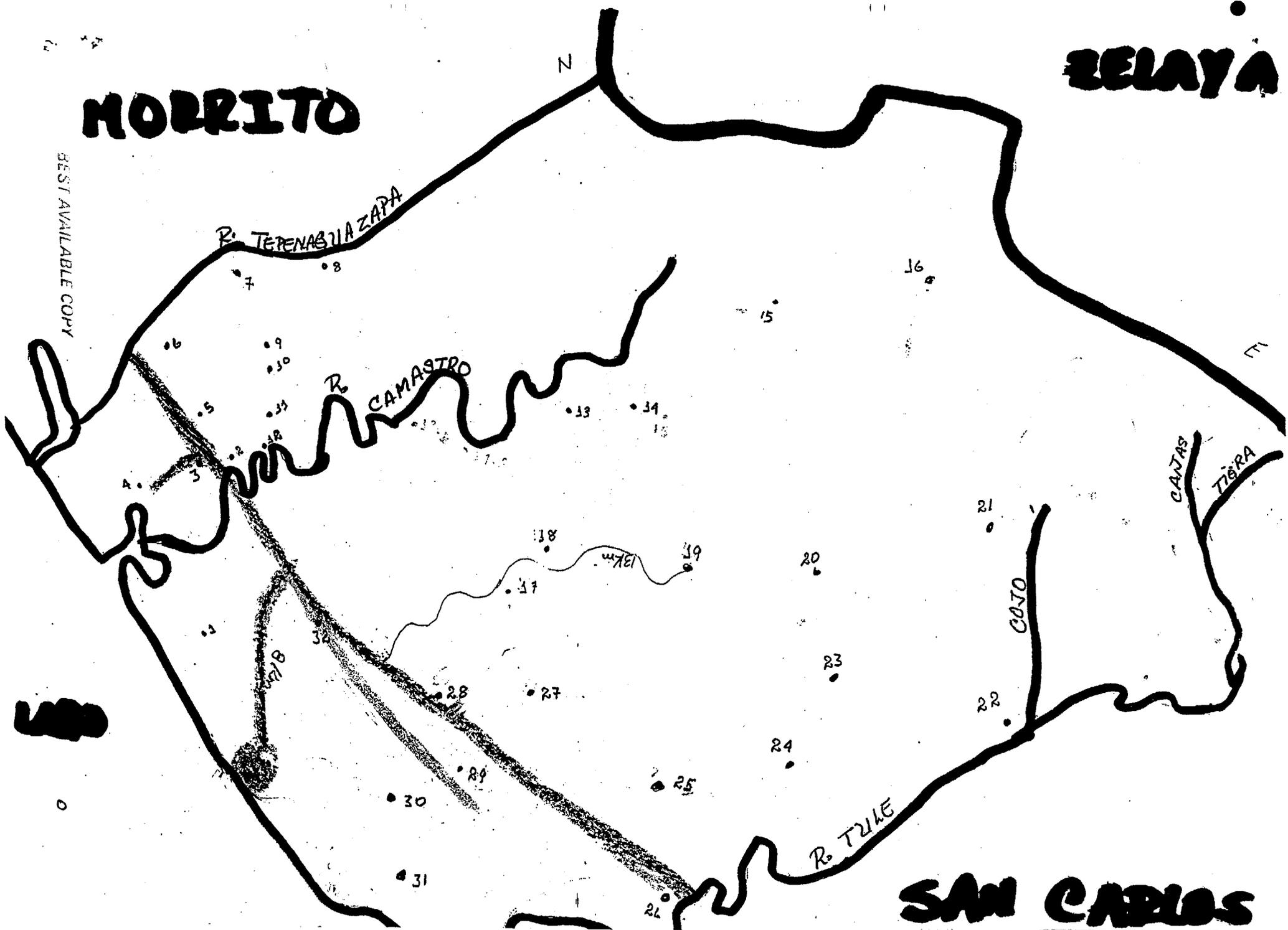
- 16 - Mónico
- 17 - El Diamante
- 18 - El Padilla
- 19 - Las Maravillas
- 20 - Km 20
- 21 - Marcelo
- 22 - Las Colinas
- 23 - La Palma Africana
- 24 - El Castillo
- 25 - Marlén Zelaya
- 26 - Laureano Mariena
- 27 - Sabalos
- 28 -

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**MORRITO**

**ZELAYA**

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MUNICIPIO  
SAN MIGUELITO.

# COMUNIDADES DE SAN MIGUELITO

- 0 San Miguelito
- 1 - Los Pantanos
- 2 - Never Oporta
- 3 - Emp Los Sanchez
- 4 - Los Toteros
- 5 - Las Palomas
- 6 - El Peñón
- 7 - El Ojoché
- 8 - El Espabel
- 9 - El Cacao
- 10 - Valencia
- 11 - Las Nubes
- 12 - Los Angeles
- 13 - Santa Paula 2
- 14 - Santa María 1
- 15 - La Tigra
- 16 - El Dorado.

- 17 - La Conquista # 4
- 18 - La Conquista # 3
- 19 - La Conquista # 2
- 20 - Aguas Calientes
- 21 - Que El Cojo
- 22 - El Naranjo
- 23 - Quebrada Seca
- 24 - El Roble
- 25 - Los Raizones
- 26 - Tole
- 27 - Tamboral Norte
- 28 - Harbha de Coyol
- 29 - Tamboral Sur
- 30 - El Ayote
- 31 - Los Angeles
- 32 - Asturias García

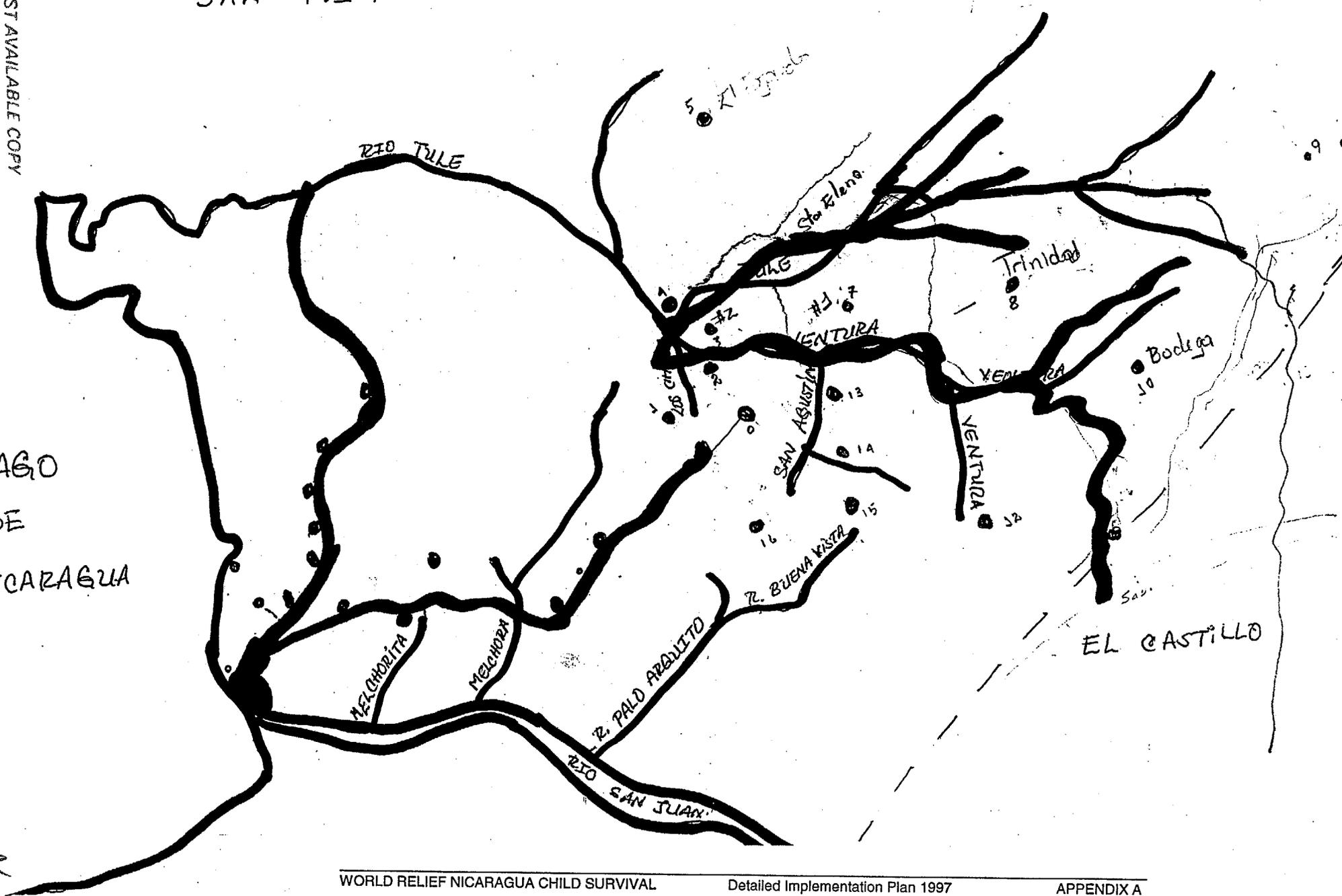
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MUNICIPIO SAN CARLOS

SAN MIGUELITO

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LAGO DE VICARAGUA



## CONVENIO DE COLABORACION

En la ciudad de San Carlos a los veinticinco días del mes de Febrero de mil novecientos noventa y siete, reunidos en la sala de conferencia del SILAIS de Río San Juan, la doctora Marisol McRea, directora del SILAIS Río San Juan en calidad de máximo representante del Ministerio de Salud en la región y la doctora Nancy Cano, directora del Proyecto SI-A-PAZ Supervivencia Infantil del organismo Auxilio Mundial de común acuerdo establecen el siguiente convenio:

- 1 En el componente de Salud Materna, Auxilio Mundial promoverá la Planificación Familiar con énfasis en la promoción de métodos definitivos a las mujeres catalogadas como Alto Riesgo Reproductivo, y la promoción de métodos temporales a través de la apertura de puestos de distribución comunitaria de anti-conceptivos en las comunidades en coordinación con PROFAMILIA.

Por su parte el Ministerio de Salud garantizará la disponibilidad de un quirófano en los días previamente establecidos en coordinación con PROFAMILIA para la realización de las esterilizaciones quirúrgicas en el hospital regional.

Además, Auxilio Mundial dotará de balanzas de resorte a 40 parteras previamente adiestradas por el Ministerio de Salud con el apoyo de Auxilio Mundial, para garantizar el registro del peso del recién nacido y referir niños de riesgo.

Por su parte el Ministerio de Salud se compromete a vigilar el mantenimiento y uso adecuado de las balanzas.

- 2 En el componente de Nutrición, Auxilio Mundial se compromete a dotar al Ministerio de Salud a través de los puestos de salud de cápsulas de vitamina A dos veces por año durante la vida del proyecto para ser empleados en niños de seis meses a cinco años y en madres durante el primer mes de puerperio para las puerperas la vitamina A estarán disponible en todas las unidades de salud de la región. También capacitará en el componente de vitamina A a todo el personal de puestos de salud para el adecuado uso de las cápsulas de vitamina A.

Por su parte el Ministerio de Salud se compromete a realizar orientaciones específicas sobre el registro de las dosis administradas en la tarjeta de CCD, tarjeta de CPN, o tarjeta de vacunación de las madres para un adecuado control de las dosis; además de reportar mensualmente el total de dosis administradas por grupos etareos en cada unidad de salud.

- 3 En el componente de Control de Enfermedad Diarreica Aguda, Auxilio Mundial fortalecerá las casas base existente mediante la capacitación y dotación de materiales para el establecimiento de 50 pequeñas Unidades de Rehidratación Oral comunitaria. El equipamiento consistirá en picheles plástico con capacidad de dos litros, porra de aluminio para hervir agua, cuchara grande de aluminio para revolver SRO, cucharitas de aluminio y 2 tazas plásticas.

Por su parte el Ministerio de Salud se compromete a realizar un abastecimiento periódico de Sales de Rehidratación Oral y monitoreo y supervisión a las URO establecidas en las casas base.

- 4 **Capacitación:**  
Auxilio Mundial se compromete a implementar una estrategia educativa con metodología participativa de la enseñanza a través de una red de facilitadores conformados por los promotores, coordinadores del proyecto y personal auxiliar de enfermería de los puestos y centros de salud de las áreas de influencia del proyecto en la región. La estrategia consistirá en capacitar al personal del Ministerio de Salud como facilitadores docentes para la promoción y difusión de los mensajes de salud a nivel comunitario.

Durante el primer año del proyecto reforzará los conocimientos en las intervenciones que el proyecto implementará en la zona, especialmente a las auxiliares de enfermería de los puestos de salud involucrados en el trabajo comunitario.

Por su parte el personal del Ministerio de Salud elaborará junto con el coordinador de área y promotores, el plan de capacitación a implementarse en las comunidades a la vez que monitoreará y supervisará las capacitaciones de los voluntarios de salud hacia las madres, llevando un registro de las actividades de capacitación desarrolladas tanto para los voluntarios como para las madres.

5 Sistema de Información en Salud:

Auxilio Mundial implementará un sistema de información en salud comunitaria que recopilará todas las actividades realizadas en las diferentes intervenciones implementadas para valorar el avance de la participación social y del trabajo desarrollado por la comunidad. Estos datos serán actualizados trimestralmente y discutidos en sesiones entre los voluntarios y personal del Ministerio de Salud para la toma de decisiones en pro del mejoramiento de la salud comunitaria. El proyecto se encargará de dotar de la papelería necesaria durante la vida del proyecto, los instrumentos para la recolección de la información consisten en: ficha familiar, hoja de referencia y contrareferencia de voluntarios y parteras.

Por su parte el Ministerio de Salud se compromete a implementar la ficha familiar en todas las comunidades involucradas en el área del proyecto, aceptar las referencias realizadas por los voluntarios y parteras, y remitir contrareferencias con datos de seguimiento de los casos referidos por los voluntarios y parteras.

Este convenio entra en vigencia a partir de su firma y caduca en la fecha de finalización del proyecto 30/09/2000.

  
\_\_\_\_\_  
Dra. Marisol McRea  
Directora  
SILAIS Río San Juan

  
\_\_\_\_\_  
Dra. Nancy Cano  
Directora  
Proyecto SI-A-PAZ Supervivencia Infantil  
Auxilio Mundial



105

## CONVENIO DE COLABORACION

En la ciudad de Bluefields a los diecisiete días del mes de Febrero de mil novecientos noventa y siete, reunidos en la sala de conferencia del SILAIS del RAAS, el doctor Jorge Torres, director del SILAIS RAAS en calidad de máximo representante del Ministerio de Salud en la región y la doctora Nancy Cano, directora del Proyecto SI-A-PAZ Supervivencia Infantil del organismo Auxilio Mundial de común acuerdo establecen el siguiente convenio:

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Por su parte el Ministerio de Salud se compromete a realizar orientaciones específicas sobre el registro de las dosis administradas en la tarjeta de CCD, tarjeta de CPN, o tarjeta de vacunación de las madres para un adecuado control de las dosis; además de reportar mensualmente el total de dosis administradas por grupos etareos en cada unidad de salud.

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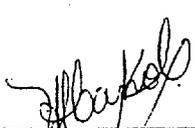
- 5 Sistema de Información en Salud:  
Auxilio Mundial implementará un sistema de información en salud comunitaria que recopilará todas las actividades realizadas en las diferentes intervenciones implementadas para valorar el avance de la participación social y del trabajo desarrollado por la comunidad. Estos datos serán actualizados trimestralmente y discutidos en sesiones entre los voluntarios y personal del Ministerio de Salud para la toma de decisiones en pro del mejoramiento de la salud comunitaria. El proyecto se encargará de dotar de la papelería necesaria durante la vida del proyecto, los instrumentos para la recolección de la información consisten en: ficha familiar, hoja de referencia y contrareferencia de voluntarios y parteras.

Por su parte el Ministerio de Salud se compromete a implementar la ficha familiar en todas las comunidades involucradas en el área del proyecto, aceptar las referencias realizadas por los voluntarios y parteras, y remitir contrareferencias con datos de seguimiento de los casos referidos por los voluntarios y parteras.

Este convenio entra en vigencia a partir de su firma y caduca en la fecha de finalización del proyecto 30/09/2000.

  
\_\_\_\_\_  
Dr. Jorge Torres R. A. C. S.  
Director  
SILAIS RAAS



  
\_\_\_\_\_  
Dra. Nancy Cano  
Directora  
Proyecto SI-A-PAZ Supervivencia Infantil  
Auxilio Mundial





**ASOCIACION PRO-BIENESTAR DE LA FAMILIA NICARAGUENSE**

**PROFAMILIA**

**Km. 5½ Carretera a Masaya - Frente al Colegio Teresiano - Apdo. 4220 - Tels.: 2780841 - 2786629 - 2670283 - Fax: 2770802**

## **CONVENIO DE COLABORACION**

### **1- INTRODUCCION:**

*La Asociación Pro-Bienestar de la Familia Nicaragüense "Profamilia", es una Institución sin fines de lucro, destinada a promover y coordinar toda clase de actividades tendientes a elevar y mantener los valores de la familia nicaragüense por la planificación de la misma como derecho inherente a la persona humana y al establecimiento de la paternidad y maternidad responsable como elementos básicos en la Salud Reproductiva.*

*Auxilio Mundial Nicaragua Organismo no gubernamental cristiano de desarrollo, que a partir de 1990 busca el alivio del sufrimiento de los menos favorecidos a través de proyectos de desarrollo en: Recursos Naturales, Agricultura sostenible, Salud sobrevivencia infantil y generación de ingresos. Y que los ha desarrollado en los territorios de: Río San Juan, Nueva Segovia, Nueva Guinea, Chontales, Managua, Región Autónoma del Atlántico Sur (R.A.A.S.), Región Autónoma del Atlántico Norte (R.A.A.N.), Estelí y Madriz,*

### **2- ANTECEDENTES:**

*En los pasados cuatro años, tiempo de vida del Proyecto de SUPERVIVENCIA INFANTIL (PSI), AUXILIO MUNDIAL NICARAGUA Y LA ASOCIACION PRO-BIENESTAR DE LA FAMILIA NICARAGUENSE (PROFAMILIA), ha llevado a cabo una serie de actividades orientadas al fortalecimiento de los Componentes del*

*Programa, específicamente en el Area de Salud Materna Infantil. Estas acciones han favorecido la preparación de Recursos Humanos y el Desarrollo Comunitario.*

*En la actualidad, estas acciones han consistido en: Apertura de 15 Puestos para la Distribución de Métodos Anticonceptivos (en la Zona de Río San Juan), Identificación y Capacitación de Recursos Humanos en el campo de Salud Reproductiva, con el objeto de constituirlos en Distribuidores de Métodos Anticonceptivos, Capacitación a Grupos de Mujeres sobre el Riesgo Reproductivo y Paternidad Responsable. Por otra parte, se han llevado a cabo actividades de Consejería, para aquellas personas que según criterios establecidos han manifestado deseos de esterilizarse. Hasta la fecha se han apoyado a 1,819 personas en las Esterilizaciones Quirúrgicas.*

### **3- OBJETIVOS:**

*Con el propósito de continuar fortaleciendo este tipo de acciones maximizando los recursos de ambos Organismos y extenderlas a otras zonas donde Auxilio Mundial está desarrollando otros proyectos; AUXILIO MUNDIAL y PROFAMILIA hemos decidido comprometernos a trabajar juntos en espíritu de colaboración y apoyo mutuo. Nuestro compromiso de trabajo consiste:*

### **4- COMPROMISOS**

#### **.1 POR PARTE DE AUXILIO MUNDIAL**

- 1. Identificar a los grupos de personas que se capacitarán en los siguientes Temas: Sexualidad y Reproducción Humana, Riesgo Reproductivo, Diferentes Tipos de Métodos Anticonceptivos, forma de uso, (ventajas y desventajas de cada uno), Paternidad Responsable etc.,*

2. **Colaborar en la Capacitación del Recurso Humano disponible a constituirse en Distribuidores de Métodos Anticonceptivos.**
3. **Colaborar en la Apertura de Puestos de Distribución de Métodos Anticonceptivos, según los criterios que se tienen para la formación de los mismos.**
4. **Supervisar y asesorar con los Miembros Responsables de Profamilia según calendario establecido los Puestos de Distribución de Métodos Anticonceptivos.**
5. **Planificar con los Miembros Responsables de PROFAMILIA un Calendario de Capacitaciones y visitas a las distintas áreas de trabajo.**
6. **Identificar y apoyar al grupo de personas con deseos de utilizar un Método Anticonceptivo permanente como la Vasectomía y el Minilap.**
7. **Garantizar que cada persona que asista a la Consejería y manifieste deseo de esterilizarse, que presente los resultados correspondientes de los Exámenes de Laboratorio (EGO, BHC, VDRL).**
8. **Elaborar con los Miembros Responsables de PROFAMILIA un Calendario para efectuar las Esterilizaciones Quirúrgicas Voluntarias con aquel grupo de personas que según criterios establecidos reúnan los requisitos para éste fin. Estos servicios se brindarán en las diferentes Clínicas de Profamilia ubicadas en los distintos Departamentos pagando por este servicio la cantidad de C\$ 40.00 (Cuarenta Córdoba Netos), por persona.**

## **.2 POR PARTE DE PROFAMILIA**

1. **Capacitar Grupos de Mujeres y Hombres identificados por A.M., en los siguientes Temas: Sexualidad y Reproducción Humana, Riesgo**

**Reproductivo, diferentes tipos de Métodos Anticonceptivos (ventajas y desventajas de cada uno), Paternidad Responsable, E.T.S., Sida y Otros.**

- 2. Capacitar al Recurso Humano disponible a constituirse en Distribuidores de Métodos Anticonceptivos.**
- 3. Colaborar en la Apertura de Puestos de Distribución de Métodos Anticonceptivos, según los criterios que se tienen para la formación de los mismos y provisionarlos de Anticonceptivos, según disponibilidad y accesibilidad.**
- 4. Supervisar y Asesorar según Calendario establecido los Puestos de Distribución de Métodos Anticonceptivos.**
- 5. Brindar Consejería a las personas con deseos de usar cualquier tipo de Método Anticonceptivo disponible en la lista que ofrece Profamilia.**
- 6. Planificar con las Coordinadoras de Areas y otro Miembro Responsable del Equipo un Calendario de Capacitaciones y visitas a las distintas Areas de Trabajo.**
- 7. Brindar Consejería al grupo de personas con deseo de utilizar un Método Anticonceptivo permanente Esterilizaciones Quirúrgicas (Vasectomía y Minilap.**
- 8. Ofrecer el Servicio de Esterilización Quirúrgica al Grupo de Personas que según criterios establecidos reúnan los requisitos para éste fin. Estos servicios se brindarán en las diferentes Clínicas de PROFAMILIA ubicadas en los distintos Departamentos, cobrando por este servicio la cantidad de C\$ 40.00 (CUARENTA CORDOBAS NETOS), por persona.**

5- AREAS DE ACCION

Los beneficiarios directos de este Convenio serán las personas involucradas en los proyectos desarrollados por Auxilio Mundial en las zonas de Río San Juan, Nueva Guinea, Región Autónoma del Atlántico Sur (R.A.A.S), Región Autónoma del Atlántico Norte (R.A.A.N.), Estelí, Madriz, Chontales, Nueva Segovia y Managua.

6- DURACION

El presente Convenio tendrá vigencia de dos años a partir de la fecha de Suscripción, pudiendo ser renovado a voluntad de ambas partes.

Dado en Managua a los dieciseis días del mes de Enero de mil novecientos noventa y siete.

  
LIC. KEVIN SANDERSON  
WORLD RELIEF NICARAGUA



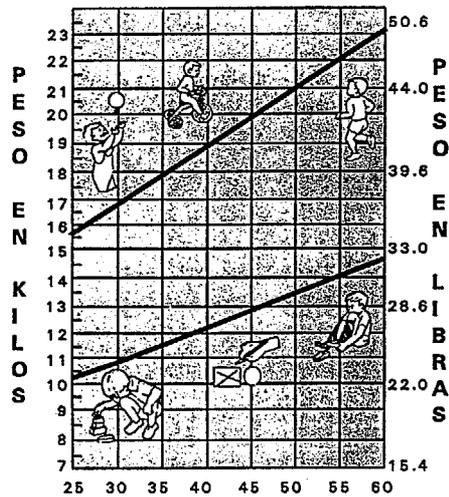
  
LIC. SERGIO MALTEZ RIVAS  
DIRECTOR  
PROFAMILIA DE NICARAGUA



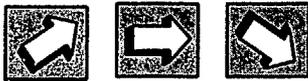
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CORE-026-01-97



**GRAFICA DE  
CRECIMIENTO Y DESARROLLO  
DEL NIÑO(A) DE 2 A 5 AÑOS**



**Tendencia del Crecimiento**



MUY BIEN    PELIGRO    PELIGRO

FECHA															
EDAD															
PESO															
PERC.															

ANTECEDENTES PERINATALES	LUGAR DE NACIMIENTO Instit. <input type="checkbox"/> Dom <input type="checkbox"/> Otro <input type="checkbox"/>	TIPO DE NACIMIENTO Unico <input type="checkbox"/> Multip. <input type="checkbox"/>
ATENDIDO POR Médico <input type="checkbox"/> Enfermera <input type="checkbox"/> Partera <input type="checkbox"/> Otro <input type="checkbox"/>		
PATOLOGIA EMBARAZO PARTO Y PUERPERIO No <input type="checkbox"/> Si <input type="checkbox"/>	EDAD GEST. AL NACER <input type="checkbox"/> Sem Menor 37 <input type="checkbox"/> Mayor 41 <input type="checkbox"/>	PESO Kg. AL NACER <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Menor de 2,500 <input type="checkbox"/> Kg
		TALLA <input type="text"/> <input type="text"/> cm Per Cef <input type="text"/> <input type="text"/> cm

**VACUNAS  
ANTIPOLIO**

**MICRONUTRIENTES**

DOSIS	FECHA	FECHA	VITAMINA A	HIERRO
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

**BCG**

**SARAMPION**

**DPT**

DOSIS	FECHA	DOSIS	FECHA	DOSIS	FECHA
1		1		1	
		Adicional		2	
				3	
				Refuerzo	

**TARJETA DE ATENCION  
INTEGRAL A LA NIÑEZ**

NOMBRE \_\_\_\_\_  
MADRE \_\_\_\_\_  
PADRE \_\_\_\_\_  
FECHA DE NACIMIENTO DIA  MES  AÑO   
No. EN EL CENSO \_\_\_\_\_ SEXO F  M   
DOMICILIO \_\_\_\_\_  
UNIDAD DE SALUD \_\_\_\_\_



**GOBIERNO DE NICARAGUA  
MINISTERIO DE SALUD**

SP

MOTHERS' TT CARD

MINISTERIO DE SALUD

PROGRAMA DE INMUNIZACIONES

TARJETA DE VACUNACION

MAYORES DE 5 AÑOS






A I D      R O T A R Y      U N I C E F      O P S / O M S

---

**LOS NIÑOS SANOS DE HOY  
SON EL FUTURO DE LA PATRIA**

NOMBRE: \_\_\_\_\_

FECHA DE NAC.: \_\_\_\_\_ EDAD: \_\_\_\_\_

SILAIS: \_\_\_\_\_ UNIDAD DE SALUD: \_\_\_\_\_

MUNICIPIO: \_\_\_\_\_ BARRIO/LOCALIDAD: \_\_\_\_\_

DIRECCION EXACTA: \_\_\_\_\_

VACUNA	FECHA 1ra. dosis	FECHA 2da. dosis	FECHA 3ra. dosis	FECHA 4ta. dosis	FECHA 5ta. dosis
ANTISARAMPION (A.S.)					
TOXOIDE TETANICO					
D. T.					

