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**Assessment of Breastfeeding  
Practices and Promotion in Rwanda**

**Conducted  
by  
Wellstart International's  
Expanded Promotion of Breastfeeding (EPB) Program**

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## **LIST OF ACRONYMS**

<b>AIDS</b>	<b>Acquired Immune Deficiency Syndrome</b>
<b>CHK</b>	<b>Kigali Hospital Center</b>
<b>CRS</b>	<b>Catholic Relief Services</b>
<b>DHS</b>	<b>Demographic and Health Survey</b>
<b>HIV</b>	<b>Human Immunodeficiency Virus</b>
<b>IEC</b>	<b>Information, education, and communication</b>
<b>IRH</b>	<b>Institute for Reproductive Health</b>
<b>LAM</b>	<b>Lactational amenorrhea method</b>
<b>MCH</b>	<b>Maternal and child health</b>
<b>MINISANTE</b>	<b>Ministry of Health</b>
<b>MRND</b>	<b>National Republican Movement for Democracy</b>
<b>NGO</b>	<b>Non-governmental organization</b>
<b>ONAPO</b>	<b>National Population Office</b>
<b>ORT</b>	<b>Oral Rehydration Therapy</b>
<b>PEV</b>	<b>Expanded Program of Immunization</b>
<b>RIM</b>	<b>Rwandan Integrated Maternal and Child Health/Family Planning Project</b>
<b>SNAF</b>	<b>Natural Family Planning Program</b>
<b>TBA</b>	<b>Traditional birth attendant</b>
<b>UNHCR</b>	<b>United Nations High Commission on Refugees</b>
<b>UNICEF</b>	<b>United Nations Children's Fund</b>
<b>USAID</b>	<b>U.S. Agency for International Development</b>
<b>WHO</b>	<b>World Health Organization</b>

## **EXECUTIVE SUMMARY**

Breastfeeding is an important resource in Rwanda. Breastfeeding practices are generally good, except among salaried urban working mothers, and are characterized by:

- ▶ Universal initiation;
- ▶ On-demand feeding; and,
- ▶ Long duration.

As a result of these practices, breastfeeding in Rwanda:

- ▶ Accounts for the relatively long birth intervals among non-contraceptive users who represent over 85% of the population;
- ▶ Provides the best nutrition, in fact the only adequate nutrition, for the average Rwandan infant;
- ▶ Saves families, communities, and the nation valuable economic resources and foreign exchange; and,
- ▶ Saves infants from repeated morbidity episodes in the first months of life and lowers rates and severity of morbidity in later months.

Despite these positive aspects, there are problems associated with breastfeeding and infant feeding practices that should be addressed. Health personnel dismiss threats to optimal breastfeeding because they assume that all women can and will breastfeed. Furthermore, although breastfeeding management skills are good, knowledge about lactation is minimal; consequently, misinformation is readily transmitted.

Factors that can interfere with optimal breastfeeding include delayed initiation, early supplementation, poor knowledge of lactation, inadequate breastfeeding counseling in family planning services, demands on women's time and energy, and potentially confusing messages about Human Immunodeficiency Virus (HIV) transmission and breastfeeding.

### **Delayed Initiation**

Women in Rwanda typically wait anywhere from several hours to a full day after birth before putting babies to the breast. This practice can have negative results for both mother and child. For the mother, it can result in engorged breasts or can increase the risk of hemorrhaging. For the infant, pathogens can be introduced when the newborn is fed sugar water or artificial milk until the mother begins breastfeeding.

Health workers share the belief that mothers should wait until their breastmilk comes in before initiating breastfeeding. They do not understand the relationships between suckling, letdown, and milk production. The hospital practice of giving mothers ergometrine immediately after birth to reduce the risk of hemorrhaging may delay breastmilk production.

### **Early Supplementation**

Health center personnel advise mothers to introduce complementary foods anywhere from two to six months of age. Data show that infants who are supplemented before seven months in Rwanda suffer more malnutrition than

infants who are exclusively breastfed. Health care personnel need to learn more about current feeding practices and the potential impact of early supplementation on fertility and infant health.

### **Poor Knowledge of Lactation**

Maternal malnutrition worries health care personnel. Knowledge of lactation is poor; consequently, personnel are not able to interpret signs of poor or adequate lactation or to counsel mothers on how to increase milk supply. Emphasis is often placed on supplementing the infant rather than feeding the mother and increasing her milk supply.

### **Inadequate Breastfeeding Counseling in Family Planning Services**

Since contraceptive prevalence is still very low in Rwanda, good breastfeeding practices are all that stand in the way of an even higher rate of population growth. If there is any fall in the duration of exclusive breastfeeding or the overall duration of breastfeeding among non-contraceptors, any gains due to contraception will be lost.

Staff of the National Office of Population (ONAPO) are supportive of breastfeeding, but like health center staff, they do not see a need to promote it. There is a casual attitude about combination pills even though they may reduce milk supply in some women and pass traces of estrogen to the breastmilk. Both USAID and ONAPO should monitor pill distribution and provide adequate education about combination pills if they continue to be distributed in Rwanda.

### **Demands on Women's Time and Energy**

Women in Rwanda like to breastfeed. However, the demands on their time and energy are great. When they begin to supplement their breastmilk with other foods, babies' nutritional status begins to decline. The difficulty of getting fuel and cooking special foods for an infant results in weaning foods inadequate in quality and quantity. We suspect, but do not know, that women's time and resource constraints may also affect breastfeeding, particularly of children older than three to six months. This is particularly true in cases where older siblings feed and care for infants.

### **Potentially Confusing Messages on HIV Transmission and Breastfeeding**

Health care providers in Rwanda express unequivocal support for breastfeeding among HIV-positive mothers. Rwanda is the focus for world attention on this issue, and local expertise is the best there is. No one with whom we spoke saw any basis for qualifying the universal recommendation to breastfeed.

The 1992 World Health Organization (WHO) guidance opens the door for a distinction between public health promotion of breastfeeding and clinical management of HIV-positive mothers. Under these guidelines, advice would be tailored to the specific circumstances of individual maternal infant dyads. Beyond the medical advisability of changes in clinical management for the small set of mothers in Rwanda for whom bottle-feeding might be an option, there is a possible public health danger. Complex medical guidance could be transformed

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quickly into misinformation and powerful rumors. Should this occur, the results could be very damaging to breastfeeding practices.

## Recommendations

In sum, the team concluded that a major breastfeeding promotional effort is not needed at this time; however, interventions are needed to disarm the threats to continued good breastfeeding. The potential threats to current breastfeeding practices in Rwanda include:

- ▶ Misinformation given to mothers by health workers;
- ▶ Continued growth of formal sector employment of women;
- ▶ The possibility that clinical management will shift for well-to-do HIV-positive mothers, creating confusing messages and possibly problems from a public health perspective;
- ▶ The demonstration effect of a cohort of wealthy HIV-positive women using bottles in a WHO-sponsored study; and,
- ▶ The likelihood that more aggressive formula promotion, especially to health care workers, built around the HIV issues will occur in Rwanda in the future.

Based on these findings, the team recommends:

- ▶ Definition and adoption of *norms* for breastfeeding support in health services;
- ▶ Training in *lactation management education* for professional health service providers;
- ▶ *In-service training* of hospital, clinic, and primary health care personnel in the implementation of breastfeeding norms;
- ▶ Replacement of incorrect materials with accurate information for use in *communication outreach efforts*;
- ▶ Modest investment in *research* on the economic and fertility impact of breastfeeding, lactation among malnourished women, and infant feeding practices among rural, urban, and HIV-positive mothers;
- ▶ Stimulation of *private sector/NGO involvement* in the development, production, and distribution of weaning foods and maternal biscuits;
- ▶ Emphasis on the prevention of HIV transmission rather than a retreat from breastfeeding; *routine and careful monitoring of the KAP* (knowledge, attitude, and practices) of mothers and health workers if recommendations other than universal prolonged breastfeeding for HIV-positive mothers are made; and,
- ▶ *Inclusion of the lactational amenorrhea method (LAM)* in family planning programs as one contraceptive option for the first six months.

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## **INTRODUCTION**

USAID/Kigali requested that Wellstart International's Expanded Promotion of Breastfeeding (EPB) Program assess breastfeeding practices and programs in Rwanda. The assessment was conducted by Chloe O'Gara, EPB director, and Anna Martin, EPB program assistant, with the assistance of Leon Nsengimana, Christine Muskashema and Sophie Nakazina from the Division of Maternal Child Health and Family Planning, Rwandan Ministry of Health (MINISANTE).

The assessment took place from April 21 to May 7, 1992. It occurred at a time when Rwanda was experiencing the transition to a new multi-party government, armed conflict, and structural adjustment. Under these conditions, information changed rapidly and was not always available.

The literature review revealed that written information and accessible data on feeding practices in Rwanda were scant. Consequently, the team based the assessment primarily on key informant interviews and observation. The team visited six rural health centers and two major hospitals and met with researchers, health services personnel, traditional birth attendants (TBAs), mothers, other household members, and representatives from the MINISANTE and non-governmental organizations (NGOs). A complete list of contacts is found in Appendix B.

