

**CHILD HEALTH CARE  
BEHAVIORS AMONG MAYAN  
WOMEN IN GUATEMALA**

Knowledge, Attitudes And Practices in Relation to  
Infant And Child Feeding, Diarrhea And Dehydration,  
Acute Respiratory Infections, And Immunization

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## ACRONYMS

ATI	Asociación Toto Integrado
ARI	Acute Respiratory Infections
BASICS	Basic Support for Institutionalizing Child Survival
EPI	Expanded Program on Immunization
GRT	Gruppo per la Relazioni Transculturali
INCAP	Institute of Nutrition of Central America and Panama
MOH	Ministry of Public Health
OMS (WHO)	World Health Organization
OPS (PAHO)	Pan American Health Organization
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PAHO	Pan American Health Organization
PCI	Project Concern International
USAID	United States Agency for International Development

## EXECUTIVE SUMMARY

To develop a behavior change strategy, including a package of effective educational materials to address child health problems prevalent in the Mayan population in the Guatemalan highlands, BASICS thought it important to undertake a thorough review of existing relevant qualitative information (knowledge, attitudes and practices) on specific topics. As a considerable number of studies have already been undertaken on the subject, it was hoped that only limited new formative research would be needed.

The report provides a brief narrative on key behaviors related to breastfeeding and young child (under three years of age) feeding, diarrhea and dehydration, acute respiratory infections (ARI), and immunization (EPI), based on the data obtained from the review. Information on current practices, differences among various groups, knowledge and attitudes concerning these practices, barriers and possible motivations or facilitating factors to modifying these practices has also been included.

Existing information suggests that there is a considerable variation as to when breastfeeding is initiated. Some women initiate breastfeeding immediately after birth, but others wait from an hour to three days. In many cases, feeding is started with prelacteal substances, which are offered due to cultural or medicinal reasons. Mothers' beliefs, biological factors related to breast milk "coming down," and limited knowledge are some of the main barriers that influence adequate feeding practices in newborn children.

Although most mothers breastfeed their children, exclusive breastfeeding is not the predominant practice. Mothers generally give children *aguitas*, using bottles or spoons. Even though quantities offered tend to be limited, it is known that both the liquids and the utensils used to administer them are frequently contaminated. The main motivations for not breastfeeding exclusively are cultural. More positively, Mayan mothers continue breastfeeding their children for a long period of time, interrupting only in special cases, such as a new pregnancy or illness of the mother or the child. Certain emotional factors affecting mothers, such as *susto* or *enojo*, can also lead to temporary interruption of breastfeeding. An interesting aspect identified is that mothers sometimes wean boys first, as they believe that breastfeeding boys can weaken mothers, while girls are thought to be more fragile and less likely to weaken them.

Complementary feeding is initiated late by a good percentage of Mayan mothers, within a period that varies from six to nine months of age. In the same way, once foods have been introduced, the transition period until the child eats whatever the rest of the family is served is prolonged, concluding at three years of age. This practice, in addition to the deficient nutritional quality and quantity of foods offered, restricts the diet of small children. The main factors that influence this behavior are cultural, economic and social (lack of knowledge of mothers about high quality mixtures).

During illness, food intake is reduced. This is mainly due to the fact that a child who is ill does not eat or does not accept food. Mothers know they should continue feeding, but they do not insist. Generally, breastfeeding is not interrupted and the administration of liquids is appropriate during both diarrhea and ARI. On the other hand, food intake is inadequate, affecting the nutritional status of the child and contributing to a greater deficit. Cultural factors influence this practice, as some mothers believe breast milk or certain foods make illness worse.

An incompatibility between Mayan and biomedical health-disease models leads to different interpretations of the causes, signs and symptoms associated with an illness. Consequently, danger signs are frequently underestimated, causing a delay in seeking care.

There is a generalized practice to provide home remedies to the sick child. Regardless of the attributed cause of the illness or the family's economic resources to seek care, there is a considerable delay in seeking health care. Self-medication of mothers, encouraged by the ease of obtaining medicines without prescription, allows for the inappropriate use of pharmaceutical products. This makes treatment difficult and causes unnecessary expenses.

Even though home treatment of diarrhea entails a considerable amount of liquids, this does not guarantee the prevention of dehydration. ORS is not commonly used by mothers, especially because they do not alleviate the symptoms of diarrhea. Other factors that influence this practice are lack of promotion, lack of availability, and lack of knowledge.

Careseeking is not a universal practice. In relation to diarrhea, mothers generally seek care when home remedies are not effective or the child gets worse. The pharmacy, after home care, constitutes one of the first sources of health care. There are types of diarrhea in which treatment is sought in the community from a "folk" curer; for instance, "evil eye" and *cuajo*. Public or private health services are referred to only for dysentery or worms.

Mothers seek care more frequently for ARI than for diarrhea. However, such care is not sought in a timely manner. As with diarrhea, the first step in the treatment of ARI is the provision of home remedies, including self-medication of pharmaceuticals. Usually mothers wait for one to five days to seek care and when they do, their preference is for private providers. The main factors identified that affect this behavior are limited recognition of danger signs and insufficient appreciation of the urgency of seeking care.

Immunization is not a universal practice in children and mothers. Children are not always taken to health services for well-baby visits, and mothers do not go for prenatal check-ups; therefore, many lack a full course of immunization. Some of the main reasons for this are related to geographical, institutional, cultural, and social factors. Mothers' perceptions about vaccines and reactions are probably the main deterrent to child immunization.

According to the literature, access and use of health services is affected by sociocultural, economic, and health program factors. Sociocultural factors are related to the different health-

illness conceptualization, education, decision-making, and lack of confidence regarding motivations of health providers. The main factors related to health programs that affect the use of health services are related to access, service provision, information, technical competence, and interpersonal relations.

Existing information suggests that some health providers are discriminatory, disrespectful, unfriendly and unkind. This is probably due to perceptions and bias regarding ethnic groups and social classes. Both linguistic and technical communication is deficient, as providers are reluctant and unable to give comprehensible explanations of diagnosis and treatment. In addition to the above-mentioned constraints, some providers lack interest and underestimate mothers' ability to understand.

Based on the literature search, it can be concluded that there are many obstacles to overcome in approaching primary health problems in the Mayan population. The main constraints to improving health practices are related to cultural, social, geographical, economic, biological and institutional factors. Therefore, these factors should be taken into consideration in formulating adequate and efficient educational interventions.

## INTRODUCTION

To develop a behavior change strategy, including a package of effective educational materials to address child health problems prevalent in the Mayan population in the Guatemalan highlands, the Basic Support for Institutionalizing Child Survival project (BASICS) thought it important to undertake a thorough review of existing relevant information on those specific topics. As an important amount of information had been previously gathered on the subject, it was hoped that only limited new formative research would be needed.

This report on key behaviors from the review knowledge, the Guatemalan concerning child (under three diarrhea and respiratory immunization



provides a brief narrative based on the data obtained of existing information on attitudes and practices of Mayan population breastfeeding and young years of age) feeding, dehydration, acute infections (ARI), and (EPI).

The focus of the review was on behavioral information on the above-mentioned topics in relation to current practices, differences among various groups, knowledge and attitudes concerning these practices, and barriers and possible motivations or facilitating factors to modifying these

practices. In addition, surveys on coverage, knowledge and practices in the target areas that provided quantitative data were also examined to find out how common behaviors were followed. Information on potential communication channels and materials was also reviewed.

## INFANT AND CHILD FEEDING PRACTICES

### Breastfeeding

*Emphasis behavior: Initiate breastfeeding within an hour of birth and feed colostrum.*

In the Guatemalan highlands, there is considerable variation as to when breastfeeding is initiated. In each area, some women initiate breastfeeding immediately after birth, but others report waiting from an hour to three days. In home births, which are the rule, beliefs about colostrum and milk production are important determinants of the timing of breastfeeding initiation (Nieves et al., 1993; Sáenz de Tejada, 1996).

In many cases, feeding is initiated with prelacteal substances, which are usually offered due to cultural or medicinal reasons: according to mothers' perspective, to "clean" or purge the stomach, to protect against worms, to prepare the stomach for breast milk, to avoid pains and colics, to bring out phlegm, to quench thirst, to allow the mother to rest, and so the child will not cry until milk "comes down." Prelacteal purges in the form of honey, oil and herbal concentrates are given by grandmothers and midwives on a one-time basis. In some cases, a lactating woman, usually a relative of the mother, may nurse the child for the first few days. In other cases, other substances are used until "milk comes down;" these include water, sugar-water, anise-water, rice-water, honey, starch-based gruels, chicory syrup or water, weak coffee, a variety of infusions or *aguitas*, which are given in the way of *chupones* (pieces of cloth soaked with the substance), with a spoon or bottle. These liquids are given to complement or substitute colostrum and even though quantities offered tend to be limited, it is known that both the liquids and the utensils used to administer them are frequently contaminated. Generally, when mothers feel they have "real milk," they discontinue prelacteal feeds (Solien and Behar, 1966; Mata, 1978; Chávez Barillas, 1986; Vielman and Hurtado, 1986; Ghidinelli, 1988; Nieves et al., 1993; INCAP, 1995; Sáenz de Tejada, 1996; Hurtado et al., 1997).

The moment to initiate breastfeeding is usually associated with perceptions and use of colostrum, perceptions about milk production and the child's conduct. Although in some areas women recognize the distinct appearance and color of colostrum, there are no local names for it, and knowledge about its special properties is limited; however, there are certain beliefs related to its quantity and quality. Some Mayan women consider colostrum ("first milk" or "yellow milk") to be scarce, not nutritious, unfit for consumption, not good, and a cause of diarrhea and stomach problems. Frequently, mothers report waiting until "milk comes down" or "milk matures" to start breastfeeding (according to mothers, milk comes down from two hours to two days after birth). Intra-cultural variation, however, is great and within the same community mothers can



extract colostrum manually, discarding it and offering prelacteal feeding instead; others use it when “the child asks for it” (usually when he starts crying); and others report giving it a few hours after birth (Solien and Behar, 1966; Mata, 1978; Liu, 1985; Ghidinelli, 1988; Valadez, 1990; Nieves et al., 1993; Hurtado et al., 1994; Hurtado et al., 1996; Hurtado et al., 1997; Sáenz de Tejada, 1996). (See Tables 1 A and B).

*Emphasis behavior: Breastfeed exclusively at least during the first four to six months.*

Although breastfeeding on demand is virtually universal among the Mayan population, exclusive breastfeeding is not a common practice. There are certain beliefs related to the quantity and quality of breast milk and the child’s conduct that influence this practice (Delgado et al., 1981; Nieves et al., 1993; Sáenz de Tejada, 1996).

In addition to prelacteal feeding, there is an early introduction of other non-nutritive liquids such as water, sugar-water, anise-water, sugar teas, infusions, liquid gruels, sweetened weak coffee, *aguitas* (rice, corn meal, barley), etc. given with a spoon or bottle. The attitude towards breastfeeding is generally positive; there is a generalized belief that breast milk is the best food for children. However, many mothers also consider that it is necessary to supplement breast milk because they believe it is not sufficient in quantity and quality; to quench thirst (perception that infants are thirsty for liquids other than breast milk); and to cure colics, stomach aches and other illnesses (anise-water is widely used for gastrointestinal problems) (Menéndez Aguilar, 1987; Vielman and Hurtado, 1986; Ghidinelli, 1988; Nieves et al., 1993; Sáenz de Tejada, 1996; Hurtado et al., 1997).

Perhaps the most important reason for introducing liquids is the pervasive sentiment among women that they are incapable of producing sufficient milk to satisfy infants’ hunger and keep them growing well. This lack of self-confidence influences their perceptions of quantity and quality of milk produced. Women often state that their milk “dries up” and their infants are left hungry even after feeding from both breasts. Often mothers’ decisions are influenced by grandmothers, friends and health care providers who insist that infants are hungry and maternal milk is insufficient or bad (Valadez, 1990; Nieves et al., 1993).

Some mothers believe that it is impossible for them to produce good enough milk to totally satisfy an infant’s hunger and nutritional needs for a full four months. They repeatedly report that their milk is “thin,” “yellow” and “old.” They state they realize this when their infants wake up very soon after breastfeeding and want to feed again or when they cry almost immediately after they have feed, suck their thumbs or fists (Valadez, 1990; Nieves et al., 1993).

There is also a persistent belief that infants become thirsty when hot. As mothers consider human milk “food,” it cannot satisfy their thirst. Women say they know this because babies continue crying after they have breastfed (Vielman and Hurtado, 1986; Nieves et al., 1993). (See Tables 2 A and B).

*Emphasis behavior: Continue breastfeeding up to 23 months of age.*

The average duration of breastfeeding in Guatemala is more than a year, with important differences by geographical location. In general terms, mothers breastfeed their children for some months to a maximum of one to four years of age. If a mother does not become pregnant again, the child may breastfeed for several years, sometimes until the boy is five years old. In a community in Chimaltenango, mothers believe boys should be weaned before girls, as boys can weaken mothers while girls are already weak and cannot affect their mothers (Soto Vargas, 1977; Mata, 1978; Anderson, 1979; Gussler et al., 1984; Hurtado et al., 1985; Monteith et al., 1987; Chávez Barillas, 1986; MSPAS and INCAP, 1987; Menéndez Aguilar, 1987; Ghidinelli, 1988; Scrimshaw and Guzmán, 1991; INE et al., 1996; Sáenz de Tejada, 1996).

In comparing Mayan and non-Mayan mothers, the former breastfeed their children for a longer period of time and generally do not mention problems related to lactation (for example, chapped nipples) (Koniz, 1980; Hurtado et al., 1985). Various regression relationships point to maternal age at time of birth, education, and socioeconomic status as the variables associated with shorter duration of breastfeeding (Teller et al., 1977).

There are noticeable regional variations in weaning age. Explanations given for beginning to wean are perception of insufficient breast milk, rejection of the child, and health problems of both the mother and the child. Another reason mentioned for stopping breastfeeding is a new pregnancy. When a mother becomes pregnant, it is believed that her milk belongs to the new child and that it is bad for the older child. Others believe that it causes diarrhea and that "milk is not good anymore." In spite of these beliefs, some mothers continue breastfeeding until the new child is born. In some places, when a child does not want to stop breastfeeding, he is sent to his grandparents for a few days or the mother places lemon or chili on her breasts to make them disagreeable to the child. At this time, the child starts to sleep with other members of the family and if he cries at night, he is given a bottle (Solien and Behar, 1966; Del Pinal, 1981; Breeuwer, 1984; Hurtado et al., 1985; Hurtado and Villatoro, 1985; Chávez Barillas, 1986; Scrimshaw and Guzmán, 1991; INE et al., 1996; Sáenz de Tejada, 1996; Hurtado et al., 1997). (See Tables 3 A and B).

### **Complementary Feeding**

*Emphasis behavior: From 6-24 months, provide appropriate complementary feeding.*

Generally, Mayan mothers start complementary feeding at six to eight months of age, in a casual and non-systematic way. There are some cases, though, in which the introduction of food is started very early, and others in which it is started very late, as some mothers believe food will make the child ill (Solien and Behar, 1966; Mata, 1980; Breeuwer, 1984; Hurtado et al., 1985; Chávez Barillas, 1986; Villatoro Paniagua, 1986; Lara et al., 1993; Hurtado et al., 1994; INE et al., 1996; Sáenz de Tejada, 1996; Hurtado et al., 1997).

Complementary feeding begins with liquids such as sugar-water, herb-water and cereal-water. In general, mothers do not prepare special foods for their small children, although they do change their texture. Foods offered are described as “easy foods within reach.” The introduction of semi-solid and solid foods begins with whatever mothers have at home: gruels, bread with coffee; rice or pasta with broth; bean or green vegetable broth; potatoes; *guisquil* (vegetable); cooked plantain; maize *tortilla* or *tamalito*. Although beans and green vegetables are present in the diet of some families, children often receive only the broth (Mata, 1978; Hurtado, 1983; Breeuwer, 1984; Hurtado et al., 1985; Villatoro Paniagua, 1986; Chávez Barillas, 1986; Rivera, 1991; Hurtado et al., 1994; Sáenz de Tejada, 1996; Hurtado et al., 1997).

The gradual introduction of foods is done mostly to get children used to semi-solid and solid foods and to their different flavors and textures; to help mothers when they feel constrained by the frequent demands of the breastfeeding infant (they breastfeed less); and to “normalize” or “make” the stomach. However, food is not offered on a regular basis or in adequate quantities, in part because mothers wait for maturational clues from the child to start feeding regularly. Likewise, foods tend to be offered twice or three times a day, portions served and consumed are small and frequently there is no variation, an inadequate caloric density and a low energy intake. In addition, the diet does not supply sufficient quantities of protein, iron and vitamin A (Solien and Behar, 1966; Mata, 1980; Hurtado et al., 1985; Chávez Barillas, 1986; Vielman and Hurtado, 1986; Rivera, 1991; Nieves et al., 1993; Díaz et al., 1995; Rivera et al., 1996; Sáenz de Tejada, 1996; Hurtado et al., 1997).