Impreso Litografía El Renacimiento



# REPUBLICA DE NICARAGUA

## MINISTERIO DE SALUD



A.R.O.	SI	<input type="checkbox"/>
	NO	<input type="checkbox"/>
CAUSA _____		

Centro de Salud \_\_\_\_\_

\_\_\_\_\_

### TARJETA PERINATAL

Este Documento contiene información Médica indispensable para la Salud de la madre y de su hijo. En caso de extravío se Ruega dirigirse a la Dirección del Centro de Salud.

#### SEÑORA: LEA ATENTAMENTE ESTOS CONSEJOS:

El embarazo no es una enfermedad pero exige vigilancia del equipo de salud para evitar complicaciones.

Es importante que cumpla con las siguientes Recomendaciones.  
 Presentese al Centro de Salud tan pronto le falte la Menstruación.  
 Repita la consulta cada vez que se le indique.  
 Cumpla las indicaciones del Médico o Personal de Enfermería.

#### SIGNOS DEL COMIENZO DEL PARTO

El Parto comienza con la aparición de contracciones frecuentes de la Matriz, rítmicas y generalmente molestas, también puede comenzar con la Ruptura de la Bolsa (Pérdida de Líquido). En tales casos consulte inmediatamente al Servicio de Obstetricia, llevando esta tarjeta que por los datos que contiene será de mucha utilidad para su mejor atención.

#### ACUDA INMEDIATAMENTE AL SERVICIO DE SALUD MAS CERCANO EN CASO DE:

Pérdida de sangre o líquido por los genitales.  
 Hinchazón (EDEMAS) en los tobillos, las piernas, las manos o en la cara.  
 Fiebre o Escalofríos.  
 Signos del comienzo del Parto, cualquiera sea la edad del embarazo.

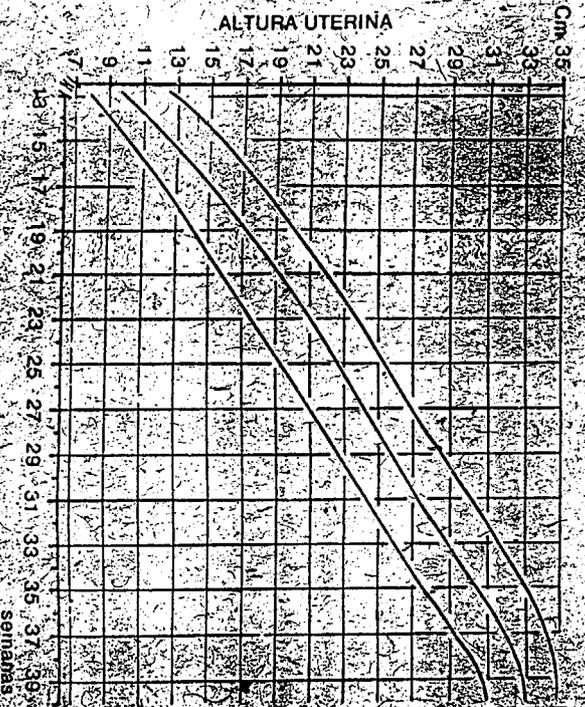
#### CONSULTE AL CENTRO DE SALUD PARA CUALQUIER PROBLEMA

#### DESPUES DEL PARTO

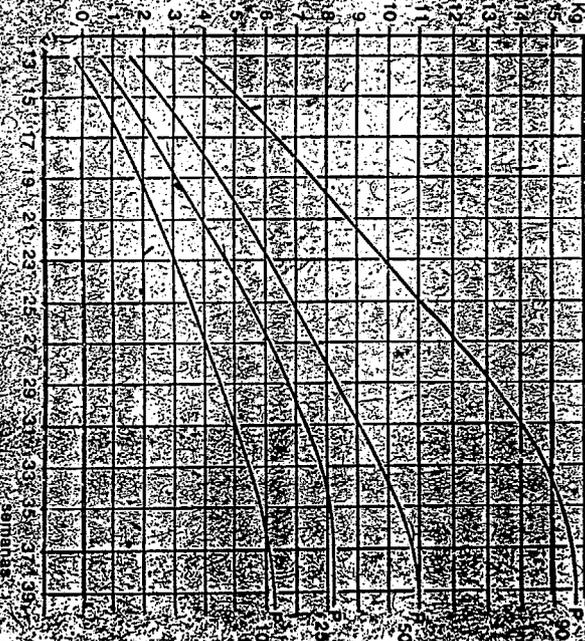
Usted y su hijo deberán volver a su control en la fecha y lugar que se le indique.

#### LA MEJOR ALIMENTACION DE SU NIÑO ES LA LECHE MATERNA

ALTURA UTERINA



INCREMENTO DE PESO



Nutrition and Growth Monitoring  
Supervision Checklist  
Child Survival Project, RAAS and Río San Juan  
World Relief Nicaragua

Date: \_\_\_\_\_ Place: \_\_\_\_\_  
Facilitator: \_\_\_\_\_ Signature: \_\_\_\_\_  
Supervisor: \_\_\_\_\_ Signature: \_\_\_\_\_

- |  |     |    |
|--|-----|----|
| 1. Session was carried out<br>[If not, explain why] _____  | YES | NO |
| The facilitator:   |     |    |
| 2. Explained that every child under two years of age should gain weight every month from birth to one year, to ensure the child has adequate growth and development                              | YES | NO |
| 3. Explained that every child under two years of age should gain weight every month so that the child grows normally and does not get sick.  | YES | NO |
| 4. Explained that from birth until 6 months of age, an infant should be exclusively breastfed because it is the best nutrition for the infant.   | YES | NO |
| 5. Explained that beginning at 6 months of age, the infant needs food other than breastmilk.   | YES | NO |
| 6. Explained that children younger than 5 years of age need to eat 5 or 6 times per day, depending on the foods that are available in the home.  | YES | NO |
| 7. Explained that children younger than 2 years of age need to eat small quantities of added fat or grease with the food that the family eats every day.   | YES | NO |
| 8. Explained that after an illness (e.g. diarrhea, respiratory infection, measles, etc.) children need to drink and eat foods which will help them recuperate weight loss during the illness.    | YES | NO |
| 9. Explained that in order for a child to physically, mentally and emotionally develop adequately, it is important for the child's caretakers to speak, play and be affectionate with the child. | YES | NO |
| 10. Explained the importance of women eating more than usual during and after pregnancy.   | YES | NO |
| 11. Explained the importance of pregnant women eating two times more than usual, and eating iron-rich foods to prevent iron-deficiency anemia.   | YES | NO |
| 12. Related other intervention topics already learned with the nutrition topics discussed today.   | YES | NO |
| 13. Used participatory methods to facilitate the participants' learning of the material.   | YES | NO |
| 14. Planned with participants specific activities which they can do to put in practice what they learned.  | YES | NO |

Diarrheal Diseases  
Supervision Checklist  
Child Survival Project, RAAS and Rio San Juan  
World Relief Nicaragua

Date: \_\_\_\_\_

Place: \_\_\_\_\_

Facilitator: \_\_\_\_\_

Signature: \_\_\_\_\_

Supervisor: \_\_\_\_\_

Signature: \_\_\_\_\_

1. Session was carried out YES NO  
[If not, explain why] \_\_\_\_\_

The facilitator:

2. Who prepared ORS washed her hands with soap and water YES NO

3. Measured one liter of boiled water YES NO

4. Emptied an ORS envelope in a liter of boiled and cooled water YES NO

5. Explained the correct way to administer ORS YES NO

6. Explained that any ORS remaining after 24 hours of being prepared should be thrown out. YES NO

7. Explained the correct way to prepare and administer ORS YES NO

8. Explained the importance and preparation of cereals during the child's diarrheal episode YES NO

9. Explained the signs and symptoms of dehydration YES NO

10. Explained the importance of rehydrating a child sick with diarrhea YES NO

11. Explained that a woman who is breastfeeding should breastfeed more often when her child is sick with diarrhea YES NO

12. Related other intervention topics already learned to the diarrhea topics discussed today YES NO

13. Used participatory methods to facilitate the participants' learning of the material YES NO

14. Planned with participants specific activities which they can do to put in practice what they learned YES NO

NOTE: The supervisor should discuss this checklist with the facilitator after the session has ended.

Family Planning  
Supervision Checklist  
Child Survival Project, RAAS and Rio San Juan  
World Relief Nicaragua

Date: \_\_\_\_\_ Place: \_\_\_\_\_  
 Facilitator: \_\_\_\_\_ Signature: \_\_\_\_\_  
 Supervisor: \_\_\_\_\_ Signature: \_\_\_\_\_

- |   |     |    |
|---|-----|----|
| 1. Session was carried out<br>[If not, explain why] _____   | YES | NO |
| The facilitator:  |     |    |
| 2. Explained the importance of spacing births by at least two years   | YES | NO |
| 3. Explained the importance and use of modern family planning methods   | YES | NO |
| 4. Explained the importance of all women, age 10-49, receiving at least two doses of Tetanus Toxoid to protect themselves from tetanus. | YES | NO |
| 5. Related other intervention topics already learned to the family planning topics discussed today                                      | YES | NO |
| 6. Used participatory methods to facilitate the participants' learning of the material  | YES | NO |
| 7. Planned with participants specific activities which they can do to put in practice what they learned                                 | YES | NO |

NOTE: The supervisor should discuss this checklist with the facilitator after the session has ended.

**Immunizations**  
**Supervision Checklist**  
**Child Survival Project, RAAS and Rio San Juan**  
**World Relief Nicaragua**

Date: \_\_\_\_\_  
 Facilitator: \_\_\_\_\_  
 Supervisor: \_\_\_\_\_

Place: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Signature: \_\_\_\_\_

- |   |     |    |
|---|-----|----|
| 1. Session was carried out  | YES | NO |
| [If not, explain why] _____   |     |    |
| The facilitator:  |     |    |
| 2. Explained which are the diseases which can be prevented with immunizations   | YES | NO |
| 3. Explained the importance of immunizing a child in the first year of life   | YES | NO |
| 4. Explained the importance of applying BCG to the newborn infant   | YES | NO |
| 5. Explained the doses of and the importance of applying DPT, Anti-Polio, and Measles vaccines to a child in the first year of life | YES | NO |
| 6. Explained the importance of pregnant women receiving at least two doses of Tetanus Toxoid vaccines during pregnancy              | YES | NO |
| 7. Explained that TT protects the pregnant woman and protects the newborn child from neonatal tetanus                               | YES | NO |
| 8. Explained the importance of breastmilk for preventing diseases and as a source of protection from disease for the child          | YES | NO |
| 9. Related other intervention topics already learned to the immunization topics already discussed today                             | YES | NO |
| 10. Used participatory methods to facilitate the participants' learning of the material   | YES | NO |
| 11. Planned with participants specific activities which they can do to put in practice what they learned                            | YES | NO |

Vitamin A  
Supervision Checklist  
Child Survival Project, RAAS and Rio San Juan  
World Relief Nicaragua

Date: \_\_\_\_\_ Place: \_\_\_\_\_  
Facilitator: \_\_\_\_\_ Signature: \_\_\_\_\_  
Supervisor: \_\_\_\_\_ Signature: \_\_\_\_\_

- |   |     |    |
|---|-----|----|
| 1. Session was carried out<br>[If not, explain why] _____   | YES | NO |
| The facilitator:  |     |    |
| 2. Explained that vitamin A is important for the child's vision and that lack of vitamin A can cause night blindness and eye lesions which can blind the child  | YES | NO |
| 3. Explained that breastmilk contains vitamin A and that exclusive breastfeeding until the infant is 6 months is the best nutrition for an infant   | YES | NO |
| 4. Explained that all children 6 months to 5 years of age should eat vitamin-A rich foods like mango, ayote, papaya, maranon, spinach, cilantro, green leafy vegetables, eggs, and fish and meat liver                            | YES | NO |
| 5. Explained that a child younger than 5 years who has diarrhea or a respiratory infection can become sicker or die from the illness if the child is lacking vitamin A  | YES | NO |
| 6. Explained that measles and diarrhea cause the child to lose vitamin A, which is why it is important that during and after an illness, the child be breastfed continuously and offered an extra meal with fruits and vegetables | YES | NO |
| 7. Explained that all women in the first month post partum should receive a dose of vitamin A   | YES | NO |
| 8. Explained that all children 6 months to 5 years should receive a vitamin A dose every 6 months to ensure that the child grows healthy  | YES | NO |
| 9. Related other intervention topics already learned to the vitamin A topics discussed today  | YES | NO |
| 10. Used participatory methods to facilitate the participants' learning of the material   | YES | NO |
| 11. Planned with participants specific activities which they can do to put in practice what they learned  | YES | NO |

Breastfeeding  
Supervision Checklist  
Child Survival Project, RAAS and Rio San Juan  
World Relief Nicaragua

Date: \_\_\_\_\_ Place: \_\_\_\_\_  
Facilitator: \_\_\_\_\_ Signature: \_\_\_\_\_  
Supervisor: \_\_\_\_\_ Signature: \_\_\_\_\_

- |  |     |    |
|--|-----|----|
| 1. Session was carried out<br>[If not, explain why] _____  | YES | NO |
| The facilitator:   |     |    |
| 2. Explained that the child should be put to the breast immediately after birth  | YES | NO |
| 3. Explained that the woman's first milk is good because it cleans the baby's stomach and is the child's first immunization  | YES | NO |
| 4. Explained that infants do not need to be breastfed according to a schedule and that breastmilk breaks down quicker and the child is hungry more often than with formula or cow's milk | YES | NO |
| 5. Explained that the child should empty each breast in a feeding so that she can receive all the vitamins that the breastmilk has   | YES | NO |
| 6. Explained that the more a child suckles, the more breastmilk the mother will produce  | YES | NO |
| 7. Explained that a lactating woman should eat and drink more than usual   | YES | NO |
| 8. Explained that the only food that a child needs for her first 6 months of life is breastmilk  | YES | NO |
| 9. Explained that breastmilk is a good source of vitamin A and iron  | YES | NO |
| 10. Explained that a lactating woman needs to rest more than usual   | YES | NO |
| 11. Related other intervention topics already learned to the breastfeeding topics discussed today  | YES | NO |
| 12. Used participatory methods to facilitate the participants' learning of the material  | YES | NO |
| 13. Planned with participants specific activities which they can do to put in practice what they learned   | YES | NO |

NOTE: The supervisor should discuss this checklist with the facilitator after the session has ended.

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# FAMILY REGISTER

FAMILY RECORD

MINSAJ/AUXILIO MUNDIAL

No. of Record: \_\_\_\_\_  
 Volunteer Name: \_\_\_\_\_  
 Head of Family Name: \_\_\_\_\_  
 No. of Children 0-5 years: \_\_\_\_\_

Mother Name: \_\_\_\_\_

No. of people more than 5 years: \_\_\_\_\_ Address: \_\_\_\_\_

CHILDREN 0 - 5 YEARS												
COMPLETE NAME OF CHILDREN	Date of Birth	Vitamin A # Doses	BCG 1	OPV # doses	DPT # doses	MEASLES T	CHILDREN COMPLETELY VACCINATE		G M  Normal = n Undernutrition = u	DIARRHEA (X) ORS (*) 	ALRI (X) COUGH, COLD, THROAT AND EAR ACHE GO TO HEALTH CENTER (*) 	FEVER WITH CHILLS 
							YES	NO				
1.												
2.												
3.												
4.												
5.												

OLDER THAN 5 YEARS																	
NAME	Date of Birth	Sex		PREGNANCY 	FAMILY PLAN 		PNC 		TETANUS TOXOID 		POLVITAMINS 		IRON 		VITAMIN A 		Malaria, Fevers and Chills (X) Treatment (*) 
		M	F		YES	NO	YES	NO	# Visits	HRO	# Doses	YES	NO	YES	NO		
1.																	
2.																	
3.																	
4.																	
5.																	
6.																	

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## MINSA DIARRHEA CASE MANAGEMENT PROTOCOL

### 4. IDENTIFICAR Y TRATAR OTROS PROBLEMAS.

Además de evaluar el estado de hidratación, el trabajador de salud debe preguntar y observar signos que indiquen la presencia de otros problemas y tratar o referir los problemas encontrados.

#### COMO IDENTIFICAR LA PRESENCIA DE OTROS PROBLEMAS:

<b>PREGUNTE SI TIENE SANGRE EN LAS HECES</b>	<b>EN CASO POSITIVO:</b> <ul style="list-style-type: none"><li>- Trátele con el antibiótico oral recomendado para shigella en su área.</li><li>- Enseñe a la madre a administrar líquidos y a alimentar al paciente, como se describe en el Plan A</li><li>- Evalúe al paciente 2 días después.</li><li>- Si persiste el compromiso en el estado general y aún hay sangre en las heces después de 2 días de tratamiento, cambie a un segundo antibiótico recomendado para Shigella. Délo por 5 días. Si persiste sangre, inicie Metronidazol.</li></ul>
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#### USO DE MEDICAMENTOS EN PACIENTES CON ENFERMEDAD DIARREICA:

- \* Los **ANTIBIÓTICOS** deben usarse sólo para disentería y cólera. En otras condiciones son ineficaces y no deben prescribirse.
- \* Los **ANTIPARASITARIOS** deben usarse sólo para:
  - Amebiasis, después que el tratamiento de disentería por *Shigella* ha fracasado, o en casos en que se identifican en las heces trofozoítos de *E. histolítica*.
  - Giardiasis, cuando la enfermedad diarreica tarda 14 días o más o se identifican quistes o trofozoítos en heces o aspirado duodenal.
- \* Nunca deben usarse "**ANTIDIARREICOS**" ni **ANTIEMETICOS**.

**ANTIMICROBIANOS UTILIZADOS EN EL TRATAMIENTO DE CASOS  
ESPECIFICOS DE ENFERMEDAD DIARREICA AGUDA**

DIAGNOSTICO CLINICO DE LA CAUSA	ANTIBIOTICO DE ELECCION <sup>1,2</sup>	ALTERNATIVA <sup>1,2</sup>
Disentería por Shigella <sup>2</sup>	<p align="center"><b>TRIMETOPRIM (TMP) SULFAMETOXAZOL (SMX)</b></p> <p><u>Niños</u></p> <ul style="list-style-type: none"> <li>- TMP 10 mg/kg/día y SMX 50 mg/kg/día, divididos en dos dosis durante cinco días.</li> </ul> <p><u>Adultos</u></p> <ul style="list-style-type: none"> <li>- TMP 160 mg y SMX 800 mg dos veces al día durante cinco días.</li> </ul>	<p align="center"><b>AMPICILINA</b></p> <p><u>Niños</u></p> <ul style="list-style-type: none"> <li>- 100 mg/kg/día divididos en cuatro dosis durante cinco días.</li> </ul> <p><u>Adultos</u></p> <ul style="list-style-type: none"> <li>- 1 gramo cuatro veces al día durante tres días.</li> </ul>
Cólera <sup>2,3</sup>	<p align="center"><b>TETRACICLINA</b></p> <p><u>Adultos</u></p> <ul style="list-style-type: none"> <li>- 500 mg cuatro veces al día durante tres días</li> </ul> <p align="center">o</p> <p align="center"><b>DOXICICLINA</b></p> <p>Una sola dosis de 300 mg</p> <p align="center"><b>TRIMETOPRIM (TMP) SULFAMETOXAZOL (SMX)<sup>4</sup></b></p> <p><u>Niños</u></p> <ul style="list-style-type: none"> <li>- TMP 10 mg/kg/día y SMX 50 mg/kg/día, divididos en dos dosis diarias durante tres días</li> </ul>	<p align="center"><b>ERITROMICINA</b></p> <p><u>Niños</u></p> <ul style="list-style-type: none"> <li>- 30 mg/kg/día divididos en tres dosis diarias durante tres días.</li> </ul> <p><u>Adultos</u></p> <ul style="list-style-type: none"> <li>- 500 mg tres veces al día durante tres días.</li> </ul> <p align="center"><b>TRIMETOPRIM (TMP) SULFAMETOXAZOL (SMX)<sup>4</sup></b></p> <p><u>Adultos</u></p> <ul style="list-style-type: none"> <li>- TMP 160 mg y SMX 800 mg dos veces al día durante tres días</li> </ul>

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**ANTIMICROBIANOS UTILIZADOS EN EL TRATAMIENTO DE CASOS PARA ENFERMEDAD DIARREICA POR PROTOZOARIOS**

DIAGNOSTICO CLINICO DE LA CAUSA	ANTIBIOTICO DE ELECCION <sup>1, 2</sup>	ALTERNATIVA <sup>1, 2</sup>
Amebiasis Intestinal Aguda	<p align="center"><b>METRONIDAZOL</b></p> <p><u>Niños</u></p> <p>- 30 mg/kg/día divididos en tres dosis durante cinco días.</p> <p><u>Adultos</u></p> <p>- 750 mg tres veces al día durante cinco días.</p>	<p>En casos graves:</p> <p align="center"><b>CLORHIDRATO DE DEHIDROEMETINA</b></p> <p>por inyección intramuscular profunda, 1 - 1.5 mg/kg/día (máximo 90 mg), hasta por 5 días dependiendo de la respuesta (todas las edades).</p>
Giardiasis Aguda	<p align="center"><b>METRONIDAZOL</b></p> <p><u>Niños</u></p> <p>- 15 mg/kg/día divididos en 3 dosis durante 5 días.</p> <p><u>Adultos</u></p> <p>- 250 mg tres veces al día durante 5 días.</p>	<p align="center"><b>FURAZOLIDONA</b></p> <p><u>Niños</u></p> <p>- 5 - 7 mg/kg/día divididos en tres dosis diarias durante 5 días.</p> <p><u>Adultos</u></p> <p>- 100 mg tres veces al día durante 5 días.</p>

**Referencias**

1. Todas las dosis indicadas son para administración oral a menos que se especifique otra cosa.
2. Al seleccionar un antimicrobiano para tratamiento, se debe tener en cuenta la frecuencia en el área de gérmenes resistentes a los antimicrobianos.
3. La terapia con antibióticos no es esencial para que el tratamiento tenga éxito, pero en casos graves abrevia la duración de la enfermedad y la excreción de organismos.
4. Otras elecciones incluyen furazolidona y cloramfenicol. Las dosis y esquemas de tratamiento se encuentran en "Guidelines for cholera control", WHO/CDD/SER/80.4, Rev. 1 (1986).
5. También puede usarse Tinidazol u Ornidazol.

**PREGUNTE, CUANDO  
COMENZO LA DIARREA**

**SI TIENE 14 días o MAS DE EVOLUCION:**

- Refiéralo al hospital para evaluación:
  - si es menor de 6 meses, o
  - si presenta deshidratación; hidrátelo primero y remítalo al hospital.
- Si no lo envía al hospital, enseñe a la madre como administrar líquidos y alimentar al paciente según Plan A.
  - asegure ingesta calórica alta, dando seis comidas al día, de cereal en papilla, mezclado con verduras, leguminosas, carne o pollo y aceite vegetal.
  - cite al paciente 5 días después:
    - si la diarrea continúa, refiera al hospital;
    - si la diarrea terminó, explique a la madre: continuar los alimentos de la dieta habitual y dar una comida extra al día hasta alcanzar el peso adecuado.

**OBSERVE SI TIENE  
DESNUTRICION GRAVE**

**SI TIENE DESNUTRICION GRAVE:**

- Inicie hidratación oral y refiéralo a un hospital.
- Entregue a la madre suficiente suero oral preparado y explíquele cómo darlo continuamente durante el viaje.

**Signos de desnutrición grave.**- Si el paciente parece muy enflaquecido, como "piel y huesos", indica que tiene marasmo grave. Si presenta edema de las extremidades o generalizado y cabello delgado y escaso, el paciente tiene kwashiorkor. Los pacientes con cualquiera de estos tipos de desnutrición grave deberán ser referidos para recuperación nutricional.

Usted deberá estar preparado para decir a la madre que su paciente está gravemente desnutrido, mirando los signos antes descritos. Si cuenta con facilidades, deberá hacer una evaluación antropométrica del estado nutricional, determinando el peso y la talla del paciente.

Cuando no se cuenta con una balanza, se puede medir la circunferencia o perímetro del brazo en un punto intermedio entre el hombro y el codo. Aunque ésta medida es menos sensible que el peso corporal, permite identificar objetivamente a pacientes como un grado importante de desnutrición.

Los pacientes menores de un año tienen abundante grasa bajo la piel del brazo. Esta grasa se reduce y el músculo aumenta con la edad. Debido a este cambio en espesor de la grasa y el músculo, la circunferencia del brazo no cambia mucho entre 1 y 5 años de edad. Por lo tanto, se considera bien nutrido a un paciente, entre esas edades, que tenga más de 13.5 cm de circunferencia del brazo y desnutrido al que tiene menos de 12.5 cm.

**Manejo del paciente desnutrido que tiene enfermedad diarreica.-** Es necesario romper el círculo vicioso de:



Esto se puede lograr dando una buena alimentación en forma ininterrumpida durante la enfermedad diarreica y continuando la administración de más alimentos durante la convalecencia hasta que el paciente alcance el peso adecuado.

Si la dieta aporta abundantes nutrimentos, el paciente puede absorber suficiente para evitar que su crecimiento y ganancia de peso se detengan, a pesar que la enfermedad diarreica reduce la digestión y absorción de nutrimentos. Por otra parte, el mantener la alimentación ininterrumpida durante la enfermedad diarreica, acelera la normalización de las funciones intestinales, incluyendo la digestión y absorción de nutrimentos.

Al desaparecer la enfermedad diarreica, el aporte nutricional de los alimentos ayudará a recuperar el peso perdido y a restablecer el estado nutricional. Esto hace particularmente importante el buen manejo dietético de desnutridos con enfermedad diarreica.

**PREGUNTE POR FIEBRE  
Y TOME LA TEMPERATURA**

**SI LA TEMPERATURA ES 38°C O MAS:**

- En ausencia de otros síntomas, revalorar después de hidratar.
- Si hay paludismo por Plasmodium falciparum en el área: \* Dé un antimalárico (de acuerdo a programa contra el paludismo).

**TRATE CUALQUIER OTRO PROBLEMA DETECTADO**

# **MINSA BREASTFEEDING PROTOCOL**

**Esta es una producción del  
Ministerio de Salud - Nicaragua**

## **Supervisión**

**Dra. Gloria Elena Navas**  
DIRECTORA DE NUTRICION

## **Coordinación Técnica**

**Lic. Ninoska Cruz Rivera**  
COORDINADORA PROGRAMA LACTANCIA MATERNA  
DIRECCION DE NUTRICION

Agradecemos al:

Comité de Lactancia Materna del  
Hospital José Nieborowky de Boaco por el apoyo en la  
elaboración de las Normas de Lactancia Materna.