## COUNTRY BACKGROUND

This section of the assessment is based on a review of the literature and presents a profile of the socio-economic, demographic, and health conditions in Rwanda. The health profile focuses on infants, children under five, and pregnant and breastfeeding women.

### SOCIO-ECONOMIC AND DEMOGRAPHIC PROFILE

#### Population Characteristics

The Rwandan Republic is among the smallest and most densely populated nations in sub-saharan Africa. Its population of 7.5 million (mid-1990) inhabits 26,338 square kilometers (10,169 square miles) of mountainous land, a density of 284.8 inhabitants per square kilometer. Between 1980-89, the annual population growth rate was 3.3%. Over half or 3.7 million Rwandans are under the age of sixteen, while 1.5 million are under five. (Unless otherwise indicated, all data in this chapter are from *Africa South of the Sahara* or the United Nations Children's Fund's (UNICEF) *State of the World's Children*.)

The Hutu people represent approximately 85% of the population. Other ethnic groups are the Tutsi, 14%, and the Twa, 1%. About one-half of the population hold traditional religious beliefs. Nearly 40% of the population are members of the Catholic church.

Only 8% of the population resides in urban areas, the vast majority in the capital city of Kigali. The average annual growth rate of the urban population was 7.7% between 1980 and 1990. The war that began in October of 1990 accounts for much of the country's migration, especially in the northeastern prefectures. Over half of the migration is from one rural area to another while 10% is from rural to urban areas. Almost 37% of migration, often prompted by armed conflict in northern Rwanda, is to other countries (Reseau des Femmes Oeuvrant, 1991).

#### Economic Summary Statistics

Per capita Gross National Product is estimated between US\$ 310 and 320. During the period 1986-1990, the central government spent an average of 5% per year of its expenditures on health services.

World Bank (1991) statistics indicate that in 1985 around 49% of the population had access to safe water, including 79% of urban dwellers and 48% of the rural population. There is considerable range in accessibility by region. For example, in Kibungo Prefecture, 21.1% of the population had access to safe water compared to 83.7% in Gitarama Prefecture (UNICEF, 1988).

Electricity was available to 19,000 people in 1989 and has increased since then to include, for example, prefecture headquarters. Generally, electricity is used for lighting; therefore, it does not particularly decrease the physical work load or the need for cooking fuel (Reseau des Femmes Oeuvrant, 1991).

## **Transportation and Communications**

There are over 10,000 kilometers of roads in Rwanda, few of them paved (World Bank, 1991). Public taxis provide transport throughout the country. Since October 1990, road access through Uganda has been closed, severely limiting Rwandan access to imported goods. There are no railway lines.

The country's one radio station, run by the government, recently started broadcasting on two channels. According to a 1988 estimate, there are 57 radios per 1,000 population. A 1986 study by the Rwandan National Population Office (ONAPO) indicated that 78% of those interviewed listened regularly to the radio. A later study by the Ministry of Social Affairs reported that 48% of women had access to radio (UNICEF, 1988).

Newspaper circulation is low (1/10,000 people) but may be growing due to increasing literacy rates and the availability of more newspapers. Currently there is no television station in Rwanda; however, the government plans to open a television station in the near future. Televisions are primarily owned by expatriots, government officials, and hotels.

## **Status of Women**

The status of women in Rwanda is similar to other East African contexts: women are responsible for most of the agricultural and household work but control relatively few resources. Nearly 98% of women who are economically active perform agricultural duties, most of them related to subsistence agriculture. A 1988 study estimated that women in rural areas receive payment for an average of 9.4% of total hours worked (Reseau des Femmes Oeuvrant, 1991).

Women have fewer educational opportunities than men. From 1978 to 1990, the adult literacy rates increased from 47.7% to 64% for men and from 25.6% to 37% for women. The primary school enrollment ratio for the late 1980s was about 63% for both girls and boys. However, 10% of school girls dropped out before the end of the first cycle of primary school, and an additional 14% left during the second cycle (Africa South of the Sahara, 1991). Between 1985 and 1990, female enrollment in secondary school basically remained the same, from 37.9% to 38.9%. University enrollment showed greater increases, with women representing 15.1% of the student body in 1985-86 compared to 21.5% in 1989-90.

There are some indications that nutritional differences exist between girls and boys. The Network of Women Working for Rural Development compiled MINISANTE data for the years 1985-86 and found that among children 0-5 years, 32% of girls compared to 23.5% of boys were under the 80th percentile in weight-for-height (Reseau des Femmes Oeuvrant, 1991).

## **HEALTH PROFILE**

### **Infant Mortality and Morbidity**

The infant mortality rate is estimated to be 117 per thousand live births. In approximately 17-20% of live births, infants weigh less than 2.5 kilograms. Low birth weights are due to poor maternal nutrition, low weight gain during pregnancy, malaria and other illnesses (UNICEF, 1992).

In 1990 the under-five mortality rate was 198 per thousand. The principal causes of death for children one to four years of age were malaria, 46%; acute respiratory infections, 23%; malnutrition, 14%; diarrhea-related illnesses, 11%; meningitis, 2%; fevers of unknown origin, 1%; dysentery, 1%; anemia, 1%; and other, 1%. Malaria was also the leading cause of morbidity in children under five years of age, followed by acute respiratory infections, bronchitis, intestinal parasites, diarrheal disease, skin diseases, and infections of the mouth and eyes (UNICEF, 1992).

The relationship between breastfeeding and mortality was analyzed over a two-year period among children under two years of age who were hospitalized in Kigali with measles, diarrheal disease, or acute respiratory disease. For all three diseases, fatality rates were significantly lower in breastfed children than in children who were no longer breastfed (Lepage et al, 1981).

### Nutritional Status of Children 0-5 Years

In the mid-1980s the Ministry of Planning conducted a National Budget and Consumption Survey for rural (1982-1983) and urban (1984-1986) areas. The survey found higher rates of malnutrition in rural areas than in urban areas and increased nutritional vulnerability during the six to 24 month period (Table 1).

**Table 1. Rwanda: Prevalence of Malnutrition for Rural and Urban Samples by Age**

Age (months)	Rural				Urban			
	%	Ht/Age	Wt/Age	Wt/Ht	%	Ht/Age	Wt/Age	Wt/Ht
0 - 5.9	7.5	39.7	10.0	2.7	13.0	10.8	1.9	1.9
6 - 11.9	6.3	60.1	52.0	20.7	11.4	31.7	21.1	0.0
12 - 23.9	16.2	72.4	32.9	10.2	20.3	54.7	22.5	12.8
24 - 35.9	15.0	62.4	45.3	1.1	21.4	27.1	28.8	1.7
36 - 47.9	14.7	44.2	33.2	5.8	11.2	45.2	25.8	9.7
48 - 59.9	21.1	54.3	20.7	3.5	22.7	41.3	22.2	6.3
60 - 74.0	19.1	36.4	23.0	2.6	-	-	-	-
<b>Total</b>	100.0	52.8	29.8	5.4	100.0	37.5	21.9	6.3

Source: *National Budget and Consumption Survey for Rural (1982-1983) and Urban (1984-1986) Areas*, Schnepf, 1992.

Notes: Rural sample: N = 276 children between 0 and 74 months of age; urban sample: N = 276 children between 0 and 60 months of age. Percentage below a Z-score of -2.

A 1987 UNICEF Weaning Foods Survey of 1,847 children between six and 36 months demonstrated that malnourished children are more susceptible to illness. Half of the children who had experienced four episodes of illness in the two weeks prior to the survey were malnourished. In contrast, malnutrition was present in only

17.4% of the infants who were not sick during the two-week period. The study showed that nutritional status started to decline at six months and continued to decline until sixteen to eighteen months (Schnepf, 1991).

Table 2, based on weight-for-age measurements, shows the heightened vulnerability of children during the weaning period. The percentage of children who weighed less than 80% of the reference median rose from 13.5% among six to seven month olds to 31.8% for sixteen to eighteen month olds and dropped to 13.9% during the third year. In reporting on the survey, Schnepf (1991) attributes the rapid deterioration in the nutritional status between eight and 24 months to poor weaning practices and infants' increasing mobility, exposing them to bacteria and dirty objects.