Mothers are generally passive when their children are eating. A large proportion of them do not feed their children in the mouth, or help, encourage, or force them to eat. They have a tendency to please them if they do not want to eat or want something else, such as chips (Rivera, 1991; Rivera et al., 1996; Hurtado et al., 1997).

One factor that influences complementary feeding is mothers’ well defined concepts concerning their children’s diet. In the first place, they believe a child regulates his diet adequately. His stomach is considered “almost like an intelligent being” that defines the quantity of food the child should eat; therefore, the child is not forced to eat great quantities. They tend to underestimate the ability of their children to eat and believe the child should gradually get used to eating; that too much food is bad for the child; and that the child should not eat late at night (after eight o’clock) because he can get sick (Rivera et al., 1996; Sáenz de Tejada, 1996).

In addition, cultural or cognitive aspects influence the consumption of certain foods; for example, some mothers are afraid to feed bananas because they are “cold,” sweet bread because it can upset the stomach or cause *empacho*, or strained beans because they are “heavy” (Chávez Barillas, 1986; Rivera, 1991).

Apart from the persistence of cultural factors, there are some material and economic circumstances that influence women’s infant feeding decisions. These have to do with women’s

work load and the activities they perform to meet economic responsibilities (Nieves et al., 1993; Hurtado et al., 1997).

Knowledge about adequate weaning foods (vegetables, fruit, etc.) is not lacking, but in most cases, these are expensive, families cannot always buy them, and sometimes they are not available at home or in the community. On the other hand, mothers tend to have no knowledge about high quality mixtures, especially about those with high energy content (Hurtado et al., 1985; Sáenz de Tejada, 1996; Hurtado et al., 1997).

The introduction of food is not translated into weaning, and breastfeeding generally continues, with some geographical differences. Children start eating by themselves at 8-24 months, depending on the child. The transition from this diet to that of an adult generally lasts until the child is from one to three years of age, when they are usually eating what the rest of the family eats on a regular basis (at least three meals a day plus *golosinas*) (Mata, 1978; Villatoro Paniagua, 1986; INE et al., 1996; Sáenz de Tejada, 1996). (See Tables 4 A and B).

### **Feeding During Illness**

*Emphasis behavior: Feed as much as possible during illness and feed extra during recovery.*

Contrary to recommended behavior, there is a drop in food intake during diarrhea and convalescence. Food classification dichotomies such as “strong” or “heavy,” “soft” or “light,” and “hot” and “cold” foods operate in decisions regarding the diet of sick children. Liquids in the form of soups and gruels, considered “soft” foods, are favored. For illnesses regarded as “hot,” cool drinks and foods like gruels and bread are recommended, while “hot” foods such as *Incaparina* and milk are proscribed. Boiled foods served warm are preferred to avoid “bringing in” more “cold” into the stomach. In general, foods prescribed are given because they are soft and easy to digest (Hurtado, 1983; Hurtado and Esquivel, 1986; Villatoro Paniagua, 1986; Rivera, 1991).

Among the Mayans, it is common to continue breastfeeding during a diarrhea episode. They believe breast milk “helps children keep on going,” “they need breast milk,” “it makes them stop crying,” and sometimes, “it is the only thing they will accept.” In some cases, though, they discontinue due to the following reasons: the child needs to rest, the child rejects it (has nausea), does not want it, it can make him sicker, or it is causing diarrhea (Hurtado et al., 1985; Villatoro Paniagua, 1986; PCI, 1988; Enge and Hewes, 1988; Burleigh, 1989; Rivera, 1991; Díaz et al., 1995; Hurtado et al., 1997).

According to Mayas, environmental, emotional and biological factors affecting the mother can change the quality of breast milk, causing diarrhea in children. The quality of breast milk can change to “cold,” “very cold,” “very hot,” or “bad” (*descompuesta*) by eating certain foods; by not following traditional prescriptions regarding breastfeeding; by having strong emotions, such as *enojo*, *cólera*, fear, *susto*, and *espanto*; by going out and getting too much sun; by doing house

chores and making *tortillas*; by delays in breastfeeding schedules; or by a new pregnancy. When diarrhea is believed to be caused by breast milk and it persists in spite of treatment given, breastfeeding can be totally discontinued (Hurtado et al., 1985; Hurtado, 1989; Hurtado et al., 1997).

Other factors that influence the continuation of lactation are related to mothers' beliefs concerning the different causes of diarrhea; for example, they believe diarrhea can be caused by *ojo*, from falling too much, from mothers' dirty hands or chapped nipples, or from *lombrices* (Hurtado et al., 1997).

The administration of liquids available at home is also continued or increased. According to mothers, children ask for more liquids than solids because they become thirsty. These liquids include boiled water, cereal-water, cereal gruels, herb teas, carbonated refreshments without gas, plantain-water or gruel, lemon juice, lemonade, other juices, coffee, bean or green vegetable broth, or boiled water with ORS. *Incaparina*, powdered milk, and milk are proscribed in case of certain diarrheas (Hurtado et al., 1985; Villatoro Paniagua, 1986; OMS/OPS, 1986; Enge and Hewes, 1988; Rivera, 1991; Rivera et al., 1996; Hurtado et al., 1997).

Food intake is generally dropped in case of diarrhea, not due to special food proscriptions, but because children are said to lose their appetite. When they are offered food, they turn their heads and reject it, they spit it out, they do not open their mouths, or they start crying. Therefore, it is primarily the child who decides what to eat or whether to eat at all. During convalescence, children start eating a little at a time (Hurtado et al., 1985; Villatoro Paniagua, 1986; Hurtado and Esquivel, 1986; Burleigh, 1989; Rivera, 1991; Hurtado et al., 1997).

Notwithstanding, there are foods that are prescribed or proscribed in case of diarrhea. Recommended foods in most areas include: vegetables, potatoes, boiled rice, pasta, bread, maize *tortillas*, *caldos* low in fat, and other non-greasy foods; however, potatoes and rice are proscribed in San Marcos, as they are considered "cold." The most frequently used vegetables are pumpkin and *guisquil*, as they are considered "soft" and not "cold" or "hot." Most of the foods proscribed are believed to be "cold," "heavy," or greasy (e.g., fried rice, beef or chicken broth, whole beans, milk, dairy products, eggs and avocado). These foods are believed to make the illness more severe and cause general indisposition. In the case of diarrhea caused by stomach worms, sweet foods and sweets are proscribed as it is believed worms become more "agitated." Nevertheless, mothers indicate that they can offer and feed anything that the child wants to eat (Hurtado et al., 1985; Villatoro Paniagua, 1986; Hurtado and Esquivel, 1985; Brown, 1988; Enge and Hewes, 1988).

It is clear that mothers are aware of the need to help feed the child during diarrhea and act accordingly. When a child is sick, most mothers become active promoters of their feeding and provide them with special care. However, they believe a child should not eat too much, especially when he has stomach problems (Rivera, 1991; Rivera et al., 1996). (See Tables 5 A and B).

The administration of liquids continues in case of ARI, but it is not increased. Herb infusions made from chamomile, fig leaves, cinnamon, *apazote*, mint *bugambilia*, thyme, rue, and pineapple are common but given in minimum quantities (Sáenz de Tejada, 1995).

Breast milk is not restricted in case of ARI. However, there are some beliefs related to the quality of breast milk: it can become *resfriada* (cold) due to mothers' carelessness. It is believed that feeding this breast milk can provoke respiratory illnesses in children (Sáenz de Tejada, 1995).

Food intake is not limited in children with ARI; however, consumption is cut down due to a reduction of appetite. Furthermore, mothers do not insist in having children eat (Sáenz de Tejada, 1995). In general, for respiratory illnesses, the only foods that are eliminated with some regularity from the sick child's diet are milk, eggs and whole black beans. Besides maize, *tortilla*, rice and cooked vegetables are favored in these cases. When children have a fever, gruels are recommended while eggs and milk, which are considered "hot," are not given because they are believed to cause nausea and vomiting (Hurtado and Esquivel, 1986; Villatoro Paniagua, 1986).

## HEALTH-ILLNESS CONCEPTUALIZATION



The human body is conceptualized in different ways by diverse cultures, and this is intimately related to the way health and illness are conceived. According to traditional Mayas, the stomach is located in the womb, the lungs at each side of the back, the kidneys below the lungs, the bladder below the stomach, and the liver between the stomach and the heart. In relation to the heart, there is some disagreement. All corded elements are considered veins; those from the legs are joined to the stomach and those from the arms, to the heart (Ghidinelli, 1988).

The normal functions of the body are also conceived differently. Traditional Mayas believe that food and air are lodged in the stomach before evacuation. Veins bring strength to the stomach, where children are also formed. It seems that the stomach is conceived as a great energy receptor (Ghidinelli, 1988).

Another important element is blood, especially beliefs associated to its quality and quantity. According to Mayas, a body that loses blood is permanently weakened. Blood can be "strong" or "weak;" these characteristics are congenital and intimately related to behavior. In addition, they believe that blood determines the physical and psychological characteristics of a person and his resistance to illnesses (Ghidinelli, 1988; Ramírez and Mazariegos, 1995; Bourgey and Pol, 1997).

Likewise, classifications of disease, causes, symptoms, and treatments vary among the different ethnic groups. According to Robles (1993), among the Mayan population, beliefs about the etiology of diseases are substantially different from modern medicine. Illnesses are usually classified into two broad categories: natural and spiritual. Natural illnesses are for the most part those that have clear symptoms such as swelling, bleeding, coughing, and can be attributed to a specific incident. Spiritual illnesses are those that tend to linger inside the body and affect the person in various ways, such as excessive weight loss, fatigue, or any psychological affliction. Spiritual illnesses are caused by the inopportune intervention of spirits and other human beings. According to Mayas, a "weak" person is more susceptible to this type of intervention. There are six types of spiritual illnesses: *susto*, "evil eye," "air," problems caused by the spirits of the dead, those caused by mean spirits, and those caused by witchcraft (Villatoro Paniagua, 1986; Ghidinelli, 1988; Robles, 1993; Ramírez and Mazariegos, 1993).

While the etiology of spiritual illnesses is diverse and depends in part on the particular cosmology of the group, the etiology of natural illnesses is more uniform among the different groups. Most of the direct causes of natural illnesses are usually attributed to an imbalance between "hot" and "cold" that follows closely the humoral imbalance explanations of medieval medicine. Imbalances can be caused by exposure to physical agents (water, cold, air, heat), specific behaviors (tiredness, sexual relations, emotional alterations) and an imbalanced diet. People can be in a "hot" or "cold" state that can cause illness if it is abruptly altered. Another set of natural illnesses are those more clearly caused by "physical disturbances;" for example, a heavy meal can disturb worms. In the case of diarrheas, some of them can be produced by "hot-cold" imbalances and others are thought of as normal given the age of the child (Villatoro Paniagua, 1986; Ghidinelli, 1986; Ramírez and Mazariegos, 1993; Robles, 1993; ATI and GRT, 1995)

According to Neueswander and Dean (1977), Mayas use the categories of "hot" and "cold" to describe qualities of the body, the environment, food, herbs and medicines. Each disease is classified according to its quality of "hot," "cold," "humid" and "dry." "Humid" diseases are "sent by God" and "dry" ones are "sent by people." In regard to diseases, the concepts of "hot-cold" are intimately related to those of strength and weakness. For example, strength is related to "hot" in *ojo*, a "hot" and "dry" disease that affects babies who are glanced at by a person who has "strong" or "hot" blood (a pregnant or menstruating woman, a working man whose blood is "hot" from the sun or alcoholic beverages). "Humid" diseases have a simple and natural etiology, do not last for long and are cured fast by means of simple medicines. "Dry" diseases have a supernatural and malignant etiology, an unfavorable prognosis and lack of sensibility to all types of treatment (medicines, massages, baths or special diet). *Curanderos* agree that there is a relation between the "humid" quality and diseases that are cured easily and the "dry" quality and chronic diseases that cannot be cured. The classification according to "cold" or "hot" characteristics is based on the etiology involved. For example, a "dry cough produced by heat" is classified as "hot;" a "dry cough produced by cold" is a "cold" disease; watery diarrhea is generally classified as "cold;" diarrhea with blood or mucus is classified as "hot" (Neueswander

and Dean, 1977; Villatoro Paniagua, 1986; Ghidinelli, 1988; Ramírez and Mazariegos, 1993; ATI and GRT, 1995).

Previous research suggests that diarrhea, generally known as *asientos* in Guatemala, is a well recognized illness, although it is some times reported as a symptom of other illnesses, generally “folk” illnesses. Popular, “cultural” or “folk” illnesses are those “syndromes” affecting members of a particular social group, for which culture provides an etiology, a diagnosis, preventive and curative measures (Villatoro Paniagua, 1986; Hurtado, 1989; ATI and GRT, 1995; Pebley et al., 1996).

There are some variations on the conceptual schemata of diarrhea. For example, according to Hurtado and Esquivel (1986), Scrimshaw and Hurtado (1988), and Pebley et al. (1996), diarrhea is classified according to eight primary causes. Burleigh (1989) presents another conceptual schemata of childhood diarrhea that includes six different categories. Another classification based on related causes of diarrhea includes three major groups: those caused by “heat,” those caused by “cold,” and those caused by magic factors or “fear” (Valadez, 1990). Depending on each type of schemata, symptoms and treatment vary, using traditional methods and pharmaceuticals. See Figure 1 and 2.

Two beliefs about the causes of illness underlie the explanatory models of diarrhea in Guatemala. The first is that an imbalance of “hot” and “cold” can cause illness. The second belief concerns the function of worms in the digestive system. In a healthy child, “hot” and “cold” elements are in equilibrium, and digestion is performed by worms which live in the stomach or in a small ball, bag, or sack within the stomach, located in the lower abdomen. All humans are said to have *lombrices* (stomach worms). Having worms in the stomach is not a cause of diarrhea or illness in itself, but rather a normal condition essential to good health. A serious condition results only when there are too many worms and they leave their bag, migrating to the head and other parts of the body like the veins. One of the symptoms of an *ataque* or *alboroto de lombrices*, as the illness is known, is diarrhea (Hurtado and Esquivel, 1986; Burleigh, 1989; ATI and GRT, 1995; Pebley et al., 1996). See Figure 3.

Diarrhea may be a symptom of other children’s illnesses, such as *cuajo* or “fallen stomach,” “fallen fontanelle,” and “evil eye.” The *cuajo* is considered by some to be a separate organ close to the stomach and by others as a part of the stomach, which might fall (if children are always jumping around or getting too much water). A “fallen fontanelle” is another folk illness characterized by a sunken fontanelle, which can be caused by a sudden change in the position of the child’s body or by abruptly taking the breast away when the child is breastfeeding (Hurtado and Esquivel, 1986; Hurtado, 1989; ATI and GRT, 1995).



FIGURE 1

CONCEPTUAL SCHEMATA OF CHILDHOOD DIARRHEA

Cause	Mother		Food	Tooth Eruption	Fallen fontanelle* Fallen stomach*		Evil eye	Stomach worms*	Cold enters stomach	Dysentery
	Hot Physical activity Hot foods Pregnancy	Emotional Anger "Bile" Sadness Fright	Bad food Excess Does not eat on time  Quality Hot Cold	Tooth are cut and child swallows hot drools	Stomach falls due to child falling, rain, cold	Fontanelle falls due to care-less handing of child	Caused by the gaze of persons with hot blood	Worms get out of bag due to thunders, rain	From feet and buttocks (cold dirt floor) From head	A simple diarrhea is neglected and gets complicated
Symptoms  All types have watery and frequent stools (asientos)	Colic	Swelling, Very dangerous	Flatulence, feeling of fullness	Diarrhea	Green with mucus	Sunken fontanel, vomiting; green in color	Fever	Worms	White in color	Blood in stools, "urgency"; color is red or black
Treatment	Not breast-feeding when hot Mother change diet Breast-feeding stops	Home, drugstore, injectio-nist, witch, spiritist	Home, folk curer	None	Folk curer		Folk curer	Drugstore, home, folk curer	Home, folk curer	Home, drugstore, health post

\* Folk illness, diarrhea can be one of its symptoms.  
(Hurtado and Esquivel, 1986)

FIGURE 2

CONCEPTUAL SCHEMATA OF CHILDHOOD DIARRHEA

<u>"heat"</u>	<u>"cold"</u>	<u>"indigestion/"</u>	<u>"indigestion of inflammation"</u>	<u>evil worms</u>	<u>dentition eye</u>
worms "alborotan" (cough, crying, nausea, no appetite)	worms "alborotan" (cough, crying, nausea, no appetite)	worms "alborotan" (cough, crying, nausea, no appetite)	stomach cramps, eyes roll up	crying no appetite	crying
"infection" (yellow diarrhea, fever, worms sometimes)	"infection" (green diarrhea, worms sometimes)	"infection" (white diarrhea, with worms)	"infection" (white diarrhea, with worms)	chronic diarrhea, "granos," fever	white diarrhea
vomiting, dehydration	vomiting, dehydration	vomiting, dehydration	vomiting, dehydration	vomiting, dehydration	
dysentery					

(Burleigh, 1989)

FIGURE 3

TAXONOMY OF WORMS

	WORMS	
	QUIET	AGITATED
CAUSE	All persons have worms in stomach or bag in stomach	Increased number of worms; thunders scare worms out of bag.
SYMPTOMS		Lack of appetite, stomach ache, diarrhea, worms in stools, vomiting worms out of mouth and nose, sleeping with eyes open, head falls back, nose itches, choking.
TREATMENT	Antiparasitic medicine (home or pharmaceutical) to keep their numbers in check.	Home treatments (herbal drinks, baths, rubbing, <u>conforte</u> ) aimed at attracting worms back into their bag.
GRAVITY	Normal	Very serious, can lead to death.