Asistencia técnica y financiera de las siguientes agencias:

**UNICEF**  
**USAID**  
**Wellstart International/AID**  
**MSH/AID**

**Diseño y producción: Cima Publicidad, Nicaragua**

- no se dispone del repuesto necesario,
- no se dispone de recursos financieros para la reparación etc.

Estos reportes serán el insumo básico para diligenciar el Cuadro para el Monitoreo Mensual de la Cadena de Frío (Anexo ).

Este Cuadro, permitirá al responsable del PAI asegurar la implementación oportuna de medidas correctivas que subsanen el daño.

### **a.1 Nivel de SILAIS**

Debe elaborarse, actualizarse y enviarse al nivel central cada mes el mapa de cadena de frío del SILAIS con todos los colores y claves sugeridas para el monitoreo de funcionamiento de equipo de la cadena de frío.

Mensualmente, el Responsable del PAI del SILAIS, recibirá de parte del Responsable del PAI del Municipio, un reporte (Vía radio, telegrama, teléfono o personal) indicando la situación de cada equipo: Reportar si cada equipo se encuentra funcionando, en proceso de reparación y/o inoperante. (Anexo ).

### **a.2 Nivel Central**

Mensualmente, el Responsable del PAI del Nivel Central, recibirá de parte del Responsable del PAI del SILAIS, un reporte (Vía radio, telegrama, teléfono/fax o personal) indicando la situación de cada equipo: Reportar si cada equipo se encuentra funcionando, en proceso de reparación y/o inoperante. (Anexo ).

## **2. ACTUALIZACION DE INVENTARIO**

Es responsabilidad del encargado del PAI, técnico en Cadena de Frío o en su defecto el Director del SILAIS, mantener actualizado en inventario de equipos de Cadena de Frío como mínimo cada 6 meses.

Manteniendo en inventario de equipos disponibles, permite conocer las condiciones operativas de los elementos y su distribución adecuada en las Unidades de Salud que lo requieran (Anexo ).

equipos que se encuentran inoperantes por falta de repuestos y los que se tienen pendientes a descartar (Anexo ).

## 1. Monitoreo Mensual del funcionamiento de la Cadena de Frío

Los responsables del PAI en el Centro de Salud, SILAIS y a nivel nacional, deben mantener información actualizada sobre el estado general del funcionamiento de la Cadena de Frío.

Los objetivos de establecer esta vigilancia periódica son:

- ✱ Mantener un inventario actualizado sobre el número de equipos y sus características técnicas para cada una de las unidades que conforman su territorio de influencia.
- ✱ Disponer de información mensual sobre el estado de funcionamiento de los equipos.
- ✱ Coordinar y programar de manera regular y oportuna las visitas de monitoreo, asesoría y mantenimiento preventivo, tanto por parte de los técnicos, como por parte de los responsables de la supervisión del PAI.
- ✱ Contar con información cuantitativa y cualitativa que apoye las decisiones de reubicación de equipos, reposición de equipos, y/o solicitud de compra de equipos adicionales.

### a. Nivel Municipal

Mensualmente, el Responsable del PAI del Municipio, recibirá de parte del Responsable del PAI en cada Unidad de Salud de su territorio de influencia, un reporte (Vía radio, telegrama, teléfono o personal) indicando la situación de cada equipo: Reportar si cada equipo se encuentra funcionando, en proceso de reparación y/o inoperante. (Anexo ).

Para los equipos inoperantes (I), se deberá describir brevemente la causa del no funcionamiento, como puede ser:

- que el daño no había sido reportado anteriormente,
- no se ha recibido asistencia técnica,

- Suministrar retroalimentación de los logros y problemas a los diversos niveles a fin de conseguir apoyo y considerar acciones correctivas;
- Evaluar el sistema de vigilancia de la Cadena de Frío;
- Recopilar costos de funcionamiento de la Cadena de Frío con el fin de actualizar los costos y preparar un presupuesto para el Plan de acción.
- Decidir alternativas de trabajo para mejorar la temperatura de los refrigeradores domésticos;
- Con base en los resultados, el supervisor tendrá detectados cuantitativamente los problemas y logros para cada establecimiento y/o área.
- Monitorear cuantitativamente y cualitativamente los logros y los problemas, para cada Unidad de Atención, y/o cada Unidad Básica Administrativa de su territorio.

Una copia del informe de cada visita de supervisión efectuada, debe permanecer en la Unidad Básica Administrativa, afin de permitir el seguimiento en la implementación de las recomendaciones y la persistencia de las dificultades.

Todo esto, debe apoyar la organización de programas de capacitación y/o actualización, o la instauración de las medidas administrativas y/o correctivas necesarias para garantizar el adecuado funcionamiento de la Cadena de Frío.

## **F. VIGILANCIA DE LA CADENA DE FRIO.**

La responsable del programa de PAI del SILAIS y de el Municipio son los encargados de garantizar el uso y distribución racional y adecuado de los equipos de la cadena de frío instalados en cada uno de los establecimientos de salud.

La vigilancia va dirigida a mantener información actualizada referente al número de localidades existentes en el municipio, al número de establecimientos de salud ubicados en el municipio, la cantidad de equipos de refrigeración instalados y en buen estado de funcionamiento, los equipos que están en mal estado de funcionamiento, los que se encuentran en proceso de reparación, la cantidad de

- Vigilar que a todas de las Unidades de Salud se les proporcione la dotación correspondiente de jeringas, de vacunas y/o del equipo necesario para su almacenaje;
- Reafirmar que exista un control de las reservas de vacunas que permitan la identificación por remesa y controlar el movimiento de las vacunas;
- Evaluar el sistema de notificación de los despachos de vacunas y jeringas;
- Asegurar que no falten termos, cajas frías y paquetes fríos;
- Ratificar que los termos y cajas frías en uso estén en buenas condiciones y que el personal de salud conozca la "vida fría" de cada recipiente;
- Establecer con el nivel central, un sistema para el ensayo de vacunas seleccionadas al azar con el fin de confirmar su potencia. Siempre y cuando las circunstancias lo requieran;
- Agilizar la reparación del equipo en mal estado;
- Asegurar el abastecimiento continuo del combustible (kerosene y gas) para los refrigeradores por absorción;
- Asegurar una mínima existencia de repuestos para los equipos en cada nivel de la Cadena de Frío;
- Verificar que el personal de salud conozca las normas de mantenimiento preventivo para el manejo de su equipo;
- Formular recomendaciones para solucionar los problemas y obtener el máximo de eficiencia en lo que se refiere a conservación, manejo y distribución de vacunas;
- Proponer actividades y acciones para implantar las recomendaciones propuestas;

El *propósito* de la supervisión es *apoyar y mejorar* el desarrollo de las actividades de la Cadena de Frío mediante la evaluación y la búsqueda de problemas para corregirlos. Es menester que el supervisor sea el que diseñe las guías evaluativas más convenientes, asegurando que sus actividades apoyen a los trabajadores.

Es importante que el responsable del Programa reciba un resumen de los informes de supervisión, realice el análisis de la información recopilada y que se haga la retroalimentación a nivel local. En el anexo 7 se consignan los aspectos más relevantes a ser revisados durante las visitas de supervisión.

### ● Tareas Específicas del Supervisor

A fin de conocer la información necesaria para el análisis y evaluación de la Cadena de Frío a nivel operativo, el supervisor debe proponerse las siguientes tareas específicas:

- Asegurar que todos los trabajadores de la salud están debidamente capacitados en relación a las normas vigentes y que reciben la información, en relación a las actualizaciones periódicas;
- Identificar y diagnosticar los problemas de operación de la Cadena de Frío, para asegurar que los objetivos se cumplan;
- Disponer de un inventario por SILAIS actualizado de los recursos existentes de la Cadena de Frío con el objeto de conocer las condiciones operativas de los elementos y su distribución adecuada en los diferentes Municipios y Unidades de Salud ;
- Verificar el adecuado funcionamiento de los termómetros en las refrigeradoras;
- Evaluar la operación de la Cadena de Frío a través del control de temperaturas obtenidas;
- Asegurar que las refrigeradoras y/o congeladores puedan mantener las temperaturas necesarias;

## 5. Sensibilidad de las vacunas al calor

Las vacunas utilizadas por el PAI son delicadas y muy sensibles al calor, si éstas se exponen a temperaturas altas, unas, disminuirán su capacidad inmunológica, otras, quedarán totalmente inutilizadas. Algunas vacunas son más sensibles al calor que otras, como puede apreciarse en el siguiente cuadro:

Sensibilidad de la Vacuna

VACUNA	MAS SENSIBLE	MENOS SENSIBLE
Antipoliomielítica (OPV)	X	
Antisarampionosa, MMR, MR	X	
Toxoide Tetánico		X
DPT, DT, Td		X
BCG	X	

Las vacunas BCG y Polio son muy sensibles a la luz y deben mantenerse en ambiente oscuro. Cuando no están en el refrigerador, termo o caja fría, hay que manipularlas a la sombra.

## E. Supervisión de la Cadena de Frío

La supervisión rutinaria de la Cadena de Frío es una actividad que se debe programar en el plan de acción cada año. La supervisión es imprescindible para detectar problemas, y poder brindar las soluciones necesarias para asegurar la potencia de las vacunas y fortalecer los tramos débiles de la Cadena de Frío.

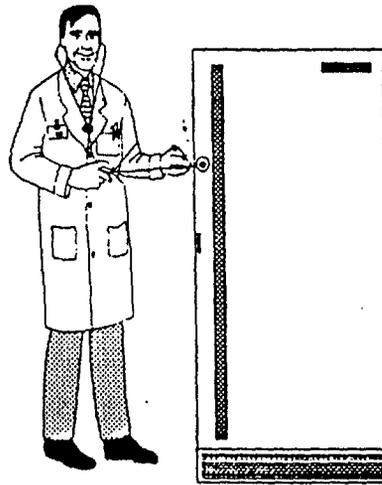
El Responsable del PAI en el SILAIS, debe asegurar que exista una supervisión regular de la Cadena de Frío. La supervisión puede ser específica por el técnico de cadena de frío, o integrada con la supervisión general del programa.



**REPUBLICA DE NICARAGUA  
MINISTERIO DE SALUD**



**PROGRAMA AMPLIADO DE INMUNIZACIONES**



**MANUAL OPERATIVO DE CADENA DE FRIO  
(VERSION PARA REVISION FINAL)**

**MANAGUA, OCTUBRE 1995**

## **IDEAL NUTRITIONAL PRACTICES**

### **THE WELL CHILD**

Initiation of breastfeeding within about one hour of birth

Frequent, on-demand feeding (including night feeds)

Exclusive breastfeeding until the infant is about 6 months of age

- infant consumes only breastmilk and no other liquids or solids except vitamins, minerals supplements, and medicines.
- maternal diet and nutrition are important at this stage.

Addition of foods other than breastmilk beginning at about 6 months

- appropriate local foods that are energy-dense, and rich in protein and micronutrients (vitamins A, C, iron, zinc, especially).
- offered after breastfeeding.
- feed complementary foods and snacks 5 times daily by 12 months of age.
- child is consuming family foods in second year of life.
- child is supervised while eating.
- Breastfeeding continues well into the second year of life or beyond.

## **APPROPRIATE COMPLEMENTARY FEEDING PRACTICES**

Appropriate practices change with the age of the child.

Breastmilk is an important source of nutrition well into the second year of life (and often provides > 50% of total calories at this age).

First foods should be offered beginning at about 6 months of age.

- these foods should be soft or semi-solid mixes of foods available in the home or community.

- ideally, these foods should contain a staple food (carbohydrate source such as maize, rice, wheat), a fat source (such as oil, butter, sugar) to increase energy density, a protein source (breastmilk, yogurt, groundnuts, softened beans, ground meat products), and chopped or mashed fruits or green leafy vegetables.
- if the protein source is not of animal origin, be sure to include a fat source and fruits rich in vitamin C to increase utilization of vitamin A and iron.
- between 6 and 9 months, it is important to provide an energy-dense weaning food and to insure that consumption of this food complements but does not replace breastmilk consumption.
- between 6 and 9 months, infants are learning about food and how to chew, eat, and swallow, so they need to be exposed to a variety of foods, tastes, and textures (purees, semi-solids, fruits, vegetables).
- feed small amounts of food frequently.
- by 12 months of age, an infant should breastfeed and eat complementary foods (mixes and snacks) 4 to 5 times daily.
- in the second year of life, the child should be eating a variety of solids foods from the family pot and snack foods, 5 times daily.

## **WEANING PRACTICES ARE IMPORTANT**

### **Studies and program experience suggest:**

- Emphasize food quality first (energy density and variety, including tastes, beginning at 6 months).
- Gradually increase feeding frequency (e.g., after 8 or 9 months).
- Always give breastmilk first.
- Do not give infants/children non-nutritive snacks and juices before any feeding (breast or complementary).
- Feed complementary foods with a cup and spoon. Never use a feeding bottle.
- Mothers/caretakers should have patience, actively engage the child, and encourage him to eat when he loses interest.
- Feeding episodes should be opportunities for positive interactions between mother and child.
- It is a part of child socialization and development processes.

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- It should be an enjoyable experience that is not too stressful for either party involved.
- Food hygiene is important.

## **OPTIMUM FOOD HYGIENE PRACTICES**

Wash hands before handling food and serving; after changing diapers.

Wash fruits and vegetables with safe water.

Peel them or cook thoroughly.

Carefully wash utensils with safe or boiled water.

Keep stored water in a covered container.

Cook food thoroughly to kill pathogenic organisms (min. 70 degrees C)

Avoid contact between raw foods and cooked foods.

Do not store cooked foods. If food must be stored then it should be kept below 10 degrees C or above 60 degrees C and reheated to 70 degrees C)

Protect all food from insects, rodents, and other animals.

Keep animals out of living space.

Keep area where food is prepared clean.

- remove all food waste that will attract animals and insects.
- dispose of garbage immediately.

## **FEEDING THE SICK CHILD**

Breastfeeding should continue as usual (or more frequently) during and after diarrhea and all other illnesses accompanied by anorexia.

Other foods should be fed continuously during the course of illness, as appetite permits.

- withholding foods contributes to intestinal damage caused by the disease.
- feeding solid foods contributes to intestinal recovery.
- vegetable-based mixtures (e.g., corn and bean flour mix, oil, sugar) have been shown to reduce duration of diarrhea illnesses.
- dietary fiber reduces the duration of loose stools - a characteristic of great concern to mothers.

- virtually all solid foods can be absorbed and retained during diarrheal illness.
- Foods should be offered frequently to the child so that the amount of nutrients for digestion and absorption is reduced per unit time (feed small amounts frequently). (alternative indicator: frequency of feeding)
- Foods of high osmolality (e.g., sweetened fruit juices, heavily sugared or salted foods) should be avoided.
- starches are the staple/carbohydrate of choice (potato, wheat, flour mixes, rice)
- Oral rehydration therapy (ORS, home fluids) is essential to prevent dehydration during severe diarrhea.
- Fever, vomiting and other symptoms of illness may depress the appetite of a small child.
- therefore, it is essential to feed sick children frequently and with patience.
- increased feeding during recuperation from infection is also important to compensate for the nutritional deficits that occur when appetite and absorption are reduced.
- children recovering from diarrhea, ARI, LRI or other infections may be more willing to eat when their symptoms subside (it is often the caretakers who are resistant to offer additional foods regularly).
- theoretical calculations suggest that energy intakes by young children with diarrhea (and other infections) should be increased by 25% during two consecutive days for each day of illness.
- a simpler message is to increase feeding (by 25%) for 10 days to 2 weeks following episodes of acute infection (assumed to last 5-6 days).

#### **For non-breastfeed infants**

- most can tolerate full strength milk. Continue undiluted milk and solid feedings (which promote GI recovery).
- if lactose intolerance is a concern, offer low lactose yogurt or fermented milk products, soy-based or other non-dairy products.

- continue to offer the same milk as before. If skim milk is used, add 2 ml of vegetable oil or 4-5 g of sugar per 100 ml to increase energy density.
- if stool volume increases, or vomiting and weight loss appear, then mix full-strength milk with solid feedings for 1-2 days.
- continued full-strength milk feeding is mainly a concern in severe cases, with severe dehydration. These cases require close supervision, ORS, and medical attention.

## NUTRITION DURING PREGNANCY AND LACTATION

- Women should gain an average of 1 kg/month during pregnancy (minimum 7 kg).
- High risk women can be identified through weight gain screening, MUAC (22.5 cm cut-off level) or height screening (145 cm), alone or combined with other risk indicators.

Increased energy requirements during pregnancy are actually modest: 150-200 kcal/day.

- most weight gained is high water content of lean tissue.
- weight gain during pregnancy is an efficient process, requiring approx. 4.7 kcal/g (compared to an average of approx. 8.0 kcal/g among non-pregnant women).
- increased intakes can come from additional snacks or liquids sources (juices, milk).
- reduction in energy expenditure during pregnancy will also affect energy balance (requirements).
- Studies show that supplementing women during pregnancy can have beneficial effects on child survival (increased birth weights, subsequent lactation performance and growth).
- Improvements in maternal nutrition during pregnancy and lactation benefit both mother and infant.
- vitamin A supplementation at or within 30 d of birth.

- increased energy consumption to meet the demands of lactation in situations where women did not gain well during pregnancy, birth weights are low, or women lack confidence in their ability to breastfeed exclusively.
- additional energy can come from liquid sources.
- reduced energy expenditure can also be part of the nutritional equation.

It is important to understand that malnourished women are able to breastfeed successfully: breastmilk supply is regulated by demand (frequent suckling).

- the remedy to insufficient milk is more frequent breastfeeding.

## **STRATEGIES FOR OPTIMAL BREAST- AND COMPLEMENTARY FEEDING**

### Breastfeeding

#### **Early initiation (within 1 hour of birth)**

- baby friendly hospitals
- training health providers and TBAs about importance of early initiation and how to counsel mothers and provide birthing environments conducive to immediate breastfeeding.
- education and counseling during prenatal period.

#### **Exclusive Breastfeeding**

- education and counseling during prenatal period.
- peer-support and counseling groups for post-partum.
- messages that emphasize delay in introduction of other liquids, non-human milks (rather than just exclusive breastfeeding).
- messages that emphasize the benefits to mother and infant of exclusive breastfeeding (less time, money, fewer illnesses, fertility-related, etc.)
- maternal dietary supplementation if malnourished and fear of insufficient milk.

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- messages to encourage mothers to eat and drink more during early lactation to benefit herself and her infant.
- home and work environments that are conducive to exclusive breastfeeding.

### **Common obstacles to optimal breastfeeding**

- Inappropriate advice from health providers.
- Cultural practices and prior breastfeeding experience.
- Perceptions of insufficient milk.
- Reactions by mothers to infants who cry following breastfeedings.
- Need to leave young infants for extended periods.

### **Overcoming obstacles**

- Health provider training.
- Research to understand perceptions of insufficient milk, how they can be overcome, and role of infant behavior in determining feeding decisions.
- Community education concerning optimal breastfeeding.
- provides information on practices and motivations for overcoming obstacles.

### **Complementary Feeding Practices**

Education about appropriate feeding practices for health providers and others who are consulted about feeding practices.

Community level education to increase normative beliefs and knowledge concerning appropriate child feeding.

Research among mothers to determine appropriate practices to emphasize at different ages (identify obstacles):

- timing of introduction (about 6 months)
- quality, texture, and variety of foods offered
- frequency of feeding

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- style of feeding (active)
- quantity of foods offered
- meal patterns (snacking, order of feeding BM and solids, etc)
- food and feeding related hygiene
- feeding during illness and convalescence

### Introduction of appropriate technologies that facilitate better feeding practices and care

- mills, food grinders, roasting, germinating
- solar dryers for food processing
- time saving technologies
- processed weaning foods
- renewable/reusable fuels or fuel efficient stoves and refrigeration units

### Using community mothers as educators (hearth model)

### Interventions to increase food availability

- income generating activities that are combined with efforts to improve weaning and complementary feeding practices.
- home gardens for self consumption or marketing

### Interventions to improve food hygiene

- education regarding food hygiene, preparation, and storage
- provision of safe water and education about its use
- provision of refrigeration
- education about food processing techniques that reduce likelihood of contamination (e.g., fermentation)

### Common obstacles to optimal complementary feeding practices

Lack of food, variety.

Lack of time for food preparation and feeding.

Lack of fuel for cooking and refrigeration for safe storage.  
Lack of knowledge about appropriate feeding.  
Reactions to young child - child-determined feeding practices.  
Resistance to change behavior because of the reactions of others.  
Fear that certain foods and practices will harm the young child.  
Limited awareness about food quantities.  
Lack of confidence when dealing with fussy children or children with depressed appetites.

### **Overcoming obstacles**

Research, training, education as above.

Food availability may appear to be a major constraint but malnourished children in impoverished environments often do not consume all the food that is offered to them (about 2/3 consumed).

Varying textures, tastes.

### **ENERGY DENSITY VS. FEEDING FREQUENCY**

Average recommended energy intake for children 6 months to 3 years is approx. 100 kcal/kg/d

Average recommended protein intakes for children 6 months to 1 year is 1.6 g/kg/d or 2.0 g/kg/d if vegetable source, and from 1 to 3 years it is 1.2 g/kg/d or 1.5 g/kg/d if vegetable source.

- about 10-15% of energy should be provided as protein if derived from vegetable sources.

Children in developing countries often consume similar quantities of food as children in developed countries.

- food quality (energy and other nutrient densities) is poorer.

- protein digestibility is lower.
- micronutrient absorption is lower.

Limited gastric capacity of young children means that foods must be energy and nutrient dense and offered frequently.

- gastric capacity per feeding is about 3-4% of body weight (30-40 g/kg) or 1 to 1.5 cups of food per feeding for infant or toddler.
- will be lower in malnourished children (because of lower body weight)
- energy density of breastmilk - approx. 65 kcal/100 g
- energy density of approp. weaning foods - will vary with feeding frequency and breastmilk intake.

#### Rough guidelines

- if breastfeed and eating 3 times a day, weaning food must be 80 kcal/100g
- if breastfeed and eating 4 times a day, weaning food must be 65 kcal/100g
- if breastfeed and eating 5 times a day, weaning food must be 50 kcal/100g
- there are tradeoffs for messages to increase energy density vs. feeding frequency. Suggestion: if energy density is < 50 kcal/100g then start with energy density.

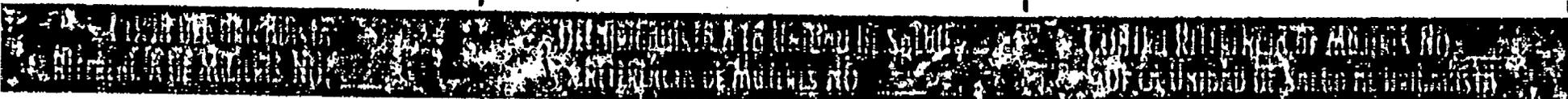
MINISTERIO DE SALUD  
 CLINICA DE REFERENCIA MATERNA USADA  
 POR EL VOLUNTARIO HACIA LAS UNIDADES DE SALUD



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 POR EL VOLUNTARIO HACIA LAS UNIDADES DE SALUD



Nombre de la madre: \_\_\_\_\_  
 Edad: \_\_\_\_\_  
 Comunità: \_\_\_\_\_  
 Puesto de Salud: \_\_\_\_\_  
 Fecha: \_\_\_\_\_  
 Brigadista: \_\_\_\_\_

Nombre de la madre: \_\_\_\_\_  
 Edad: \_\_\_\_\_  
 Comunità: \_\_\_\_\_  
 Puesto de Salud: \_\_\_\_\_  
 Fecha: \_\_\_\_\_  
 Brigadista: \_\_\_\_\_

Nombre de la madre: \_\_\_\_\_  
 Edad: \_\_\_\_\_  
 Atendida por: \_\_\_\_\_  
 Cargo/Nombre  
 Puesto de Salud: \_\_\_\_\_

MOTIVO DE LA REFERENCIA

MOTIVO DE LA REFERENCIA

Tiene una TT ( ) Papanicolaou ( )  
 Control Prenatal ( )  
 Signos de embarazo de riesgo ( )  
 Tiene sangrado ( )  
 Ardor al orinar ( )  
 Hinchazón en los plex ( )  
 Infección Renal  
 Dolor de cabeza ( )  
 Mareo, Visión borrosa ( )  
 Otro (especifique): \_\_\_\_\_

Tiene Vacuna TT ( ) Papanicolaou ( )  
 Parto ( ) Control Prenatal ( )  
 Signos de embarazo de riesgo ( )  
 Tiene Sangrado ( )  
 Ardor al orinar ( )  
 Hinchazón en los plex ( )  
 Infección Renal  
 Dolor de cabeza ( )  
 Mareo, Visión borrosa ( )  
 Otro (especifique): \_\_\_\_\_

Fecha: \_\_\_\_\_  
 DIAGNOSTICO: \_\_\_\_\_  
 SEGUIMIENTO: \_\_\_\_\_  
 Recibido por el brigadista en (fecha): \_\_\_\_\_  
 Acción tomada por el Brigadista: \_\_\_\_\_

REFERRAL/COUNTER-REFERRAL FORMS

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MINISTERIO DE SALUD / *Asistencia Municipal*

BOLETA DE REFERENCIA MATERNA USADA POR EL VOLUNTARIO  
HACIA LAS UNIDADES DE SALUD

COPIA DEL BRIGADISTA  REFERENCIA DE MUJERES N <sup>o</sup> . _____	DEL BRIGADISTA A LA UNIDAD DE SALUD REFERENCIA DE MUJERES N <sup>o</sup> . _____	CONTRAREFERENCIA DE MUJERES: N <sup>o</sup> . _____  De la unidad de salud al brigadista
Nombre de la Madre: _____ Edad _____ Comunidad _____ Puesto de salud: _____ Fecha: _____ Brigadista: _____	Nombre de la Madre: _____ Edad _____ Comunidad _____ Puesto de salud: _____ Fecha: _____ Brigadista: _____	Nombre de la Madre: _____ Edad _____ Atendida por: _____ cargo/nombre
MOTIVO DE LA REFERENCIA		Puesto de salud: _____ Fecha: _____ DIAGNOSTICO: _____
Vacuna TT ( ) Papanicolau ( )	Vacuna TT ( ) Papanicolau ( )	_____ _____ _____
Parto ( ) Control prenatal ( )	Parto ( ) Control prenatal ( )	SEGUIMIENTO: _____ _____ _____
Signos de embarazo de riesgo ( )	Signos de embarazo de riesgo ( )	_____ _____ _____
Tiene sangrado ( )	Tiene Sangrado ( )	_____ _____ _____
Ardor al orinar ( ) Hinchazón de los pies ( ) (Infección renal)	Ardor al orinar ( ) Hinchazón de los pies ( ) (Infección renal)	Recibido por el brigadista en: _____ FECHA
Dolor de cabeza ( )	Dolor de cabeza ( )	Acción tomada por el Brigadista: _____ _____ _____
Mareo. Visión borrosa ( )	Mareo, Visión Borrosa ( )	_____ _____ _____
Otro (especifique): _____ _____	Otro (especifique): _____ _____	_____ _____ _____

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*Fax Cover Sheet*



**SIGHT AND LIFE**

**TO:** World Relief  
Mrs Olga Wollinka  
Wheaton, Illinois  
USA

**FROM:** Dr Martin Frigg  
Task Force SIGHT & LIFE  
P.O. Box 2116  
4002 Basel, Switzerland

**FAX:** 001 603 665 0235

**FAX:** +41 61 688 1910

**DATE:** January 29, 1997  
Fg/9709/mcg

**PAGES:** 1 (incl. this page)

Dear Mrs Wollinka,

We thank you for your fax of January 27. We are glad to continue the support you received previously from SIGHT AND LIFE, John Gmünder.