**Table 2. Rwanda: Levels of Weight-for-age Malnutrition by Age Group**

Age (Months)	Sample Percent	Percent of Median <sup>b</sup>			Z-Score <sup>c</sup> Cumulative Average
		<65%	65 ≤ <80%	<80%	
6-7	11.7	1.9	11.6	13.5	-0.13
8-9	13.0	2.9	19.7	22.6	-0.96
10-12	14.8	5.1	22.8	27.9	-0.99
13-15	15.3	3.4	25.1	28.5	-1.16
16-18	13.5	5.0	26.8	31.8	-1.26
19-23	14.9	4.5	23.7	28.2	-1.25
24-36	16.8	2.2	11.7	13.9	-0.85
<b>Total<sup>a</sup></b>	<b>100.0</b>	<b>3.6</b>	<b>20.3</b>	<b>23.9</b>	<b>-0.96</b>

Source: UNICEF Weaning Foods Survey, Schnepf, 1991

<sup>a</sup>N = 1,328

<sup>b</sup> $\chi^2 = 35.3$ ; probability = 0.000

<sup>c</sup>F = 14.7; probability = 0.000

The association between nutrition, especially breastfeeding, and health is reflected in the word *irungu*, a popular term in Rwanda for children who are suffering from kwashiorkor. *Irungu* means "illness of children who are left" or are not kept near their mother. A study of a commune in Kigali found higher rates of malnutrition in children thirteen to 36 months. Spot statistics in this commune showed breastfeeding rates of 89% from 0-12 months, 75% from 25-36 months, and 35% from 25-36 months (MINISANTE, 1991).

Additional information on nutritional status is found in district and regional studies. A rapid nutritional assessment of children 1-5 years conducted in four prefectures in late 1989 and early January 1990, during the middle of a drought, used the brachial perimeter method for measuring nutritional status. The assessment found severe malnutrition in 17.5% of children and moderate malnutrition in 30.3%, for a combined rate of 43-52%, allowing for a margin of error (Desmoulins, 1990). The assessment report states, "insufficiency of milk in lactating mothers is common...(however) the breastfed infants of lactating mothers having enough milk are in a better nutritional state than their older brothers and sisters."

A 1982 nutritional survey of under-fives in eastern Rwanda also examined some of the potential causes of malnutrition. In this study, about 33% of children under five fell below the 3rd percentile of weight for age; however, only 1% or less showed overt kwashiorkor or marasmus. The principal causes of low weight were thought to be short birth interval ("50% of mothers delivering their next child within two years—the previous child thus coming off the breast at about eighteen months"), late introduction of solid food, poor staple diet with lack of variety, and infection (Cant, 1982).

In January 1992, a joint UNICEF and MINISANTE team interviewed nutrition service personnel and asked them to identify reasons for malnutrition in Rwanda. Reasons they gave included the sale rather than the consumption of a family's agricultural and animal products, early weaning brought on by another pregnancy, income spent on beer rather than food, lack of variety in weaning foods, and "parental irresponsibility" (MINISANTE, 1992).

At a 1989 seminar on food and nutritional monitoring, one of the recommendations for reducing malnutrition was the promotion of exclusive breastfeeding for the first six months with "substantial" breastfeeding until nine to twelve months and continued breastfeeding until at least twenty months (MINISANTE, 1989). The seminar report notes that malnutrition rates begin to increase during the first year of life and are particularly high among children thirteen to 36 months old. The report suggests that the following factors contribute to malnutrition: (1) early interruption of breastfeeding because of another pregnancy; (2) drastic reduction in the number of feedings per day once weaning begins; (3) absence of any traditional weaning foods; (4) high number of pregnancies; and, (5) mothers' lack of knowledge concerning infant nutrition.

### **Nutritional Status of Pregnant and Breastfeeding Women**

Very little information exists on the nutritional status of pregnant and lactating women in the country. Vitamin A deficiency is seen only in certain areas and is not considered a major problem (Interview, UNICEF Nutrition Officer). UNICEF reports that average monthly weight gain during pregnancy in 1982 was 0.29 kilograms, down from 0.68 kilograms in 1978. While 1982 may not have been a typical year, records covering a five-year period show inadequate weight gains during pregnancy.

Written reports and conversations with health center and MINISANTE personnel indicate that they believe maternal malnutrition is the reason Rwandan mothers do not have enough breastmilk. "In general, rural women are not able to produce sufficient quantities of breastmilk because their diet is inadequate" (Comite Interministeriel, 1991). Nonetheless, breastfeeding is widely encouraged as the optimal and only realistic option for infant feeding.

### **Reproductive Health**

Estimates of the rates of maternal mortality from the late 1980s range from 346 to 753 per 100,000 births. Five of the ten principal causes of morbidity for women between the ages of 15-44 are related to reproduction (UNICEF, 1992).

Repeated births with short birth intervals pose a threat to women's health and lives. In 1985 the total fertility rate was 8.0. A 1974 study found shorter birth intervals in urban women than in rural women. In the rural group, 75% of the conceptions occurred between 24 and 29 months postpartum whereas in the urban group, 75% occurred between six and fifteen months postpartum. The rural women in this study kept their infants with them

continuously and nursed throughout the day and night. The urban women, however, tended to maintain a breastfeeding schedule, thereby, reducing the contraceptive benefits of breastfeeding (Lethbridge, 1989).

Another study, published in 1976, looked at maternity ward records in Gitarama province and compared birth intervals following stillbirths with intervals following births of children who were still surviving at the time of the next birth. The median interval rose from 13.5 months in the former to 27.4 months in the latter (Ntabomvura, 1976).

In some African countries, lactating women abstain from sexual relations. Although women in Rwanda resume sexual relations about eight days after childbirth (ONAPO, 1983), breastfeeding plays a critical role in child spacing. Two family planning officials in Rwanda acknowledged that birth intervals for users of modern contraceptives are almost identical to those of breastfeeding women. UNICEF reports a contraceptive prevalence rate of 10% for the years 1988-90. Current ONAPO information shows a national contraceptive rate of 11-14%, with a rate of 21% in Kigali.

## INFANT FEEDING PRACTICES

This section of the paper examines the breastfeeding practices of mothers. A discussion of breastfeeding practices in hospitals and health centers is the subject of the chapter on health services.

### Percent Ever Breastfed

All evidence we have assembled suggests a rate of 99-100% "ever breastfed." This conclusion is bolstered by Demographic and Health Survey (DHS) data from Burundi, a country that borders Rwanda and shares many relevant characteristics. The "ever breastfed" rate for Burundi is 100%. The only information that calls into question the "ever breastfed" figure for Rwanda is that of Gussler et al, cited by WHO, who report a 92% initiation rate in an urban area in 1980.

Not one person we interviewed, nor any written materials we reviewed, suggest that there is any question about the value of breastfeeding. This positive attitude towards breastfeeding is shared by doctors and nurses providing care to HIV-positive mothers. Even among wealthy mothers, breastfeeding is considered *de rigueur*. Mothers do not regard it a chore but a pleasure, particularly in the early months.

### Initiation of Breastfeeding

#### *Timing*

Our inquiries revealed a brief, prevalent practice of waiting to initiate breastfeeding until "good milk" comes in. Breastmilk that is flowing or bountiful is considered "good milk." Initiation typically starts within the first 24 hours, although we heard reports of delays ranging from several hours to three days. Mothers in rural areas reported initiation typically after the first 24 hours.

The information we assembled suggests that the WHO indicator for "timely first suckling rate" would have a very low value if it were calculated. Collection of data on this indicator might increase awareness of the effects of early suckling on letdown.

#### *Colostrum and Prelacteal Feeds*

All infants reportedly are fed colostrum. Most mothers seem to view colostrum as beneficial for newborns. It appears that the tradition of giving a herbal mixture called *inkuli* as a prelacteal feed is no longer observed. Prelacteal feeding is not routinely practiced except in cases of a fussy baby or a baby whose mother "doesn't have milk" after more than 24 hours. In these cases, the newborn might be fed sugar water. A less common practice is for a rural woman to give cow's milk to the newborn; an employed, urban woman might give formula. Another practice, reported by Ndagiza (1984), is for friends to breastfeed a newborn until the mother's milk comes in.

### Exclusive Breastfeeding

Both the 1983 National Fertility Survey and Munyanshongore's 1981 study of breastfeeding practices in urban and rural Rwanda provide information on exclusive breastfeeding. Munyanshongore found that among rural and urban low-income families, 90% of three-month-old infants were exclusively breastfed. Among higher income urban families, less than half of the infants were exclusively breastfed at three months.

The 1983 fertility survey reported the following rates of exclusive breastfeeding: 80% at three months, 24% at seven months, and 9% at nine months as illustrated in Table 3. These rates are based on the current breastfeeding practices of women interviewed at the time of the survey. Table 4 shows duration rates based on recall of past breastfeeding practices. The average duration of exclusive breastfeeding was 6.6 months. Women with secondary or higher education reported shorter durations of exclusive breastfeeding compared to women with no formal education (6.7 months compared to 4.8 months). Age and residence appeared to have little influence on the rates of exclusive breastfeeding.

**Table 3. Proportion of Women Exclusively Breastfeeding at the Time of the Interview**

Months Postpartum	Percentage
0	88.3
1	90.6
2	88.3
3	80.2
4	81.7
5	62.3
6	44.8
7	24.3
8	12.7
9	9.1
10	7.4
11	3.4
12	3.6
13 and over	1.2

Source: 1983 National Fertility Survey, National Population Office.