(Hurtado and Esquivel, 1986)

According to earlier studies, poor hygiene was not included in the taxonomy for Guatemala and was mentioned solely as a means of ingesting worms. More recently, though, findings suggest that some traditional models of illness causation identified in previous investigations are relatively unimportant in communities studied. These findings, in conjunction with frequent responses related to hygiene and water, suggest that traditional explanations may be coexisting with biomedical views of illness causation to a greater degree today than in the past (Pebley et al., 1996).

The etiology of respiratory illnesses is also related to an imbalance between “hot” and “cold” that follows closely the humoral imbalance explanations of ancient medicine. Causes of respiratory infections are similar in the different Mayan areas and are fundamentally attributed to abrupt changes in temperature, a *descuido* (carelessness), or from having breastfed *leche resfriada* (milk with a cold). Recent findings, though, suggest that chills and cold are now given more emphasis as a causation than changes from “hot” and “cold” (Sáenz de Tejada, 1995; Pebley et al., 1996).

There are also some variations on the conceptual schemata of respiratory illnesses. For example, in Comalapa (Chimaltenango), these are classified into four groups: cold, cough, *ojo*, bronchitis and pneumonia; in San Bartolo (Totonicapán) and in Ciudad Vieja (Sacatepéquez), the classification comprises two groups: chest and lung diseases. In San Miguel (Sacatepéquez), there are three main divisions: cold, gripe and cough. In some cases, the main categories are subdivided, as in San Miguel, where a cold can be common or pulmonary. Depending on each type of schemata, causes, symptoms, gravity, and treatment vary (Hurtado and Esquivel, 1986; Barriga, 1994; Sáenz de Tejada, 1995). See Figure 4.

As the previous information is related to cognitive structures more than to specific practices, only a table on current problems, motivations and constraints was included for this section of the report. See Table 6 A.

## HOME HEALTH PRACTICES

### Diarrhea

*Emphasis behavior: Mothers recognize diarrhea.*

The process of providing health care starts at home with the mother, when she notices signs in the child that make her think he is ill. A child is considered to have diarrhea when waste is liquid or semi-liquid in consistency and occurs frequently, ranging from 5 to 20 times in a 24 hour period. Diarrhea is referred to as *asientos*, and there are certain phrases commonly used when describing its consistency; waste is described as “coming out in the same form as it was eaten,” as “just like *mixtamal* water,” and “just like opening a water faucet.” Mothers recognize different typ mes of diarrhea, distinguishing them by the different colors. There is green, white, and yellow diarrhea and diarrhea with blood; however, there is a great diversity in relation to the

meaning of the color of diarrhea. Symptoms associated with diarrhea include frequent crying and complaining, tiredness, restlessness, sleepiness, stomach aches, loss of appetite, fever, vomiting, and palor. Most of these signs and symptoms are associated to the diarrhea process in general, without considering the causes; in some cases, however, signs are related to causes; for example, nose itching and teeth scratching is related to diarrhea produced by worms and small eyes are associated to diarrhea produced by “evil eye” (Villatoro Paniagua, 1986; Burleigh, 1989; Ward et al., 1989).

The concept of dehydration is known to Mayas, but they are not familiar with the term in Spanish. However, they describe it as “to lose liquid in the body,” or *seco* (dryness). Apparently, though, there is some confusion between dehydration and malnutrition or loss of strength. The dehydration symptom more frequently mentioned is sunken eyes. Other specific symptoms mentioned are thirst, weakness, dry mouth, and purple around the mouth. Even though the sunken fontanelle is mentioned, it is never identified as one of the symptoms of dehydration; it is considered as a specific illness (Villatoro Paniagua, 1986; PCI, 1988; Burleigh, 1989; Ward et al., 1989).

For mothers in Guatemala, diarrhea can be an illness by itself (*asientos*, dysentery), a symptom among others, and sometimes it is considered more characteristic of a popular or folk illness (*empacho*, “evil eye,” “fallen fontanelle,” *alboroto de lombrices*). It is also seen as a normal sign of changes in growth and development in the child, such as tooth eruption, crawling, first steps, or first words (Villatoro Paniagua, 1986; Hurtado, 1989).

According to the different taxonomies found in the literature, there are two that can provide a general idea of the cognitive interpretation of diarrhea among the Mayan population. Burleigh (1989) found six cognitive schemata for diarrheal disease, each with specific causes, a linked progression of concepts, symptoms, signs, and diagnostic characteristics. Nearly all are related to the humoral theory of disease, including the concept of “evil eye.” Stool color reflecting humoral theory is a key concept in diagnosis. Behavior associated with these cognitive schemata (traditional treatments, pharmaceutical and dietary management) also adhere to the humoral concept of equilibrium and include the use of ORS and liquids.

Regarding the second taxonomy, diarrhea is classified into eight cognitive schemata: mother, food, tooth eruption, fallen fontanelle/stomach, “evil eye”, stomach worms, cold enters stomach, and dysentery. Breastfeeding children can get diarrhea if the mother’s milk is hot (pregnant, doing house work, cooking, had too much hot food); or if she has strong emotions (anger, sadness, fright). One can also get diarrhea for different reasons associated with food intake (eating spoiled food, hot food, cold food, too much, too much of a particular food, not at the proper time). Another perceived cause of diarrhea in small children is tooth eruption. Diarrhea can also be caused by children getting cold and wet, as cold enters their body from the feet or the head and affects their stomach, among other parts. Diarrhea may be a symptom of other children’s illnesses such as *cuaajo* or “fallen stomach,” “fallen fontanelle,” stomach worms and “evil eye” (Hurtado and Esquivel, 1986; Scrimshaw and Hurtado, 1988; Pebley et al., 1996).

**FIGURE 4**

**CONCEPTUAL SCHEMATA OF RESPIRATORY ILLNESSES**

Types	COLD		GRIPPE	COUGH		
	Common	Pulmonary	Exposure to cold when body is hot.	Common	Pulmonary	Whooping
Causes	Exposure to cold when body is hot; abrupt weather changes.	Neglected common cold.		Neglected cold, abrupt weather changes.	Neglected common cold and cough.	Seasonal, in the air.
Symptoms	Running nose, headache, sneezing, red eyes.	Same as cold plus fever, difficult breathing.	Same as cold plus body ache, fever, general malaise.	Cough (and sometimes cold), phlegm (not dry).	Dry cough, chest pains, fever.	Cough ends in a whoop, child chokes.
Gravity	Not serious.	Very serious.	Moderately serious.	Not too serious.	Very serious.	Serious.
Treatment	Home, drugstore.	Home, drugstore, injectionist, physician, hospital.	Home, drugstore, injectionist.	Home, drugstore.	Home, drugstore, injectionist, physician, hospital.	Home.

(Hurtado and Esquivel, 1986).

P

According to a more recent study (Pebbley et al., 1996), respondents gave many of the same causes for diarrhea previously described, in particular those causes related to cold, worms, and eating. Other folk illnesses, such as evil eye and *empacho*, were only rarely mentioned. In contrast to earlier anthropological work in Guatemala, many women from Mayan communities mentioned dirtiness as a cause of diarrhea. The cluster of explanations related to “cold,” worms, and eating reflects underlying beliefs about physiology which are sharply different from those of the biomedical perspective. Dirtiness as a cause, however, is much closer to the biomedical notion of the transmission of pathogens through fecal-oral contamination, even though the specific mechanisms by which they believe dirtiness causes diarrhea may be quite different. See Tables 7 A and B.

*Emphasis behavior: Mothers provide quality home care.*

Once the cause of diarrhea is identified, treatment generally starts with the mother, who normally gives the child some kind of popular medicine (medicinal plants or a pharmaceutical product sold in local stores or the market). Frequently, traditional and non-traditional medicines are combined; for example, a combination of herb teas and Santemicina, a popular medicine sold in individual dosages. Often, several different herbal and patent remedies are tried in the course of a diarrhea episode (Hurtado and Villatoro, 1985; Hurtado and Esquivel, 1986; Cominsky, 1987; Valverde, 1988; Ward et al., 1989).

Traditional treatment patterns adhere for the most part to the humoral system use of opposites: diarrhea caused by “heat” is treated by two types of liquid thought to be cool or “fresco” (teas or “waters” made from rose hips or barley) and coca-cola; diarrhea caused by “cold” is treated by an infusion of chamomile (thought to be “hot”), body massages with marjoram and rubbing alcohol and a drink of alcohol, also categorized as “hot.” In general terms, the majority of treatments for diarrhea from “heat” or “cold” include a variety of liquids (infusions, “waters” and teas) prepared with different wild, cultivated and purchased substances used for each type or stage of diarrhea. Some of these traditional herbs used include mint, absinthe, *apazote*, rue, lemon, *pericón*, *salvia santa*, guava leaves, cacao, and eucalyptus (Hurtado and Esquivel, 1986; Villatoro Paniagua, 1986; OMS/OPS, 1986; Ward et al., 1989; Hurtado et al., 1997).

In some areas, pharmaceutical treatment is mostly used for diarrhea due to “heat,” and during the different stages in the progress of some schemata. In other areas, non-traditional medicines are combined with traditional medicines. Pharmaceutical products used include: Alka Seltzer, Tabcin, *Sal Andrews*, *Sal de Uvas Picot*, *Cumalito*, *Santemicina*, *Auromicina*, *Yodoclorina*, *Agromicina*, *Sulfadiacina*, or *Enterobioformo*, and baking soda. These remedies are what mothers call “simple medicines” (Hurtado and Esquivel, 1986; Villatoro Paniagua, 1986; Burleigh, 1989; Ward et al., 1989).

Pharmaceutical remedies and home remedies can be combined with traditional treatments, such as “stomach rubbings,” traditional saunas (*temascal*) or immersion in cold water. Generally,

mothers provide these treatments, although some times they seek help from the local midwife for “rubbings” (Villatoro, 1986; Ward et al., 1989).

Treatment is generally started on the second or third day of the child having diarrhea. If home remedies do not function during the following days, mothers consult with their husbands and/or an older women from the community who knows about illnesses. If the grandmother or the mother-in-law is there, mothers will frequently consult with them. In other cases, a neighbor can be consulted regarding home remedies. Older women with several children mentioned that they do not consult with anyone else as they already have experience in treating diarrhea (Ward et al., 1989).

The specific treatment used depends on the perceived cause of diarrhea. Just as illnesses are believed to be passed through breast milk, so are remedies, and mothers may take them to help cure their nursing children’s diarrhea; for example, coconut oil, milk with burnt cloves, “life” or “red beverage” pills, magnesium carbonate powder and rhubarb. The child can also be given a home remedy. To treat *empacho de leche* mothers give their children a beverage made with three milks (breast milk from a mother who has a baby girl, that of a mother who has a baby boy and that of the mother whose child has *empacho*). Mothers may also modify their diet if a particular food consumed by them is believed to be causing diarrhea in the nursing child (Scrimshaw and Hurtado, 1988; Hurtado, 1989).

Treatment of the stage called infection (with or without worms) and dysentery consists of infusions of wild and cultivated herbs. The treatment of worms also consists of “waters” or teas made from wild, cultivated or purchased substances. The only exceptions are garlic and cigar which are rubbed, with herbs and alcohol, on the body of the child to “keep the worms from climbing” or to “bring the worms together.” Dysentery is also treated with water or tea made from wild or cultivated substances. The only non-liquid treatment is the practice of tying the child’s stomach with a cloth belt to keep it from “falling.” Treatment for *mollera caida* involves sucking the fontanelle, placing medicinal plants on the head tied with a handkerchief, or placing the child upside down. Traditional treatment of diarrhea from “evil eye” involves very little preparation of liquid remedies and more magical practices, including bathing the child with herb water and throwing the water out, passing an egg or a live duck over the child and throwing it away, and placing pins or lemons in a cross (Hurtado and Esquivel, 1986; Burleigh, 1989; ATI and GRT, 1995; Hurtado et al., 1997). See Tables 8 A and B.

*Emphasis behavior: Mothers administer ORS correctly.*

Most of the existing information suggests that knowledge about ORT is limited among Mayas. However, according to one of the studies (Ward et al., 1989), when they were shown a package, they recognized it as the medicine doctors and other health providers prescribe. Some mothers know how to prepare them, but only few use them (Pineda et al., 1984; MSPAS and INCAP, 1987; Enge and Hewes, 1988; PCI, 1988; Robles, 1993; Díaz et al., 1995; Hurtado et al., 1997).



There are some erroneous ideas about ORS. First, ORS is generally not recognized as part of the home remedies pharmacopoeia, but as a “medicine” that should be prescribed by a doctor. A second mistaken belief is that ORS can rapidly stop diarrhea. A third fallacy that is in line with traditional beliefs about using laxatives to treat diarrhea is that ORS can serve to clean the stomach (Ward et al. 1989; Burleigh, 1989).

There are also positive but erroneous beliefs about ORS. Many believe that ORS can provide strength and help to nourish the child. It is considered as a remedy to help the child recover his appetite and strength lost due to diarrhea, fever or other symptoms. It seems that ORS is considered a “cold” remedy; therefore, it is not used for “cold” diarrheas, which are more common than “hot” ones (Ward et al., 1989; Burleigh, 1989).

Some of the main factors that influence the use of ORS are that it does not alleviate the symptoms of diarrhea, lack of promotion, lack of availability, and lack of knowledge (including not knowing what it is and how to use it) (OMS/OPS, 1986; INCAP, 1987; PCI, 1988; Blanco, 1989; Valadez, 1990; Mustard et al., 1992; Hurtado et al., 1997). (See Tables 9 A and B).

### **Acute Respiratory Infections**

*Emphasis behavior: Mothers recognize ARI.*

Findings from previous and recent research indicate that there are considerable differences between the biomedical perspective on the signs, symptoms and causes of ARI, and the beliefs of rural Guatemalans (Pebley et al., 1996).

As with diarrhea, the process of providing health care starts at home with the mother, when she notices signs in the child that make her think he is ill. Cough and fever, danger signs proposed by PAHO and adopted by the MOH, however, are not the same as those most frequently recognized by the highland Mayan population. (Sáenz de Tejada, 1995; Pebley et al., 1996).

According to the ethnomedical or traditional model, fever is a central concept which has been related to the heart and breathing. The concept refers to a hot body, but is also associated with fast breathing, difficult breathing, persistent crying and restlessness. It is thought that temperature can “enter” the body and that it is located in the stomach. This type of temperature provokes concern, as temperature that goes in and does not come out is more serious than external temperature, which is easily perceived. It is believed that excess of internal temperature can burn the brain or cause a blockage in the heart, provoking death. A common manifestation of internal temperature is fast breathing or fatigue (Sáenz de Tejada, 1995).

At the local level, it is said that cough is “dry” and irritable in the beginning and then it becomes “mature” or “productive.” The first is considered serious and potentially mortal. “Dry” cough is a danger sign that makes mothers seek care. “Mature” cough, on the other hand, is welcomed as it is believed that the illness has “matured” and is coming to an end. Chest wheezing is a

condition intimately related to cough. It is a sign that worries mothers and that they recognize by the noise coming from the chest (like a cat's squeak). To mothers, chest wheezing, fever, cough and fast breathing are grouped into a syndrome. They believe they come together in severe cases and have a synergetic action. In some areas, cough is related to "folk" illnesses, such as *ojo*, and *susto*; and difficult breathing is related to *mollera caída* (Sáenz de Tejada, 1995).

Except for mothers in Totonicapán and Sacatepéquez, most others pay attention to changes in breathing frequency and recognize fast breathing when children are ill. Even though it is considered a danger sign, many times mothers treat fast breathing at home with herbal infusions and chest rubbings. Difficult breathing is frequently interpreted as a more serious sign. According to mothers, the obstruction caused by phlegm in the throat is what causes difficult breathing and they worry because the child can choke. In the K'iche' area, difficult breathing frequently refers to nasal obstruction caused by high fever (Barriga, 1994; Sáenz de Tejada, 1995; Sáenz de Tejada, 1996; Hurtado et al., 1997).