A formal proposal is not necessary but we appreciate to receive a project description as you may already have prepared for other purposes. During the following four project years, we would like to be updated with a progress report and if needed a confirmation of the need of more capsules.

Please let us have the exact shipping address (street name, responsible project leader, telephone and/or fax number). We also would appreciate if at some later stage we could receive a field report and some pictures for our Newsletter.

We hope we could be of help to you and look forward to receiving your final instructions.

Yours sincerely,

Task Force SIGHT AND LIFE

*M. Frigg*  
Dr Martin Frigg

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# LIST OF BASIC MEDICATIONS (HEALTH POSTS)

PROGRAMACION DE MATERIAL DE REPOSICION POR PUESTO DE SALUD  
MEXICO.

CODIGO	NOMBRE GENERICO	U.M	C=MENS.	C=UNID.	C=TOTAL.
01010770	Acido salic. soluc.	fco		4.95	
01010783	Acido undecil. crema	tbe			
01130131	Benzoato de bencilo	fco	30	5.02	
01110304	Gestagenos orales	sbs	189		
01100518	Neoginin	sbs	36	2.50	
01100520	Euginon	sbs	36	1.44	
01100521	Microginon	sbs	215	1.50	
01120105	Oxitetraciclina oftalm.	tbe	4	2.13	
01100520	Cloruro de sodio	"	10	2.13	
04010005	Hojas de bisturi nº 21	Und	6	0.55	
04010007	Hojas de bisturi nº 23	"	3	0.17	
	Lofenenal		72		
04010233	Guantes Qx nº 8	Und	4	3.82	
04010234	Guantes Qx nº 7	"	1	4.50	
04010235	Guantes Qx nº 7	Par			
04010243	Deparadrapo 5"/4"	Und	5	4.26	
04010248	Vendas plasticas 4x5 yds	"	4	2.79	
04010259	Gaza Qx. 36x100 yds	"			
04010260	Aplicad. de madera c/ punta de algod.	"		0.07	
04040274	Termometros orales	"	2	2.33	
04010265	Termometros rectales	"			
04010267	Depresores de madera 6x3/4	"	100	0.03	
04010269	Cinta métrica plástica	"			
04010286	Toallas sanitarias	"			
04010291	Tu os lubricantes	"			
04010327	Condón preservativos	"	200	0.54	
04010324	Algodón absorbente	lbs	1	10.99	10.99
0404027	Clam umbilical	Und			
04050005	Aguja hipoder, metal. 21x1.1/2	Und			
04050004	Aguja hipoder, metal. 21 x 1.1/2	"			
04030017	Jeringa descartable 3 cc	"	50	0.31	
04030018	Jeringa descartable 5 cc	"	60	0.80	
04080102	Peroxido de hidrogeno	fco	1	4.21	
04080109	Cloruro de benzalconio	gln			
04040009	Cat.gut. crom. 2/0 c/a	Und	3	5.83	
04040058	Seda negra trenz. 2/0 c/a	"	4	7.55	

PROGRAMACION DE MEDICAMENTO POR FONDO DE SALUD ( MEXICO )

CDIGO	NOMBRE GENÉRICO	U.M.	CANTIDAD	UNIDAD	C. TOTAL
01010109	Cefalexina	Cap.	600		1.16
01010160	Ampicilina 250 mg x 5 ml.	fcc			
01010170	Ampicilina 500 mg	fcc			
01010500	Trim. sulf. 80x40 mg.	tab	2,000		0.25
01010520	Trim. sulf. 40x200 mg	fcc	70		9.48
01010191	Dicloxacilina 125 mg	fcc	15		6.66
01010710	Nicotina 100,000IU	fcc	21		5.36
01010750	Clorimacol 40% / 1%	fcc	15		5.70
01010820	Cloroquina 200 mg	tab	5,685		0.11
01010830	Primaquina 5 mg.	tab	3,700		0.04
01010840	Primaquina 15 mg	"	2,274		0.21
01020550	Dimenhidrinato 50 mg	tab	360		0.06
01010705	Albendazol	fcc	75		2.43
01020706	Albendazol	tab	400		0.18
01020620	Metronidazol 125 mg	fcc	75		2.98
01020700	Mebendazol 100 mg	tab	510		0.18
01020702	Mebendazol 100 mg	fcc	70		2.90
01050110	Acido folico 5 mg	tab	1,410		0.06
01050110	Salas de hierro 30 mg.	grg			0.03
01050130	Salas de hierro 15 mg	fcc	80		18.38
01060130	Hierro C.A. Ac. Fóllico multiv.	grg	1,500		0.04
01060200	Vit. C.A.D. flavor multiv.	fcc	80		6.33
01060330	Electrolitos orales	sbs	510		0.99
0113383	Difenhidramina	tab	72		0.04
01160280	Acetaminofen gts	fcc	204		0.06
01160280	Acetaminofen 325 mg.	tab	195		2.93
01160290	Acetaminofen 500 mg	tab	1,000		0.05
01190300	Lidocaina 2%	sem	2		1.38

*Handwritten signature or initials*

**LIST OF BASIC MEDICATIONS (HEALTH CENTERS)**

CENTRO DE SALUD LAS AZUCENAS.-

PROGRAMACION

DE

MEDICAMENTO

Y

MATERIALDE

REPOSICON

PERIODICA

CENTRO DE SALUD , LAS AZUCENAS.-

CODIGO	NOMBRE GENERICO	U=M	C=MENS.	C=UNIT.	C=TOTAL.=
01010110	Pen.Proc. 4,000.000 III	Fam	30	3.14	94.2
01010111	Pen.Proc. 8,000.000 UI	fco	200	1.08	216.00
01010132	Pen.Benz. 1,200.000 UI	"	21	1.53	32.13
01010164	Dicloxacilina 125 mg.	"	7	6.66	46.62
01010165	Dicloxacilina 500 mg	Cap	-	0.93	-
01010180	Cefalexina 500 mg.	"	336	1.16	389.76
01010250	Eritromicina 250 mg	fco	5	10.87	54.35
01010260	Eritromicina 500 mg	tab	102	-	-
01010301	Doxiciclina 100 mg	"	100	0.25	25.00
01010400	Estreptomicina 1 gmo.	fam	26	1.80	46.8
01010500	Trim.Sulfa 480. mg	tab	1,500	0.25	375.00
01010520	Trim.Sulfa suspensión	fco	60	9.48	568.8
01010170	Amoxacilina 500 mg	cap	-	0.59	-
01010710	Nistatina suspensión	fco	5	6.36	31.8
01010820	Cloroquina 250 mg	tab	6,000	0.11	660.00
01010830	Primaquina 5 mg	"	700	0.04	28.00
01010840	Primaquina 15 mg	"	5,600	0.21	1,176.00
01020500	Dimenhidrinato	"	144	0.06	8.64
01020602	Tinidazol 500 mg	"	100	0.24	24.00
01020620	Metronidazol 125 mg	fco	60	3.98	238.8
01020705	Albendazol	tab	200	0.18	36.00
	Mebendazol 100 mg	"	660	-	-
01020706	Albendazol suspensión	fco	20	2.43	48.6
01030110	Salbutamol jarabe	"	15	2.04	30.6
01030120	Salbutamol spray	"	5	19.47	97.35
	Aminofilina	amp	10	0.15	15.00
01030158	Teofilina jarabe	fco	15	2.65	39.75
01030300	Isonasida 10 mg	tab	100	0.04	4.00
01030321	Isoniasida +Tiacetazona 450 mg	"	100	0.07	7.00
01030311	I.N.H+Tiacetazona 100/50	"	150	0.02	3.00
01030321	I.N.S+Rifampicina 150/100 mg	Grg	100	0.25	25.00
01030330	Etambutol 400 mg	tab	100	0.20	20.00
01030350	Pirazinamida 500 mg	"	100	0.26	26.00
01030512	Ketotifeno jbe. 1mg/5 ml.	fco	-	6.86	-
01040110	Digoxina 0.25 mg.	tab	90	0.14	12.6
01040510	Isosorbide 5 mg	"	-	-	-
01040520	Isosorbide 10 mg/ oral	"	-	0.05	-
01040420	Epinefrina 0.1 %	Amp	5	0.91	4.55
01060401	Ac.Acetil A.S.A. 100 mg	tab	200	0.03	6.00
	A.S.A. 500 mg	"	-	0.04	-
01040805	Enalapril 20 mg	"	120	0.11	13.2
01040810	Alfametil dopa 500 mg	"	60	0.37	22.2
01040852-	Propanolol 40 mg	"	200	0.05	10.00
01040860	Hidralazina 50 mg	"	-	0.45	-
01050111	Sulf. Ferroso + Ac.Fólico	"	8,000	0.06	480.00
01050130	Sulf.Ferroso gotas	Fco	20	14.32	286.4
01050311	Vitamina K-1	amp	20	1.33	26.6
01060200	Multivitaminas gotas	fco	40	6.33	253.2
01060400	DW en agua 5% x1,000 cc	"	20	5.68	113.6
01060451	Soluc.Hartman 1,000 cc	"	15	6.57	98.55
01060460	SSN 0.9% x 1,000 cc	"	10	5.10	51.00
01060610	Agua bidestilada 5 ml.	amp	150	0.58	87.00
	Cloruro de potasio	"	3	1.61	48.3
	Gluconato de potasio	"	-	-	-
0160830	Electrolitos orales	sbs	950	0.99	940.5
01070120	Furosemida 40 mg	amp	5	0.07	0.35
	Amilorida	"	-	-	-

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MODIGO	NOMBRE GENERICO	U=M	C=MENSUAL	C=UNITAR.	C=TOTAL. =
01070140	Hidroclorotiacida+Amilorida	Tab	100	0.25	25.00
01070420	Haloperidol 100 mg	"	-	0.39	-
	Fenitoína	"	-	-	-
01080130	Difenilhidantoína 100 mg	"	180	0.17	30.6
01080170	Carbamazepina 200 mg	"	540	0.18	97.2
01090121	Lorazepán 1 mg	"	-	0.06	-
	Ergotamina + Cafeína	"	-	-	-
01090100	Diazepán 5 mg	"	40	0.04	1.6
01090520	Haloperidol 5 mg	"	75	1.00	75.00
01100270	Cletrazol 199 mg	Ovulos	40	0.34	13.6
01100520	Neoginón	sbs	80	2.50	200.00
01100521	Microginón	"	20	1.50	30.00
01120105	Oxitetraciclina oft.	Tbe	5	2.13	10.65
01130211	Benzato bencilo	fce	10	3.02	50.2
01130719	Ac. fólico 5 %	tbe	-	4.95	-
01131382	Difenhidramina 25 mg	tab.	100	0.04	4.00
01160220	Acetaminfen 300 mg	Sup.	40	0.44	17.6
01160287	Paracetamol 325 mg	tab	300	0.96	288.00
01160220	Paracetamol gts	fce	60	2.93	17.58
01160290	Acetaminofen 500 mg	tab	5,000	0.05	250.00
01160301	A.S.A. 500 mg.	"	1,000	0.04	40.00
01160310	Indometacina 25 mg	"	500	0.04	20.00
01160330	Ibuprofeno 400 mg	"	500	0.09	45.00
01170120	Hidrocortizona	fam	-	5.47	-
01170461	Glibenclamida	tab	500	0.06	30.00
01190300	Lidocaina 2% 2-25ml.	fce	10	3.47	34.7
01190315	Lidocaina 2% a luc.	cert.	-	1.36	-
01190340	Lidocaina c/Epinefrina 2%	fam	200	5.56	1,112.00
01060820	Bicarbonato de sodio	amp	5	1.85	9.25
	Adrenalina acuosa	"	5	-	-
01040866	Nifedipina 10 mg	amp	50	0.22	11.00
01010130	Fenoterol 5 mg	tab	100	0.45	45.00
01010010	Oxitecina 5 mg	amp	3	2.39	7.17
01100111	Metil-Ergonovina	"	15	1.30	19.5

# LIST OF BASIC MEDICATIONS (HOSPITALS)

Fecha : 29/Jan/1997

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MINISTERIO DE SALUD  
DIR. GRAL DE NORMALIZACION INSUMOS MEDICOS  
REPORTE DE REQUERIMIENTO POR UNIDAD

=====

SILAIS RIO SAN JUAN                      921001.....HOSP. LUIS FELIPE MONCADA

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CODIGO	U.M.	DESCRIPCION DEL PRODUCTO	MENSUAL			ANUAL	
			C\$ C. UNIT.	CANTIDAD	COSTO C\$	CANTIDAD	COSTO C\$
01010100	FAM	BENCILPENICILINA G. CRISTALINA 1.000.000 U.I. POLVO ESTERIL I.V. U.S.P.	1.19	879	1,046.01	10,548	12,552.12
01010110	FAM	BENCILPENICILINA G. PROCAINICA 4.000.000 U.I. A 4.000.000 U.I. POLVO E	2.74	50	137.07	600	1,644.83
01010111	FAM	BENCILPENICILINA G. PROCAINICA 400.000 U.I. POLVO ESTERIL I.M. U.S.P.	1.14	35	39.90	420	478.80
01010132	FAM	BENCILPENICILINA G. BENZATINICA 1.200.000 U.I. POLVO ESTERIL I.M. U.S.	1.33	50	66.30	600	795.61
01010164	FCO	DICLOXACILINA CODICA 125 MG/5 ML, POLVO, P/SUSPENSION ORAL 60 - 100 ML.,	6.66	50	333.17	600	3,998.88
01010165	CAP	DICLOXACILINA CODICA 500 MG CAPSULA U.S.P.	0.91	400	364.00	4,800	4,368.00
01010167	FAM	CLOXACILINA O DICLOXACILINA CODICA 500 MG. POLVO ESTERIL I.V. I.M., U.	1.77	2	3.54	24	42.48
01010180	CAP	CETALEXINA MONOHIDRATO 500 MG. CAPSULA U.S.P.	0.54	420	226.80	5,040	2,721.60
01010188	FAM	CEFTRIAZONA 1 GNO. POLVO LIOFILIZADO I.V., I.M. U.S.P.	67.87	30	2,036.10	360	24,433.20
01010250	FCO	ERITROMICINA ETILSUCCINATO O ESTEARATO 250 MG/5 ML, SUSPENSION ORAL 60	7.44	30	223.14	360	2,677.64
01010260	TAB	ERITROMICINA ESTEARATO 500 MG. TABLETA U.S.P.	0.64	300	192.08	3,600	2,304.91
01010301	CAP	DOXICICLINA HICLATO 100 MG. CAPSULA U.S.P	0.21	720	151.20	8,640	1,814.40
01010311	CAP	CLORANFENICOL 500 MG. CAPSULA U.S.P.	0.60	600	360.00	7,200	4,320.00
01010330	FAM	CLORANFENICOL SUCCINATO SODICO 1 GNO. POLVO ESTERIL I.V. I.M. U.S.P.	5.60	960	5,376.00	11,520	64,512.00
01010340	FCO	CLORANFENICOL PALMITATO 125 MG. BASE / 5 ML, SUSPENSION ORAL 60 - 120	6.33	12	75.96	144	911.52
01010430	AMP	GENTAMICINA SULFATO 80 MG./2 ML. SOLUCION 2 ML. I.M. I.V. INYECTABLE U	0.81	3,000	2,430.00	36,000	29,160.00
01010440	AMP	GENTAMICINA SULFATO 20 MG./2 ML. SOLUCION I.M. I.V. U.S.P.	0.93	1,200	1,116.00	14,400	13,392.00
01010500	TAB	TRIMETOPRIM Y SULFAMETOXAZOL (COTRIMOXASOL) 80 X 400 MG. TABLETA U.S.P	0.15	500	75.21	6,000	902.54
01010520	FCO	TRIMETOPRIM Y SULFAMETOXAZOL (COTRIMOXASOL) 40 X 200 MG./ 5 ML. JARABE	3.72	30	111.46	360	1,337.47
01010710	FCO	NISTATINA 100.000 U.I./1 ML. SUSPENSION ORAL 30 - 60 ML. U.S.P.	6.27	15	94.10	180	1,129.15
01010740	FUCO	CLOTRIMAZOL CREMA TOPICA AL 1 %, 20 - 30 GNO. U.S.P.	2.72	20	54.36	240	652.27
01010800	AMP	CLOROQUINA CLORHIDRATO, 120 MG. BASE X 3 ML. I.M. U.S.P.	0.97	3	2.91	36	34.92
01010820	TAB	CLOROQUINA FOSFATO 250 MG. TABLETA U.S.P.	0.11	500	52.94	6,000	635.33
01010830	TAB	PRIMAQUINA FOSFATO, 5 MG. BASE U.S.P.	0.05	250	12.57	3,000	150.79
01010840	TAB	PRIMAQUINA FOSFATO, 15 MG. BASE U.S.P.	0.07	250	17.15	3,000	205.84
01010701	AMP	ANTIMONIATO DE MGLUCINA 1.5 GNO. SOLUCION 5 ML. I.M.	13.05	28	365.40	336	4,384.80
01020100	FCO	ALUMINIO Y MAGNESIO HIDROXIDO 150 - 300 / 150 - 300 MG. SUSPENSION 180	3.26	60	195.60	720	2,347.20
01020110	TAB	ALUMINIO Y MAGNESIO HIDROXIDO 150 - 300 / 150 - 300 MG. TABLETA	0.04	960	38.40	11,520	460.80
01020153	TAB	CIMETIDINA 400 MG. TABLETA U.S.P.	0.32	1,080	345.60	12,960	4,147.20
01020500	TAB	DIMENHIDRINATO 50 MG. TABLETA U.S.P.	0.06	336	20.16	4,032	241.92
01020510	AMP	DIMENHIDRINATO 50 MG. / 1 ML. SOLUCION I.V. I.M. U.S.P.	3.35	500	1,674.62	6,000	20,095.46
01020602	TAB	TINDAZOL 500 MG. TABLETA	0.17	840	142.80	10,080	1,713.60
01020620	FCO	NETRONIDAZOL 125 MG. / 5 ML. ORAL, SUSPENSION 100 - 120 ML.	3.28	240	787.20	2,880	9,446.40
01020700	TAB	MEBENDAZOL 100 MG. TABLETA U.S.P.	0.22	1,080	237.60	12,960	2,851.20
01020701	FCO	MEBENDAZOL 100 MG. / 5 ML. SUSPENSION 30 ML.	2.22	120	266.40	1,440	3,196.80
01020705	TAB	ALBENDAZOL 200 MG. TABLETA	0.12	144	17.28	1,728	207.36
01020706	FCO	ALBENDAZOL 400 MG. SUSPENSION FRASCO 10 - 20 ML.	2.43	60	145.80	720	1,749.60
01020710	TAB	NICLOSANIDA 500 MG. TABLETA	1.06	12	12.72	144	152.64
01030110	FCO	SALBUTANOL SULFATO (ALCUTEROL) 2 MG. / 5 ML. JARABE 100 - 150 ML.	2.00	10	20.00	120	240.00
01030140	AMP	AMINOFILINA 250 MG. / 10 ML. SOLUCION 10 ML. I.V. U.S.P.	1.41	500	706.50	6,000	3,478.03
01030150	FCO	TEOFILINA 80 MG. / 15 ML. ELIXIR 100 - 120 ML.	2.62	50	130.98	600	1,571.80
01040510	TAB	ISOSCORBIDE DINITRATO SUBLINGUAL 5 - 6 MG. TABLETA U.S.P.	0.09	50	4.48	600	53.76
01040520	TAB	ISOSCORBIDE DINITRATO 10 MG. ORAL TABLETA U.S.P.	0.05	120	6.00	1,440	72.00
01040532	TAB	PROPANOLOL CLORHIDRATO 40 MG. TABLETA RANURADA U.S.P.	0.04	90	3.60	1,080	43.20
01040560	GRG	HIDRALAZINA 50 MG. GRACA U.S.P.	0.12	12	1.44	144	17.28
01040570	AMP	HIDRALAZINA CLORHIDRATO 20 MG. / 1 ML. SOLUCION 1 ML. I.M. I.V. U.S.P.	8.51	15	127.65	180	1,531.80
01050111	TAB	SULFATO FERROSO, 60 O 70 MG. HIERRO ELEMENTAL + ACIDO FOLICO 0.25 MG.	0.05	500	25.00	6,000	300.00
01050120	FCO	SULFATO FERROSO, HIERRO ELEMENTAL 15 MG. / 0.6 ML. SOLUCION 30 ML. U.S	2.34	5	11.70	60	140.40

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MINISTERIO DE SALUD  
DIR. GRAL DE NORMALIZACION INSUMOS MEDICOS  
REPORTE DE REQUERIMIENTO POR UNIDAD

SILAIS RIO SAN JUAN 921001.....HOSP. LUIS FELIPE MONCADA

CODIGO	U.M.	DESCRIPCION DEL PRODUCTO	C\$ C. UNIT.	MENSUAL		ANUAL	
				CANTIDAD	COSTO C\$	CANTIDAD	COSTO C\$
01050200	FAM	HEPARINA SODICA 5.000 U.I. / ML., SOLUCION 5 - 10 ML. S.C. I.V. U.S.P.	7.92	12	95.04	144	1,140.48
01050210	TAB	WARFARIN SODICO 5 MG. TABLETA U.S.P.	0.53	15	7.95	180	95.40
01050320	AMP	PROTAMINA SULFATO 10 MG. / 1 ML. SOLUCION 5 ML. I.V. U.S.P.	17.30	1	17.30	12	207.60
01060171	AMP	TIAMINA CLORHIDRATO 100 MG. SOLUCION I.M. I.V. U.S.P.	2.05	14	28.70	168	344.40
01060190	GRG	RETINOL (VITAMINA "A") 50.000 U.I.	0.10	30	3.00	360	36.00
01060400	FCO	DEXTROSA EN AGUA 5 % SOLUCION ACUOSA 1.000 ML. I.V. U.S.P.	6.99	300	2,097.00	3,600	25,164.00
01060420	FAM	DEXTROSA EN AGUA 50 % SOLUCION ACUOSA 50 ML. I.V. U.S.P.	6.31	50	315.50	600	3,786.00
01060451	FCO	HARTMAN SOLUCION STANDARD 1.000 ML. I.V. U.S.P.	6.75	600	4,049.42	7,200	48,593.08
01060460	FCO	NORMAL SALINA SOLUCION FISIOLOGICA 0.9 % 1.000 ML. I.V.	5.10	200	1,020.00	2,400	12,240.00
01060461	FCO	NORMAL SALINA SOLUCION FISIOLOGICA 0.9 %, 500 ML. I.V.	5.01	50	250.50	600	3,006.00
01060610	AMP	AGUA ESTERIL PARA INYECCION STANDARD SOLUCION 5 - 10 ML. I.V. I.M.	0.55	1,500	822.74	18,000	9,872.84
01060800	AMP	CLORURO DE POTASIO 2 MEQ / 1 ML. SOLUCION 10 ML. I.V. U.S.P.	1.63	300	490.00	3,600	5,879.98
01060801	AMP	SOLUCION HIPERTONICA CLORURO DE SODIO 20 %, 10 ML. I.V. U.S.P.	0.94	12	11.28	144	135.36
01060810	FCO	POTASIO CLUCONATO 20 MEQ / 15 ML. ELIXIR, 180 - 240 ML. U.S.P.	9.88	2	19.76	24	237.12
01060820	AMP	SODIO BICARBONATO 8.4 - 8.5 % SOLUCION 10 ML. I.V. U.S.P.	1.54	150	230.96	1,800	2,771.47
01060830	SGC	SALES DE REHIDRAT. ORAL:(GLUCOSA 20 GMO.,CL.SODIO 3.5 GMO.,CL.POTASIO	1.06	45	47.70	540	572.40
01070130	AMP	FUROSEMIDA 20 MG. / 2 ML. SOLUCION 2 ML. I.M. I.V. U.S.P.	0.82	250	205.00	3,000	2,460.00
01070140	TAB	HIDROCLOROTIAZIDA Y AMILORIDA 50 MG. X 5 MG. TABLETA U.S.P.	0.22	60	13.20	720	158.40
01070150	FCO	MANITOL 20% SOLUCION 250 - 500 ML. I.V.	11.34	5	56.70	60	680.43
01080130	CAP	FENITOINA (DIFENILHIDANTOINA SODICA) 100 MG. CAPSULA O TABLETA	0.09	100	9.00	1,200	108.00
01080140	FCO	FENITOINA (DIFENILHIDANTOINA SODICA) 125 MG. / 5 ML. SUSPENSION 120 ML	9.97	1	9.97	12	119.64
01080170	TAB	CARBAMAZEPINA 200 MG. TABLETA RANURADA U.S.P.	0.21	120	25.20	1,440	302.40
01080200	AMP	SULFATO DE MAGNESIO 10 % SOLUCION 10 ML. I.M. I.V. U.S.P.	1.26	20	25.20	240	302.40
01080220	AMP	DIAZEPAN 10 MG. / 2 ML. SOLUCION 2 ML. I.V. I.M. U.S.P.	9.96	60	57.60	720	691.20
01080230	FAM	FENITOINA (DIFENILHIDANTOINA SODICA) ESTERIL 250 MG. / 5 ML. SOLUCION	11.66	14	163.24	168	1,958.88
01080320	TAB	TRINEXIFENITOILO 5 MG. TABLETA U.S.P.	0.11	60	6.60	720	79.20
01080800	GRG	ERGOTAMINA Y CAFEINA 1 X 100 MG. GRAGEA O TABLETA	0.23	300	70.08	3,600	840.94
01090100	TAB	DIAZEPAN 5 MG. TABLETA U.S.P.	0.01	300	2.64	3,600	31.68
01090121	TAB	LORAZEPAN 1 MG. TABLETA	0.07	100	7.04	1,200	84.46
01090330	TAB	CLORPROMAZINA CLORHIDRATO 100 MG. TABLETA U.S.P.	0.05	30	1.50	360	18.00
01090510	AMP	HALOPERIDOL 5 MG. / ML. SOLUCION 1 ML. I.M. I.V. U.S.P.	1.10	6	6.60	72	79.20
01090610	TAB	AMITRIPTILINA 25 MG. TABLETA U.S.P.	0.05	30	1.50	360	18.00
01090620	TAB	IMIPRAMINA CLORHIDRATO 25 MG. TABLETA U.S.P.	0.05	30	1.50	360	18.00
01100100	AMP	OXITOCINA SINTETICA 5 - 10 U.I. / 1 ML. SOLUCION 1 ML. I.M. I.V. U.S.P	0.99	50	49.50	600	594.00
01100111	AMP	ERGOMETRINA (ERGOVACINA) MALEATO 0.2 MG. / 1 ML. SOLUCION 1 ML. I.M. I	0.80	15	11.99	180	143.84
01100270	OTC	CLOTRIMAZOL 100 MG. OYULO U.S.P.	0.41	100	40.75	1,200	489.01
01100330	TAB	ESTROGENO CONJUGADO (ESTRONA, EQUILINA SULFATO SODICO) 0.625 MG. TABLE	0.27	4	1.08	48	12.96
01100420	AMP	FENOTEROL 0.5 MG./10 ML. SOLUCION 10 ML. I.V. U.S.P.	6.56	1	6.56	12	78.72
01100430	TAB	FENOTEROL 5 MG. TABLETA	0.72	60	43.20	720	518.40
01120105	TUSO	OXITETRACICLINA 0.5 - 1 % UNGUENTO OFTALMICO 3 - 5 GMO. U.S.P.	3.95	15	59.25	180	711.00
01120211	FCO	BLENZOATO DE BENCILO 25 % LOCION TOPICA 120 ML. U.S.P.	5.04	15	75.56	180	906.76
01130500	FCO	PIXIDE ENLORO + ALQUITRAN DE HULLA, SHAMPOO 120 ML.	5.69	3	17.07	36	204.84
01130610	SBE	PERMANGANATO DE POTASIO 0.10 GMO. POLVO SOBRE	1.00	50	50.00	600	600.00
01131302	TAB	DIFENHIDRAMINA 25 MG. TABLETA U.S.P.	0.03	100	3.00	1,200	36.00
01160190	AMP	MORFINA SULFATO 10 MG. O NEPERIDINA 100 MG. SOLUCION 1 - 2 ML. I.M. U.	1.82	10	18.19	120	218.27
01160220	SUP	PARACETAMOL (ACETAMINOFEN) 300 MG. SUPOSITORIO	0.27	100	27.15	1,200	325.85
01160230	FCO	PARACETAMOL (ACETAMINOFEN) 100 MG./ 1 ML. FRASCO GOTERO 15 - 30 ML. U.	2.23	100	223.17	1,200	2,678.05
01160270	TAB	PARACETAMOL (ACETAMINOFEN) 500 MG. TABLETA U.S.P.	0.05	4,000	203.58	48,000	2,442.91