**Table 4. Duration of Exclusive Breastfeeding<sup>a</sup> in Rwanda** (Number of women = 2,872)

No. of Months <sup>b</sup>	<3	3	4	5	6	7	8	9-11	12	13+
% of Women <sup>c</sup>	2.8	2.7	6.6	11.5	40.3	14.2	10.5	3.9	5.5	1.9

**Mean duration - 6.6 months**

Source: 1983 National Fertility Survey.

<sup>a</sup> Duration among non-single women in the last interval between two pregnancies with the last pregnancy resulting in a live birth and the child's survival for at least twelve months.

<sup>b</sup> Months postpartum.

<sup>c</sup> The percentage of women never breastfeeding in the last interval between pregnancies was 0%. The percentage of women who breastfed until the death of the infant was 0.1.

**Predominant Breastfeeding**

WHO has introduced a series of indicators for breastfeeding practices, including the percent of infants less than four months who are predominantly breastfed, that is, given breastmilk as well as water and water-based drinks. We were unable to find data on which to base an estimate of this indicator. Interviews, however, suggest that little water or water-based drink is given to infants. Several people explained to us that Rwanda is not a hot country, so infants and lactating women do not need water.

**Total Breastfeeding Duration**

For the majority of mothers, breastfeeding extends well into the second year. The 1986 Nutrition Survey found breastfeeding rates of 97% at 6 months, 76% from 7-18 months, almost 50% from 19-23 months, and less than 13% for 24 months or longer. The most common reason for ending breastfeeding was another pregnancy. Some mothers reportedly put pepper on the nipple so the child loses the taste for it and no longer wants to breastfeed.

Data collected in the 1983 National Fertility Survey show a mean total duration of 21 months (Table 5). Graph 1 plots the cumulative percentages of breastfeeding duration. Women under age 30 reported shorter total durations than older women. Total breastfeeding duration was shorter for women living in Kigali. In Kigali, mean duration was 16.7 months compared to 21.3 months in rural areas. There was an inverse relationship between breastfeeding duration and education. The rate for women with no formal education was 21.7 months compared to 15.7 months for women with a secondary education or higher.

**Table 5. Total Breastfeeding Duration\* in Rwanda (Number of Women = 3,205)**

No. of Months	0	1-5	6	7-8	9-11	12	13-17	18	19-23	24	25-29	30	31-35	36+
% of Women <sup>b</sup>	3.3	0.9	1.2	2.7	3.0	8.4	13.5	9.0	9.5	17.4	7.7	3.6	1.7	8.0

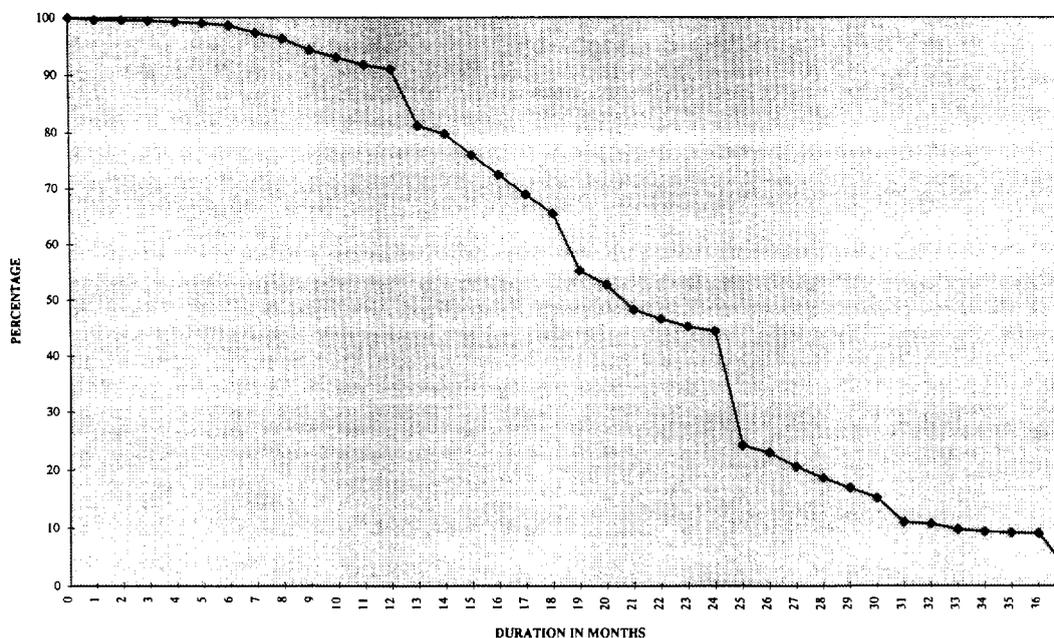
**Mean duration - 20.4 months**

Source: 1983 National Fertility Survey.

\*Duration among non-single women in the last interval between two pregnancies with the last pregnancy resulting in a live birth.

<sup>b</sup> The percentage of women never breastfeeding in the last interval between pregnancies was 0%. The percentage of women who breastfed until the death of the infant was 10.2%.

**Graph 1. Cumulative Percentages of Total Breastfeeding Duration\* (Number = 2754)**



Source: 1983 National Fertility Survey, National Population Office.

\* The graph does not include the responses of women whose infant died before the first birthday or women whose infant died but was breastfed up until death, regardless of the infant's age.

### Complementary Feeding

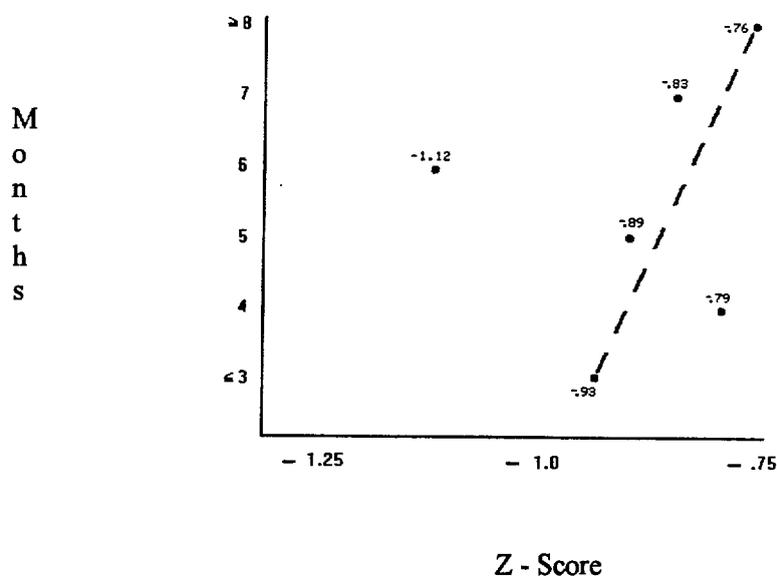
Over the years, delayed introduction of complementary foods has been a major concern in Rwanda. The 1983 ONAPO fertility study reported that 24% of infants were not supplemented at seven months. UNICEF's 1987 Weaning Foods Survey (Schnepf, 1990) found that 13.5% of three month olds were eating solid or semi-solid foods. At four months the figure increased to 27% and jumped to 82.3% by sixth months. By eight months, weaning foods were included in the diets of all of the children studied in the survey (Table 6). Graph 2 shows that children who receive complementary foods before they are six months of age have higher rates of malnutrition than those who begin eating complementary foods after six months.

**Table 6. Infant's Age at the Time of the Introduction of Weaning Foods**

Age in Months	#	%	Cum. %	% of Median			Z-Score <sup>b</sup>	
				<65%	65-79%	<80%	Mean	S.D.
≤ 3	175	13.5	13.5	1.7	26.3	28.0	-0.93	1.39
4	175	13.5	27.0	3.4	18.3	21.7	-0.79	1.54
5	128	9.9	36.9	1.6	15.6	17.2	-0.89	1.11
6	590	45.5	82.3	4.7	22.2	26.9	-1.12	1.26
7	128	9.9	92.2	6.3	12.5	18.8	-0.83	1.48
≥ 8	101	7.8	100.0	1.0	16.8	17.8	-0.76	1.26
<b>Total</b>	<b>1297</b>	<b>100.0</b>	<b>100.0</b>	<b>3.7</b>	<b>20.2</b>	<b>23.9</b>	<b>-0.97</b>	<b>1.33</b>

Source: UNICEF 1987 Weaning Foods Survey, Schnepf, 1990

**Graph 2. Age of Child at Introduction of First Weaning Food and the Relationship to Malnutrition Based on 24 Hour Recall with Frequency**



(Standard deviation from norm)  
 $F = 3.11, p < .01$

Source: UNICEF 1987 Weanings Food Survey, Schnepf, 1990.

Note: Six months is problematic, perhaps indicating one or two acutely malnourished children.

UNICEF's 1987 survey found that nearly 70% of the respondents listed sorghum porridge as the first choice for a weaning food. This porridge often lacks adequate calories and nutrients because it is overdiluted and unfortified. Infrequent feedings compound the problem. Over three quarters of the families surveyed reported that they prepared and consumed food twice a day. Over one-third of the children in sample households that prepared food once a day were malnourished compared to 13% in households where food was prepared three times a day (Schnepf, 1991).