Few mothers mentioned terms that could be interpreted as possible signs of chest-indrawing. Some mentioned that "their stomach goes up," "their stomach sinks," "their stomach or ribs jump," "their ribs show when breathing." In Comalapa, some mothers mentioned that "the hole in their throat moves." This danger sign is not commonly observed, partly because mothers rarely undress their children when they are sick (Sáenz de Tejada, 1995; Hurtado et al., 1997).

In general terms, there are several signs or changes in conduct commonly interpreted as a manifestation of danger: sleepiness, not wanting to play, not breastfeeding, not eating, tiredness, fatigue, restlessness, unconsciousness, attacks or convulsions, and turning purple or white. In regard to pneumonia, recent findings suggest that symptoms reported are more likely to include chest and lung symptoms, as well as apathy (Barriga, 1994; Sáenz de Tejada, 1995; Pebley et al., 1996).

There is a perceived evolution of respiratory illnesses, whereby neglecting a simple cold might provoke a more severe condition. It is believed that respiratory illnesses can evolve from one to the other, leading to pneumonia (Hurtado and Esquivel, 1986; Barriga, 1994; Sáenz de Tejada, 1995; Pebley et al., 1996).

*Emphasis behavior: Mothers provide quality home care in case of ARI.*

The process leading to the treatment of respiratory illnesses in children generally starts in the home with the mother as the principal health provider. In the Mayan highlands, home treatment includes a variety of home remedies, self-medication and certain practices to prevent the condition from becoming more severe (Barriga, 1994).

For most conditions, a range of herbal concoctions (chamomile, fig leaves, cinnamon, *apazote*, *bugambilia*, thyme, rue, mint, lemon tea, eucalyptus, pineapple) is prepared to sooth a sore throat or cough and poultices (*confortes*) to lower a fever. To subdue a persistent cough, chest rubbing

or massages are performed with a variety of oils, ointments, creams, and animal fats, including Vicks Vaporub, sometimes mixed with tobacco. Bathing with herbal infusions is now becoming common. Self-medication is rampant, and the most frequently used pharmaceutical drugs are antipyretics (anti-fever), specifically aspirin and acetaminophen, and a wide variety of flu tablets that are readily available over the counter in pharmacies and general stores. If a child has a fever, suppositories (Cibalgina) may be used. Store-bought syrups are not widely used since mothers seem confident in the curative or soothing power of their own concoctions; however, in some cases they use syrups, utilizing various ways to force children into taking them. While adults get injections as prophylaxis to “fortify” or “vitaminize” the lungs, this is seldom a practice in children (Hurtado and Esquivel, 1986; Barriga, 1994; Sáenz de Tejada, 1995; ATI and GRT, 1995; Sáenz de Tejada, 1996).

The *temascal* is used as a therapeutic resource in some areas of Guatemala. For example, in Santiago Atitlán and Comalapa it is used when people have a cough, a cold, or a headache. In case of a cough, a cold or a headache, steam is directed to the head. Newborns or children under two years of age can also be introduced in the *temascal* when they have a cold; however, it is done only for a short time and with low heat. In other areas, however, hot baths with herbs are not common any more, as people believe they affect the quality of cough; if it is “mature” it makes it “dry” and vice-versa (Villatoro, 1986; Sáenz de Tejada, 1995).



In some areas, cough is associated with two “folk” illnesses: *ojo* and *mollera caída*, and both are treated at home. The treatment for *ojo* consists in a *pasada* with rue, chili and peach leaves, saying a prayer, and drinking an infusion of rue with Alka Seltzer. The material from the *pasada* is burnt and if it creaks, they consider that the *ojo* is strong and the process has to be repeated three more times. The sunken fontanelle is cured by introducing a finger in the

palate to bring out phlegm or by aspirating the area and sprinkling the child with *ardiente* water (Sáenz de Tejada, 1995).

## CARE SEEKING PRACTICES

*Emphasis behavior: Mothers seek appropriate care when sick infant or child has danger signs.*

### Diarrhea

The mother is also the main health-seeker on behalf of her children and the main initiator of the decision-making process concerning her family’s health matters. A mother’s careseeking decision is mainly influenced by the following factors: the perceived cause of the illness, the severity and persistence of the symptoms, and economic considerations. In addition, it is

influenced by the interaction of other factors, such as characteristics of health services (distance, access, price, time costs, quality of service), and control over cash, food, time and energy resources. These factors are influenced in turn by her household organization and support system. However, the perceived cause of the illness is the main factor that determines the type of treatment sought. It is considered that the other factors involved have more influence in the time elapsed between each step in the decision-making process (Hurtado and Villatoro, 1985; Hurtado and Esquivel, 1986; Cosminsky, 1987; Ward et al., 1989).

Parents can respond in a variety of ways to a diarrhea episode. Health resources are sometimes used sequentially, but they are also used simultaneously. If one type of healer or medicine does not work, another is tried. The diagnosis of an illness is sometimes arrived at in retrospect, depending on the health resource and treatment to which the patient responded favorably (Hurtado and Esquivel, 1986; Cominsky, 1987; Scrimshaw and Hurtado, 1988; Ward et al., 1989; Ramírez and Mazariegos, 1993).

The common element in the treatment process for the different types of diarrhea seems to be the initial treatment with home or simple remedies. For most types of diarrhea, when home remedies fail in the treatment, generally on the second or third day of the illness, the next step is to seek care from the pharmacy (Scrimshaw and Hurtado, 1988; Valverde, 1988; Ward et al., 1989).

When the symptoms persist and the mother considers that the child needs treatment outside the home, she will generally consult with her husband before seeking care. In some cases, the role of the father is limited to approving the decision and providing money for the treatment. In other cases, both discuss the problem and make a joint decision. In the rural area, many times the father is the one who goes out to buy medicine at the pharmacy. In the literature reviewed, there is agreement that it is the mother who identifies the illness and initiates the decision-making process. If the father is away from home, the mother is responsible for any decision to seek care (Valverde, 1988; Ward et al., 1989).

The pharmacy, after home care, constitutes one of the first health resources used by the community in the process of seeking care. The reasons for this selection include quick and free service and the fact that the service schedule adjusts to clients' needs. The time at which treatment is sought during the illness from the pharmacy apparently depends on factors such as the severity of the symptoms and economic resources, in addition to access to the pharmacy (Scrimshaw and Hurtado, 1988; Valverde, 1988; Ward et al., 1989; Ramírez and Mazariegos, 1993; Díaz et al., 1995).

There are certain types of diarrhea in which treatment is sought in the community from a "folk" curer. These types of diarrhea are caused by worms, *cuajo* or "fallen stomach," teething or "evil eye." Mothers consider that diarrhea caused by worms is not serious and can be treated at home with simple remedies. Diarrhea caused by "evil eye" is considered severe and lethal. Mothers believe that this diarrhea cannot be treated by a doctor, as doctors do not believe in it. Besides, it is dangerous to take a child to the doctor as he can prescribe injections and mothers believe that

these can cause death in a child suffering from “evil eye” (Hurtado and Esquivel, 1986; Scrimshaw and Hurtado, 1988; Ward et al., 1989; Hurtado et al., 1997; Valverde et al., 1997).

According to data on Guatemala, the use of public health services and private physicians for diarrhea is low. Health services are referred to only for one kind of diarrhea, dysentery, which is perceived as the most severe, coming from neglect or failure to cure one of the other types. In some areas, health services are also sought for worms or when a child gets worse and does not improve with other treatments (Hurtado and Esquivel, 1986; Scrimshaw and Hurtado, 1988; Valverde, 1988; Enge and Hewes, 1988; Díaz et al., 1995; Van der Stuyft et al., 1996).

### **Acute Respiratory Infections**

The decision to seek care outside the household is based on the perception families have about the seriousness of the condition and the vulnerability of the sick child. When mothers consider that the illness is mild or “simple,” they use popular medicine or home remedies as a primary treatment. However, when they see that the child does not improve, they generally seek care, in spite of difficulties encountered in the process (Sáenz de Tejada, 1995).

Careseeking, however, is often delayed. Paradoxically, the wealth of cultural experience with ARI and the range of home treatments that have developed to deal with it lead to delays in careseeking for episodes in which timely biomedical assistance is vital. Mothers generally wait for three days before seeking care, and some even wait for two weeks, regardless of the child’s age. Even in cases of fast breathing, most mothers wait two or three days after the initiation of the sign before seeking care. On rare occasions, mothers wait for more than five days to seek care or do not seek care at all, even when their children are very sick. Mothers tend to wait until the child’s illness gets worse, partly because they hope it will be cured with home remedies or without medical treatment, but also due to a underestimation of the seriousness of the symptoms (Goves and Pelto, 1994; Sáenz de Tejada, 1995; Sáenz de Tejada, 1996).

Local public health posts and centers are the services most commonly used in case of respiratory infections; however, reasons for using them are related to lack of economic resources. The second choice are private providers (doctors or nurses), who are the preferred alternative. Children who are judged to be very ill will often be taken directly to a hospital, if there is one within reasonable distance. Care is also sought from the pharmacy, health promoters, and to a lesser degree, from traditional or folk providers, especially when the illness manifests signs suggesting supernatural causes. Mothers from towns use private services more and those from the villages use pharmacies and “folk” healers. Generally, though, mothers consult with more than one health provider (Elder and Cordón, 1994; Goves and Pelto, 1994; Sáenz de Tejada, 1995; Sáenz de Tejada, 1996; Van der Stuyft et al., 1996).

There are several common themes concerning decisions about where to seek care and reasons for delay in seeking help. The characteristics of the health system, including access, long waiting time, communication problems, interpersonal relations, inconvenient hours, lack of drugs, poor

delivery of services, and availability of drugs, lead to both delays in careseeking and preferences for private practitioners. Material and economic features, including lack of transportation and lack of financial resources to pay for services and drugs, are also a significant reasons for delay in careseeking. Another reason for delay, related to the Mayan social system, lies in characteristics of family organization and decision-making power within the household. Often, the need to wait for the husband's approval or his presence, or the approval of the household head, delays careseeking for a child. The mother also has to find someone else to take care of other healthy children while she is away. Fear of being admitted to the hospital or of administrative procedures involved in discharging the child in case of death is another factor that influences decisions about seeking-care (Goves and Pelto, 1994; Sáenz de Tejada, 1995; Sáenz de Tejada, 1996; Hurtado et al., 1996).

## IMMUNIZATION PRACTICES

*Emphasis behavior: Infants should receive the full course of vaccinations.*

Generally speaking, immunization coverage has increased significantly in Guatemala; however, it is still lower among the Mayan population (The Pragma Corporation, 1988). Apparently, this difference is due to the following reasons: less credence given by the Mayan population to the biomedical model of illness causation; a preference by Mayan patients for being treated by a Mayan practitioner, most of whom are not part of the formal system; lack of trust in *ladinos* and *ladino* institutions by the Mayan population; and, the use of traditional practitioners as means of ethnic and community identification (Pebley and Goldman, 1992).

On the other hand, the increase in coverage has been influenced by the following factors:

- 1) Method of delivery (predominantly a campaign-based service);
- 2) The two pronged approach followed after the 1986 campaign: first, national vaccination days have been held each year; second, efforts have been made at routinize immunization through the facilities of the MOH;
- 3) Immunizations are given free to children in campaigns and at clinics;
- 4) Immunization has become more acceptable over time as families observe that their children are less likely to get sick and as traditional practitioners have become more likely to recommend immunization;
- 5) Parents have relatively little choice about whether their children are vaccinated due to the way campaigns and programs are undertaken.

(Pineda et al., 1984; PAHO, 1987; Pebley and Goldman, 1992; Goldman and Pebley, 1994).

In spite of this increase, levels of complete immunization remain low in Guatemala and are lower for children from Mayan families whose mothers have no formal education, do not speak Spanish, do not have a radio, and who live in predominantly Mayan communities. The distance to the nearest clinic and the remoteness of the municipality from urban life both are negatively related to the proportion of children who are fully immunized. In addition, there is a high proportion of missed opportunities attributed to the presence of symptomatic illness in the child and to health services' factors (lack of vaccine or provider, changes in schedule for vaccination campaigns) (Monteith et al., 1987; PCI, 1988; Boerma et al., 1990; Mustard et al., 1992; Goldman and Pebley, 1994).

Knowledge about the age and the frequency in which each vaccine should be administered, the name of each vaccine, the reason why immunization is important, secondary effects and adequate treatment measures is limited in most Mayan areas. There are some exceptions, though, such as in San Lorenzo, San Marcos (Enge and Hewes, 1988; Enge et al., 1988).

The belief that vaccines can sterilize is not generalized among the Mayan population; however, in a community in Quiché this belief is still common (Enge and Hewes, 1988). Other barriers are related to the fact that immunizations in Guatemala are usually available only from government or private clinics and are exclusively associated with biomedical ideas of disease transmission and the immune system. There is a contradiction between the ideas underlying immunization and local concepts of illness prevention and causation. Injections are administered when a person is sick, not when he is healthy; injections cure fast and vaccines cause reactions which make the child temporarily ill or irritable. The reaction from a vaccine is strongly feared by mothers and is probably the main deterrent to child immunization. Therapeutic use of injections is much more widely understood and accepted than immunization (PCI, 1988; Mata Gamarra et al., 19..; Pebley and Goldman, 1992; Goldman and Pebley, 1994; Hurtado et al., 1997).

*Emphasis behavior: Women should receive an appropriate course of tetanus toxoid vaccinations.*

Among the Mayan population, only a small percentage of pregnant women have received a tetanus shot. Improving these figures is complicated by cultural and language barriers. While a great number of Mayan women do not speak Spanish, it is rare to find a formally trained health care worker who can communicate in local Mayan languages. In addition, most births are attended by traditional birth attendants (*comadronas*), many of whom are illiterate and unaware of basic sterile procedures. They are also not included in the national immunization program strategy and, therefore, do not provide tetanus toxoid immunization to the women under their care. Even though women are often referred to public health services, they generally do not complete the immunization series. In Totonicapán, patients do not accept tetanus vaccines because they believe shots are meant to sterilize them (Ward and Newman, 1990; Nicolaidis, 1993). See Tables 14 A and B.

## HEALTH WORKER PRACTICES

When care is pursued outside the home, there are various types of health resources that the local population can use. These resources are perceived by people as a variety of options among which they can choose. Most usage is sequential, but it can also be simultaneous, as previously mentioned. Health providers available to families come both from the traditional/popular/informal and from the biomedical/modern/formal health systems; however, their availability and accessibility varies in relation to the community (village or town). The decisions concerning these treatment options are based on multiple factors, including the nature and gravity of the illness (Hurtado and Esquivel, 1986; Cominsky, 1987; Scrimshaw and Hurtado, 1988; Ward et al., 1989; Ramírez and Mazariegos, 1993).

The options that families have when seeking care are the *tiendas* (stores), pharmacies, injectionists, traditional healers, midwives, health promoters, and public or private biomedical providers. Stores are used to buy pharmaceuticals employed in preparing remedies at home. Pharmacies are used to buy medicines and to obtain orientation. When injections are required as part of the treatment, injectionists are sought. Traditional healers and midwives are mostly sought for “folk” illnesses such as “evil eye,” “sunken fontanelle,” “fallen stomach,” stomach worms, and *susto*, as they have specific remedies for them which suit cultural expectations (baths, passing of egg, etc.). Health promoters are mostly sought when advice is needed, as they generally lack curative resources (Hurtado and Esquivel, 1986; Scrimshaw and Hurtado, 1988; Valverde, 1988; Ward et al., 1989; Ramírez and Mazariegos, 1993; Díaz et al., 1995; Hurtado et al., 1997; Valverde et al., 1997). See Figure 5.

When children are seriously ill, most parents usually take them to a public health post or center or to a private health provider, if families have the resources to pay for consultation and treatment. As previously mentioned, physicians are actually the preferred alternative for children with ARI; many mothers state that they consult public services, even if they have to buy the medicines from the pharmacy, only because they do not have the economic resources to go to a private doctor (Elder and Córdón, 1994; Goves and Pelto, 1994; Sáenz de Tejada, 1995; Sáenz de Tejada, 1996; Hurtado et al., 1997).

Consultation at public health services may imply a lesser amount of expenses, but there are other barriers that make access and use difficult. According to the literature search, the use of health services is affected by sociocultural, economic, and health program factors (Ward, 1991; Martínez, 1995).

The main sociocultural factors that contribute to the underutilization of health services are related to the following aspects. In the first place, Mayas have different perceptions of the etiology, classification and appropriate treatment of many diseases. They also have high expectations and trust in the effectiveness and quick results of pharmaceuticals. Secondly, while Mayan women are mainly responsible for the care of children and are the ones who provide treatment when they get sick, men play an important role in decision-making regarding the use of health services. In



the third place, the discrepancies regarding health indicators and use of health services are intimately related to the low educational level among Mayas. In addition, there is lack of confidence among Mayas regarding motivations of health providers and, consequently, regarding health programs (Ward, 1991; Martínez, 1995).