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MINISTERIO DE SALUD  
DIR. GRAL DE NORMALIZACION INSUMOS MEDICOS  
REPORTE DE REQUERIMIENTO POR UNIDAD

SILAIS RIO SAN JUAN 921001.....HOSP. LUIS FELIPE MONCADA

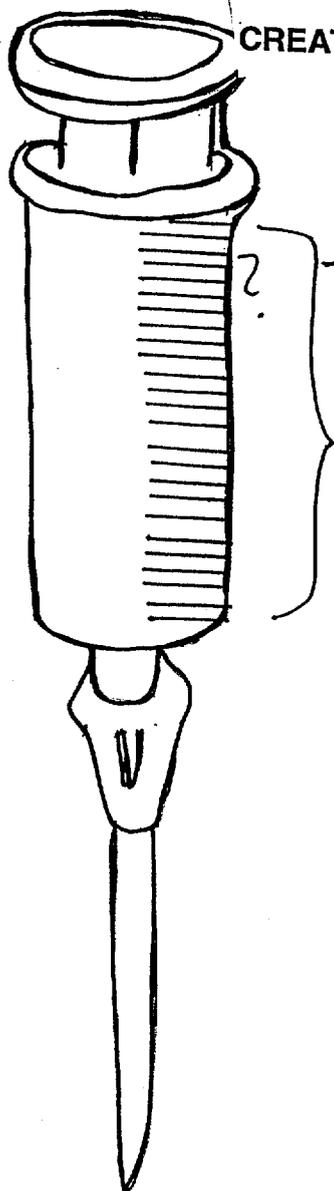
CODIGO	U.M.	DESCRIPCION DEL PRODUCTO	C\$ C. UNIT.	MENSUAL		ANUAL	
				CANTIDAD	COSTO C\$	CANTIDAD	COSTO C\$
0116030	GRG	IBUPROFENO 400 MG. GRAGEA 0 TABLETA	0.10	500	49.24	6,000	590.85
01160451	AMP	DICLOFENAC 75 MG. SOLUCION 3 ML. I.M.	1.36	200	272.95	2,400	3,275.40
01170110	AMP	DEXAMETASONA FOSFATO SODICO 4 MG. / 2 ML. SOLUCION I.M. I.V. S.C. U.S.	1.19	50	59.50	600	714.01
01170120	FAM	HIDROCORTISONA SUCCINATO SODICO 500 MG. BASE, POLVO ESTERIL I.V. U.S.P	19.10	30	573.10	360	6,877.22
01170140	IAB	PREDNISONA 5 MG. TABLETA U.S.P.	0.08	200	16.30	2,400	195.57
01170461	TAB	GLIBENCLAMIDA (GLIBURIDA) 5 MG. TABLETA U.S.P.	0.06	4	0.24	48	2.88
01170550	IAB	LEVOTIROXINA SODICA 0.05 MG. (50 MCG.) U.S.P.	0.27	15	4.05	180	48.60
01170600	TAB	METIMAZOL (TIAMAZOL)*5 MG. TABLETA U.S.P.	0.16	5	0.80	60	9.60
01170910	AMP	GLUCONATO DE CALCIO 1 GHO. / 10 ML. (10 %) SOLUCION 10 ML. I.V. U.S.P.	2.13	50	106.35	600	1,276.22
01180320	CCS	ANTIINFIDICO SUERO, POLIVALENTE, LIOFILIZADO 10 ML I.M.	93.27	30	2,798.19	360	33,578.24
01190100	AMP	ATROPINA SULFATO 0.5 - 1 MG. / 1 ML. SOLUCION 1 ML I.M. U.S.P.	1.08	50	54.00	600	648.00
01190201	FAM	TIOPENTAL SODICO 1 GHO. POLVO ESTERIL I.V. U.S.P.	7.86	20	157.20	240	1,886.40
01190210	FAM	KETAMINA CLORHIDRATO 50 MG. BASE / 1 ML. SOLUCION 10 ML. I.V. INYECTAB	9.63	20	192.60	240	2,311.20
01190300	FAM	LIDOCAINA CLORHIDRATO 2 % SOLUCION 20 - 30 ML. (SIN CONSERVANTES) I.T.	4.86	20	97.20	240	1,166.40
01190400	AMP	SUCCINILCOLINA CLORURO (SUXAMETONIO) 500 MG., POLVO ESTERIL I.V. U.S.P	6.85	20	137.00	240	1,644.00
01190409	AMP	PANCURONIUM 4 MG. / 2 ML. SOLUCION I.V.	3.20	15	48.00	180	576.00
01190500	FAM	PROPERIDOL 2.5 MG. / 1 ML. SOLUCION 10 ML. I.V. U.S.P. (600,10 ML)	3.47	15	52.05	180	624.60
01190510	FAM	FENTANYL CITRATO 0.05 MG. / 1 ML. SOLUCION 10 ML. I.V. U.S.P.	3.43	30	102.90	360	1,234.80
01190600	AMP	NALOXONE CLORHIDRATO 0.4 MG. / 1 ML. SOLUCION 1 ML. I.V. I.M. U.S.P.	4.71	1	4.71	12	56.52
01210182	SBE	CARBON ACTIVADO 30 GHO. POLVO	3.99	4	15.96	48	191.52
** Total Productos ==> ***116				** C\$	35,626.71		427,520.35

RPTPROG.PRG

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## CREATIVE WAYS INFORMATION HAS BEEN FED BACK TO THE COMMUNITY

### Inmunizaciones



- Número de niños de 0-23 meses de la comunidad

a) Niños inmunizados completamente

(se colorean el número de rayas, que representan el total de niños inmunizados).

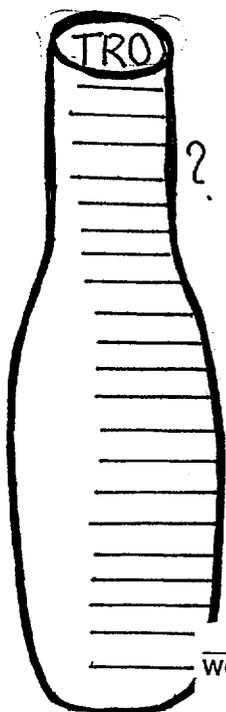
b) Niños con esquema incompleto.

(se dejan el # de rayas, que representan el número de niños que le faltan vacunas para lograr esquema completo).

c) Se le muestra a la comunidad esta representación cada <sup>tres</sup> meses, para valorar el avance, cada ~~vez~~ se cambia de color, para diferenciar los esfuerzos que se van obteniendo en conjunto.

d) Sirve para tomar acciones a corto plazo, para sensibilizar a la comunidad, y para asegurar la salud de los niños y para medir el indicador del Proyecto.

### Uso de TRO



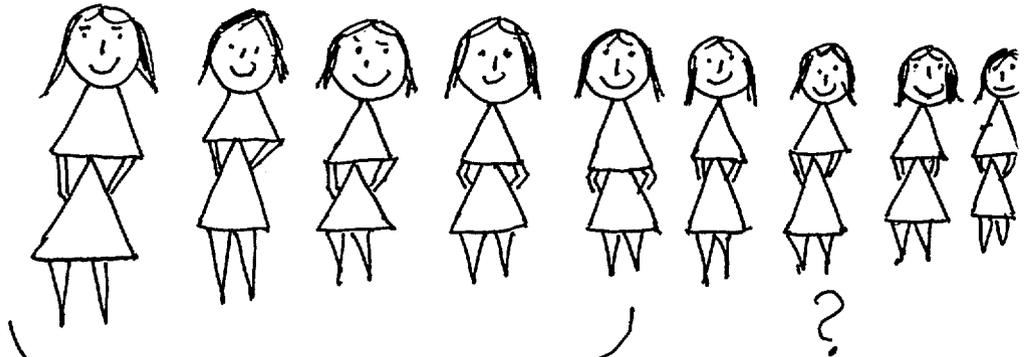
- Niños(as) menores de 5 años que tuvieron diarrea en el trimestre.

• Cada rayita representa los niños que tuvieron diarrea en el trimestre

• Se colorean el número de rayitas que representan el número de niños que recibieron TRO en su episodio de diarrea

• En cada encuentro se harán las comparaciones, para observar el progreso.

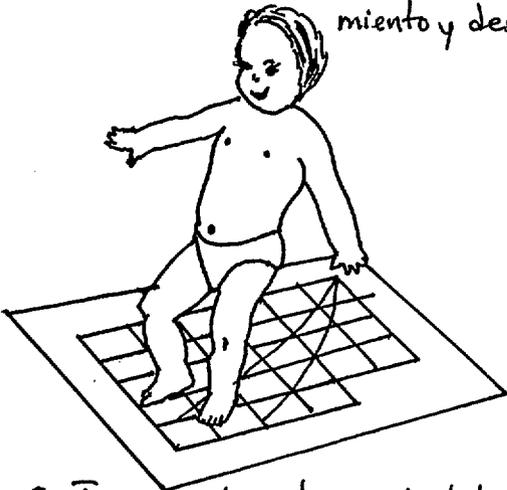
## Toxide Tetánico a mujeres en edad fértil.



- Mujeres coloreadas, representan el número de mujeres inmunizadas con 2 dosis de T.T. en escala de 10 (cada mujer representa 10 mujeres)
- En cada evaluación trimestral se colorear de distintos colores, para medir el progreso de la intervención y hacer comparaciones
- Se sensibilizará a las mujeres para que completen su esquema.

## Monitores del Crecimiento y desarrollo.

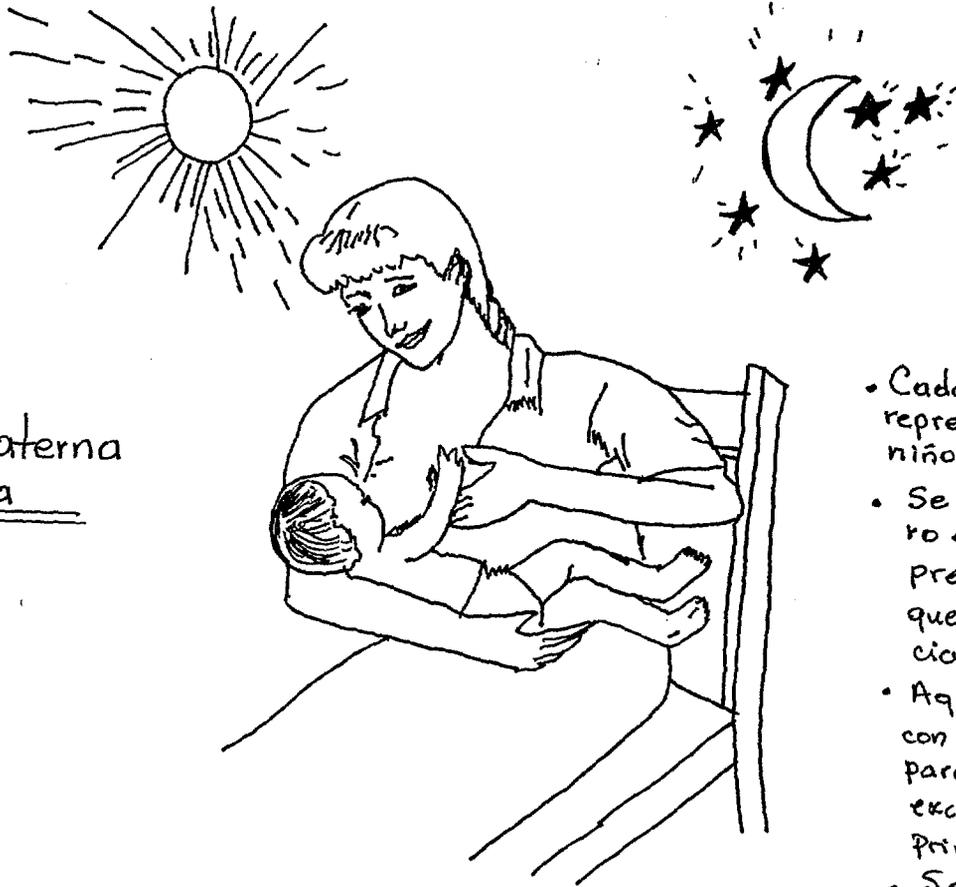
- Cada carita coloreada, representa el número de niños (as) que están asistiendo a Control de Crecimiento y desarrollo.



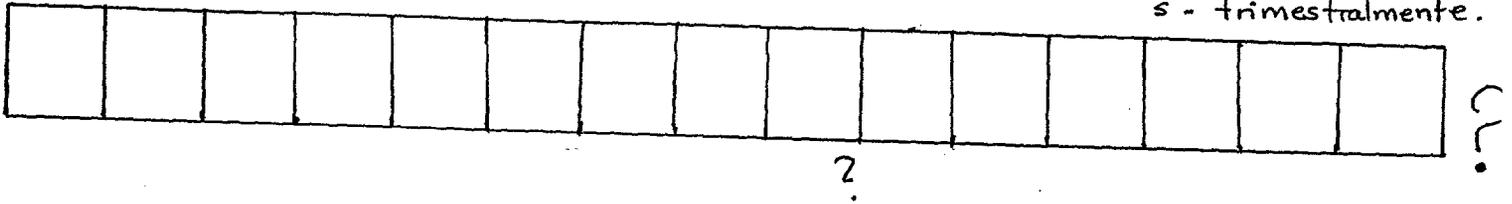
😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
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😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
😊	😊	😊	😊	😊	😊	😊	😊	😊	😊

- Trimestralmente se hará la evaluación y se colorearán en otro color los niños asistentes a C.C.D.
- Se analizará la situación con la comunidad para aumentar la cobertura.

## Lactancia Materna Exclusiva



- Cada cuadro de la barra representa las madres e niños de 0-6 meses.
- Se coloreará el número de cuadros, que representen las mujeres que estén dando lactancia materna exclusiva.
- Aquí se reflexionará con mujeres embarazadas para que den lactancia exclusiva durante los primeros 6 meses.
- Se hará comparaciones trimestralmente.



## Control Prenatal.

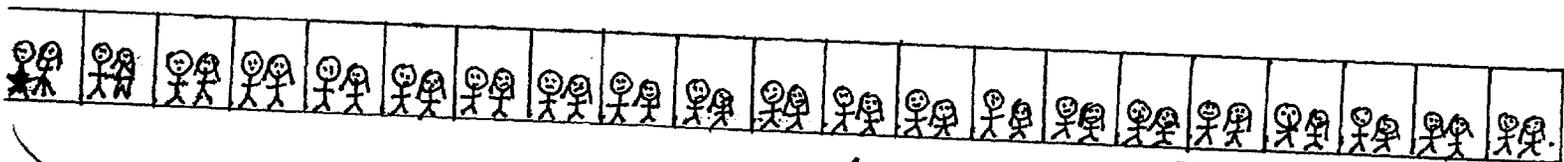


- Cada raya de la barra de la pesa representa el número de mujeres embarazadas de la comunidad.
- Se coloreará el número de rayas que representa el número de mujeres que estarán asistiendo a control prenatal.
- Con este gráfico se sensibilizará a las mujeres que no asisten a control prenatal se explicará la importancia de CPN.
- Cada trimestre se harán las comparaciones, coloreándose de distintos colores.

# Planificación Familiar

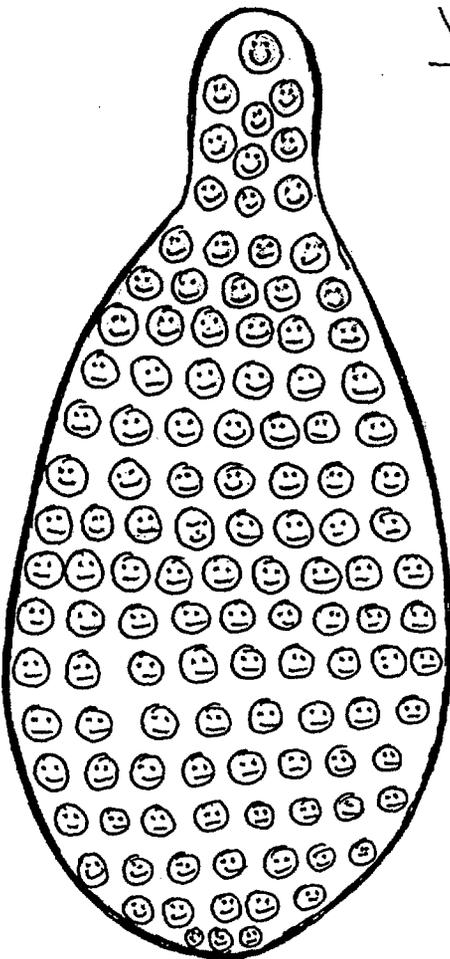


- Las casillas coloreadas representan las parejas que están usando algún método moderno de Planificación familiar.
- Las casillas sin colorear son las parejas que tenemos que concientizar para que planifiquen.
- Trimestralmente se pintarán de otro color los avances en Planificación familiar.



?

## Vitamina A.



- Cada carita representa los niños de 6-59 meses de la comunidad.
- Las caritas coloreadas representan los niños(as) que han recibido vitamina A en el semestre o 2 dosis en el año.
- Las caritas sin pintar serán referidas para su aplicación (C/S, P/M o longadista).

## Nutritional Assessment of Home Gardens

### Child Survival Project, World Relief Nicaragua

Vitamin A-rich foods	Planted in the past semester?		Harvestable in the next semester?	
	No	Yes	No	Yes
Mango	No	Yes	No	Yes
Papaya	No	Yes	No	Yes
Ayote	No	Yes	No	Yes
Spinach	No	Yes	No	Yes
Avocado	No	Yes	No	Yes
Plantains (ripe)	No	Yes	No	Yes
Cantaloupe	No	Yes	No	Yes
Carrot	No	Yes	No	Yes
Maranon	No	Yes	No	Yes

Iron-rich foods	Planted in the past semester?		Harvestable in the next semester?	
	No	Yes	No	Yes
Radish (leaves)	No	Yes	No	Yes
Ayote (flesh & leaves)	No	Yes	No	Yes
Spinach	No	Yes	No	Yes
Kidney beans	No	Yes	No	Yes
Pigeon peas	No	Yes	No	Yes
Cilantro	No	Yes	No	Yes
Cassava (leaves)	No	Yes	No	Yes
Spearmint	No	Yes	No	Yes

Evaluator:

- |   |    |     |
|---|----|-----|
| 1. Was there at least one vitamin A-rich food planted in the last semester?                 | No | Yes |
| 1a. If no, ask the mother if she is interested in receiving seeds for vitamin A-rich foods. |    |     |
| 1b. If yes, encourage her to continue caring for those plants.                              |    |     |
| 2. Was there at least one iron-rich food planted in the last semester?                      | No | Yes |
| 2a. If no, ask the mother if she is interested in receiving seeds for iron-rich foods.      |    |     |
| 2b. If yes, encourage her to continue caring for those plants.                              |    |     |

- |   |    |     |
|---|----|-----|
| 3. Is there at least one harvestable vitamin A-rich food for the next quarter?  | No | Yes |
| 3a. If no, ask if she is interested in receiving seeds for vitamin A-rich foods which will be harvestable in the next semester. |    |     |
| 3b. If yes, encourage her to harvest them and provide her with ideas/recipes for how to prepare the food.                       |    |     |
| 4. Is there at least one harvestable iron-rich food for the next quarter?   | No | Yes |
| 4a. If no, ask if she is interested in receiving seeds for iron-rich foods which will be harvestable in the next semester.      |    |     |
| 4b. If yes, encourage her to harvest them and provide her with ideas/recipes for how to prepare the food.                       |    |     |

If the mother is interested in receiving seeds, make arrangements to distribute them.

WABA GLOBAL FORUM CHILDREN'S HEALTH, CHILDREN'S RIGHTS: ACTION FOR THE 21ST CENTURY Bangkok, Thailand. 2-6 December 1996.

## "I DON'T KNOW ANY" : UNDERSTANDING EXCLUSIVE BREASTFEEDING FROM THE PERSPECTIVE OF NICARAGUAN WOMEN

Janet Irene Picado, MS. Division of Nutritional Sciences, Cornell University, Ithaca, New York.

### Introduction

The phrase "I don't know any" in the title refers to a response given by a young Nicaraguan mother during an interview on breastfeeding (Picado and Carrillo 1995). She had been asked whether she knew of women who fed their infants only breastmilk, without additional food or beverages, but she responded "I don't know any". This statement is an accurate reflection of exclusive breastfeeding practices (breastmilk as the only source of food or beverage) in Nicaragua, where breastmilk is highly valued as a food for infants, but exclusive breastfeeding is rare. Learning how to promote exclusive breastfeeding to achieve current recommendations is a priority.

This paper will present current information on the duration of exclusive breastfeeding in Nicaragua, as well as the results of qualitative research to explore the factors that promote, enhance or interfere with exclusive breastfeeding.

### Background information on Nicaragua

Nicaragua is the largest of the Central American countries, with a surface area of 120,254 square kilometers. To the north, Nicaragua limits with Honduras, and borders on the south with Costa Rica. The Pacific ocean lies on the western coast, with the Atlantic on the eastern coast. The country's population is currently 4.1 million, with a population density of 33 inhabitants per square kilometer. The population is mainly concentrated on the Pacific side of the country, and more than half (about 60%) is urban (Banco Mundial 1993). Nicaragua is known for its warm climate, as well as the numerous lakes, volcanoes and mountains spread along its territory.

### Breastfeeding incidence and duration

In Nicaragua, most women breastfeed their infants at some point. A recent "Family Health Survey" that was conducted in all areas of the country except the Atlantic region interviewed a sample of 7,150 women between the ages of 15-49 years (Stupp et al. 1993). Of the live infants born to these women during the five-year period previous to the interview, 92% had been breastfed. This proportion was higher in rural areas. The same study found that the mean duration of any breastfeeding (period from birth until an infant is completely weaned from the breast) was 12.3 months, and only 0.6 months for exclusive breastfeeding. Mean duration of exclusive and any breastfeeding was longer for rural women, and was inversely related to educational level and socio-economic status (Stupp et al. 1993).

Managua, the country's capital, shows a similar breastfeeding pattern. A study by the author done in 1993 examined breastfeeding duration in a sample of 556 mothers of infants under one year of age living in low-income neighborhoods (Picado 1994). Most infants were breastfed (about 93%) and breastfeeding duration among these infants was further studied using survival analysis. The

results of the survival analysis for breastfeeding duration show that most infants ( 97%) were breastfeeding one week after birth, however only about half were exclusively breastfeeding. By 12 weeks the proportion still breastfeeding dropped to about 70%, with only 4% of infants doing so exclusively.

In summary, most Nicaraguan women breastfeed, but studies have found only a small proportion breastfeed exclusively, and many wean their infants before three months of age. Rural, less educated, and lower-income women have a longer duration of exclusive breastfeeding in comparison to other women.

### Motivation and focus of qualitative research

Nicaragua's Ministry of Health recommends six months of exclusive breastfeeding for infants, thus a huge gap exists between the recommendation and the actual practices of mothers. This has motivated more research to learn how to improve current promotion efforts as well as programs to support breastfeeding mothers, especially regarding exclusive breastfeeding.

The results described here integrate research carried out in 1993 and 1995-6, and methods included focus groups and in-depth interviews. Focus groups were conducted in low-income neighborhoods of Managua and several rural communities of Matagalpa in the northern part of Nicaragua. Groups interviewed included breastfeeding mothers of infants under one year of age as well as fathers and grandmothers of infants. In-depth interviews were conducted in a single low-income neighborhood of Managua, with exclusive and non-exclusive breastfeeding mothers.

The main focus of the research has been to describe practices, attitudes, beliefs and values related to breastfeeding, and in particular, to identify the factors that promote, enhance or interfere with exclusive breastfeeding. Following is a description of some of the main findings, as well as a discussion of the implications for breastfeeding promotion programs in Nicaragua.

### What do mothers and other family members value about breastmilk?

The high value and positive view of breastmilk as a food for infants is universal, in rural as well as urban areas. Breastmilk is valued for many different reasons: it prevents illness (especially diarrhea); it's cleaner; it helps with birth spacing; it is more economical; it promotes a child's growth; it promotes a better mother-child relationship; and, very importantly, it is the only food a sick child will take. One of the participants described her positive feelings and attitudes while breastfeeding: Carmen: "...[breastfeeding] is important because they don't get sick, I feed my child day and night, I cuddle him, he looks back at me; you don't feel the same giving the bottle, all mothers should breastfeed, there's more closeness than if you just bottlefeed."

### Why is exclusive breastfeeding rare?

If breastfeeding is so frequent and so highly valued, why is exclusive breastfeeding so rare? As mentioned before, exclusive breastfeeding is not a part of the cultural norms for infant feeding. Exclusive breastfeeding as recommended by the Ministry of Health is not a concept that is understood by the mothers or other participants such as fathers or grandmothers. According to interview participants, to feed a child "only breastmilk" means that breastmilk is the only source of milk for the infant, but does not exclude other beverages or foods.