After porridge, the most commonly used first weaning foods are powdered milk, 10%; fruit, 8.4%; and cow's milk, 4.3%. The use of water in the preparation of both the porridge or powdered milk increases an infant's risk of exposure to contaminants (Schnepf, 1991). Milk as a supplement to breastfeeding is beginning to make inroads beyond the urban area. This development is apparent because the percentage of people (10%) using powdered milk as a first complementary food is larger than the percentage of the population (8%) living in urban areas. Health care personnel, however, continue to believe that the use of powdered milk as the first supplement

to breastmilk is a phenomenon only among wealthier urban people. A workshop report from 1981 states that weaning problems are more prevalent in rural than in urban areas. The report warns, however, of the example being set for the urban poor by the wealthy urban population who often supplement breastfeeding with bottle-feeding (Munyashongore, 1981).

The negative impact of early supplementation on the infant gut may be associated with accelerated disease in HIV-positive infants (Tozzi et al) or postnatal transmission in HIV-negative infants (Ruff). At this time one can make no definitive statements about the contribution of infant mucosal integrity or immune factors to the development of symptoms or the potential transmission through breastmilk if the mother seroconverts postpartum. However, many researchers suspect that infant factors play a role in the progression of Acquired Immune Deficiency Syndrome (AIDS) and transmission of HIV.

### **Feeding During Child Illness**

Only 12% of mothers interviewed as part of the UNICEF Weaning Food Survey said that they thought breastfeeding should be stopped or reduced when their children were sick. The most common reason (54%) for reducing breastfeeding at this time was a sick child's refusal to suck or concern that breastfeeding caused the child to suffer diarrhea (Schnepf, 1991).

### **CONCLUSION**

Action to protect current breastfeeding practices is urgent. As long as trends in exclusive breastfeeding and total breastfeeding duration do not begin to decline, integration of more complete information about breastfeeding into maternal and child health services and family planning services, coupled with modest public education efforts, should suffice to protect breastfeeding practices.

At this moment it is impossible to state with confidence that change is not already in process. Data for overall duration show declining rates, but we were unable to find values for median and mean durations to plot a trend over time. In the judgment of everyone we asked, there has been no improvement in nutritional status of infants and young children over the past decade.

There are several possible explanations for the lack of improvement in nutritional status: (1) There has been little change in feeding practices; (2) changes in feeding practices have been inappropriate; or (3) improvements in nutritional status have been offset by morbidity or negative changes in breastfeeding practices.

## **KNOWLEDGE AND ATTITUDES OF MOTHERS AND HEALTH WORKERS**

To understand infant feeding practices and maternal diets in Rwanda, it is helpful to examine the knowledge and attitudes of mothers and health workers. Written materials on this subject, however, are limited. The information presented below draws on both written studies and interviews conducted during the assessment. Although the data are often anecdotal, the consistency of certain attitudes and practices provide a basis for identifying some key areas of concern.

### **INFANT FEEDING**

#### **Initiation of Breastfeeding**

There is consensus among all health workers and their clients, both rural and urban, that breastfeeding is universal and desirable. The universality of breastfeeding in Rwanda extends to health personnel. Every health care provider we asked had breastfed (or his wife had). Advantages of breastfeeding were widely known and accepted. Disadvantages were scarcely mentioned. No one spoke to us about experiences of lactation failure. One nurse mentioned that she had dealt with cracked nipples, a problem that apparently is normally handled in the household. She said that one way or another, every mother manages to breastfeed.

Although breastfeeding practices are generally good, conditions that foster successful breastfeeding are not well understood. For instance, mothers and health personnel are unaware that suckling stimulates let down or production; consequently, they see no reason to put newborns to the breast before they think that “good milk” is available. This attitude coexists with the belief that colostrum is good. No hospital personnel volunteered that immediate suckling helps in involution or prevention of hemorrhaging. Nurses were not at all clear whether babies should be put to breast immediately after birth.

In fact, health care personnel we met, particularly in rural settings, actively promoted a waiting period of up to 24 hours and seemed convinced that mothers needed to wait until the breasts felt full before feeding the infant. We did, however, meet one older and experienced TBA who clearly understood the relationship between suckling and milk production and explicitly linked a decline in frequency with the introduction of weaning foods and an increased risk of pregnancy.

Another area that indicates an incomplete understanding of lactation relates to prelacteal feeding. Prelacteal feeds are not encouraged per se, but almost all health workers discussed the need to give sugar water, formula (in Kigali) or cow’s milk if the baby was crying before the mother “had” milk.

#### **Feeding Frequency**

The practice in Rwanda of a young child sleeping with the mother at least until the next baby is born makes demand feeding easier. Demand feeding was universally reported by and for everyone except urban working women although we question whether frequency is sustained during periods of heavy work demand. We heard many reports of infants left for entire days with siblings. We were told that typically, such infants are given

nothing. Clearly this topic requires more study. In addition, we lack information on changes in feeding frequency as the infant gets older.

### **Exclusive Breastfeeding**

Health workers do not appear to be very clear or concerned about the actual rate or duration of exclusive breastfeeding. There is little appreciation of the importance of exclusivity; most of the concern is over delayed introduction of supplements. People working in family planning were able to give us a clear and accurate explanation of the practices required for the lactational amenorrhea method, but no one else seemed concerned about the fertility or morbidity effects of exclusive breastfeeding.

In addition to a lack of awareness of the importance of exclusive breastfeeding, there is confusion over its definition. Health workers said that mothers introduce a thin porridge (*bouillie*) at five or six months. When asked, they said that before the introduction of *bouillie*, infants are exclusively breastfed. However, charts on the walls of Kigali Hospital Center and some rural health centers encourage the introduction of juice at one month, *bouillie* at two months, etc. Also, it appears that women begin giving infants tastes of what they are consuming (juice, banana beer, bits of meat) very early. Health care personnel do not seem to be concerned about this practice.

Several health workers remarked that the period of exclusivity during the last ten to fifteen years had dropped from nine to twelve months to approximately six months. This decline was due, apparently, to health promotion of supplementation. Everyone agreed that earlier introduction of complementary foods did not appear to have resulted in improved nutritional status.

### **Complementary Feeding**

Health personnel report that there are problems during the weaning period because mothers are ignorant about appropriate complementary foods. Most health personnel think that complementary foods should be introduced by at least six months. For the most part, they are convinced that Rwandan mothers are waiting too long to supplement breastmilk.

Most of the health personnel that the team interviewed mentioned the need to teach mothers about appropriate complementary foods. Upon further questioning, they acknowledged that the feeding advice given in many areas is not realistic. Many mothers do not have access to the recommended foods or much control over household resources. Mothers usually receive generic recommendations without reference to the foods they grow, the way foods are prepared, feeding frequency, or food quantity. Health personnel also said that problems during the weaning period result from food scarcity in certain areas or misuse of food and financial resources in the household, including up to 30% of household expenditures for the purchase of beer (MINISANTE evaluation of nutrition activities, 1992).

At one time, delayed introduction of complementary foods may have been the cause of malnutrition among six to twelve olds, but it is not the primary cause today. The data suggest that it is precisely when weaning foods are introduced that serious malnutrition problems begin. We sensed that many health workers failed to consider that early supplementation often replaces breastmilk, the only source of protein for most children, with a less nutritious food. The weaning food may be 90% water and contaminated. Furthermore, as weaning foods are

ingested, breastmilk intake tends to drop, particularly among infants who are undemanding. However, neither health personnel nor mothers think that increasing use of other milks will affect breastfeeding practices. Service providers in health and family planning services were not concerned that earlier weaning might have a negative impact on birth spacing.

### **Total Breastfeeding Duration**

On the subject of the total duration of breastfeeding, estimates by health personnel ranged from eighteen months to over three years. Again, we heard no expressions of concern about the fertility or nutritional impact of actual or potential declines in total duration. Given the low, but rapidly increasing rate of contraceptive use and the virtual absence of other protein in the diets of poor children, a clearer appreciation of the value of prolonged breastfeeding should be fostered.

### **Bottle-feeding**

No bottles were seen by the assessment team during its visits to rural areas. Among health personnel in urban areas, there is a general acceptance of the notion that working mothers who are well-to-do can and will bottle-feed. Health workers did not appear to see any need to dissuade such mothers. Bottle-feeding is not perceived as a threat, just something that a few wealthy women do. Most health workers reported that other mothers do not bottle-feed because they are poor. They remarked that infants who receive both breastmilk and bottled milk are the best nourished (fattest) although they have more illnesses, especially gastrointestinal.

## **MATERNAL HEALTH, NUTRITION, AND LACTATION**

### **Diet for Lactating Women**

Rwandans associate maternal nutrition with breastmilk production. Focus groups in a community in northeastern Rwanda as well as conversations with mothers and TBAs indicate that people believe mothers must eat well to ensure good lactation (Zigirumugabe, date unknown). Mothers are fed sorghum porridge for the first eight days following birth. They often gain weight due to this supplement and their brief freedom from heavy physical labor. This special treatment lasts up to thirty days in higher income families. We were unable to explore more carefully if this belief in the association between maternal nutrition and good lactation extends for the total duration of breastfeeding.