Several studies have suggested that even though sociocultural factors influence decisions regarding the use of health services, economic factors play an important role in the decision of which service to use; however, this aspect has not been sufficiently studied (Ward, 1991).



The main factors related to health programs that affect the use and acceptance of health services are access, service provision, information, technical competence, and interpersonal relations. The difficult access to services, including distance, cost of services, transportation, working time lost, care of other children, and eating outside the household, all influence the utilization of health services (Ward, 1991; Hurtado et al., 1994; Martínez, 1995).

Aspects related to service provision, including lack of human and material resources, unreliable service hours, long waiting periods involved in obtaining services, and schedules conflicting with local needs also influence the use and acceptance of health services (Ward, 1991; Hurtado et al., 1994; Martínez, 1995; Barrios et al., 1996; Sáenz de Tejada, 1996; Valverde et al., 1997; Hurtado et al., 1997).

Technical competence is frequently perceived as poor. Some of the gaps in providers' understanding and skills come from the lack of clear, coherent, easily usable policies, norms or guidelines. The norms that exist are scattered among a number of different documents and formats, and there is no single, unified resource which a provider can study, turn to for quick reference or follow for explicit case management purposes (Enge and Harrison, 1988; Mustard et al., 1992; Martínez, 1995; Hurtado et al., 1997).

Poor interpersonal relations between provider and client, accentuated by the lack of respect for Mayan culture and insensitivity towards the realities of the rural Mayan population shown by many *ladino* providers, are important factors that affect the use and acceptance of health services. In addition, relations are limited by the lack of Mayan or Mayan-speaking personnel in mother and child health care services. This factor influences careseeking in two ways: first, lack of comprehension due to the language; second, lack of confidence in relation to the motivation of non-Mayan providers (Ward, 1991; Mustard et al., 1992; Pebley and Goldman, 1992; Hurtado et al., 1994; Goldman and Pebley, 1994; Martínez, 1995; Barrios et al., 1996; Sáenz de Tejada, 1996; Hurtado et al., 1997).



*Emphasis behavior: Provide clear explanations and confirm caretakers' understanding of what health workers are doing and what should be done at home.*

Both the linguistic and technical communication are deficient, as providers are reluctant and unable to give comprehensible explanations of diagnosis and treatment. The information given to mothers by providers is minimal, no explanation of health problems is given, and the terms used are not well understood. Language is another barrier, as health staff rarely speak any language other than Spanish, even in predominantly Mayan areas, making communication with Mayan patients difficult (Ward, 1991; Pebley and Goldman, 1992; Goldman and Pebley, 1994; Hurtado et al., 1994; Martínez, 1995; Barrios et al., 1996; Sáenz de Tejada, 1996; Valverde et al., 1997; Hurtado et al., 1997).

*Emphasis behavior: Treat people with respect and in a friendly manner.*

Interpersonal relations are often poor. Mayan patients are sometimes subject to discriminatory treatment, or overtly deprecating remarks by clinic staff. Most mothers complain that they are not treated well and that most health personnel are not kind, friendly or respectful (Goldman and Pebley, 1994; Hurtado et al., 1994; Martínez, 1995; Barrios et al., 1996; Valverde et al., 1997; Hurtado et al., 1997). See Tables 16 A and B.

## COMMUNICATION CHANNELS

As suggested by some, mass media is considered inefficient in rural areas, especially among Mayan populations. Areas such as Totonicapán, Sololá and Quetzaltenango are less accessible to these media, less receptive to messages in Spanish and more isolated in geographical and cultural terms (The Pragma Corporation, 1988). However, there is also information indicating that radio is an appropriate communication channel for reaching the target population in Guatemala. Three-fifths of the population listen to the radio on a daily basis, and radio has the potential to reach at least half of even the poorest sector in the country. According to some, from a technical point of view, only broadcasts in Spanish (as opposed to Mayan languages) can be justified, since 97 percent of the target audience listens to Spanish broadcasts; however, others suggest that local radio stations that transmit messages in local languages are better (Ghidinelli, 1988; Hornik et al., 1989; Ward et al., 1989; Hurtado et al., 1996).

**FIGURE 5**  
**TREATMENT OPTIONS AND FACTORS AFFECTING HEALTH CARE DECISION MAKING**

Resource	Home	Store	Folk curer	Injectionist	Pharmacist	Health post	Private clinic	Private physician	Hospital
Faith on Remedies	Herbs  "Simple" manufactured medicines		Herbs Massages	Injections	Manufactured medicines				
Illness	"Common" illnesses: headache, stomachache, cold, diarrhea, eye infection.		Folk illnesses: evil eye, fallen stomach, fallen fontanelle, stomach worms.	Respiratory illnesses: grippe, pulmonary cold, pulmonary cough.	Diarrhea, stomach worms, respiratory illnesses.	Cold, fever, dysentery.	Diarrhea, dysentery, respiratory illnesses.	Unknown illnesses, skin infections, respiratory illnesses.	Accidents, emergencies.
Gravity	Not serious ----- (*) ----- Very serious								
Cost	Least expensive ----- ( ) ----- Most expensive ( )								
Decision-making	Mother ----- Relatives ----- and/or ----- (older women ----- neighbors ----- who know)  Husband -----								

(Hurtado and Esquivel, 1986)

The information reviewed suggest that emphasis should be given to a two-tier communication strategy which utilizes local communication channels to reinforce mass media messages. In this two-tier process, detailed, community-specific information and motivational strategies make the health message more relevant to the local target audience. A higher awareness is created and there is more likelihood that the community will accept the message and take action to adopt the health practice. The second step of the two-tier strategy includes utilizing community-based media and communications channels such as human resources and networks to coordinate and disseminate the health messages locally. Human resources might include teachers, students, parents, traditional health providers, pharmacists, people who sell medicines, auxiliary mayors, labor groups, and religious leaders and helpers. Local media may include puppet shows, loudspeakers, town criers, rotating cinema productions, cassette tape recorders, videotapes, audiotapes, sociodramas, sports events, games, music and theater shows, billboards, flags, letters, leaflets, posters, invitations, banners, postcards, caps, ribbons, arm bands, and stickers. Different combinations of the media must be developed and tested to determine which have the greatest reach and effect (Fernández et al., 1977; Abrams et al., 1979; AED, 1985; The Pragma Corporation, 1989; Elder and Cordón, 1994; Orgaz, 1996; Hurtado et al., 1997).

Many opportunities exist for using radio for health programming in Guatemala. Government radio, *Radio Estatal*, covers almost the entire country. It is run by the Ministry of Communication and consists of a chain of radio stations from the different departments. Both Catholic and Evangelical religious organizations and NGOs own non-profit private radio stations, most of which are small and local with less than 1Kw. Some non-profit stations are actually *radio autoparlantes*, or radio loudspeakers, which broadcast on market days to audience in town squares. Approximately 120 commercial radio stations operate on both FM and AM. Most FM stations are in the cities. Some FM and AM stations operate in networks. Prices for public service radio spots on commercial radio stations vary widely depending on audience size. Most non-profit radio stations broadcast public service announcements free of charge. In some cases, commercial companies, such as Colgate, make donations in cash, or in kind, to support public service announcements and campaigns (Fox, 1996).

Interpersonal communication at an individual or group level is preferred by Mayas, especially that which involves people from the same community; for instance, they appreciate participatory educational talks, home visits, demonstrations, trials or practices (The Pragma Corporation, 1988; Ward et al., 1989; Hurtado et al., 1996; Hurtado et al., 1997).

Midwives and pharmacy workers are seen as a good source of information. Midwives are frequently sought, especially in case of very small children, and pharmacies are visited for orientation, products and information. Midwives are also seen as the primary target of education programs related to infant feeding practices. Their influence on maternal choices about infant feeding practices during the early postnatal period, especially those related to prelacteal feeding, is clearly reflected in the literature reviewed (Vielman and Hurtado, 1986; Ward et al., 1989).

As suggested, messages should be developed by searching and observing local occupational and daily life to find societal parables to form a message strategy. For example, local stories, folk

sayings or teachings about agriculture, forestry or animal husbandry may have parallels which can be adapted as message strategies for health education about immunization, ORT, ARI or other health services. If developed from local beliefs, these educational health messages may be better understood and lead to higher acceptance and regular practice of appropriate behaviors (The Pragma Corporation, 1989).

Doctors are more frequently mentioned as the best source of authority; however, other comments indicate that Mayas do not have confidence in doctors in the treatment of all illnesses. On the other hand, the most acceptable sources of communication are middle-aged women, who speak the local Mayan language, and have knowledge and experience; for example, midwives, mothers or mothers-in-law, as elder women are respected because of their experience (Villatoro Paniagua, 1986; Ward et al., 1989; Rivera, 1991; Hurtado et al., 1996). See Table 17 A.

The use of complementary educational methodologies was suggested; for example, the use of songs known by the population in the production of jingles was noted. It was also recommended to contact people who already have a network, due to the difficult access to so many small communities in the country; for example, enterprises that produce carbonated drinks which have a large distribution and promotion network could use similar strategies to transmit health messages (Enge and Hewes, 1988).

## CONCLUSIONS

In Guatemala, there is considerable variation as to when breastfeeding is initiated. Some women initiate breastfeeding immediately after birth, but others wait from an hour to three days. In many cases, feeding is started with prelacteal substances, which are offered due to cultural or medicinal reasons. Mothers' beliefs, biological factors related to breast milk "coming down," and limited knowledge are some of the main barriers that influence adequate feeding practices in newborn children.

Although most mothers breastfeed their children, exclusive breastfeeding is not the predominant practice. Mothers generally give children *aguitas*, using bottles or spoons. If hygienic conditions are not adequate, diarrhea can occur. The main motivations for not providing exclusive breastfeeding are mothers' perceptions about the quality and quantity of their milk and advice given by other people. On the other hand, Mayan mothers continue breastfeeding their children for a long period of time, interrupting only in special cases, such as a new pregnancy, illness of the infant or the mother and physical problems with milk production. Certain emotional factors affecting mothers, such as *susto* or *enojo*, can also lead to temporary interruption of breastfeeding. An interesting aspect identified is that mothers sometimes wean boys first, as they believe breastfeeding boy babies can weaken mothers, while girl babies are more fragile and cannot wear them out.

Complementary feeding is initiated late by a good percentage of Mayan mothers, within a period that varies from six to nine months of age. In the same way, once foods have been introduced, the transition period until the child eats whatever the rest of the family is served is prolonged, concluding at three years of age. This practice, in addition to the deficient nutritional quality and quantity of foods offered, restricts the diet of small children. The main factors that influence this behavior are cultural, economic and social (lack of knowledge of mothers about high quality mixtures).

During illness, food intake is reduced. This is mainly due to the fact that a child who is ill does not want to eat or does not accept food. Mothers know they should continue feeding, but they do not insist. Generally, breastfeeding is not interrupted and the administration of liquids is continued both in case of diarrhea and ARI. On the other hand, food intake is inadequate, affecting the nutritional status of the child and contributing to a greater nutritional deficit. Cultural factors influence this practice, as some mothers believe breast milk or certain foods make illness worse.

There is an incompatibility between the Mayan and the biomedical health-disease models which leads to different interpretations of the causes, the signs and the symptoms associated with an illness. Therefore, danger signs are frequently underestimated, causing a delay in seeking care.

Likewise, there is a generalized practice of providing home remedies to the sick child. Consequently, there is a considerable delay in seeking health care, independently of the attributed cause of the illness or the family's economic resources. On the other hand, the use of pharmaceuticals or medicines without prescription or a more suitable control allows for the inappropriate use of these products. This makes treatment difficult and causes unnecessary expenses.

Even though home treatment of diarrhea entails a considerable amount of liquids, this does not guarantee the prevention of dehydration. ORS is not commonly used by mothers, generally because it does not alleviate the symptoms of diarrhea. Other factors that influence the use of ORT are lack of promotion, availability and knowledge.

Careseeking is not a universal practice. Mothers seek care for diarrhea only when home remedies are not effective or the child gets worse. The main factors identified that affect this behavior are limited recognition of danger signs and underestimation of some of them. Regarding ARI, mothers seek care more frequently than with diarrhea. However, such care is not sought in a timely manner. As with diarrhea, the first step in the treatment of ARI is the provision of home remedies, including self-medication with pharmaceuticals. Usually mothers wait for one to five days to seek care and when they do, they prefer private providers.

Immunization is not a universal practice in children and mothers. Children are not always taken to health services for well baby visits and mothers do not go for prenatal check-ups; therefore, not many have a full course of immunization. Some of the main reasons for this are related to

geographical, institutional and social factors. Mothers' perceptions about vaccines are probably the main deterrent to child immunization.

Existing information suggests that there are some health providers who are discriminatory, disrespectful, unfriendly and unkind. This is probably due to perceptions and bias regarding ethnic groups and social classes. The language barrier was also identified as a major problem, in addition to institutional factors such as low motivation and too many duties. Likewise, some providers do not explain diagnosis and treatment and do not listen to patients. In addition to the above-mentioned constraints, some providers lack interest in listening and explaining and underestimate mothers' ability to understand.

According to this review, there are many obstacles to overcome in approaching primary health problems in the Mayan population. The main constraints to improving health practices involve cultural, social, geographical, economic, biological and institutional factors. Therefore, these factors should be taken into consideration in formulating effective educational interventions.

## RECOMMENDATIONS



There is a wide cultural gap between the Mayan population and formal health services, based on different world views, by which health and illness are conceptualized in a different way. All health interventions, including the provision of care, strategies, messages, materials and any other activity aimed at improving health behaviors should be designed and undertaken giving attention to ethno-psychological considerations.

One of the greatest barriers to improved health in the Mayan population is the variety of languages spoken in the country. It has been suggested that all activities aimed at the Mayan population should be designed and undertaken with special attention to linguistic considerations.

Ideally, both the language barrier and the cultural gap between the Mayan population and formal health services could be eliminated if services in Mayan communities were "indigenized." In other words, all health staff in these areas would have to be from the community and be able to speak the local language. This "indigenization" process, however, could only be implemented in the long term.

On the short term, nevertheless, *ladinos* working in Mayan areas could get familiarized with the health-illness local model, through training based on existing literature regarding the subject and by exchanging ideas and experiences with the local population. As a suggestion, people involved in health activities could get together and juxtapose a local classification with the biomedical

nosology, find common bases for communication, and become familiar with the ethnoclassification. Likewise, respect for local norms, values and behavior, especially among health providers, could be promoted.

Bruce's framework for assessing quality of care (1990) includes different elements. Some of these elements, such as the information given to clients, technical competence of the staff, interpersonal relations, mechanisms that assure continuity and an appropriate or convenient organization of the services, are often not the best in public health services. As suggested by the literature reviewed, health services' personnel frequently do not speak the local language, their health-illness model is different from the local one, they are discriminatory, unkind, and unfriendly and their competence is sometimes not satisfactory. Efforts should be made to improve health providers' clinical competence, and most of all, their interpersonal relations.

Before a communication strategy is initiated, public health services should review such critical factors, such as the adequate provision of antibiotics, in response to the demand created by promotional programs, especially in regard to ARI.

According to the literature reviewed, the private sector is a major provider of health care services, especially for ARI. These providers should also be trained so they can observe the principles of standard case management.

One of the home health practices related to the treatment of the sick child involves the use of pharmaceuticals and other medicines bought at the pharmacy. Currently, pharmacy workers have limited or inadequate knowledge about different diseases and their treatment. Ideally, they should receive information on prevalent health problems and their management in the context of primary health care activities. For instance, training should be provided so that ORS is sold in pharmacies for the treatment of children's diarrhea instead of antidiarrheals, antibiotics and other drugs which are now being used.

All activities undertaken at the local level should be participatory. Traditional/non-formal and biomedical/formal health care providers, municipal authorities, and leaders should be taken into consideration as they are respected and because local people have confidence in them. They should be involved throughout the process to assure acceptance and sustainability in the long term. The participatory focus should also include representatives from the agricultural, industrial, religious and other sectors working in the community.

Among participatory activities, a health diagnosis at the community level could be implemented. The identification of high risk families (for malnutrition, infant morbidity and mortality, poor hygiene) by the people themselves using locally perceived/defined socioeconomic and psychosocial indicators could be attempted. These families could then be targeted for more intensive counseling, monitoring, and support by the community.



In the Mayan culture, women are the main providers of health care at home. This responsibility is only one of the multiple obligations they have in taking care of the family. Projects that focus on improving women's conditions, e.g., reducing the time they spend on household chores and increasing their resources (water introduction, production and income-generating projects) could be promoted. Part of women's time could then be used in health related activities. In the meantime, advantage could be taken of activities in which women get together (wash clothes, grind corn, fetch water, etc.) to undertake educational interventions.