To feed "only breastmilk" is not viewed positively, and many attitudinal barriers exist toward this behavior. For example, the belief that mother's milk alone cannot sustain the infant is generalized, and following is an example from Juan, father of a small infant:...it's always been the breast because the breast is what really nourishes a child and keeps him in shape and aside from that you can combine it, giving him "Gerber" [brand name of processed baby food]... because only breastmilk really does not keep-up the weight so to keep the child from becoming underweight you have to combine breastmilk with other soft foods...

Other strong factors for not breastfeeding exclusively are that breastfeeding too much can make the mother thin, and the perception that if a mother has a poor diet, she cannot breastfeed, or her milk is inadequate or insufficient. In general mothers do not perceive that they have any control over their own milk production except through what they eat. These beliefs are closely related to the concept of how milk is formed. Both rural and urban participants believed that milk forms from the mother's blood, and blood in turn is made from what the woman eats and drinks. That is why a mother who breastfeeds "too much" becomes weak, since the baby is "sucking her blood"; therefore, a mother with a poor diet "cannot have milk".

Other barriers are: the belief that feeding only breastmilk predisposes an infant to refuse other foods later; the refusal by the mother to feed frequently and on-demand; and the mother's feeling uncomfortable with the idea that the infant is completely dependent on the maternal presence, as required of exclusive breastfeeding.

#### What is the most common breastfeeding practice?

The most common breastfeeding practice is combining breastmilk with other foods or beverages. Pre-lacteal feedings are common. Urban mothers usually start adding other beverages such as water, "fresco" and milk to the infant's diet about two weeks after birth. The time of introduction of food varies, but usually by three months infants are receiving a variety of foods. Rural women supplement breastmilk with sugared herbal teas as well as cow's milk, but usually delay food until the third or fourth month. Regardless of early supplementation, many women breastfeed for prolonged periods.

Which factors reinforce these practices? Several factors contribute to these common breastfeeding practices, and become barriers to exclusive breastfeeding.

#### Attitudes toward other milk and breastmilk supplements

One important issue is that cow's milk in different forms (whole powdered milk, infant formula, fresh pasteurized, or fresh, non-pasteurized) is also valued highly as an infant food, and supplementing breastmilk with other milk is considered compatible and necessary. Even grandmothers advocated supplementing breastmilk, though they differed from younger women in the type of supplements recommended. While younger urban mothers mainly supplemented with whole powdered milk or fresh pasteurized milk, rural women, and older urban women valued fresh cow's milk or "atoles". One grandmother, Ofelia, mentioned the following: ".....Sorghum atol is a good food for babies....you just have to be careful to feed it to them very well cooked..."

### Factors that motivate the early introduction of water and "fresco" or teas

Urban mothers start offering water and fresco during the first few weeks after birth. There is a strong belief that infants feel thirst just as adults, and therefore need water. Other motivations include: fresco "refreshes" the stomach; water is needed because of the heat; the infant expresses a desire for water, and "likes" it; it is needed for the infant's urinary system; and the infant must become "accustomed" to it. Rural women offer herbal teas to supplement breast milk if they are too poor to obtain cow's milk.

### Factors that motivate the early introduction of foods

Food must be introduced early because after a certain age, milk does not "sustain", and a child needs food to grow well. Mothers and other family members also interpret different infant behaviors as the child "asking" for food or "wanting" food. There is a strong belief in the need to accustom infants to a variety of foods from an early age on, motivated by the fear that the child will refuse food later on.

### How are mothers who are exclusive breastfeeders different?

"Traditionalists" and "Innovators"

Taking into account the huge gap existing between the recommendation and the actual practices of mothers as well as the cultural barriers to exclusive breastfeeding, the question arises: "Will it ever be possible to change women's behavior with regards to exclusive breastfeeding?"

While conducting in-depth interviews in a Managua neighborhood, the author was able to identify mothers who actually practiced exclusive breastfeeding, contrary to what most women do. Not all of these mothers practiced exclusive breastfeeding for the same time period, as duration ranged from three to six months. It is interesting to note that all women who breastfed exclusively planned to do so but experimented with supplementing at some point during the course of exclusive breastfeeding. Of those mothers who breastfed exclusively over three months two prototypes were identified: the "traditionalists" and the "innovators".

Both prototypes of women were very different from mothers with the more frequent type of breastfeeding practices. Exclusive breastfeeders were strongly committed to only breastfeeding, and believed a mother should put the baby's need over her own. Thus, their principal motivation was the baby's welfare. As opposed to the mainstream, their attitudes toward bottles and other milk was very negative and they were not bothered by negative comments about exclusive breastfeeding from other people. Other differences included: a more trusting and positive view of what health workers say; and a better ability to cope with the frequent, on-demand feeding pattern of the breastfed baby or other situations such as a crying baby.

However, the two prototypes differed in how they learned about and decided to breastfeed exclusively. "Traditionalists" belonged to families that had a tradition of exclusive breastfeeding, and did not have the custom of using bottles. It was the natural thing to do. It appears that these type of women are in the minority. "Innovators" on the other hand, learned about exclusive breastfeeding through community groups, the health system or other women and were motivated by the desire to "experiment" or do something different. In most cases these women had to overcome family opposition, even insults, to keep their commitment to exclusive breastfeeding. Some were also motivated by a negative experience with a previous child who had been

bottlefed. During the course of lactation, these mothers formed a strong commitment to exclusive breastfeeding, since they felt that their expectations of having a health, well-nourished baby without having to spend on extra milk were confirmed.

Among the mothers who breastfed exclusively over three months, there were exceptions that did not fit either of the previous categories. These were mothers who practiced exclusive breastfeeding because of economic hardship. Although they would prefer to feed supplements as well, they were unable to do so because of economic hardship.

### Implications

Promoting exclusive breastfeeding implies introducing a new behavior, that is very different from current infant-feeding practices. Since mothers' negative view of exclusive breastfeeding is shared by other family members, messages and educational efforts must include them as well. It cannot be assumed that messages recommending six months of exclusive breastfeeding are understood by mothers as intended. Based on this knowledge, messages in Nicaragua have recently been modified, and now explain exactly what it means to "breastfeed exclusively" (e.g. your breast is enough for six months; the baby does not need other foods, water, fresco or other milk).

Mothers need to learn and believe that they have control over their milk production. This in turn may help overcome the concept that "milk does not sustain". A recent campaign in Nicaragua has started emphasizing this point.

Care must be taken regarding the content of messages regarding maternal diet and breastfeeding. In fact, messages such as "breastfeeding mothers need to eat all types of foods" may be doing more harm than good. If the basic diet of the mother is corn and tortillas, a more useful message might be: "continue eating everything in your regular diet and add two extra tortillas".

In helping mothers adopt a new behavior such as exclusive breastfeeding, interpersonal, woman-to-woman approaches may be important. Women who currently do not exclusively breastfeed may not trust health workers, but will listen to a neighbor or older woman. Also women's group may be better prepared to respond to the doubts and needs of young mothers than the current health system.

In continuing to reinforce and support the generally positive view of breastfeeding in Nicaragua while trying to create positive attitudes toward exclusive breastfeeding, two messages may be important: that exclusive breastfeeding is more economical than introducing other milk and foods and that a sick baby still takes to the breast.

Previously, the question was asked: "Will it ever be possible to change women's behavior with regards to exclusive breastfeeding?" These results point to a positive response, as mothers with encouragement and support have become successful and committed exclusive breastfeeders, despite all types of cultural barriers. Hopefully in the future, with continued support, promotion and protection of breastfeeding, the young mother's response "I don't know any", mentioned at the beginning, will refer to a bottlefeeding mother and not to mothers who exclusively breastfeed.

### Acknowledgments

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## **CURRICULUM VITAE**

### **DATOS PERSONALES**

**NOMBRE:** Corina Rodríguez Rodríguez

**LUGAR Y FECHA DE NACIMIENTO:** La Trinidad, Estelí,

**ESTADO CIVIL:** Casada

**DIRECCION:** Villa Flor Norte, casa # 935.

**NACIONALIDAD:** Nicaragüense

**IDENTIFICACION:** INSSBI # 1016002

### **EDUCACION**

8/8/83 - 12/86 Universidad Nacional Autónoma, Managua  
Medicina

3/87 - 11/88 Contabilidad (contador privado)

3/77 - 12/82 Bachiller en Ciencias de la Educación  
con mención a Química y Biología.

3/71 - 12/76 Educación Elemental.

### **CURSOS Y SEMINARIOS RECIBIDOS**

Taller sobre organización del programa EDA ADRA/CASA

Taller sobre organización Programa IRA ADRA/CASA

Taller de nutrición, Universidad de Loma Linda  
California ADRA/CASA

Taller sobre conocimientos y prácticas de Supervi-  
vencia Infantil y supervisión de Encuesta de base  
(Universidad de John Hopkins) ADRA/CASA

Seminario de Supervivencia Infantil ADRA/SUP. INF.

Seminario de Lactancia Materna, México D.F, Auspi-  
ciado por OPS/UNICEF, Nov. 1991 ADRA/SUP. INF

Seminario de Planificación Familiar, impartido por  
PROFAMILIA/NIC. 1,992 ADRA/SUP. INF

Taller sobre Lactancia materna por AHLACMA,  
Honduras. 1,993 ADRA/SUP. INF

Taller sobre Metodología Participativa de la  
enseñanza 1.994 AUXILIO MUNDIAL

Encuentro sobre la erradicación de la polio en Nicaragua, Agosto 1,994 MINSA/OPS.

Seminario sobre medicina natural alternativa . CECALI, Esteli, Auxilio Mundial.

Seminario sobre Lactancia Materna, Juigalpa, Chontales, Auxilio Mundial.

Taller sobre 'Una Huella Imborrable, para adolescentes, FNUAP, Mayo 1,996.

Taller sobre Atención Integral a la Mujer y la Niñez , MINSA/MSH

Taller de Actualizaciones sobre Monitoreo del Crecimiento y desarrollo, Impartido por el Dr Mario Lacayo MINSA/MSH.

Taller sobre Micronutrientes y Lactancia Materna, Junio, 1,996 .Departamento de Nutrición del MINSA/MSH

Taller sobre gerencia en IRA (ALRI) a nivel de facilitadores, MINSA/MSH

Taller sobre actualizaciones de Malaria , Julio 1,996 MINSA/OPS

Taller sobre Facilitadores Docentes, Enero 96, MINSA, SILAIS/MSH/UNICEF

Taller sobre Lactancia Materna y Grupos de Apoyo, UNICEF/WELLSTART/MINSA, Mayo, 1,996

Taller sobre Jornadas Nacionales de Salud, Marzo 96 MINSA.

Taller sobre cómo elaborar un módulo de Lactancia Materna, 19-22 Marzo, WELLSTART/AID/MINSA.

Taller sobre educación comunitaria en salud y desarrollo comunitario, Abril 96, Dpto. de Participación comunitaria. MINSA/MSH

## **MENCIONES**

Participación activa en desastres naturales en la zona Atlántica de Nicaragua, como organizadora de equipos de rescate, 1,987, 1,991

Consultoría sobre sistemas de información en proyecto Urbano de Supervivencia Infantil en Tegucigalpa, Honduras, Noviembre 1,992.

Elaboración de Manual para Promotores integrales de salud. MINSA/SILAIS, Julio 1,995

Elaboración de guía metodológica para facilitadores docentes en la formación de promotores

integrales de salud, Agosto 1,995

Elaboración de rotafolios de salud reproductiva y Materno infantil . MINSA/SILAIS, Agosto, 1996.

Elaboración de protocolo sobre proyecto de formación de Promotores integrales de salud. MINSA/SILAIS Managua, Septiembre 1,995

Coordinación con MINSA a todos los niveles en la implementación y desarrollo de programas de Supervivencia Infantil, en los Departamentos de Managua, Madriz, Nueva Segovia, Esteli, Bluefields y Río San Juan. desde 1,990 a 1,997

Elaboración conjunta del sistema de información, referencia y contrarreferencia con el MINSA, en los Departamentos de Madriz y Managua.

Capacitaciones a personal de MINSA en Supervivencia infantil en los Proyectos de Sup. Inf. de ADRA, y Auxilio Mundial.

Elaboración y ejecución de proyecto Nutricional " El Porcal" Madriz en base al afrecho de arroz, con buenos resultados en la recuperación nutricional.

Formación de Microempresa "El Porcal" para la elaboración y comercialización de productos a base de afrecho de arroz.

He impartido dos talleres sobre salud, higiene y Nutrición al FONIF. ( Fondo Nicaragüense de la niñez y la familia) y el PMA ( Programa Mundial de alimentos).

Réplica de talleres de Control de crecimiento de desarrollo y micronutrientes a personal de salud de 7 áreas del SILAIS Managua ( 7 talleres) en conjunto con el personal del SILAIS Managua

Réplica de talleres de Atención integral a la Mujer y la Niñez (2 talleres) en 2 áreas de salud del SILAIS Managua, en conjunto con personal de salud de MINSA.

Capacitación de facilitadores docentes del Proyecto MOLISV (Unión Europea) del 27 al 29 de Marzo, formación de 100 facilitadores del departamento de Enfermedades de transmisión vectorial del SILAIS Managua.

Participación en la evaluación del análisis del desempeño en la educación permanente y elaboración del plan 1,996, MINSA/SILAIS, Managua.

Taller sobre IRA (ALRI) a voluntarios de Cuerpo de Paz, Junio, 96, Hotel Jinotepe.

Réplica del taller de Cierencia de IRA a personal de salud (Médicos y enfermeras) en 6 áreas de salud del SILAIS Managua, Julio - Agosto 1,996.

Formación de 500 facilitadores docentes en todas las áreas del SILAIS Managua, en conjunto con el equipo técnico docente del SILAIS, en áreas de: Comunicación, Metodología participativa de la enseñanza, utilización de medios de enseñanza, Técnicas de enseñanza y planificación de actividades docentes. de Mayo a Diciembre 1,996.

Taller sobre metodología participativa de la enseñanza a personal del SILAIS de León y movimiento comunal, como facilitadores docentes, en coordinación con el SILAIS Managua y Proyecto ACSUR Las Segovias.  
Noviembre 1,996.

Taller sobre Metodología participativa de la enseñanza a personal del SILAIS de Chinandega y Movimiento comunal, como facilitadores docentes, en coordinación con el SILAIS Managua y el Proyecto ACSUR Las Segovias, en Noviembre 1,996.

Talleres a personal de comedores infantiles del PMA (Programa Mundial de alimentos) en la cuarta y segunda región del país, sobre seguridad alimentaria. Junio, 1,996.

Asesor Técnico del equipo de Docencia del SILAIS Managua, MINSA/Auxilio Mundial

### **EXPERIENCIA LABORAL**

De 1,994 a 1,997 Auxilio Mundial Nicaragua, desempeñándome como Coordinadora de Área en el Distrito 6 de Managua y como Asesor técnico del equipo docente del SILAIS Managua.

De 1,990 a 1,994 ADRA (Agencia de Desarrollo y recursos asistenciales Adventista) desempeñándome como supervisora de área en proyectos de Emergencia y Supervivencia Infantil.

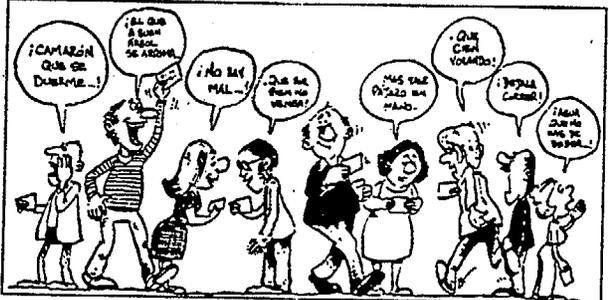
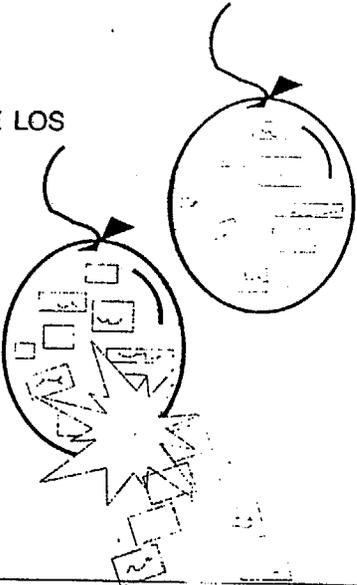
1,989. CAS (Colegio Secundario de Matagalpa) como profesora de Química, Biología y Naturales.

### **PERSONAS QUE ME RECOMIENDAN**

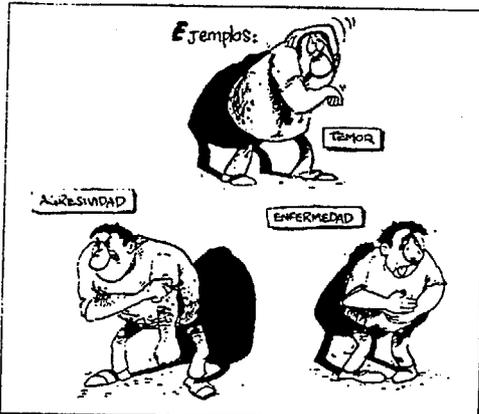
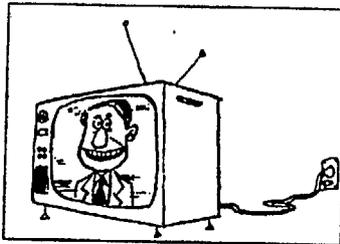
Lic. Aminta Ferrufino, Directora PSI, Auxilio Mundial

Dr. Alberto Araica, Development Associates/AID Nicaragua

Dra. Olga Sequeira, Sub directora docente SILAIS, Managua.

HORA	TEMA	DINAMICA	PROCEDIMIENTO
8:00 A 8:15	BIENVENIDA Y PRESENTACION DE LOS PARTICIPANTES	LOS REFRANES	SE ELABORAN REFRANES DIVIDIDOS EN DOS PARTES , SE ASIGNA UN TROZO DE REFRAN A CADA PARTICIPANTE, LOS REFRANES DEBEN REVOLVERSE ANTES DE REPARTIRLOS, CADA PERSONA DEBE BUSCAR LA FRASE QUE COMPLETE EL REFRAN AL ENCONTRARLA, TIENEN 5 MINUTOS PARA CONOCERSE, POSTERIORMENTE CADA PAREJA HACE SU PRESENTACION CON EL COMPAÑERO QUE ACABA DE CONOCER.
			
8:15 A 10:00	PLANIFICACION FAMILIAR <ul style="list-style-type: none"> <li>● IMPORTANCIA</li> <li>● EDAD PARA EMBARAZARSE</li> <li>● ESPACIAMIENTO DE LOS EMBARAZOS</li> </ul>	GLOBOS EXPLOSIVOS	<ol style="list-style-type: none"> <li>1. SE ELABORAN PREGUNTAS DEL CONTENIDO DE LOS TEMAS.</li> <li>2. SE INTRODUCEN EN CHIMBOMBAS, SE INFLAN Y SE LES PONE EN HILO LARGO, SI EL GRUPO ES MUY GRANDE Y EL NUMERO DE PREGUNTAS ES MUY PEQUEÑO, PUEDEN HACERSE PAREJAS.</li> <li>3. A UN MIEMBRO DE LA PAREJA SE LE AMARRA LA CHIMBOMBA A LA CINTURA, Y EL QUE TIENE LA CHIMBOMBA AMARRADA AGARRA AL OTRO POR LA CINTURA , CADA PAREJA NO DEBE SOLTARSE Y DEBE ROMPER LAS CHIMBOMBAS DE LAS OTRAS PAREJAS PERO NO DEJAR QUE LE ROMPAN LA SUYA.</li> <li>4. AL ROMPERSE DEBEN RECOGERSE LOS PAPELITOS CON LAS PREGUNTAS Y CADA PAREJA DEBE CONTESTAR LA PREGUNTA QUE CORRESPONDIO.</li> </ol>
			

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HORA	TEMA	DINAMICA	PROCEDIMIENTO
			5. EL COORDINADOR DE LA ACTIVIDAD DIRIGE EL PROCESO DE RESPUESTAS Y COMPLEMENTA AL FINAL DE CADA UNA.
10:00 A 10:15	RECESO		
10:15 A 12:00	METODOS DE PLANIFICACION FAMILIAR	PANTONIMA  	<ol style="list-style-type: none"> <li>1. SE DIVIDE EL GRUPO EN SIETE SUBGRUPOS.</li> <li>2. A CADA SUBGRUPO SE LE PIDE QUE ESCOJA UN PAPELITO, DENTRO DE LOS CUALES HAY UN NOMBRE DE UN METODO DE PLANIFICACION FAMILIAR.</li> <li>3. CADA SUBGRUPO DEBE REPRESENTAR SIN HABLAR EL METODO QUE LES CORRESPONDIO, CON MIMICAS HASTA QUE EL RESTO DEL GRUPO LOGRE IDENTIFICAR DE CUAL METODO SE TRATA, DEBEN INCLUIR TAMBIEN LAS PERSONAS QUE PUEDEN USARLOS Y LAS COMPLICACIONES QUE PUEDEN CAUSAR.</li> </ol>
12:00 A 1:00	ALMUERZO		
1:00 A 3:00	METODOS DE PLANIFICACION FAMILIAR	EXPOSITIVA DEMOSTRATIVA  	<p>SE MOSTRARA UN VIDEO DE PLANIFICACION FAMILIAR, AL FINAL DEL VIDEO EL RESPONSABLE DE LA ACTIVIDAD, PROBLEMATIZARA Y ACLARARA LAS DUDAS, DE LOS PARTICIPANTES.</p> <p>SEGUIDAMENTE SE DARAN MUESTRAS DE CADA METODO DE PLANIFICACION FAMILIAR, PARA QUE LOS CONOZCAN.</p>
3:00 A 3:15	RECESO		

HORA	TEMA	DINAMICA	PROCEDIMIENTO
3:15 A 4:00	CONTINUACION DEL TEMA ANTERIOR		
4:00 - 4:30 PM	PREVENCION DEL CANCER CERVICO UTERINO.  PREVENCION DEL CANCER DE MAMAS	EXPOSITIVA	<ol style="list-style-type: none"> <li>1. EL COORDINADOR DE LA ACTIVIDAD EXPLICA LA IMPORTANCIA DEL PAPANICOLAU Y DEL EXAMEN DE MAMAS Y LAS ACITIVIDADES DEL PROMOTOR.</li> <li>2. DURANTE EL DESARROLLO DA CABIDA A PREGUNTAS Y RESPUESTAS.</li> </ol>
4:30 - 5:00 PM.	ACTIVIDADES DEL PROMOTOR	PAPELOGRAFO	<ol style="list-style-type: none"> <li>1. SE DIVIDE AL GRUPO EN 4 SUB-GRUPOS.</li> <li>2. CADA GRUPO ESCRIBIRA LO QUE CREE SERAN LAS ACTIVIDADES DEL PROMOTOR EN UN PAPELOGRAFO.</li> <li>3. SE EXPONE EN PLENARIO.</li> </ol>



HORA	TEMA	DINAMICA	PROCEDIMIENTO
5:00 A 5:30	EVALUACION DEL TEMA	BINGO 	<ol style="list-style-type: none"> <li>1. SE PREPARAN CUATRO O CINCO CARTILLAS COMO CHALUPA QUE CONTENGAN EN CADA CUADRO PALABRAS CLAVES RELACIONADAS CON EL TEMA.</li> <li>2. EN TIRAS PEQUEÑAS DE PAPELOGRAFO, SE ESCRIBEN PREGUNTAS CUYA RESPUESTA SEA LA O LAS PALABRAS CLAVES QUE VAN ESCRITAS EN LAS CARTILLAS DEL BINGO.</li> <li>3. QUIEN LLENE PRIMERO SU CARTILLA ES EL GRUPO GANADOR.</li> </ol> <p>OJO: EL GRUPO DEBE CONTESTAR LA PREGUNTA ANTES DE PONER UNA FICHA O SEMILLA SOBRE LA RESPUESTA A LA PREGUNTA.</p>
5:00 A 5:30	EVALUACION DEL TALLER	DIGALO EN UNA PALABRA	CADA PARTICIPANTE EXPRESA COMO SE SINTIO EN EL TALLER. ¿QUE ES LO QUE MAS LE GUSTO?

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# PLANIFICACION FAMILIAR

## ¿Qué es Planificación familiar?

Es una decisión consciente, voluntaria y responsable de la pareja, de la mujer, o del hombre, para decidir el número de hijos que puede tener y cuándo tenerlos, es un derecho y nadie puede prohibirlo.

Esa decisión debe ser **libre**, porque nadie puede ni debe obligar a las personas a tomarla. También debe ser **responsable**, pues cuando las personas piensan en los hijos que van a tener deben tomar en cuenta el tiempo que van a dedicarles y los gastos en mantenerlos. Por último debe ser una decisión **informada**, es decir que la persona conozca las ventajas que tiene planificar la familia y cuáles son los métodos adecuados.

## ¿Por qué es bueno planificar la familia?

- La mamá conserva mejor salud.
- La mamá y el papá pueden dedicarle más tiempo a cada uno de sus hijos.
- Los niños crecen más sanos.
- El dinero rinde más.
- Los esposos pueden pasar mayor tiempo juntos.
- Los niños pueden vestirse, alimentarse, educarse y recibir suficiente cariño.

## ¿Cuántos hijos se debe tener?

El número de hijos depende de cada pareja. No hay número preciso o ideal para cada familia.

Debemos hacer reflexionar con la pareja, hacerlos pensar en:

- **La salud de la madre:** Si es buena o mala, si sus embarazos son o podrían ser de alto riesgo o si ha tenido abortos o niños muertos.
- **Los recursos económicos,** que tiene la pareja para brindar a los hijos alimento, ropa, casa, cuidados médicos, educación y diversión.

Si ella y su pareja están seguros de que no desean tener más hijos, pueden seleccionar entre la ligadura de trompas (Operación de la mujer) o la Vasectomía (operación del hombre).



**La mejor edad para ser madre es entre los 19 y los 35 años.**

## **EL ESPACIAMIENTO DE LOS EMBARAZOS**

### **¿Qué pasa cuando los hijos nacen muy seguidos?**

En primer lugar la madre se debilita y tiene problemas de salud durante el embarazo y al momento del parto.