Women and health workers do not recognize a need for fluids for adequate breastmilk production. Mothers do not drink water, but they do drink banana "juice" and *bouillie*, which can be fairly thick.

In the past, little emphasis was placed on micronutrient enrichment of the maternal diet. There are no national studies on iron deficiency, but it is assumed that anemia rates in women are similar to other African countries. The mini-pills provided by USAID contain iron. UNICEF is planning an iron supplementation component within its micronutrient program. Women apparently do not receive micronutrient supplements as part of prenatal care.

### **Insufficient Milk**

Inadequate maternal nutrition is often blamed for breastmilk insufficiency. Both high-level professionals and mothers are concerned about insufficient milk, particularly immediately postpartum and after the third or sixth month. This preoccupation suggests a lack of knowledge about normal lactation. First, health personnel showed no awareness that the "feel" of the lactating breast changes somewhere between three and six months and does not necessarily indicate diminution of milk supply. Second, an infant's need for complementary foods around six months reflects the changing requirements of an older infant and usually does not mean that the mother's milk supply is down.

Insufficient milk may be a problem in Rwanda, but the solutions were not clearly expressed by anyone with whom we spoke. The effect on breastfeeding practices of women's heavy workloads in rural areas and in the formal sector is usually overlooked. Another factor that may be contributing to reduced breastmilk production is food supplementation. Food aid programs have focused on providing food to infants rather than to supplementing maternal diets as a way of helping mothers to increase their milk supply.

### **Food and Gender**

There is a clear cultural norm that women should feed men first, then infants, and lastly themselves. Even informants who acknowledged the importance of good maternal nutrition during pregnancy and lactation felt that this cultural pattern of food privileges for men had to be accepted. They recognized that many men abused this privilege and were irresponsible with regard to the nutritional well-being of their wives and children. For example, men often ate more than their share during shortages and spent household resources on beer. Although people are aware of men's critical role in assuring their families' adequate nutrition, we heard of only one effort to direct nutritional messages specifically to men. This effort was part of an HIV activity that included nutritional sessions.

Gender differences in feeding patterns have their beginnings in infancy. We were told by mothers and health personnel that boys like to eat more than girls. We observed a case of fraternal twins where the girl weighed 0.7 kilograms more at birth than the boy. At seven months, the boy weighed two kilos more than the girl. His caretaker was almost force feeding him with bottled milk while no food was being offered to his sister.

### **Breastfeeding and HIV Transmission**

Approximately one third of Kigali mothers are HIV positive. Support for breastfeeding among HIV-positive mothers is unequivocal among health care providers. Only two people questioned whether there might be a transmission problem through breastmilk. Rwanda is the focus for world attention on this issue, and local expertise is the best there is. No one with whom we spoke saw any basis for qualifying the universal recommendation to breastfeed.

## CONCLUSION

Mothers and health personnel share similar beliefs about infant feeding and maternal nutrition. Breastfeeding is accepted, expected, and admired. Empirical hands-on-skills are good. However, there is little awareness of the:

- ▶ Advantages of initiating breastfeeding soon after birth;
- ▶ Nutritional or fluid intake needs of mothers after the first postpartum week;
- ▶ Supply and demand functions of breastmilk production; and,
- ▶ Potential impact of supplementation on frequency, intensity of suckling, fertility, nutrition, or morbidity.

This lack of knowledge and certain attitudes among health providers in urban areas could erode good practices. These attitudes include:

- ▶ Acceptance, even expectation, that better off clients of public health services will breastfeed;
- ▶ Admiration for fat bottle-fed babies; and,
- ▶ The perception that exclusive breastfeeding is something that women must and will do because they are poor.

## HEALTH SERVICES

This chapter looks at traditional and formal health services and the various points where they might influence breastfeeding practices.

### TRADITIONAL HEALTH CARE

#### Traditional Healers

The information on traditional healers is based on discussions with health center workers and mothers attending the centers. When asked why families delayed taking a child who was experiencing diarrhea to a health center, the mothers reported that children with diarrhea are often taken to a traditional healer. The healer is believed to have the only antidote for the particular poison causing an illness. Diarrhea is sometimes attributed to poisoning by a neighbor.

Almost every child at the Rukoma-Sake (Kibungo) health center's *causerie* for at-risk children had small scars on the forehead, indicating previous attention from a traditional healer. From the limited number of cases seen, it seems that healers do not recommend effective rehydration techniques for children suffering from diarrhea. Mothers at Rukoma-Sake reported that traditional healers did not give any particular advice about breastfeeding.

#### Traditional Birth Attendants

Outside of hospitals or clinics, we were unable to identify systematic, medical prenatal care or supervision of births. There appears to be a network of midwives (TBAs). Over 1,000 TBAs have received training through local health centers (Reseau des Femmes Oeuvrant, 1991). MINISANTE personnel report that TBAs fill out a "fiche maternel" for each mother whom they assist. At their convenience, TBAs give these forms to the relevant health center. Although the existence of these forms would suggest a monitoring system, it seems that the health centers do not supervise TBAs, monitor their practices, or systematically assemble data on the births they attend.

Many clinics do, however, maintain a registry of midwives who practice locally. No TBA registries were shown to us during visits to health centers. Nonetheless, when we asked to meet TBAs, personnel from two health centers were immediately able to take us to a TBA with whom they appeared to have frequent contact. In several rural locations, it was reported that TBAs received free health care in return for patient referral to prenatal consultation or maternity clinics. TBAs are paid only for successful outcomes. They are not paid if they refer women to the clinic or hospital.

We were able to meet with two TBAs in their homes. They reported thriving practices. One had practiced midwifery for twenty years, the other for eighteen years. Both had received their initial training from other TBAs and had participated in the late 1980s in what was apparently a UNICEF-supported training program offered through a local health center. They each had a midwifery kit.

Most TBAs do not appear to become involved with their clients during pregnancy although some refer pregnant women to health centers for pre-natal consultations. The two TBAs who were interviewed reported that women occasionally ask them about nutrition during pregnancy, and both said that they recommend varied diets to

counteract pregnant women's cravings for specific foods. One mentioned a specific recommendation for manioc leaves or *isombe*, one of the few leafy greens commonly eaten in Rwanda.

Deliveries attended by TBAs take place in the pregnant woman's home. If a case becomes too complicated, TBAs refer the woman to the health center. The TBAs interviewed live and work in relatively close proximity to a health center with a maternity clinic. Transport difficulties would probably result in lower referral rates by TBAs in other areas.

After birth, the TBAs stay until the mother is bathed and put into bed, the baby wiped clean and wrapped up, and the mother given a portion of the special *bouillie* usually prepared for her by her husband. One TBA reported that she advised mothers to wait for the milk to come in (usually eight to ten hours) before breastfeeding. The other, aware that suckling causes milk to come in, encouraged mothers to begin breastfeeding within three hours. Both TBAs knew about the protective properties of colostrum. Neither reported knowledge of any breastfeeding problems such as engorgement, cracked nipples, etc. They could remember one or two women who had no milk but said that such cases were extremely rare and very upsetting to the mother.

When asked about infant diarrhea, both TBAs quickly recited recipes for Oral Rehydration Therapy (ORT). However, their ORT training did not appear to have covered breastfeeding recommendations. One of the TBAs reported that there was no reason for mothers to stop breastfeeding during diarrheal problems, but she probably did not encourage more frequent breastfeeding. The other reported that she advised mothers to stop breastfeeding and to give cow's milk to the infant. When the diarrhea stopped, she recommended that they resume breastfeeding. Pressed on the issue, she said that her advice was based on experience with her own children over a decade ago.

The two TBAs who were interviewed refer mothers to health centers for childhood immunizations. They reported that mothers ask them for advice concerning infant feeding and weaning, and both gave recommendations similar to those given at the health centers. This may reflect the bias of visiting TBAs who were trained at a health center close to their home. The two TBAs do not recommend any particular foods or fluids for lactating mothers.

## FORMAL HEALTH SERVICES

City health services in Rwanda differ markedly from rural health services both in the clients they serve and in the services they provide. These differences are noted in the following discussion.

### Prenatal Care

#### *Statistical Indicators*

The MINISANTE estimate for national utilization of prenatal care is approximately 80%. The majority of women who receive prenatal care apparently attend only one prenatal consultation. This visit takes place late in the pregnancy to ensure access to the clinic in case of birthing problems. In areas where services are good, multiple visits occur. In the Kigali hospital, for example, there were 5,458 births in 1991. Out of this number, 4,033 women initiated prenatal care, for a rate of almost 74%. There were 4,719 repeat visits.