Women's support groups for specific health components could be promoted, taking advantage of existing organizations. This activity is innovative and, according to experience, is accepted by Mayan women. These groups could be a focus to exchange experiences and knowledge among women and with the project's staff.

Educational activities should be oriented towards the improvement of health care practices. Training of mothers on the different topics should consider introducing new concepts and reinforcing current adequate knowledge and practices that were identified. Men should also be involved in educational activities related to specific topics, especially in regard to careseeking and health prevention practices.

Home visits are an effective tool in reinforcing emphasis behaviors, in detecting cases, and in monitoring and referring them. Periodic visits could be programmed for each component included in the strategy. Promoters, midwives and other health volunteers could be involved in this activity, after appropriate training.

The information reviewed on health prevention practices is not extensive and focuses mainly on handwashing practices. Therefore, educational interventions should include health prevention messages promoting the correct handwashing of mothers and small children's hands before eating, before food preparation, before offering food or feeding the child and, if possible, after using the latrine or changing diapers.

Although some of the existing information suggests that mass media does not have a wide penetration in the more remote areas of the highlands, recorded materials in local languages with messages on the same key behaviors could be offered to local radio stations. These could also be used on loudspeakers in markets, churches, schools, and health services' waiting rooms so that they slowly penetrate through other communication channels, besides the interpersonal communication channel.

Health promoters, midwives, monitors and other people at the local level could be offered educational materials and training to deliver educational messages on a limited number of key behaviors at the family level in the local language. Midwives would be especially trained to implement immediate initiation of breastfeeding and to offer messages on exclusive breastfeeding.

In addition to mothers, midwives could also be the primary target in messages directed to discourage the use of prelacteal feeding. The influence of midwives on maternal choices about infant feeding practices during the early postnatal period is clearly documented.

## **APPENDIXES**

## **APPENDIX A**

### **Bibliography**

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**APPENDIX B**  
**Tables**

**TABLE 1 A**

**Age Group:** Newborns

**Population Group:** Highland Mayas

**Ideal Practice:** Initiate breastfeeding within an hour of birth and feed colostrum

<b>CURRENT PRACTICE</b>	<b>HELPFUL</b>	<b>HARMFUL</b>	<b>DO NOT KNOW</b>	<b>HOW COMMON? WHAT GROUPS?</b>
Immediately after birth	Mothers know benefits of breast milk (nutritional, good, prevents infections)  Mothers believe it is the best food for children			Not common: only documented for Santa Cruz Balanyá, Totonicapán and Huehuetenango
Within one hour of birth	Idem			Not very common: Sololá, Totonicapán, Quetzaltenango, San Marcos
Within eight hours of birth	Idem			Common: Sololá, Totonicapán, Quetzaltenango, San Marcos
Within birth to three days	Children are breastfed by another nursing women	Variability in milk coming down  Mothers' perception about child's conduct  Mothers' beliefs that first milk causes diarrhea and stomach problems  Mothers' beliefs that first milk is scarce, not nutritious, not good, unfit for consumption  Mothers' beliefs about resting after giving birth		Very common: Santiago Atitlán, Santa María Cauque, Totonicapán, Quetzaltenango, San Marcos

**TABLE 1 (cont.)**

**Age Group:** Newborns

**Population Group:** Highland Mayas

**Ideal Practice:** Initiate breastfeeding within an hour of birth and feed colostrum

CURRENT PRACTICE	HELPFUL	HARMFUL	DO NOT KNOW	HOW COMMON? WHAT GROUPS?
Prelacteal feeding		<p>Mothers' beliefs in waiting for milk to "come down," "mature"</p> <p>Mothers' belief that colostrum causes diarrhea and stomach problems</p> <p>Mothers' belief that colostrum is scarce, not nutritious, not good, unfit for consumption</p> <p>Mothers' beliefs that other substances bring out phleym, avoid pains and colics</p> <p>Mothers' beliefs that other substances protect against worms, quench hunger, prepare stomach for breast milk</p> <p>Use of "chupones," spoons or bottle for prelacteal feeding (doubtful hygienic measures)</p>		<p>Common: San Marcos, Sololá, Totonicapán, Quetzaltenango</p> <p>Not so common: Santiago Atitlán</p>

TABLE 1 B

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Late initiation of breastfeeding	<p>Mothers wait until milk "comes down" (2 hours to 2 days after birth)</p> <p>Mothers wait until milk "matures"</p> <p>Mothers believe colostrum is scarce, not nutritious, not good, unfit for consumption</p> <p>Mothers believe colostrum causes diarrhea and stomach problems</p> <p>Mothers wait for clues from child</p>	<p><u>Biological</u>: milk production ("does not come down")</p> <p><u>Cultural</u>: Mothers' perception about child's needs (does not cry, is not hungry, rejects breast)</p> <p>Mothers beliefs about colostrum (scarce, not nutritious, etc.)</p> <p>Mothers beliefs about milk production</p> <p><u>Social</u>: Mothers' limited knowledge about breastfeeding practices and special properties of colostrum</p>	<p>Emphasize advantages of immediate breastfeeding</p> <p>Emphasize disadvantages of not breastfeeding immediately after birth</p> <p>Reinforce mothers' knowledge about breastfeeding practices</p> <p>Emphasize advantages of feeding colostrum</p>
Prelacteal feeding	<p>Mothers use "chupones" (cloth soaked with substance), spoons or bottles</p> <p>Mothers give "waters" (boiled water, sugar-water, anise-water, etc.)</p> <p>Mothers believe prelacteals clean or purge the stomach, bring out phlegm, avoid pains and colics</p> <p>Mothers believe prelacteals protect against worms, quench hunger, prepare stomach for breast milk</p>	<p><u>Biological</u>: Milk production ("does not come down")</p> <p><u>Cultural</u>: Child is hungry and milk has still not "come down"</p> <p>Mothers' beliefs that waters, especially anise, cure colics</p> <p>Mothers' beliefs concerning prelacteals</p> <p><u>Social</u>: Mothers' limited knowledge about special properties of colostrum</p>	<p>Emphasize (especially midwives) the benefits of immediate breastfeeding versus prelacteal feeds</p>



TABLE 2 A

Age Group: Birth to 4-6 months

Population Group: Highland Mayas

Ideal Practice: Exclusive breastfeeding for 4-6 months

CURRENT PRACTICE	HELPFUL	HARMFUL	DO NOT KNOW	HOW COMMON? WHAT GROUPS?
Exclusive	<p>Generalized belief that breast milk is the best food for children</p> <p>Generalized positive attitude towards breastfeeding</p> <p>Highly valued</p> <p>The best food for small children</p> <p>Children are not mature to be given other substances</p> <p>Other substances are harmful</p>	Short duration		<p>Common: Santa María Cauque, Santa Cruz Balanyá.</p> <p>Not very common: San Marcos, Sololá, Totonicapán.</p> <p>Least common: Quetzaltenango</p>
Non-exclusive		<p>Mothers do not exclusively breastfeed</p> <p>Mothers give "aguítas" and other substances</p> <p>Mothers use bottles and spoons to give substances (doubtful hygienic measures)</p> <p>Mothers' beliefs related to quantity and quality of breast milk</p> <p>Mothers' beliefs about breast milk (not "food" and does not quench thirst)</p> <p>Mothers' decisions are often influenced by grandmothers, friends, health providers</p> <p>Mothers' beliefs that some substances cure colics, stomach aches and other illnesses</p>		Common: Quetzaltenango, San Marcos, Totonicapán

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Children are not exclusively breastfed	<p>Mothers' beliefs about the quality of their milk (not good enough)</p> <p>Mothers' beliefs about the quantity of their milk (not sufficient, source becoming dry, small breasts do not produce enough milk)</p> <p>Mothers' beliefs about breast milk (conceived as "food")</p> <p>Mothers' beliefs concerning treatment of colics, stomach aches and other illnesses</p>	<p><u>Cultural</u>: Mothers perceptions about children's needs (thirst)</p> <p>Mothers perceptions on factors affecting quality and quantity of milk</p> <p>Mothers' beliefs regarding treatment of illnesses</p> <p>Mothers' perceptions about breast milk (food)</p>	<p>Emphasize properties of breast milk in comparison to those of other substances</p> <p>Emphasize harmful effects due to use of bottles, spoons, etc.</p> <p>Emphasize difference between a child who has been breastfed and another that has not</p>
Children are given other substances besides breast milk	<p>Mothers' beliefs concerning treatment for colics, stomach aches and other illnesses</p> <p>Influence of other people on mothers' decisions</p> <p>Mothers' beliefs about quality and quantity of breast milk</p> <p>Mothers' beliefs about breast milk (conceived as food)</p> <p>Mothers' use of spoons and bottles</p>	<p><u>Cultural</u>: Mothers' beliefs concerning treatment of illnesses</p> <p>Mothers' perceptions about children's needs (thirst)</p> <p>Mothers perceptions on factors affecting quality and quantity of milk</p> <p>Mothers' perceptions about breast milk (food)</p>	<p>Emphasize problems caused by the use of bottles, etc. (diarrhea, infections)</p> <p>Orient mothers concerning use of identified "aguas"</p>

**TABLE 3 A**

**Age Group:** Children under 23 months of age

**Population Group:** Highland Mayan

**Ideal Practice:** Continue breastfeeding up to 23 months of age

CURRENT PRACTICE	HELPFUL	HARMFUL	DO NOT KNOW	HOW COMMON? WHAT GROUPS?
Prolonged lactation	Favored			Common: Santa Cruz Balanyá (18 m), Sololá, Quetzaltenango, Santa María Cauque (20-23 m)  Not so common: Totonicapán, San Marcos (20-23 m)
Interrupted lactation		Interruption due to health problems of mother or child  Mothers' beliefs concerning emotional, biological and environmental factors that affect them and their children		Not common: Chimaltenango, San Marcos, Totonicapán, Quetzaltenango, Sololá
Weaning	Generally gradual	Mothers' beliefs about quantity of milk  Males are weaned before females		Common: Highland Mayan population  Not very common: Chimaltenango
Abrupt weaning		Health problems of mother or child  New pregnancy  Child rejects breastfeeding  Mothers place substances on breasts to make them disagreeable to child		Common: Highland Mayan population  Common: Highland Mayan population  Not so common: Highland Mayan population  Common: Sololá

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TABLE 3 B

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Interruption of breastfeeding	Illness of mother or child  Mothers' beliefs concerning biological, environmental and emotional factors ("enojo," "susto," "tristeza," cold) that affect them and their children	<u>Biological</u> : Illness of the mother or child  <u>Cultural</u> : Beliefs that environmental, biological, or emotional factors affecting mothers can cause diarrhea and other problems in children through breast milk	Emphasize advantages of prolonged lactation  Promote formation of support groups for breastfeeding mothers  Emphasize careseeking practices in case of mothers' illness
Wean males before females	Mothers' belief that males can weaken mothers	<u>Cultural</u> : Beliefs that males are stronger than females	Include gender focus in educational interventions
Abrupt weaning	Mothers' beliefs regarding a new pregnancy  Illness of mother or child	<u>Biological</u> : Illness of the mother or child  <u>Cultural</u> : Beliefs that pregnancy affects breast milk (causes diarrhea, milk is not good anymore)  Beliefs that breast milk belongs to new child  Perception of child's conduct (rejection)	Emphasize advantages of prolonged lactation, even in case of new pregnancy  Continue promoting spacing of pregnancies  Emphasize advantages of gradual weaning
Place substances on breasts	Mothers' belief that disagreeable substances placed on breasts will make children stop breastfeeding	<u>Cultural</u> : Belief that certain substances will make child stop breastfeeding	Emphasize advantages of gradual weaning

**TABLE 4 A**

**Age Group:** Children at 6-24 months

**Population Group:** Highland Mayas

**Ideal Practice:** From 6-24 months, provide complementary feeding

<b>CURRENT PRACTICE</b>	<b>HELPFUL</b>	<b>HARMFUL</b>	<b>DO NOT KNOW</b>	<b>HOW COMMON? WHAT GROUPS?</b>
Initiation before or at 6 months of age	Initiation at 6 months *	Initiation before 4 months **  Mothers' beliefs concerning quality/quantity of breast milk		Common: Santa María Cauque * and Totonicapán **
Initiation at 6-9 months of age	Initiation at 6 months	Initiation at 8-9 months  Mothers' belief that food will make child ill		Common: Santiago Atitlán, San Marcos, Sololá, Quetzaltenango  Less common: Totonicapán (8 months)
Gradual introduction of foods		Mothers' beliefs that a child regulates his diet, that too much food is bad for him, that he should not eat late at night  Mothers' beliefs that introduction of foods should be gradual (not on a regular basis and in adequate quantities)  Mothers' beliefs that foods are introduced to get children used to different flavors and textures, to "normalize" or "make" the stomach  Mothers' beliefs that food will relieve them of the frequent demands of breastfeeding infant  Mothers' beliefs about children's conduct		Common: Highland Mayan population
No special weaning foods are prepared	Texture is changed	Foods offered are "easy foods within reach"  Foods offered are those mothers have at home		Common: Highland Mayan population
Transition to family diet (1 to 3 years)		Late completion (3 years)		Common: Santa María Cauque (3 years), others (1-3)

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TABLE 4 B

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Early introduction of foods	<p>Mothers' perceptions that their milk is not sufficient/good</p> <p>Limited knowledge about breastfeeding and complementary feeding practices</p> <p>Mothers' beliefs that foods are given to help them (children breastfeed less)</p>	<p><u>Social</u>: Limited knowledge about complementary feeding</p> <p><u>Cultural</u>: Mothers' perception about quality/quantity of breast milk</p> <p>Mothers' perception that food will help them when they feel constrained by frequent demands of breastfeeding infants</p>	<p>Emphasize adequate complementary feeding practices</p> <p>Emphasize advantages of exclusive breastfeeding</p>
Late introduction of foods	<p>Limited access/availability at home or community</p> <p>Mothers' belief that food can make children sick at an early age</p> <p>Mothers' beliefs that children give clues when they are ready to eat</p> <p>Limited knowledge about weaning foods and practices</p> <p>Mothers' work load and activities to meet economic responsibilities</p> <p>Mothers' passiveness when their children are eating</p>	<p><u>Cultural</u>: Mothers' fear of having children become sick (diarrhea, infections, "empacho")</p> <p>Mothers waiting for clues from child showing he is ready to start eating</p> <p>Passiveness of mother in feeding their children, help, encourage, or force them to eat</p> <p><u>Social</u>: Limited knowledge concerning complementary feeding and nutritional value of foods, special weaning preparations, etc.</p> <p><u>Economic</u>: Limited access and availability of appropriate complementary foods</p> <p>Mothers' work load and activities to meet economic responsibilities</p>	<p>Emphasize adequate complementary feeding practices</p> <p>Demonstration of preparation of weaning foods</p> <p>Help mothers identify local foods and recipes that can be prepared during weaning</p> <p>Promote home, school and community vegetable gardens</p> <p>Promote use of graphic recipes</p> <p>Promote recipe exchange and contests</p> <p>Promote projects to decrease mothers' work load (water, etc.)</p>
No special weaning foods	<p>Foods given are "easy foods within reach," whatever mothers have at home</p> <p>Limited access/availability at home and community</p> <p>Limited knowledge about proper weaning foods</p>	<p><u>Economic</u>: Limited access to other foods</p> <p>Mothers give children whatever they have at home</p> <p><u>Social</u>: Limited knowledge concerning appropriate weaning foods</p>	<p>Emphasize adequate complementary feeding practices</p> <p>Promote home, school and community vegetable gardens</p>

<p>Inadequate quality/quantity of food</p>	<p>Foods given are "easy foods within reach," whatever mothers have at home</p> <p>Mothers' beliefs that children should gradually get used to eating, that too much food is bad, that they regulate their diet, that they should not eat at night</p> <p>Mothers' beliefs that foods are given to get children used to them, to their different flavors and textures, to "normalize" or "make" the stomach</p> <p>Mothers' beliefs about certain foods (proscribed)</p> <p>Limited knowledge about weaning practices</p> <p>Limited access/availability at home and community</p>	<p><u>Cultural</u>: Passiveness of mother in feeding their children, help, encourage or force them to eat</p> <p>Mothers' tendency to please them (let them have what they want)</p> <p>Mothers' beliefs concerning certain foods (proscribed)</p> <p>Mothers' beliefs that child regulates his diet, should gradually get used to eating, too much food is bad, child should not eat late at night</p> <p>Mothers' beliefs that foods are given to get children used to them, their different flavors and textures, to "normalize" or "make" the stomach</p> <p><u>Social</u>: Limited knowledge concerning complementary feeding and nutritional value of foods, special weaning preparations, etc.</p> <p><u>Economic</u>: Limited access and availability of appropriate complementary foods</p> <p>Children are given whatever foods mothers have at home</p>	<p>Emphasize adequate complementary feeding practices</p> <p>Emphasize adequate nutritional practices and knowledge</p> <p>Promote demonstrations of preparation of weaning foods</p> <p>Help mothers identify local foods and recipes that can be prepared during weaning</p> <p>Promote home, school and community vegetable gardens</p> <p>Promote use of graphic recipes</p> <p>Promote recipe exchange and contests</p>
<p>Late completion of weaning process</p>	<p>Limited knowledge about weaning practices</p> <p>Mothers' beliefs that children regulate their diet</p> <p>Mothers' passiveness in motivating their children to eat</p>	<p><u>Cultural</u>: Passiveness of mother in insisting to have children eat</p> <p>Mothers' tendency to please children (let them eat and do what they want)</p> <p>Mothers' beliefs that children regulate their diet</p> <p><u>Social</u>: Limited knowledge about weaning</p>	<p>Emphasize adequate weaning practices</p> <p>Emphasize adequate nutritional practices and knowledge (malnutrition)</p>