Su cuerpo no tiene el tiempo necesario de recuperar las energías entre uno y otro embarazo. Como el organismo de la madre está débil, es muy frecuente que los niños nazcan muy chiquitos y bajos de peso, lo que hace que se enfermen con facilidad. Cuando los niños nacen muy seguidos reciben poca atención, pues la mamá tiene mayores quehaceres en la casa. Así mismo, el cuidado del niño y las atenciones al marido se reducen. la pareja no dispondrá de tiempo suficiente para sí misma y su familia. Por el contrario, cuando se espacian los em-

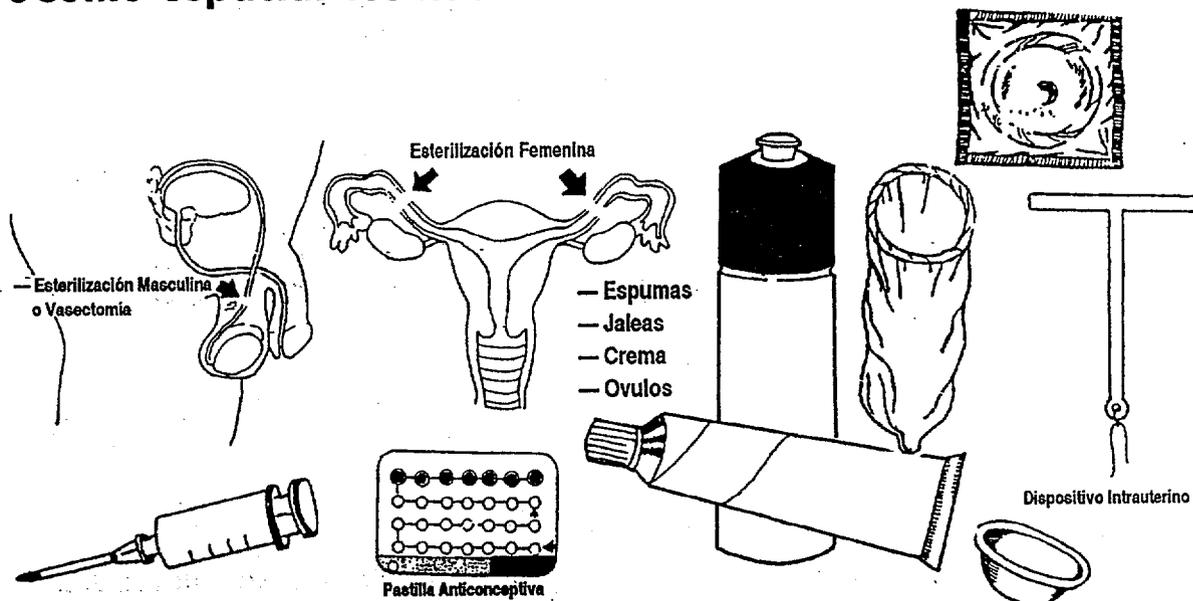
barazos la mamá le puede dar el pecho por un tiempo mayor al niño, atenderlo constantemente, y prepararle todas las comidas que necesita.

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## ¿Qué tiempo hay que dejar pasar entre un embarazo y otro?

Para que la madre y el niño se conserven sanos, la madre debe dejar pasar por lo menos dos o tres años para volver a embarazarse. Antes del embarazo, la mujer debe estar fuerte y completamente recuperada de su último parto. La pareja debe estar segura si desea otro hijo, y si sus ocupaciones les van a permitir darle el tiempo y la atención al niño y a sus hermanos.

## ¿Cómo espaciar los nacimientos?



Para dejar pasar de dos a tres años entre un embarazo y otro es conveniente usar un método de planificación familiar temporal, como las pastillas, el D.I.U. (dispositivo intrauterino), condón y spermicidas.

**Si deja pasar de 2 a 3 años entre uno y otro, la mamá y el niño estarán sanos.**

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# MÉTODOS DE PLANIFICACION FAMILIAR

Es importante saber que:

- No hay un sólo método que sea enteramente satisfactorio para todos.
- Algunos métodos son más apropiados que otros para ciertos grupos de población.
- Las parejas suelen elegir más de un método anticonceptivo durante su período de fecundidad.

## ¿Cómo se clasifican los métodos anticonceptivos?

Se clasifican en **temporales y permanentes**.

### Métodos temporales.

Estos métodos anticonceptivos evitan la concepción sólo cuando se les está usando, al suspenderles se recupera la fecundidad y la capacidad para lograr un embarazo.

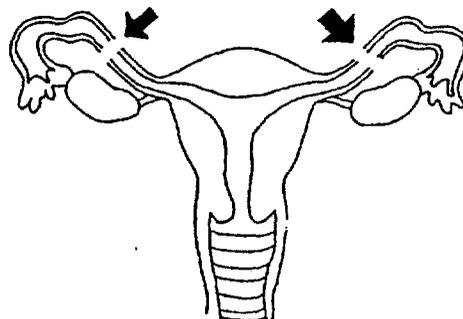
Entre los métodos temporales tenemos:

- Pastillas anticonceptivas.
- Condón o preservativo.
- D.I.U. (Dispositivo intrauterino).
- Ovulos, cremas, tabletas vaginales anticonceptivas.
- Inyección anticonceptiva.
- Lactancia materna exclusiva (exclusiva en los primeros 3 meses).

**MÉTODOS PERMANENTES:** Son métodos que pueden usar las personas que ya tienen todos los hijos que desean y para hombres y mujeres que por razones de salud no es conveniente que tengan otro hijo.

## ¿Cuáles son los métodos permanentes o definitivos?

**La esterilización quirúrgica femenina:** Es un método de planificación familiar para mujeres que han decidido no tener más hijos.



**¿En qué consiste?** Consiste en una operación sencilla en la cual se cortan y ligan las Trompas de Falopio, órganos situados entre los ovarios y la matriz para impedir que los óvulos y los espermatozoides se unan.

**La esterilización quirúrgica masculina:** Es un método definitivo de planificación familiar que se le hace al hombre, cuando éste ha decidido no tener más hijos.



## LAS PASTILLAS ANTICONCEPTIVAS

Las pastillas anticonceptivas contienen sustancias elaboradas a base de hormonas. La mujer debe tomar una pastilla al día para no quedar embarazada. Este tipo de anticonceptivos se encuentran en paquetes o cajitas de 21 y 28 pastillas.

### ¿A qué mujeres les conviene usar la pastilla anticonceptiva?

Las pastillas anticonceptivas son recomendables para mujeres menores de 35 años de edad que desean dejar pasar algún tiempo antes de tener un hijo y que no presentan contraindicaciones médicas para su uso.

### ¿Cómo se toman las pastillas?



La mujer debe empezar a tomar las pastillas anticonceptivas cuando el médico lo aconseje. Se debe tomar una pastilla cada día, de preferencia a la hora de la comida o antes de acostarse.

Si el paquete contiene 21 pastillas, la mujer debe dejar pasar 7 días después de haberse tomado la última pastilla antes de empezar otro paquete; en esos

días le vendrá la menstruación (regla). Al concluir los 7 días debe empezar otro paquete.

Si el paquete es de 28 pastillas, la mujer tiene que tomar una cada día hasta terminarlos y al día siguiente empezar otro paquete. El período de la menstruación se presentará cuando la mujer tome las últimas siete pastillas, que generalmente vienen indicadas de un color diferente a las anteriores.

### **¿Qué mujeres no deben tomar las pastillas?**

- Las mujeres embarazadas o con sospecha de embarazo.
- Las mujeres que están dando lactancia materna.
- Las mujeres mayores de 35 años.
- Las mujeres que fuman más de diez cigarrillos al día.
- Las mujeres que con frecuencia sufren dolores de cabeza fuertes o presión alta.
- Las mujeres que tienen problema de salud como coágulos en la sangre, cáncer en pechos o en la matriz, enfermedades del corazón, del hígado, várices o venas abultadas.

### **¿Qué molestias pueden causar las pastillas?**

Cuando una mujer empieza a tomar pastillas anticonceptivas puede sentir molestias como náuseas, mareos, dolores de cabeza, los pechos pueden aumentar de tamaño, y pueden tener pequeños sangrados entre una menstruación y otra.



Estas molestias generalmente son pasajeras, pero si la mujer continúa teniendo estos problemas, aún transcurrido tres meses de haber empezado a tomar las pastillas debe dejar de tomarlas y visitar el Centro de Salud.

Se recomienda que la mujer que toma pastillas anticonceptivas visite al médico después del primer mes de haber comenzado a tomarlas.

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# LA INYECCION ANTICONCEPTIVA

La inyección anticonceptiva es un preparado hormonal que se inyecta cada 3 meses a la mujer y sirve para evitar el embarazo durante este tiempo.



## ¿A qué mujeres les conviene usar la inyección anticonceptiva?



- Las mujeres menores de 20 años.
- Las que no han tenido hijos.
- Las que están dando pecho.
- Las que tienen problemas de salud como: Coágulos en la sangre, várices, enfermedades del hígado, cáncer tumores en la matriz o en el pecho o que padezcan de azúcar en la sangre (diabética).

La inyección anticonceptiva es muy efectiva, falla como método en uno o dos de cada cien mujeres, a menudo aumenta los niveles de hierro en la sangre.



## ¿Qué molestias o efectos secundarios puede causar la inyección anticonceptiva?

Algunas mujeres pueden sentir:

- Ligeros mareos.
- Náuseas, vómitos.

- Aumento de peso.
- Dolor en los pechos.
- Sangrado entre una y otra menstruación.
- Falta de sangrado mensual o menstruación.

Por lo general estos problemas desaparecen después de la tercera inyección, pero si no es así, se debe recomendar que la madre visite al médico. Se recomienda que visite al médico cada 2 meses, para someterse a un examen físico. La inyección es un método fácil de usar, se recomienda para aquellas mujeres que ya no quieren tener más hijos, pero que aún no se deciden por un método permanente.

## **OVULOS, TABLETAS VAGINALES ANTICONCEPTIVAS**

### **¿Qué son los óvulos o tabletas vaginales anti-conceptivas?**

Los óvulos o tabletas vaginales anticonceptivas conocidas como espermicidas, son preparaciones

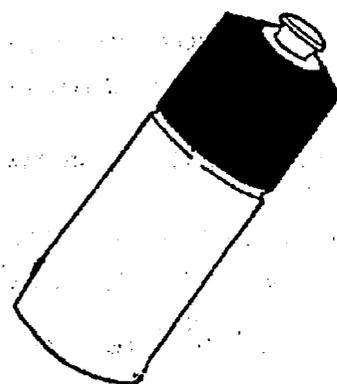
químicas que destruyen los espermatozoides antes de que lleguen al útero o matriz de la mujer.

Los óvulos o tabletas vaginales se colocan profundamente en la vagina, 10 a 15 minutos antes del acto sexual y funcionan formando una barrera que inmoviliza y destruye los espermatozoides impidiendo su entrada a la matriz y evitando así la fecundación. Estas preparaciones químicas contribuyen a disminuir el riesgo de contraer algunas enfermedades de transmisión sexual como: Tricomonas, Gonorrea y otras.

### **¿Cuál es la presentación de los productos espermicidas?**

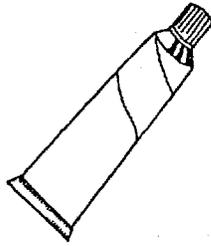
#### **ESPUMAS:**

Son productos empacados en un frasco con gas inerte, que al ser liberados producen una espuma espesa que se coloca con un aplicador hueco tipo jeringa y se introduce en la vagina 5 a 10 minutos antes de la relación sexual.



## **TABLETAS VAGINALES:**

Son tabletas redondas que al introducirse en la vagina se convierten en espuma y tienen el mismo efecto.



## **CREMAS O JALEAS:**

Son tubos con sustancias anticonceptivas de consistencia cremosa o gelatinosa que es colocada en la vagina con un aplicador.

## **SUPOSITORIOS VAGINALES:**



Son productos anticonceptivos de consistencia cerosa y sólida que se derriten al ser introducidos en la vagina.

## **¿Qué recomendaciones hay que dar a las mujeres que usan espermicidas?**

- Lavarse las manos con agua y jabón antes de aplicarse los espermicidas.
- Aplicarse las tabletas, cremas o jaleas anticonceptivas 10 a 15 minutos antes de cada relación sexual.
- El efecto anticonceptivo desaparece en una hora.

## **¿Qué mujeres pueden usar los espermicidas?**

La mayoría de las mujeres pueden usar los espermicidas ya sean solos o con preservativo o condón.

## **¿Qué mujeres no pueden usar espermicidas?**

- Las mujeres que sean sensibles a las sustancias químicas, contenidas en los espermicidas.
- Las mujeres con infecciones o úlceras en la vagina.

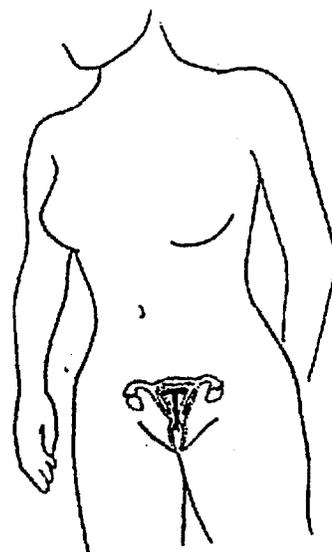
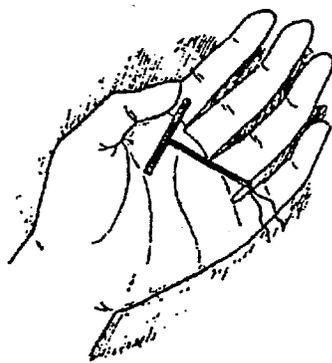
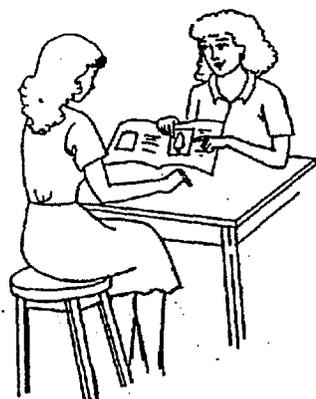
## EL DIU

El D.I.U. o dispositivo intrauterino es un aparatito de plástico que se coloca en el útero de la mujer, para evitar un embarazo. Existen dispositivos de diferentes formas y tamaños, pero el más usado actualmente es de forma de T. Este tipo de dispositivo lleva en la parte de abajo unos hilos que sirven para saber si el aparato se encuentra en su lugar y para extraerlo cuando la mujer decida.

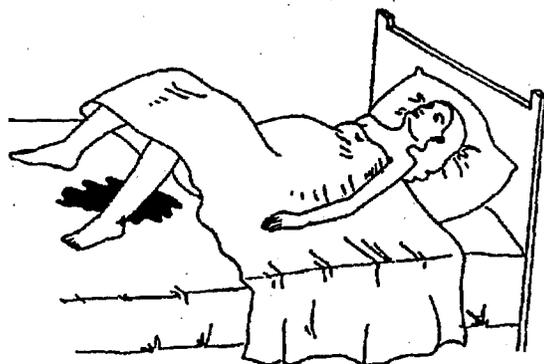
### ¿Cuándo puede colocarse el D.I.U.?

El D.I.U. puede ser colocado:

- En cualquier período del ciclo menstrual o durante la regla o menstruación teniendo la seguridad que la mujer no está embarazada.



- Después de un parto o cesárea.



- Después de un aborto.



### ¿A qué mujeres les conviene usar el D.I.U.?

El D.I.U. es un método para mujeres que quieren esperar un tiempo antes de tener otro hijo, o que ya no desean tener más hijos y no quieren esterilizarse.

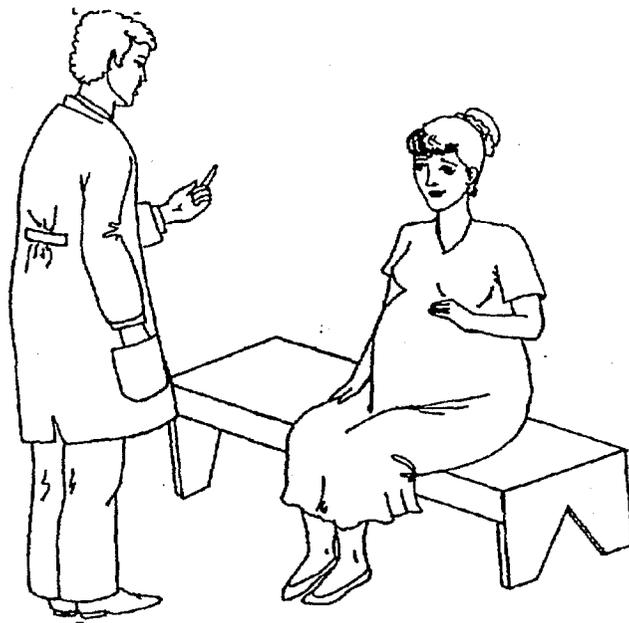
También pueden usarlo aquellas mujeres que dan pecho o están amamantando.

El D.I.U. es un método fácil de usar, una vez que ya ha sido colocado, la mujer necesita someterse a otros cuidados.

El D.I.U. como método anti-conceptivo dura varios años.

### Hay mujeres que no pueden usar el D.I.U. por ejemplo:

- Mujeres embarazadas o que existe sospecha de embarazo.
- Mujeres con tumores o malformaciones en el útero.
- Mujeres que tienen infección pélvica.
- Mujeres que presentan sangrados anormales.
- Mujeres que no han tenido hijos.
- Mujeres que han tenido embarazos ectópicos (fuera del útero).



## ¿Qué molestias puede causar el D.I.U.?

Mientras el cuerpo de la mujer se acostumbra al dispositivo D.I.U., pueden presentarse algunas molestias como: manchas pequeñas de sangre entre los períodos de menstruación o regla; aumento del sangrado de la menstruación, cólicos leves o dolor de cintura.

## ¿Qué pasa si una mujer que usa el D.I.U. queda embarazada?

En este caso la mujer no debe sacarse el dispositivo. El aparato debe quedar en el sitio donde fue colocado. El niño no corre ningún peligro, no le pasará nada.

## ¿Cada cuánto tiene que ir a revisión la mujer que usa el D.I.U.?

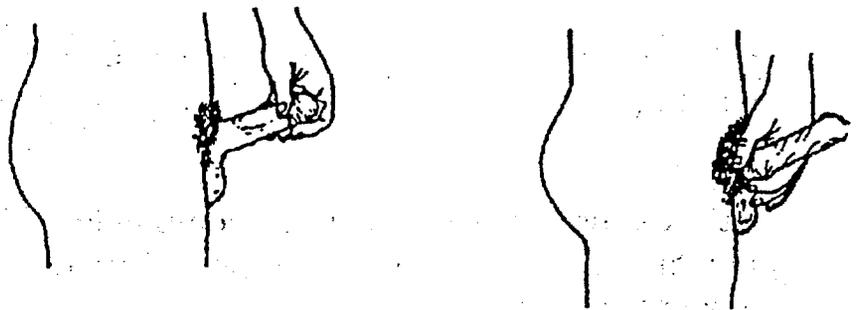
Cuando el médico le recomiende. Generalmente a los seis meses de colocado el D.I.U., mujer debe someterse a una revisión médica, después puede hacerlo cada año.

## PRESERVATIVO O CONDON

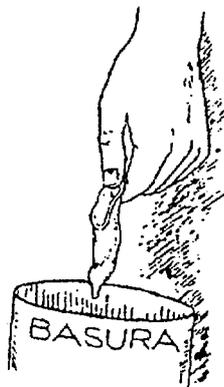
El preservativo o condón es un método anticonceptivo temporal. Tiene forma de bolsita de hule, muy delgada. Sirve para cubrir el pene durante la relación sexual y evitar un embarazo porque los espermatozoides (semillas del hombre) no se depositan en el cuerpo de la mujer.

### ¿Cómo se usa el condón?

El condón es un método efectivo, sólo si el hombre lo usa correctamente en cada relación sexual. Si lo usa correctamente el condón no se rompe. El condón se coloca en el pene cuando está erecto o duro antes de comenzar la relación sexual, tratando de no tocar la vagina de la mujer con el pene antes de colocarlo. Se coloca inicialmente en la punta del pene y se comienza a desenrollar hasta que lo cubre todo. En la punta del pene debe quedar un espacio vacío para depositar el semen.



Al terminar la



relación sexual el hombre debe retirar el pene de la vagina cuando todavía esta erecto o duro, deteniendo el condón con los dedos para evitar que se quede en la vagina y se derrame el semen dentro. Luego se quita el condón y se bota en el basurero. Cada preservativo o condón debe usarse una sola vez.

### **¿Cuándo es recomendado usar preservativo o condón?**

El uso del preservativo se recomienda cuando los otros métodos como pastilla e inyección no son aconsejables o bien que no puede ponerse el dispositivo D.I.U. o no quiere operarse. El preservativo es un método que debe recomendarse mientras la mujer espera su período de menstruación o regla para empezar a usar pastillas, inyección o D.I.U. Si el hombre se practicó la vasectomía debe usarlo durante las primeras quince o veinte eyaculaciones después de la operación.

### **¿Qué ventajas tiene el preservativo o condón?**

Previene enfermedades que se transmiten por contacto sexual. Actualmente es la única medida preventiva para evitar la infección por SIDA. Con el uso del condón el hombre contribuye con la planificación de su familia. Este método impide que los espermatozoides producidos por el hombre en la relación sexual se depositen en el cuerpo de la mujer, por lo tanto evita el embarazo.

## **LA OPERACION FEMENINA**

La operación femenina llamada también ligadura de trompas, es una operación para la mujer que no desea tener más hijos. Es una operación sencilla y segura. Después de la operación la mujer ya no volverá a embarazarse.

### **¿Por qué la mujer ya no quedará embarazada?**

Durante la operación el médico corta y liga las trompas de la matriz.

Así el óvulo (semilla de la mujer) que sale de los ovarios no puede pasar a la matriz.

Los espermatozoides (semilla de hombre) tampoco podrán unirse con el óvulo. Si el óvulo femenino y el espermatozoide masculino no se unen, no puede haber embarazo.

## **¿Para qué tipo de mujeres es adecuado este método?**

La ligadura de trompas es adecuado para mujeres que ya no desean tener más hijos.

Se recomienda para mujeres en estas situaciones:

- Cuando un embarazo pone en peligro la vida de la madre.
- La mujer tiene más de 35 años de edad.
- La mujer ha tenido dos cesáreas anteriores.
- La mujer ha tenido hijos con malformaciones.
- La mujer tenga problemas de salud mental.

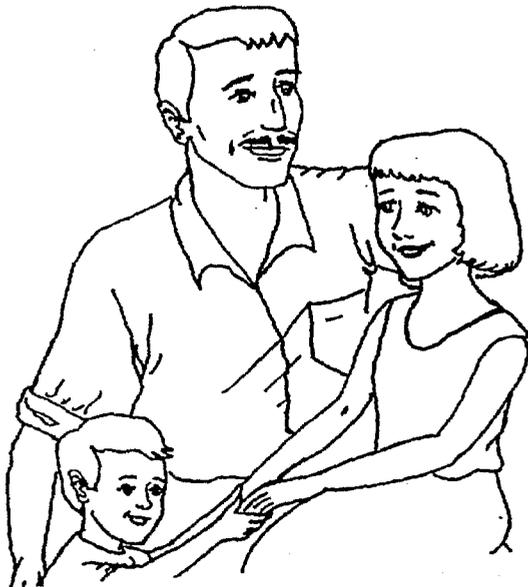
## **¿Qué molestias puede sentir la mujer después de la operación?**

La operación femenina causa pocas molestias. La mujer usuaria de este método tiene problemas como dolor fuerte y por tiempo prolongado, sangrado por vagina o bien retraso en la menstruación. Debe visitar al médico de su comunidad.

## **¿Qué debe saber la mujer que se hace una ligadura de trompas?**

- Su vida sexual será igual que antes de la operación.
- Que podrá tener relaciones sexuales cuando desaparezcan las molestias de la operación.
- Seguirá teniendo su menstruación.
- No necesitará atención médica constante.
- Estará tranquila pues no saldrá embarazada.

# LA OPERACION MASCULINA O VASECTOMIA



La vasectomía es un método anti-conceptivo permanente para hombres que ya no quieren tener más hijos. Es una pequeña operación que dura entre 15 y 30 minutos y se efectúa con anestesia local.

## ¿Qué hace el médico durante la operación?

El médico corta y amarra unos conductos llamados conductos deferentes para evitar el paso de los espermatozoides al semen del hombre. Sin el depósito de espermatozoides en la vagina de

la mujer no puede haber embarazo.

## ¿Qué debe saber el hombre sobre la vasectomía como método de planificación?

Todo hombre debe conocer antes de practicarse la Vasectomía que:

- No afecta la salud de la persona.
- El hombre no cambia su fuerza o masculinidad.
- El hombre mantiene su deseo normal o actividad sexual.
- Es un método permanente para ya no tener más hijos.

## ¿Qué tan confiable es la vasectomía?

Es el único método anticonceptivo masculino totalmente efectivo hoy en día. Después de efectuada la operación el hombre no tendrá que preocuparse jamás de causar un embarazo o de tener más hijos que mantener.

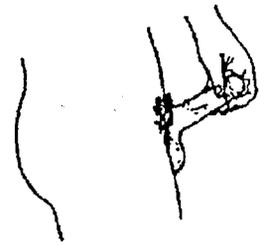
## ¿Qué molestias puede tener el hombre después de operado?

La vasectomía es una operación que causa pocas molestias. Sin embargo el hombre debe acudir al Centro de Salud si después de operado presenta hinchazón, sangrado, infección, moretones o cambios de color en la piel, especialmente en el lugar de la operación.

El hombre puede realizar trabajo leve al día siguiente de la operación y después de una semana puede volver a realizar cualquier tipo de actividad o trabajo.

### **¿Qué debe conocer el hombre después de haberse practicado la vasectomía?**

- No pierde su potencia sexual ni deja de eyacular.
- Después de la operación puede regresar a su casa. Al tercer día ya puede reincorporarse a su trabajo.
- Podrá tener relaciones sexuales, siete días después de haberse operado, pero debe usar condón o bien la mujer tomar anticonceptivos o inyección. Este cuidado debe seguirse hasta que el hombre haya eyaculado una veinte veces después de haber transcurrido la operación.
- El hombre tiene el mismo deseo sexual que antes, llega a su clímax tan intensamente como antes, el único cambio es que el líquido no contiene espermatozoides que puede causar un embarazo.