Births are reported for statistical purposes when mothers come in at six weeks for their infants' vaccinations. The community focal points for the Expanded Promotion of Immunization (EPI) have been members of the political party, National Republican Movement for Democracy (MRND). With recent political changes, this powerful network will no longer be activated for health purposes. The one remaining community outreach network is through voluntary family planning workers, the *abakangurambaga*. ONAPO staff told us that these volunteers are trained to talk with mothers about a range of family planning and maternal and child health issues. However, maternal and child health clinic staff never mentioned these volunteers as integrated with clinic activities or related in any way to systematic programming around issues other than family planning. A new CARE project in four northern prefectures may include these volunteers in a community-based distribution system. CARE does not plan for this network to be charged with broader maternal and child health responsibilities.

### *Protocols and Norms for Prenatal Visits*

The following descriptions of prenatal visits are composites based on interviews. Interviews with clinic personnel responsible for prenatal visits revealed a fairly consistent protocol even though it appears that there are no checklists or written procedures kept readily available.

Counselling during any contact with health workers appears to be minimal unless the mother has a problem. Since everyone assumes a woman will breastfeed, no one considers it a high priority to counsel women on the specifics of breastfeeding. Mothers are told to breastfeed and advised to begin introducing complementary foods around four, five, or six months. Discussion of breastmilk substitutes during prenatal visits was not reported. As far as we could determine, powdered milk was not distributed during the visit or recommended directly to pregnant women.

Nutrition counselling during prenatal consultations is common and includes advice on the diet for pregnant women, lactating women, and weaning-age infants. The actual amount of counselling given on each of these topics varies according to the practitioner. Apparently women are aware of the need to eat special foods after birth to "help them to have enough milk," but weight gain during pregnancy is not emphasized by either pregnant women or health workers. Most health workers in rural areas initially responded that women gained weight during pregnancy. When they looked at their records, they noted certain problems such as very small weight gains and even weight loss due to illness, primarily malaria.

The chief of Obstetrics and Gynecology (OB/GYN) at the Kigali Hospital agreed that in the majority of cases, weight gains during pregnancy were inadequate. He had no explanation for the fairly modest rate of low birth weight babies relative to the poor weight gain by mothers. He found it remarkable that there is generally a postpartum weight gain. This weight gain is not entirely surprising given the emphasis on supplemental feeding of postpartum mothers and the days of rest from physical labor which new mothers enjoy.

UNICEF is working with MINISANTE on the development of a maternal card that will include some information on nutritional practices. In addition to providing much needed information, it is hoped that the card will prompt more interaction between mothers and health center personnel on nutrition and weight monitoring during pregnancy and lactation.

Currently, the nutritional advice given to mothers is usually technically correct but impractical. Some health workers appear to be conscious of the need to couch advice in concrete terms by talking about accessible foods.

However, many advise almost by rote and tell women to eat proteins, oils, vegetables, and carbohydrates with little discussion of what foods are actually available and how they should be prepared.

### **Hospital and Clinic-based Deliveries**

Nationwide, approximately 20% (USAID estimates) to 28% (MINISANTE figures) of births are in health facilities. According to USAID, one quarter of attended births nationwide occur at Kigali Hospital Center (CHK). We were told that antenatal records are kept and referred to for those mothers who receive prenatal, perinatal, and postpartum care in the same institution. Mothers who are referred from other facilities apparently do not bring any records with them.

Clinic and hospital births are typically attended by nurses. A doctor attends if he or she is available and when there are complications. The city hospital reports that female relatives accompany urban women when they deliver. Rural women who come to the city hospital for childbirth are generally accompanied by their husbands. Reliable information is not available on the proportion of out-of-hospital births attended by TBAs, family members, or others.

At CHK, slightly more than 12% of births are by caesarean section. This rate seems credible since almost 1,200 of the 6,795 births are referrals from other prefectures and 1,151 of the pregnancies are characterized as high risk. Use of ergometrine at CHK is routine. The chief of OB/GYN is not concerned about the possible effect of ergometrine on milk production or let down. This practice merits further investigation, however, since many women wait to initiate breastfeeding until there is enough flow.

All women, including ceasarean section mothers and mothers of premature babies, keep their babies with them in the ward. The only time of separation appears to be immediately after birth when the baby is bathed. The wards are relaxed, pleasant, and filled with empirical lactation management skills.

Initiation of breastfeeding appears to be universal in every institution; consequently, staff do not concern themselves with observing or assisting mothers. It is unclear but seems unlikely that the first nursing session is observed by staff. There are no written norms for initiation of breastfeeding. Health personnel were not consistent in their reports on practices. All health workers volunteered that colostrum is good. Colostrum is not discarded during the period when mothers wait for their milk to come in. Once breastfeeding begins, infants are nursed on demand.

All premature infants are fed breastmilk. Babies who cannot nurse are fed mothers' milk by eye dropper. We did not see breast pumps in the central hospital or in any clinics, nor did we see any hospital-supplied bottles. One woman was using a bottle that she brought to the hospital because she thought she did not have enough milk. She breastfed the baby in our presence; he latched on well and swallowed repeatedly. Nevertheless, the mother and the nurse did not think that the baby was getting enough breastmilk. They agreed that the mother should only use the bottle for the first three days. CHK will supply formula in a bottle to mothers whose milk has not come in within a day or two or cannot afford to buy it. The majority of mothers leave the hospital within 24 hours, so this is an issue only for mothers with longer stays, such as c-sections.

Prelacteal feeding is the exception rather than the rule at CHK. Mothers who give prelacteal feeds arrange to have family members bring in formula or sugar water. Kettles of water are scattered throughout the wards, so fluids

are readily accessible to mothers. There does not seem to be any awareness of or emphasis on the need for mothers to increase their fluid intake during lactation.

In all areas other than outreach activities, CHK probably is the closest example of a model for other services. Routine patient education includes nutrition and information; the critical importance of breastfeeding is noted. Sometimes nutrition advice does not take into account the individual situation of the client. In addition, there are some inconsistencies in the messages provided. For example, a poster used in the *causerie* room shows that juice can be added to an infant's diet at one month, cereal at two months, etc.

### **Outreach Activities**

A site visit was made to the Nemba hospital in Ruhengeri prefecture to look at one of the few active outreach programs in the country. The outreach team consists of one social worker who is employed by the Ministry of Social Services and two advisors trained by the hospital. All three are women. The team visits about four homes a week, referring high-risk pregnancies and malnourished children to the hospital. When asked, the team also refers women to the hospital for family planning services. Other duties include reminding mothers to have their children vaccinated and weighed and reviewing the progress of women attending the hospital's nutritional services.

### **Immediate Postpartum and Infant Care**

Contact of mothers and infants with the health system is most likely to occur at the six weeks' immunization visit. Typically at that time, mothers are offered contraceptive services. Postpartum care appears to be perfunctory. Women are expected to come to the health center for any postpartum care. Particularly in rural health centers, health workers themselves noted that given the time pressures on women, the expenses of transport, etc., there was no motivation for mothers to come to the health center unless there were specific problems.

In hospitals and maternity clinics, maternal weight is monitored. We were told that mothers are reminded of the importance of breastfeeding and proper weaning. However, our observations of growth monitoring suggest that it is a very silent process. Babies are weighed, mothers hand over the growth cards, the cards are filled in and returned, and the mothers leave. There is not a time or place where the health workers discuss the weight with the mother, ask about feeding practices, discern if the mother has any questions, etc.

Counseling in the event of poor weight gain seems erratic. Generally, health personnel recommend supplements, *bouillie* for infants from low-income families and implicitly bottles with formula for infants from wealthier families. There is a suspicion that women may stop breastfeeding during acute illness, not because they are counseled to do so but because they are too weak and/or not producing milk.

### **Breastfeeding and HIV Transmission**

The position among health care providers in Rwanda is that HIV-positive mothers should be encouraged to breastfeed. Not one service provider questioned the rationale for full support of breastfeeding although all are informed of the studies and results. The only note of concern about HIV and breastfeeding was raised by senior staff members who were aware that Dr. Van der Perre is discussing the advisability of discouraging breastfeeding

after eighteen months by AIDS symptomatic mothers. The rationale for this caution is that at eighteen months, the risk of transmission may outweigh the benefits of breastfeeding. At this point in time, service providers are taking a “wait and see” attitude. They shared with us concerns about the feasibility, relevance, and ethics of future studies to compare infants of HIV-positive mothers who are formula-fed with those who are breastfed.

Guidance by WHO (1992) opens the door for a distinction between public health promotion of breastfeeding and clinical management of HIV-positive mothers. Under these guidelines, advice would be tailored to the specific circumstances of individual maternal infant dyads. Beyond the medical advisability of changes in clinical management for the small set of mothers in Rwanda for whom not breastfeeding might be an option, there is a possible public health danger in having several strategies for managing breastfeeding by HIV-positive or high-risk women. The decision strategies are complex, involving age of the infant, mother’s clinical status, mother’s anticipated risk of infection during lactation, and the availability of safe alternatives to infant feeding.

Complex medical guidance can be transformed quickly into powerful rumors of misinformation. Fear of HIV transmission via breastfeeding might generalize among health workers and mothers beyond the specific cases for which conservative medical advice is appropriate. Should this occur, the results could be very serious.