TABLE 5 A

Age Group: Small Children (Under 2 years old)

Population Group: Highland Mayas

Ideal Practice: Feed as much as possible during illness and feed extra during recovery

CURRENT PRACTICE	HELPFUL	HARMFUL	DO NOT KNOW	HOW COMMON? WHAT GROUPS?
Continue breastfeeding	<p>Most mothers continue breastfeeding</p> <p>Mothers' beliefs that breast milk "helps children keep on going," they need it, "makes them stop crying," "it is the only thing they will accept"</p>	<p>Mothers' beliefs that environmental, biological, emotional factors affecting them change quality of breast milk causing diarrhea in children</p> <p>Mothers' beliefs related to quality of milk that affects them and causes ARI</p> <p>Mothers' beliefs concerning different causes of diarrhea</p> <p>Mothers' perceptions about child's needs and conduct (rejects it, needs to rest, make him sicker)</p>		<p>More common: Totonicapán, Sololá *</p> <p>Common: San Marcos *</p> <p>Less common: Quetzaltenango *</p> <p>Common: Totonicapán, Chimaltenango **</p>
Continue giving equal or more liquids	Mothers continue giving liquids	<p>Liquid administration is not increased in ARI</p> <p>Proscription of certain liquids in case of diarrhea and ARI</p>		<p>More common: Totonicapán, San Marcos, Sacatepéquez *</p> <p>Common: Sololá *</p> <p>Less common: Quetzaltenango *</p> <p>Common: Totonicapán, Chimaltenango **</p>
Continue giving equal or more food		<p>Mothers drop food intake</p> <p>Proscription of "cold," "heavy" or "greasy" foods in case of diarrhea</p> <p>Proscription of certain foods (eggs, beans) in case of ARI</p> <p>Child decides what to eat or whether to eat or not</p>		<p>Common: San Marcos *</p> <p>Less common: Totonicapán, Sololá, Quetzaltenango *</p> <p>Common: Totonicapán, Chimaltenango **</p>

\* Diarrhea \*\* ARI



TABLE 5 B

• CURRENT PROBLEM	• MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	• RECOMMENDATIONS
Stop breastfeeding	<p>Mothers' beliefs that biological, emotional and environmental factors affect breast milk and cause diarrhea</p> <p>Mothers' beliefs related to quality of milk ("resfriada") which can cause ARI</p> <p>Mothers' perceptions about child's needs and conduct (needs to rest, rejects it, makes him sicker)</p> <p>Limited knowledge concerning dietary practices during illness</p> <p>Mothers' beliefs concerning causes of diarrhea</p>	<p><u>Biological</u>: Child not hungry and has nausea</p> <p><u>Cultural</u>: Mothers' beliefs that environmental, biological and emotional factors affect quality of breast milk and cause diarrhea</p> <p>Mothers' beliefs about quality of milk causing ARI ("resfriada")</p> <p>Mothers' perceptions about child's needs and conduct</p> <p>Mothers' beliefs concerning causes of diarrhea ("ojo," worms)</p> <p><u>Social</u>: Limited knowledge about adequate dietary practices during illness</p>	<p>Emphasize advantages to continue or increase breastfeeding</p> <p>Emphasize that in case of nausea or vomiting, care should be sought</p> <p>Emphasize importance of adequate feeding practices during illness and recovery</p>
Provision of equal or more liquids is not a universal practice	<p>Limited knowledge concerning dietary practices during illness</p> <p>Proscriptions about certain liquids in case of diarrhea and ARI</p>	<p><u>Social</u>: Limited knowledge about adequate dietary practices during illness</p> <p><u>Cultural</u>: Proscriptions of certain liquids in case of diarrhea and ARI</p>	<p>Emphasize that the same or more liquids should be given in case of diarrhea, especially ORS</p> <p>Emphasize that the same or more liquids should be given in case of ARI</p> <p>Emphasize importance of adequate feeding practices during illness and convalescence</p>
Drop in food intake	<p>Mothers' perceptions about children's appetite</p> <p>Proscriptions about "cold," "heavy" or "greasy" foods in case of diarrhea</p> <p>Proscriptions about certain foods in case of ARI (beans, eggs)</p> <p>Mothers' perceptions about child's needs and conduct (rejection, decides what or whether to eat or not)</p>	<p><u>Biological</u>: Loss of appetite</p> <p><u>Cultural</u>: Mothers' perceptions about child's needs and conduct (rejects food, decides what or whether to eat or not)</p> <p>Proscription "cold," "heavy" or "greasy" foods in case of diarrhea</p> <p>Proscription of certain foods in case of ARI</p> <p>Mothers' perceptions about children's appetite</p>	<p>Promote elaboration of adequate local recipes for the sick and convalescent child</p> <p>Emphasize the importance of local foods for the sick and convalescent child</p> <p>Emphasize importance of adequate feeding practices during illness and convalescence</p>

TABLE 6

Age Group: All groups

Population Group: Highland Mayas

Subject: Health-Illness Conceptualization

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Different conceptualizations of the human body	Different interpretations of the human body	<u>Cultural</u> : Incompatibility of concepts concerning human body	Look for convergencies in aspects that can affect health and quality of life  Consider both conceptualizations in educational programs and health care services
Different conceptualization of functions of the human body	Different interpretations of the functions of the human body	<u>Cultural</u> : Incompatibility of concepts concerning functions of the human body	Look for convergencies in aspects that can affect health and quality of life  Consider both conceptualizations in educational programs and health care services
Different conceptualization of blood	Different ideas about the quality and quantity of blood	<u>Cultural</u> : Incompatibility of ideas concerning the quality and quantity of blood	Consider both conceptualizations in educational programs and health care services
Different interpretation of health-illness (Mayan and biomedical)	Different interpretations of etiology, causes, signs, symptoms and treatment	<u>Cultural</u> : Incompatibility of health-illness models	Look for convergencies in aspects that can affect health and quality of life  Improve communication and exchange of experiences with traditional providers  Consider both interpretations in educational programs and health care services



Some differences in interpretations among diverse Mayan groups	Some differences in interpretations of etiology, causes, signs, symptoms and treatments among different ethnic groups	<u>Cultural</u> : Variations in interpretations within different ethnic groups	Consider different schematas during interventions  Emphasize knowledge of different childrens' illnesses
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TABLE 7 A

**Age Group:** Infants and small children

**Population Group:** Highland Mayas

**Ideal Practice:** Mothers recognize diarrhea

CURRENT PRACTICE	HELPFUL	HARMFUL	DO NOT KNOW	HOW COMMON? WHAT GROUPS?
According to different schematas, mothers identify signs and symptoms of diarrhea	<p>Mothers differentiate between mild and severe cases and treat them differently</p> <p>Now some mothers recognize that main cause of diarrhea is lack of personal hygiene</p> <p>Some mothers recognize relation between diarrhea and dehydration</p>	<p>Mothers' beliefs that diarrhea can be a symptom of "folk" illnesses ("empacho," "evil eye," worms, "fallen fontanelle")</p> <p>Mothers' beliefs that diarrhea can be a normal sign of changes in growth and development in the child</p> <p>Most recognized signs and symptoms are associated to the diarrhea process in general</p>		Common: Among highland Mayas
Some mothers recognize dehydration signs	Some mothers recognize and describe dehydration as "to loose liquid in the body" or "seco"	<p>Mothers are not familiar with term in Spanish</p> <p>Some confusion between dehydration and malnutrition or loss of strength</p>		<p>Common: Sacatepéquez, San Marcos, Chimaltenango</p> <p>Half of the mothers in Totonicapán, San Marcos, Quetzaltenango</p> <p>Not common: Sololá</p>

**TABLE 7 B**

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Diarrhea is attributed to diverse causes, including supernatural ones	<p>Different interpretations of illness causation (symptom of "folk" illnesses, a normal sign)</p> <p>Most signs and symptoms associated to diarrhea process in general</p>	<p><u>Cultural</u>: Beliefs that diarrhea can be an illness, a symptom of "folk" illnesses, or a normal sign of changes in growth and development</p> <p>Generalization of signs and symptoms of diarrhea</p>	<p>Emphasize illness prevention practices (hygiene)</p> <p>Emphasize that preventive measures are effective for most types of diarrhea (for example, most types can be prevented by hand- washing)</p>
Some confusion concerning dehydration	<p>Limited knowledge about dehydration and malnutrition</p> <p>Limited knowledge about the term in Spanish</p>	<p><u>Social</u>: Limited knowledge about dehydration and malnutrition</p> <p>Limited knowledge of Spanish</p>	Emphasize knowledge about dehydration and malnutrition
Fallen fontanelle is an illness, not a sign of dehydration	Conceptualized as a separate illness with diarrhea as one of its symptoms	<u>Cultural</u> : Different beliefs about illness causation	Recommend continuation of liquids, independently of traditional treatment

TABLE 8 A

Age Group: Infants and children

Population Group: Highland Mayas

Ideal Practice: Mothers provide quality home care in case of diarrhea

CURRENT PRACTICE	HELPFUL	HARMFUL	DO NOT KNOW	HOW COMMON? WHAT GROUPS?
Care usually starts with home remedies	Home remedies include a variety of liquids	Among liquids offered ORS is not common		Common: Among most highland Mayas
Care is provided with home remedies and pharmaceuticals	Use of a variety of liquids	Self-medication of pharmaceutical products		Common: Among most highland Mayas
Care is provided with pharmaceuticals and home remedies combined with traditional treatments	Use of a variety of liquids		Traditional treatments include "stomach rubbings" "temascal" or immersion in cold water	Common: Among most highland Mayas
Specific treatment used depends on perceived cause of diarrhea		Treatment for "evil eye" involves few liquid remedies *	Mothers change their diet and take remedies when diarrhea is caused by breast milk  Treatment for worms and dysentery involve traditional practices  Treatment for "fallen fontanelle" and "evil eye" involve traditional practices	Common: Among most highland Mayas  Documented for Sacatepéquez *
Treatment is generally started on the second or third day		Delay in providing home care		Common: Among most highland Mayas
Decisions for home care falls on mothers		Over-load of responsibilities		Common: Among most highland Mayas
Mothers consult with other people if home remedies do not work	Mothers consult with husbands or other elder women who know about illnesses			Common: Among most highland Mayas

TABLE 8 B

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Self-medication in case of pharmaceuticals	<p>Mothers' beliefs about pharmaceuticals ("simple medicines")</p> <p>Pharmaceuticals are available at stores and pharmacies</p> <p>Mothers' limited knowledge about home management of diarrhea</p>	<p><u>Cultural</u>: Mothers' beliefs about pharmaceuticals ("simple medicines")</p> <p><u>Socioeconomic</u>: Pharmaceuticals are easily available at stores and pharmacies</p> <p><u>Social</u>: Lack of knowledge about home management of diarrhea</p>	<p>Reinforce local practice of giving liquids to the child with diarrhea</p> <p>Emphasize adequate use of pharmaceuticals</p> <p>Emphasize adequate home management of diarrhea</p>
Treatment for "evil eye" includes little provision of liquid remedies	Traditional treatment for this illness does not contemplate use of liquid remedies	<u>Cultural</u> : Traditional treatment for evil eye includes few liquid remedies (treatment includes baths, passing of egg, etc.)	Emphasize need to continue providing the same amount or more liquids, even in case of "folk" illnesses
Delay in providing home care	<p>Mothers wait to see if illness goes away by itself</p> <p>Mothers' limited knowledge about home management of diarrhea</p>	<p><u>Cultural</u>: Mothers' beliefs about treatment of illnesses</p> <p><u>Social</u>: Limited knowledge about home management of diarrhea</p>	Emphasize adequate home management of diarrhea
Over-load of responsibilities	Mothers' have diverse activities to carry out at home	<u>Sociocultural</u> : Women's role within the household and the community	Promote support groups in case of illness

TABLE 9 A

**Age Group:** Infants and children

**Population Group:** Highlands Mayas

**Ideal Practice:** Mothers administer ORS correctly

CURRENT PRACTICE	HELPFUL	HARMFUL	DO NOT KNOW	HOW COMMON? WHAT GROUPS?
Most mothers do not use ORS	<p>Beliefs that ORS provide strength and help nourish the child</p> <p>Considered a remedy to help child recover his appetite and strength</p>	<p>ORS is considered a "cold" remedy that cannot be used for "cold" diarrhea</p> <p>Not recognized as part of home remedies pharmacopoeia but as a "medicine" doctors prescribe</p> <p>Mistaken belief that ORS can rapidly stop diarrhea</p> <p>Erroneous belief that ORS can serve to clean the stomach</p>		Common: Among highland Mayas



TABLE 9 B

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Limited use of ORS	<p>Limited knowledge and information about what it is and how to use it</p> <p>Does not rapidly alleviate diarrhea</p> <p>Not recognized as part of the home remedies pharmacopoeia, but as a "medicine" doctors prescribe</p> <p>Belief that ORS is a "cold" remedy that cannot be used for "cold" diarrheas</p>	<p><u>Cultural</u>: Not recognized as part of the home remedies pharmacopoeia, but as a "medicine" doctors prescribe</p> <p>Belief that ORS is a "cold" remedy and cannot be used for "cold" diarrheas</p> <p><u>Social</u>: Limited knowledge and information on what it is and how to use it</p> <p><u>Institutional</u>: Lack of availability</p>	<p>Promote periodic distribution of ORS through health promoters/ pharmacies, including training on the adequate use of ORS</p> <p>Promote ORS as a "neutral" (neither "cold" or "hot") liquid, so that mothers feel they can use it whether diarrhea is caused by "heat" or "cold"</p>

TABLE 10 A

**Age Group:** Infants and children  
**Population Group:** Highland Mayas  
**Ideal Practice:** Mothers recognize ARI

CURRENT PRACTICE	HELPFUL	HARMFUL	DO NOT KNOW	HOW COMMON? WHAT GROUPS?
According to different classifications, mothers recognize signs and symptoms	<p>High fever and cough are the most commonly recognized danger signs</p> <p>Most mothers pay attention to changes in breathing frequency and recognize fast breathing *</p>	<p>Chest-indrawing is underestimated as a danger sign</p> <p>Chest-indrawing cannot be seen as mothers do not undress children with fever</p> <p>Many times fast breathing is underestimated and treated at home</p>		<p>Not very common: San Marcos, Totonicapán, Quetzaltenango, Sololá, according to MOH survey</p> <p>Not common: Totonicapán and Sacatepéquez *</p>
Based on different classifications, symptoms and signs are considered at different levels of severity or danger	Mothers are able to differentiate levels of severity and consequently, treat them differently			<p>Most common: San Miguel Dueñas</p> <p>Common: Highland Mayas</p>
Some signs such as cough are associated to "ojo" and "mollera caida," both traditional illnesses		In this case, not necessarily considered as a danger sign		Most common: San Bartolo (Totonicapán)

TABLE 10 B

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Different perspective on signs, symptoms, causes and treatment of respiratory illnesses	Mayan conceptualization of respiratory illnesses	<u>Cultural</u> : Incompatibility of health-illness models	Emphasize knowledge about biomedical danger signs  Emphasize knowledge about biomedical etiology of ARI
Biomedical danger signs are underestimated or not recognized	Limited knowledge about biomedical danger signs  Chest-indrawing cannot be observed as mothers do not undress children with respiratory illnesses  Fast breathing is recognized but it is underestimated	<u>Cultural</u> : Mothers beliefs about undressing children with ARI  Different interpretations of signs and their severity  <u>Social</u> : Lack of knowledge and orientation about biomedical danger signs	Emphasize knowledge about biomedical danger signs  Emphasize severity of biomedical danger signs  Reinforce local knowledge on recognized danger signs
Attribution of signs to traditional illnesses	Cough is sometimes related to "ojo" and "mollera caida"	<u>Cultural</u> : Mothers beliefs about traditional illnesses	Emphasize knowledge about biomedical etiology of ARI