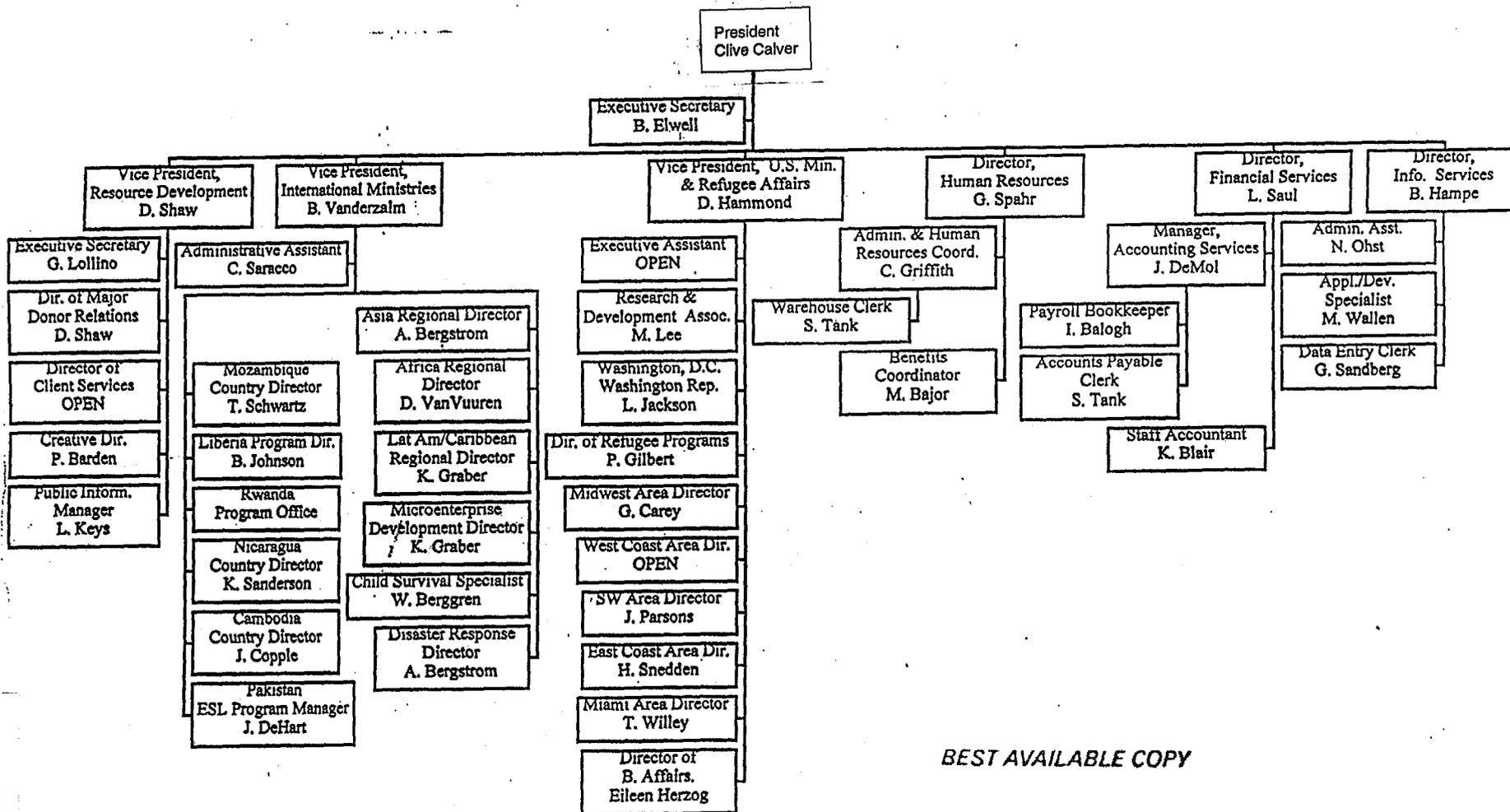
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# WORLD RELIEF CORPORATION FY 97 ORGANIZATION CHART

WORLD RELIEF NICARAGUA CHILD SURVIVAL

Detailed Implementation Plan 1997

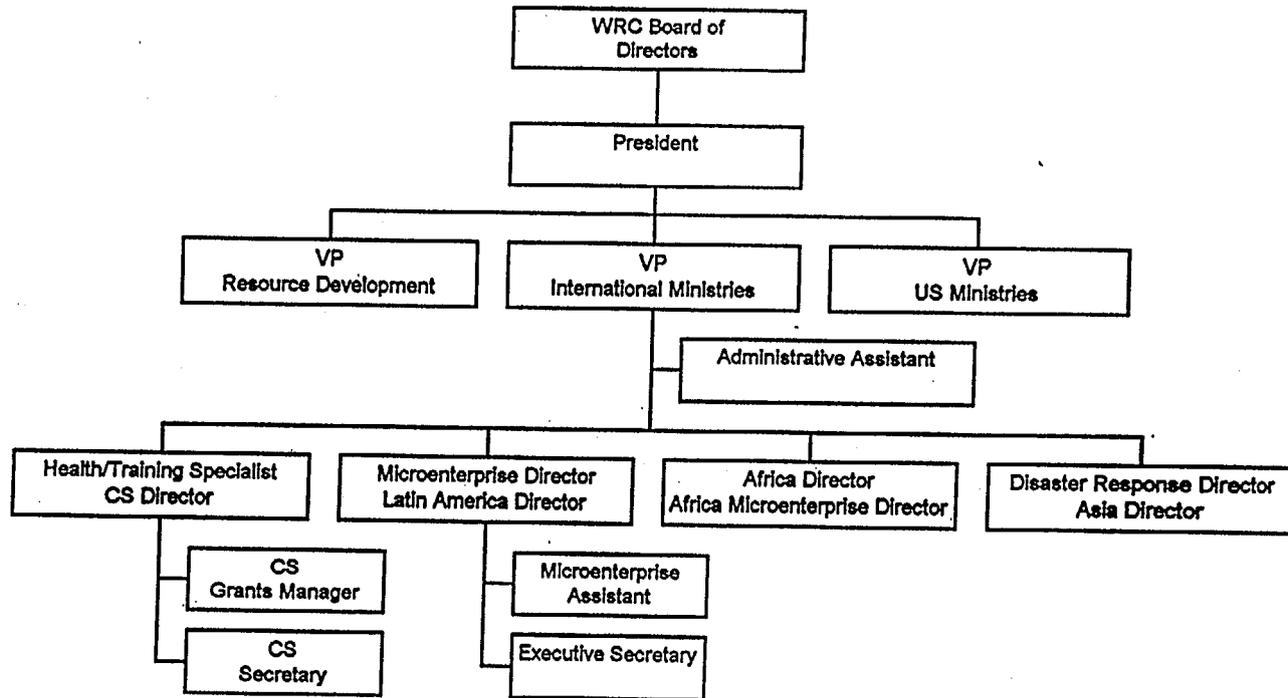
APPENDIX P



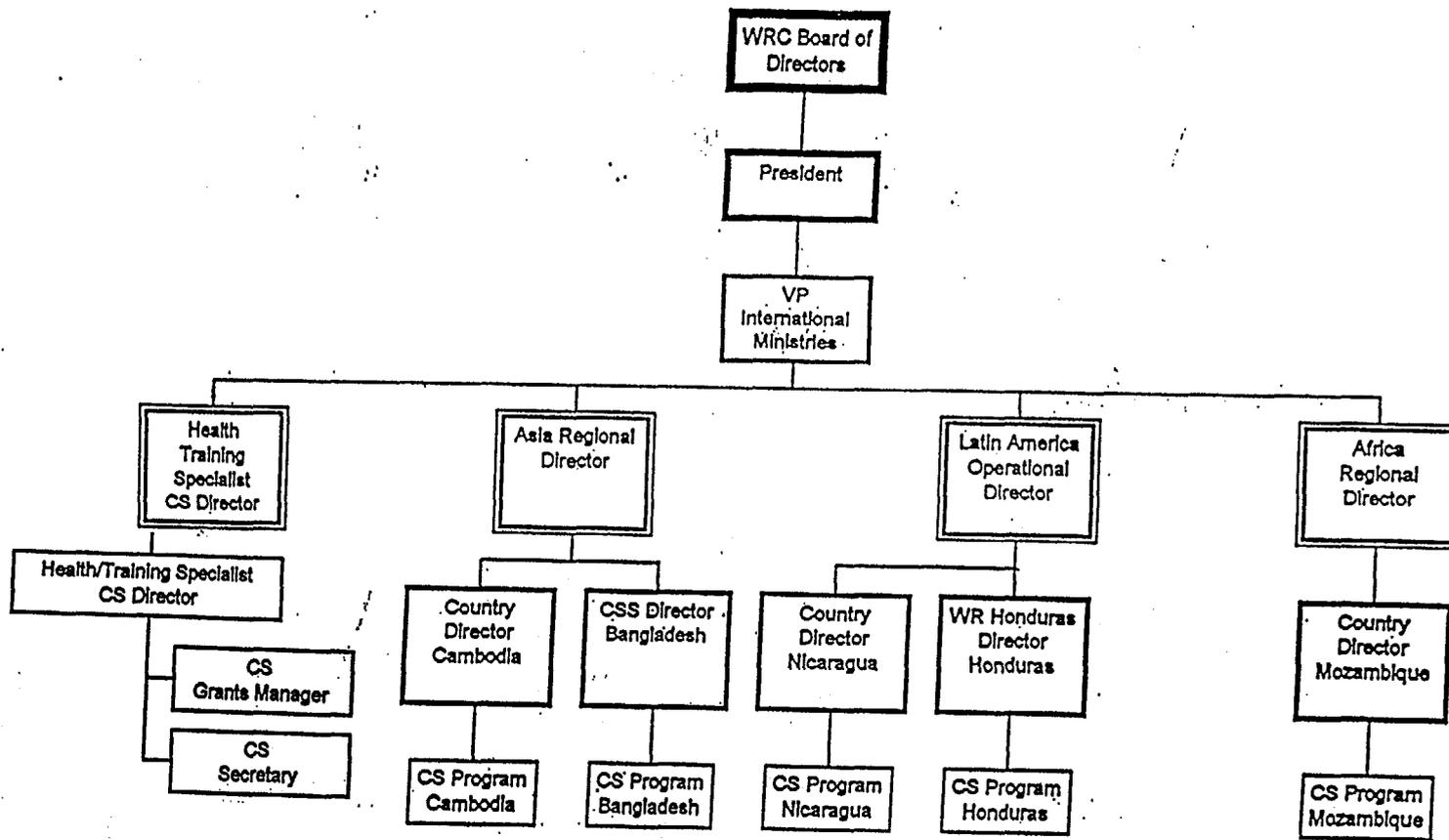
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# World Relief Corporation International Ministries Organization Chart

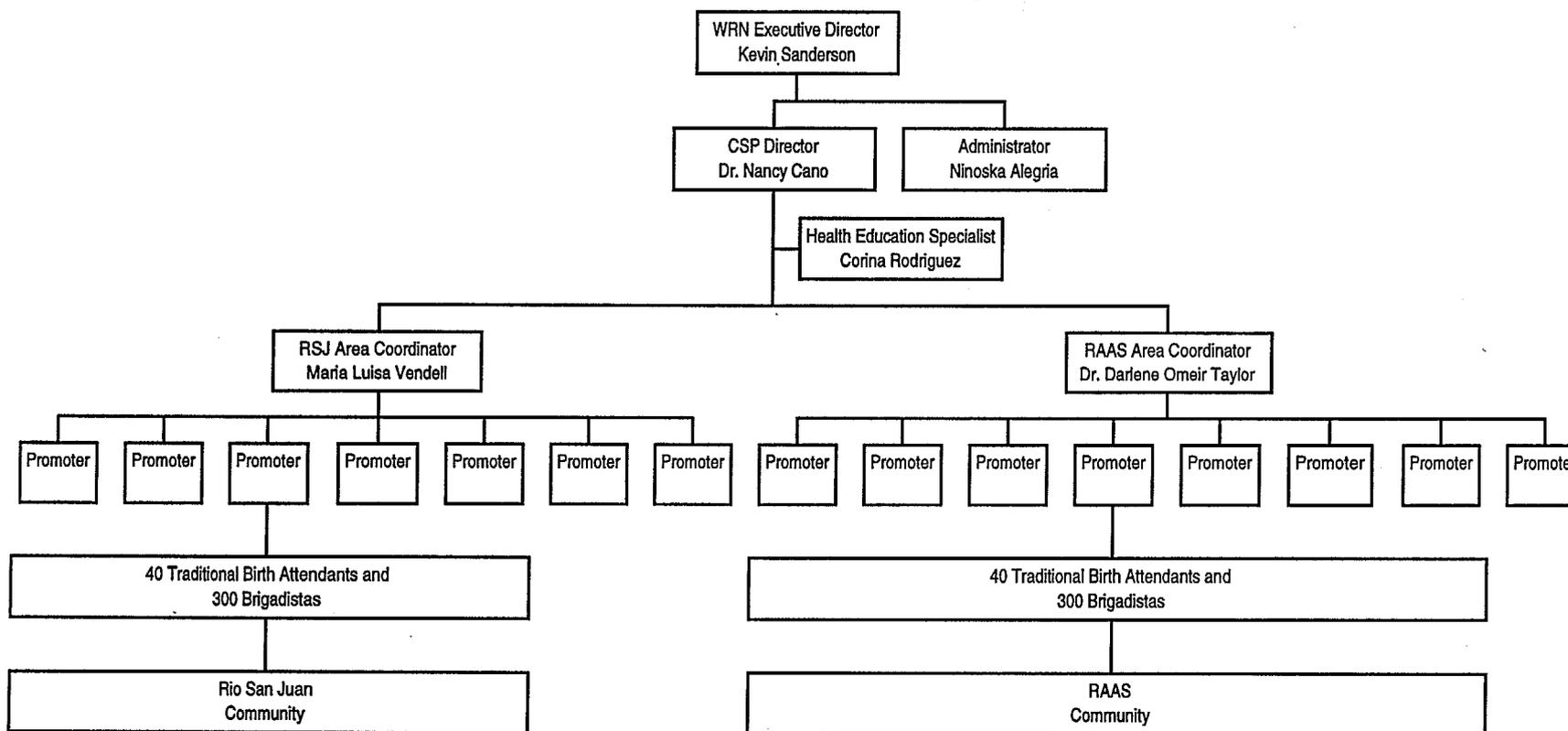


# World Relief Corporation Child Survival Organizational Chart



1998

# WORLD RELIEF NICARAGUA 1997 CHILD SURVIVAL ORGANIZATIONAL CHART



**Person responsible for:**

- (1) Program Administrative management: *Overall*: CS Project Director (Dr. Nancy Cano)  
*Regional level*: Area Coordinators ( Dr. Darlene Omeir Taylor in the RAAS and Maria Luisa Vendell in RSJ)
- (2) Oversight of technical health activities: Project Director, Health Education Specialist (Corina Rodriguez)
- (3) Monitoring of progress toward objectives: Child Survival Project Director, Health Education Specialist, Area Coordinators, Health Promoters
- (4) Training of health workers: Health Education Specialist, Area Coordinators, Health promoters
- (5) Health information system: Child Survival Project Director, Area Coordinators, Health promoters

All WRN Child Survival Staff are full-time salaried nationals from the regions in which they are working. Trained Brigadistas (health volunteers) are part time national volunteers.

Secours Mondial  
Auxilio Mundial  
世界宣仁會  
**World Relief**   
CORPORATION

P.O. Box WRC • Wheaton, Illinois 60189 • Phone: 708-665-0235 • Fax: 708-653-8023 • Email: worldrelief@xc.org

June 25, 1996

Ms Rosella Marshall, Contracting Officer  
Chief, FAO Branch, Division A  
USAID Office of Procurement  
Room 1538, SA-14  
Washington, D.C. 20523-1428

**Subject: Concurrence with the Nicaragua "Si-A-Paz" Child Survival Project  
Program Description**

Dear Ms Marshall:

Attached please find a copy of the revised program description for the Nicaragua Si-A-Paz Child Survival Project. The changes we have made in this program include the following:

1. We have reduced the proposed budget by 23% in order to reflect USAID's commitment of \$1 million to this project rather than the \$1,252,642 that we had requested in the proposal. We have also reduced the World Relief matching amount from \$417,548 to \$333,341. The World Relief matching amount remains set at 25% of the total project budget.
2. We have reduced the target population by 15% from 24,917 to 21,179 women 10-49 years, from 23,350 to 19,848 infants and from 47,141 to 40,070 children under 5.
3. We have reduced the number of base houses to be integrated into the MINSA health system from 150 houses to 100 houses.
4. We have eliminated the provision of cold chain supplies needed to equip 10 MINSA health posts.
5. We have eliminated the position of Child Survival Program Specialist from the proposed headquarters staffing plan.

Otherwise, the attached project description remains unchanged from the proposed project description.

Sincerely,



Bas Vanderzalm  
Vice-President/International Ministries

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## **Annex I. Response to Proposal Technical Review**

### **CONCERNS AND RECOMMENDATIONS**

*WRC's objectives are very ambitious for an area with basically no health infrastructure and very poor access. In particular, the family planning and exclusive breastfeeding objectives seem particularly ambitious, given the weakness of the intervention strategies.*

Objectives were set with experiences of the previous project in mind, and have been readjusted to take into account the results of the KPC baseline survey. Objectives for family planning and exclusive breastfeeding were ambitious, given the intervention strategies and the said intervention strategies have been strengthened considerably. Baseline survey found 55% of women who did not want a child in the next two years or were not pregnant were using family planning, which is much higher than the proposal estimated coverage levels (project had as a final goal 55%). As family planning levels were already fairly high, and project staff consider that the objective of 65% is achievable, especially given WR's partnership with PROFAMILIA, a Nicaraguan NGO involved in distributing FP methods at a subsidized cost. (see section D.4 for FP intervention strategies for a description of WR's relationship with PROFAMILIA.) PROFAMILIA will assure a constant, uninterrupted supply. Our volunteers and PROFAMILIA can assure a sustainable delivery system and aggressive promotion.

Exclusive Breastfeeding interventions have been improved to include Wellstart's EBF training manuals (published since the proposal was written in 1995). Please see section D.4.c. for EBF intervention strategies, which now include the promotion of the Baby Friendly hospital initiative in Bluefields and the development of breastfeeding support groups. Objectives have been changed to 14% to reflect the 6% EBF to 6 months found in the baseline survey. The original proposal was written with EBF to 4 months as a goal.

#### Diarrhea Case Management

*WRC's recommendations concerning breastfeeding within diarrhea case management efforts are unclear. WRC should teach that if a child is exclusively breastfed and has diarrhea, the mother should continue breastfeeding only. If a child is dehydrated, the mother should give only ORS and breastmilk, not additional fluids.*

Reviewer's recommendations for the breastfeeding during diarrhea messages have been incorporated into the DIP, please see section D.4.d.7, message #4 of ORS /breastmilk/other liquids messages given to mothers.

#### Nutrition

*The relative emphasis on certain information strategies and interventions does not seem appropriate. WRC's proposal has placed a very strong emphasis on vitamin A capsule distribution. This strategy will be difficult to sustain in the long-term in a region with such poor access. In the nutritional improvement section, the proposal talks about exclusive breastfeeding till 4 months. The MINSA recommendation is six, which is quite appropriate in this area. WRC needs more emphasis on exclusive breastfeeding, and improvements in nutrition through dietary change such as adding oil.*

Since the proposal was written, MINSA has adopted a vitamin A capsule distribution as part of its EPI (Health Campaigns, three times per year). WR will be working closely with MINSA during these campaigns, assisting them in tracking defaulters, and in distributing vitamin A to more remote areas. During the life of the project, WRN will encourage MINSA to include "training and supervision of volunteers" in the job description of MINSA staff.

Exclusive breastfeeding goals have been adjusted to reflect up to six months throughout the proposal. Please see section D.4.c for details on the Breastfeeding Promotion intervention.

Please see the end of section D.4.b.4. for strengthened infant nutrition activities.

*WRC should expand and give more emphasis to the project component that promotes exclusive breastfeeding (EBF) as a means to help with child spacing and diarrhea control.*

The project has expanded the breastfeeding promotion intervention (see section D.4.c), and messages will include diarrhea control (see section D.4.d.7 and D.4.d.8 for messages given about EBF/BF and diarrhea control.) However, the project will not promote LAM for breastfeeding at this time, given the very low percentage of women who practice EBF (6%) to six months. This will be reevaluated at the Midterm, to see if interest and success in EBF has warranted an effort to include LAM. Project staff tried to promote LAM in the previous project and it failed, due to very low percentage of women exclusively breastfeeding to 6 months. When the rate of exclusive breastfeeding to age six months has improved, LAM may become an effective family planning intervention.

*WRC should start the breastfeeding component of the intervention earlier that year two, as is proposed. WRC's initial assessment should clearly identify the specific problem behaviors (feeding infants water? honey? early foods? why? etc.), which should then be addressed in the trainings. WELLSTART's qualitative research in Nicaragua has shown the EBF is practiced by very few mothers. Olive oil and honey purges are common, milk and water are given to newborns, and foods are started very early.*

The project will begin the breastfeeding component in the 3rd quarter of year 1 (June, 1997). All MINSA personnel in RAAS will be trained in nutrition/breastfeeding during the third quarter, and will be training mothers and beginning support groups by the fourth quarter of year 1.

WR project staff have clearly identified specific problem behaviors in section D.4.c.1. Janet Picado's research on EBF practices in Nicaragua also provided valuable information (see appendix M). Wellstart's research has been taken into account, see Appendix F for a copy of the cover page of their Spanish Assessment series "Breastfeeding in Nicaragua: Diagnosis of Practices and Promotion." and the cover page of the June 1996, MINSA Norms and technical manual for breastfeeding, "Your milk alone is sufficient." These two documents, and others technical documents/training manuals from Wellstart, were used to develop the EBF promotion intervention strategy.

*WRC should take advantage of the excellent resources for breastfeeding promotion that already exist in Nicaragua. Project HOPE is doing innovative, community-based breastfeeding*

*promotion. The Division of Nutrition at MINSA has several outstanding breastfeeding trainers (e.g. Ninoska Cruz) who could provide excellent assistance if her travel expenses were covered.*

WR intends to do so. Both Project HOPE and World Vision have projects that will be visited on site for lessons learned and practical ideas for implementing a similar program in urban Bluefields. Ninoska Cruz is well known in Nicaragua and has already trained 3 of WRN staff involved in the CS project. WR staff area already in contact with Ms. Cruz and she has agreed to provide training in Bluefields and Rio San Juan to MINSA and project staff on the initial training sessions. (Section D.4.c.3, D.4.c.4)

#### Maternal and Newborn Care & Family Planning

*The family planning strategy for temporary methods is weak. WRC recently conducted a project in coordination with PROFAMILIA in Rio San Juan, the results of which showed increases in number of tubal ligations, but decreases in the use of pills and IUDs. This is not beneficial in an area so in need of birth spacing.*

The family planning strategy has been strengthened, please see section D.4.f.3 for strategies in place for promotion of temporary methods of birth spacing.

*Birth spacing is a problem in Nicaragua. WRC should consider breaking up objective six into two parts: one for temporary methods to space, and another for permanent spacing.*

WR will report the methods separately, expecting that assuring a constant, uninterrupted supply of temporary contraceptives will increase the demand for temporary methods and reduce the demand for sterilizations.

*In this vein, WRC's current proposal contains strategies for promoting permanent birth control strategies that are important for those who have had many children. WRC should complement this approach by developing a strong, explicit long-term strategy for increasing the target population's use of birth-spacing methods, which will help combat the project area's high maternal mortality, infant mortality and fertility rates. WRC should consider strategies to promote birth spacing that include making appropriate temporary birth control methods available to the target population, such as IUDs.*

WRN's long term strategy for increasing the population's use of Birth Spacing methods.

#### The unmet demand:

The KPC identified a group of non-pregnant women who did not want another baby for at least two years. Forty five percent (45%) of this group were not using any modern method of contraception. The size of this group constitutes one measure of the population's unmet demand for contraceptive services. The women whose demand for services are not being met constitute 24% of all women in the survey sample. The common local barriers to using temporary contraceptives are the time and money lost in going to the government health facilities and the lack of confidence that the health facility will have contraceptives in stock.

Current attempts to meet the demand:

MINSAs provides a limited variety of temporary contraceptives to their clientele. MINSAs contraceptives are accessible only in the Health Posts and Health Centers. The supply tends to be less than the demand and ruptures of stock are frequent.

PROFAMILIA sells a wide variety of temporary contraceptives to its clientele at a modest, subsidized price. PROFAMILIA supplies are constant and accessible at free-standing contraceptive posts and at the household level through local distributors who sell condoms and oral contraceptives at a modest commission.

World Relief's strategy of strengthening sustainable family planning services:

World Relief will facilitate further training for MINSAs, WRN and PROFAMILIA personnel. The training will focus on the three agencies on a plan of coordinated promotion, logistics and distribution. World Relief will coordinate with PROFAMILIA to train health volunteers to sell contraceptives in all those communities that presently have no PROFAMILIA distributor and in communities that are irregularly supplied by MINSAs health centers and posts.

Human Resources

*WRC has not addressed one of the "lessons learned" from their prior project--that community health volunteers could not devote the time required without receiving some economic incentive. In this project, WRC has proposed that each community health worker (CHW) is to be responsible for 30 families. WRC should devise an innovative and sustainable cost-recovery mechanism that will assure, at a minimum, 1) the availability of basic supplies, and 2) some economic incentive to the CHWs and the traditional birth attendants.*

The Project has developed a series of incentives that staff believe will be sufficient. Initially, volunteers will be given a rain poncho, boots and a flashlight, which aids them in their work and are also prized items in this community. This equipment will help them feel like the work they are doing is important. Other incentives include t-shirts, biannual meetings with other volunteers and a special meal together, and the special ceremony for volunteers who have "graduated" and completed all the training. MINSAs staff and regional dignitaries are invited to this special event. Volunteers will be able to participate in the home gardens initiative if they wish, which is a help to the family's food supply.

*If WRC's goal is sustainability, then WRC should establish supervision systems. WRC should go further than specifying "training" as an output. WRC should work closely with MINSAs to establish ongoing supportive supervisory systems. Impact--long term and short term--won't be addressed without good monitoring and supervision. WRC plans considerable training, but not much for follow-up, refresher training, ongoing supervision for the hard to reach, and referral and counter-referral systems for CHWs. WRC's planned supervision, monitoring and follow-up strategy would benefit from clearer definition, which would result in greater short- and long-term impact. WRC has placed great emphasis on initial staff training, but relatively minor emphasis on staff supervision, refresher training and follow-up; the latter merely consists of MINSAs monthly visits. WRC should work closely with MINSAs to establish ongoing supportive supervisory systems.*

Project staff have planned to work with MINSA from the outset to establish ongoing supportive supervisory systems. Please see section E.3. for a full description of the project's supervision plan.

#### Health Information Systems

*WRC has not developed measurable monitoring indicators (except total number) for the garden promotion component. WRC should develop 1) a simple classification system for assessing the nutritional balance and economic value of each garden, and 2) an index to determine the sustainability of gardens (i.e. percentage dropouts).*

Please see Appendix L for the classification system for home gardens.

#### Budget and Sustainability

*WRC's plan for sustainability hinges on (hoped-for) follow-through by local level MINSA staff, whose turnover rate is probably rapid. WRC might try to cultivate interest and personal involvement of a few appropriate ministry of health and ministry of planning officials in Managua.*

Turnover rate of local MINSA staff at the level of auxiliary nurse is not rapid; auxiliary nurses tend to come from the communities they are working in, and stay at the health posts for a long time. Physicians and trained nurses tend to come from bigger cities and once they have finished their compulsory social service, tend to move back closer to home. WRC already has connections at the SILAIS and national (MINSA Central) level in Managua (see section D.5.2 for description of how WRN worked with Managua MINSA after the previous project, a strong collaborative relationship.)

*WRC should clarify the relationship between base houses (BHs) and the CHWs. If the staff at the BHs are to refer patients to CHWs, then the establishment of BHs prior to CHW-training will leave the BHs without a counter-referral system, and probably without supervision. WRC could solve this dilemma by readjusting the timing of the workplan. WRC should consider staggering the training of CHWs in years 2 and 3 of the project, while establishing BHs simultaneously (or after the CHWs are trained).*

Base Houses are often one and the same as a volunteer's home. Mothers will go to the health volunteers whose home is a Base House. Training of all Health Volunteers will begin in the 3rd quarter of Year 1, and continue into the 2nd quarter of Year 2 (see workplan). Base Houses will be established/strengthened simultaneously as the training of volunteers.

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