TABLE II A

**Age Group:** Infants and children

**Population Group:** Highland Mayas

**Ideal Practice:** Mothers provide quality home care in case of ARI

CURRENT PRACTICE	HELPFUL	HARMFUL	DO NOT KNOW	HOW COMMON? WHAT GROUPS?
Children who have a mild illness are treated at home with home remedies	Home remedies include a range of herbal concoctions			Common: Totonicapán, Comalapa
Home care also includes self-medication with pharmaceuticals		Self-medication of pharmaceuticals (antipyretics)  Self-medication of suppositories for fever and syrups for cough		Common: Among highland Mayas  Not common
In many cases, fast breathing is treated at home		Underestimation of danger sign		Common: Sacatepéquez and Totonicapán
Home care includes a variety of other treatments ("confortes," rubbings or massages, bathing)			Use of "temascal" and other traditional treatments	Common: Santiago and Comalapa
Symptoms associated to "folk" illnesses are treated at home		Cough related to "ojo" and "susto and difficult breathing related to "mollera caída" are treated at home		Common: Among highland Mayas

TABLE 11 B

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Children with danger signs are treated at home	<p>Mothers underestimate some danger signs (fast breathing)</p> <p>Mothers do not recognize some danger signs (chest in-drawing)</p> <p>Limited knowledge of biomedical danger signs</p>	<p><u>Cultural</u>: Different interpretation of danger signs</p> <p><u>Social</u>: Limited knowledge about biomedical danger signs</p>	<p>Emphasize knowledge about biomedical danger signs</p> <p>Train health promoters and midwives to visit homes to orient mothers and refer cases</p> <p>Promote use of local health monitors to detect cases, orient, and refer them when necessary</p>
Self-medication of pharmaceuticals	<p>Extended availability of pharmaceuticals at stores and pharmacies</p> <p>Mothers' beliefs about pharmaceuticals</p>	<p><u>Cultural</u>: Mothers' beliefs about pharmaceuticals</p> <p><u>Socioeconomic</u>: Access and availability of pharmaceuticals at stores and pharmacies</p>	<p>Emphasize knowledge about proper use of pharmaceuticals</p> <p>Train salesmen from pharmacies concerning danger signs and referral</p>
Some signs are related to "folk" illnesses	Mothers' beliefs about illness causation	<u>Cultural</u> : Different conceptualization of symptoms and illness causation	Emphasize knowledge about biomedical danger signs

TABLE 12 A

**Age Group:** Infants and children

**Population Group:** Highland Mayas

**Ideal Practice:** Seek appropriate care when infant or child with diarrhea has danger signs

CURRENT PRACTICE	HELPFUL	HARMFUL	DO NOT KNOW	HOW COMMON? WHAT GROUPS?
Mothers do not seek care when illness is perceived as not serious (mild, early)		Mothers perceptions about cause, severity and persistence of symptoms		Common: Among highland Mayas
Mothers seek care when home remedies are not effective, when illness gets worse (dysentery)	Health services are referred to for dysentery	Mothers perceptions about cause, severity and persistence of symptoms		Common: San Marcos, Quetzaltenango, Sololá Not so common: Totonicapán
Care is sought from "folk" providers in case of "folk" illnesses		Mothers' beliefs concerning treatment of "folk" illnesses		Common: Among highland Mayas

TABLE 12 B

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Delay in seeking care	<p>Mothers first try home remedies, pharmaceuticals and other treatments</p> <p>Mothers perception about cause of illness, severity and persistence of symptoms</p> <p>Mothers perceptions about health services (distance, access, cost, time, quality)</p> <p>Mothers control over cash, food, time, energy</p> <p>Household organization and support system</p> <p>Limited knowledge about careseeking practices</p>	<p><u>Cultural</u>: Mothers first try home remedies, pharmaceuticals and other treatments</p> <p>Mothers' perceptions about cause of illness, severity and persistence of symptoms</p> <p><u>Social</u>: Lack of orientation concerning adequate careseeking practices</p> <p>Mothers' perceptions about health services</p> <p>Household organization and support system</p> <p>Limited knowledge about careseeking practices</p> <p><u>Socioeconomic</u>: Mothers' control over cash, food, time, energy</p>	<p>Emphasize knowledge about biomedical danger signs</p> <p>Train health promoters and midwives to visit homes, orient mothers, and refer serious cases</p>
Some times care is not sought	<p>Mothers' perceptions about cause of diarrhea, severity and persistence of symptoms</p> <p>Mothers' perceptions about health services</p> <p>Mothers' control over cash, food, time, energy</p> <p>Household organization and support system</p> <p>Limited knowledge about careseeking practices</p>	<p><u>Cultural</u>: Mothers' perceptions about cause of diarrhea, severity and persistence of symptoms</p> <p><u>Social</u>: Lack of orientation concerning adequate careseeking practices</p> <p>Mothers' perceptions about health services</p> <p>Household organization and support system</p> <p>Limited knowledge about careseeking practices</p> <p><u>Socioeconomic</u>: Mothers' control over cash, food, time, energy</p>	<p>Promote use of local health monitors to detect cases, orient mothers, and refer serious cases</p> <p>Emphasize knowledge about biomedical danger signs</p>

TABLE 13 A

**Age Group:** Infants and children

**Population Group:** Highland Mayas

**Ideal Practice:** Seek appropriate care when infant or child with ARI has danger signs

CURRENT PRACTICE	HELPFUL	HARMFUL	DO NOT KNOW	HOW COMMON? WHAT GROUPS?
If child does not improve after providing home remedies, biomedical care is sought		Mothers underestimate danger signs  Mothers' perceptions about seriousness of condition and vulnerability of child		Common: Quetzaltenango  Not so common: San Marcos, Sololá  Less common: San Marcos
Care is sought within the first and fifth day		Mothers perceptions about seriousness of condition and vulnerability of child  Mothers underestimate danger signs  Range of home treatments		Common: Sacatepéquez, Chimaltenango, Totonicapán
Mothers prefer to seek care from private rather than from public services		Management of ARI cases has not been standarized for private sector  Primary health care is not practiced by the private sector		More common: Quetzaltenango, Sololá  Common: Totonicapán, San Marcos



TABLE 13 B

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Delay in seeking care	<p>Mothers' perceptions about seriousness of condition and vulnerability of child</p> <p>Mothers' try home remedies first</p> <p>Underestimation of the magnitude of the seriousness of symptoms</p> <p>Material and economic features (transportation, cost of service and medicines)</p> <p>Family organization and decision-making power</p>	<p><u>Cultural</u>: Mothers' perceptions about seriousness of condition and vulnerability of child</p> <p>Mothers try home remedies first</p> <p>Underestimation of magnitude of the seriousness of symptoms</p> <p><u>Economic</u>: Material and economic issues (transportation, cost of services and medicines)</p> <p><u>Social</u>: Family organization and decision-making power</p>	<p>Emphasize knowledge about biomedical danger signs</p> <p>Train health promoters and midwives to visit homes to orient mothers and refer cases</p> <p>Promote use of local health monitors to detect cases, and refer them when necessary</p>
Mothers' preference to seek private providers rather than public ones	<p>Mothers' perceptions about private providers (treat them better)</p> <p>Mothers' perceptions about characteristics of health services (access, long waiting time, communication problems, interpersonal relations, inconvenient hours, lack of drugs, poor delivery of services)</p>	<p><u>Cultural</u>: Mothers' perceptions about public health services</p> <p><u>Institutional</u>: Bad quality of services provided at public health centers</p>	<p>Emphasize provision of good quality services in the public sector</p> <p>Emphasize promotion of public health services at the local level (home visits, loudspeakers, "pregones," radio, etc.)</p>
Private providers have not been trained in standard case management of ARI	There is no link between the private and public health sector	<p><u>Institutional</u>: Lack of an integrated health system</p> <p>As long as there is no integrated health system, there is no communication between private and public providers</p>	<p>Emphasize standarization of case management in private sector</p> <p>Promote use of primary health care in private sector</p>

TABLE 14 A

**Age Group:** Infants and pregnant mothers

**Population Group:** Highland Mayas

**Ideal Practice:** Infants should receive the full course of vaccinations and women an appropriate course of tetanus vaccinations

CURRENT PRACTICE	HELPFUL	HARMFUL	DO NOT KNOW	HOW COMMON? WHAT GROUPS?
Most infants do not have a full course of immunization		<p>Mothers' beliefs about immunization</p> <p>Mothers do not take children to health services for control</p> <p>Limited knowledge about immunization</p> <p>Reactions to vaccines</p>		Common: Sololá, Quetzaltenango, San Marcos, Totonicapán
Most mothers have an incomplete course of tetanus toxoid vaccines		<p>Mothers' beliefs about immunization</p> <p>Mothers do not go to services for prenatal care</p> <p>Limited knowledge about immunization</p>		Little information on practices, only on knowledge, which is limited in regard to indications and schedule

TABLE 14 B

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Incomplete immunization record	<p>Mothers' fear of secondary reactions (sick, fever)</p> <p>Contradiction: injections are administered when a person is sick, vaccines when a person is healthy</p> <p>Lack of knowledge about immunization</p> <p>Problems related to health services (communication, schedule)</p> <p>Missed opportunities (illness of child, health service factors)</p> <p>Some children are not taken to health services for control</p> <p>Mothers' beliefs about immunization</p>	<p><u>Biological</u>: Probable secondary reactions</p> <p>Opportunities missed due to illness of child</p> <p><u>Cultural</u>: Fear of secondary reactions</p> <p>Immunization does not make sense in context of traditional health beliefs</p> <p><u>Social</u>: Lack of knowledge about immunization schedule, mother not speaking Spanish, no formal education of mother</p> <p>Children are not taken to health services for control</p> <p><u>Institutional</u>: Lack of vaccines, limited coverage, change in immunization schedules</p> <p>Missed opportunities due to lack of vaccine or provider</p> <p><u>Geographical</u>: Difficult access to communities, distance to nearest municipality</p>	<p>Emphasize importance of immunization as an illness prevention measure and also taking children for control</p> <p>Emphasize knowledge about immunization scheme</p> <p>Promote use of existing distribution and promotion networks (Coke and Pepsi for example) in far away villages to carry educational messages</p> <p>Consideration of importance of health promoters and midwives at a local level to include them in educational interventions</p> <p>Support channeling activities</p> <p>Promote transmission of adequate information concerning campaigns and channeling, using local media</p>
Incomplete course of tetanus vaccinations	<p>Lack of knowledge about this vaccine (indications, scheme)</p> <p>Mothers' fear of secondary reactions</p> <p>Husbands' rejection to immunization</p> <p>Mothers do not go to health services for prenatal care</p> <p>Midwives who provide prenatal and natal care are not included in the national immunization program strategy</p>	<p><u>Cultural</u>: Fear of secondary reactions</p> <p>In some areas, they believe shots are meant to sterilize</p> <p>Immunization does not make sense in context of traditional health beliefs</p> <p><u>Social</u>: Lack of knowledge about immunization</p> <p>Mothers do not go to health services for prenatal care</p> <p><u>Institutional</u>: Midwives are not included in the national immunization program strategy</p>	<p>Consideration of importance of health promoters and midwives at a local level to include them in educational interventions</p> <p>Emphasize importance of immunization during pregnancy to prevent neonatal tetanus in babies</p> <p>Emphasize importance and benefits of seeking care during pregnancy</p> <p>Train midwives and promoters about tetanus vaccine during pregnancy</p>

Age Group: Diverse

Population Group: Health care providers

Ideal Practices: Health providers treat people with respect and in a friendly manner

CURRENT PRACTICE	HELPFUL	HARMFUL	DO NOT KNOW	HOW COMMON? WHAT GROUPS?
Frequently health providers are discriminatory		Discrimination by social class and ethnic group is common		Common: Highlands
Frequently health providers are not respectful		Respect for ethnic and class differences is not common		Common: Highlands
Frequently health providers are not friendly		Interpersonal relations are inadequate		Common: Highlands
Frequently health providers are not kind		Interpersonal relations are inadequate		Common: Highlands

TABLE 15 B

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Discriminatory treatment	Perceptions and prejudices concerning ethnic groups and social classes	<u>Sociocultural</u> : Ethnic and class bias	Promote acceptance and respect towards different ethnic groups and social classes  Promote use of local personnel
Unrespectful treatment	Perceptions and prejudices concerning ethnic groups and social classes	<u>Sociocultural</u> : Ethnic and class bias	Promote acceptance and respect towards different ethnic groups and social classes  Promote use of local personnel
Unfriendly treatment	Too many obligations, low motivation, little identification with clients, lack of interest in human beings	<u>Institutional</u> : Low motivation due to low salaries, lack of technical and moral support, training, incentives and compensations  High demand of services and limited staff  <u>Psychosocial</u> : Little identification with clients  Lack of interest in human beings	Emphasize adequate interpersonal relations and quality of care  Motivate and stimulate health staff  Involve local health promoters and midwives in proving support in health care activities (id patient classification)  Better selection of health staff
Unkind treatment	Too many obligations, low motivation, little identification with clients, lack of interest in human beings	<u>Institutional</u> : Low motivation due to low salaries, lack of technical and moral support, training, incentives and compensations  High demand of services and limited staff  <u>Psychosocial</u> : Little identification with patients  Lack of interest in human beings	Emphasize adequate interpersonal relations and quality of care  Motivate and stimulate health staff  Involve local health promoters and midwives in providing support in health care activities  Better selection of health staff

TABLE 16 A

**Age Group:** Diverse

**Population Group:** Health care providers

**Ideal Practice:** Health providers explain clearly and confirm caretakers' understanding of what is being done and what should be done at home

CURRENT PRACTICE	HELPFUL	HARMFUL	DO NOT KNOW	HOW COMMON? WHAT GROUPS?
Health providers do not usually listen when mothers are explaining the health problem		Providers are not usually good listeners  Partial interpretation of the health problem		Common: Highlands
Health providers do not usually explain diagnosis and treatment to mothers in a clear way		Providers do not provide clear explanations		Common: Highlands
Health providers do not usually confirm caretakers' understanding about diagnosis and treatment		Providers generally do not confirm caretakers' understanding		Common: Highlands

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TABLE 16 B

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Providers do not listen to mothers	Lack of time Lack of interest Language barrier	<u>Institutional</u> : Limited health personnel  <u>Psychosocial</u> : Lack of interest in human beings  Social: Language barrier	Emphasize importance of adequate communication skills  Emphasize importance of showing interest in what mothers have to say  Emphasize importance of having local providers who speak the language in health services
Diagnosis and treatment is generally not explained clearly to mothers	Mothers' ability to understand is underestimated by health providers  Usually providers speak only Spanish  Health providers use technical language  Mothers' perception that providers are not interested in explaining health matters to them	<u>Sociocultural</u> : Providers underestimate mothers' ability to understand  Language barrier  Use of technical language  Perceived lack of interest in listening and explaining	Emphasize importance of adequate communication skills  Emphasize importance of having local providers who speak the language in health services  Emphasize importance of using simple and common language in explaining to mothers  Emphasize importance of showing interest in what mothers have to say
Usually providers do not confirm mothers' comprehension about diagnosis treatment, and follow-up visit	Mothers' ability to understand is underestimated by health providers  Usually providers speak only Spanish  Mothers' perception that providers are not interested in discussing health matters with them	<u>Sociocultural</u> : Providers underestimate mothers' ability to understand  Language barrier  Perceived lack of interest in asking and listening	Emphasize importance of having local providers who speak the language in health services  Emphasize importance of using simple and common language in confirming mothers' understanding  Emphasize importance of showing interest in what mothers have to say

TABLE 1/ A

CURRENT PROBLEM	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	RECOMMENDATIONS
Mass media has been considered inefficient for Mayan rural areas	Less accessible Less receptive to messages in Spanish More geographically and culturally isolated	<u>Social</u> : Language barrier <u>Institutional</u> : Inadequate selection of radio stations <u>Geographic</u> : Isolation <u>Economic</u> : Limited access to radios	Emphasize use of local languages in educational messages  Emphasize adequate selection of radio stations and programs to transmit messages  When constraints are related to geographical and economical factors, consider use of other channels
Most messages have not been based on Mayan concepts or local needs	Incompatibility of health-illness models Most organizations have predetermined messages and contents Organizations have not used a participatory focus in their educational interventions	<u>Cultural</u> : Incompatibility of health-illness models <u>Institutional</u> : Predetermined interventions  Limited participatory focus	Emphasize finding common bases for communication and becoming familiar with ethnoclassifications
Limited use of local media	Most organizations have predetermined messages and contents Organizations have not used a participatory focus in their educational interventions Non-participatory focus in the identification of local problems	<u>Institutional</u> : Predetermined interventions  Limited participatory focus	Emphasize use of middle-aged women, who speak the local Mayan language, and have knowledge and experience: midwives, nurses, promoters, and doctors  Emphasize use of local media (puppets, banners, flags, events, "pregoneros," etc.)
Limited use of combination of mass and local media	Generally, the focus has been one or the other Most organizations have predetermined messages and contents	<u>Institutional</u> : Predetermined interventions	Emphasize a focus that combines mass media and local communication channels (teachers, students, traditional health services, churches, NGO's, etc.)

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