If recommendations other than universal prolonged breastfeeding are made to any group of mothers, routine and careful monitoring of the knowledge, attitude, and practices of mothers and health workers vis-a-vis breastfeeding should be implemented. If concern about HIV transmission were to become widespread, an aggressive promotion program targeting both health workers and parents should be undertaken immediately to counteract any negative trends.

A clear emphasis on preventing HIV transmission to women rather than a retreat from breastfeeding should be pursued. A precipitous retreat from current breastfeeding practices would have disastrous consequences for fertility, infant mortality, and nutrition in Rwanda.

## **CONCLUSION**

Currently all mothers who receive health services are expected to breastfeed and do so. Health personnel have personal experience in breastfeeding and are supportive of it. Knowledge and skills in the community and health centers are adequate to support successful breastfeeding by almost all mothers.

Although there is consistent support for breastfeeding among health personnel, this support is limited by the:

- ▶ Lack of explicit policies or norms to guide routine practices or targeted service delivery;
- ▶ Absence of a program to integrate breastfeeding information, support, or promotion with any program; and,
- ▶ Recommendations to supplement infants when there are complaints of insufficient milk.

## **TRAINING PROGRAMS FOR HEALTH CARE PROVIDERS**

Rather than visiting training centers and reviewing written curricula, the assessment team focused on specific issues which were raised by MINISANTE, donors, and health personnel regarding training needs and opportunities. The team looked at four categories of health care providers: physicians, nurses, nutrition workers, and traditional birth attendants.

### **PHYSICIANS**

As of 1981, there was one doctor per 29,150 people in the country (World Bank, 1987). MINISANTE employs several doctors; others work primarily in urban hospitals. Most rural health centers are staffed by nurses and medical assistants.

The doctors we spoke with were extremely supportive of breastfeeding as the medically optimal method for feeding children, as well as the only economically viable option. Their training generally provides them with a range of insights into both the benefits of breastfeeding and the dangers of bottle-feeding.

However, doctors do talk about mothers "not having enough milk" as a reason for weaning, rather than children needing more than mother's milk as they grow. There is also a lack of awareness of the changes in the "feel" of the breast and growth patterns for the first three to six months of life. Nonetheless, the doctors with whom we spoke encourage continued breastfeeding through the second year.

In general, although training does include the benefits of breastfeeding, there is no instruction in lactation management, details of breastfeeding processes, etc. There are no Wellstart Associates in Rwanda. If teams are recruited, we would strongly urge that a team from the Kigali hospital be included. This hospital has more direct experience with HIV mothers and infants than any other institution in the world. The staff is completely committed to breastfeeding, but knowledge of problems, optimal practices, and consistent procedures are lacking. The strong skills gained by lactation management education training could make the hospital a center for demonstration and promotion.

### **NURSES**

With one nurse for 10,260 people in the country (World Bank, 1987), each rural health center depends on one to three nurses to provide most primary health care. Nurses staffing health centers and hospitals have varied levels of training, ranging from two years of secondary school to post-secondary school training.

Breastfeeding is included as part of nurses' pediatric training. At the higher levels, there is discussion of the advantages of breastfeeding including involution, fertility impact, and immunity transference to the infant. Nurses express an overall appreciation of breastfeeding as the ideal food for infants and as a very positive experience for mothers. They are trained to routinely encourage mothers to continue breastfeeding during diarrhea and other illnesses, both maternal and infant, and to stay with infants who are hospitalized. The nurses we spoke with said that they were not aware of women experiencing problems with breastfeeding, such as engorgement, cracked nipples, etc., although it is highly unlikely that these problems never occur.

Training includes units on pregnancy and maternal nutrition. Nurses are trained to recognize at-risk pregnancies, including any pregnancy after five births, and to encourage these women to give birth at a health center. The nurses we interviewed said they learned that women should gain ten to twelve kilograms during pregnancy, although in practice many nurses were not necessarily aware of or concerned about the fact that most Rwandan women gain far less. Nurses are instructed to encourage mothers to consume *bouillie* while they are breastfeeding in order to increase the quantity of milk. In general, awareness of the need for improved maternal nutrition and increased fluid intake during lactation is limited.

Nutritional training for nurses also includes infant and young child nutrition. Apparently, nurses are taught that sorghum porridge and fruit should be introduced to the infant at five months followed by purees of beans and vegetables. In practice, many nurses discuss the introduction of complementary foods beginning anywhere from two to eight months.

Health care employees spoke about the differences in nutritional status between girls and boys and indicated that boys just like to eat more. If this is not being explicitly taught, it certainly is not being effectively counteracted during the training process.

Assistant nurses who work in the health center lack information on the specifics of lactation management. For example, the commonly recommended practice of waiting 24 hours for a mother's milk to come in shows a basic lack of understanding of the mechanisms and benefits of immediate breastfeeding. The concern about insufficient milk, particularly around the three month growth spurt, also indicates a gap in information and training.

## **NUTRITION WORKERS**

Many of the observations concerning nurses' training apply to the training of nutrition workers. In particular, it was noted that nutrition workers are trained to provide specific recipes and rote advice rather than to apply their knowledge to actual situations.

Nutritional service personnel receive training at a national training center at Ruhengeri. The "Report of the 16th Training Session for Nutrition Aides" lists "Breastfeeding and Infant Nutrition" as one of eight components in the program. This component emphasizes the benefits of breastfeeding and the introduction of complementary foods at five months and their preparation.

UNICEF is sponsoring additional training for nutrition personnel on micronutrients, starting in 1992, in Gitarama and Gikongoro prefectures. While the emphasis of the program will be on consumption, nutrition workers will be distributing supplements. Pregnant and lactating women will be a prime target group for the micronutrient program. Training of 60 *titulaires* and nutrition service personnel in each prefecture will be run jointly by the regional nutrition supervisors and UNICEF.

## **TRADITIONAL BIRTH ATTENDANTS**

According to the Réseau des Femmes Ouvrant pour le Développement Rural, there are 1,000 trained TBAs in the country. The two TBAs we met had both been trained at the nearby health center, apparently in a UNICEF-sponsored programs in the late 1980s. Their skills were generally very good. In some areas, such as the timing

of the initiation of breastfeeding, their responses were closer to the optimal response than the comments made by health center personnel.

Neither of the TBAs we interviewed had received consistent supervision or follow-up training, and we did not see evidence of any TBA monitoring or support systems at health centers. One health center did have a register with the names of ten TBAs on it. Unfortunately, we did not have time to determine the actual nature and/or effectiveness of systems for TBA training and supervision.

## **CONCLUSION**

Health care providers have a number of relevant skills but lack knowledge of the details concerning lactation management. There is a need to standardize training for all health care personnel on breastfeeding and lactation and to deepen their interest and support of breastfeeding with physiological and clinical information. We noted a lack of training in interpersonal skills and counselling which may affect the ability of health care providers to identify and work with women to address breastfeeding and weaning problems.

## **PROGRAM, FINANCIAL, AND RESEARCH SUPPORT FOR BREASTFEEDING**

This chapter looks at the extent to which governmental, non-governmental, and donor organizations support breastfeeding in their programs.

### **PROGRAM ACTIVITIES**

#### **Ministry of Health**

The country is divided into nine prefectures and is relatively decentralized. Most health services in Rwanda are provided by MINISANTE, the National Ministry of Health. Currently, there is no financial support from government sources designated for breastfeeding. In 1991 the Nutrition Division of MINISANTE did not program all the funds available from UNICEF for breastfeeding promotion, apparently because it was overwhelmed with emergency food programs in response to the war in the north. Recently, responsibility for breastfeeding was moved out of the nutrition division and into the division for maternal and child health and family planning. A member of the maternal and child health and family planning division worked with us in the preparation of this document. Two members of the four person division took turns accompanying us for interviews and site visits.

#### *Family Planning Services*

Theoretically, maternal and child health and family planning services are integrated. ONAPO, the national family planning agency, provides contraceptives to the public health clinics. Nutrition services, formerly carried out in separate nutrition centers, have been integrated into the health center in the last two years. The degree of integration of maternal and child health, family planning, and nutrition services varies greatly among health centers.

Of the contraceptives distributed by ONAPO, 65% are injectables and 25-30% are pills. Injectables are compatible, though perhaps not ideal, with breastfeeding. Although most family planning administrators we interviewed knew that combination pills were not recommended during breastfeeding, no one was certain what proportion of pills were combination or mini or whether the pills were being prescribed appropriately for breastfeeding women. There is no awareness of the effect that contraceptive use can have on breastfeeding practices nor a policy on appropriate contraceptives for breastfeeding women.

Depending on the source, contraceptive use appears to be between 11% and 14%. The birth intervals observed today in Rwanda are due to lactation. Two family planning officials acknowledged that so far the birth intervals for users of modern contraceptives are almost identical to those of breastfeeding women. Nevertheless, family planning programmers are not promoting breastfeeding.

In fact, ONAPO has made an explicit decision not to address breastfeeding in its contraceptive strategy even though there is a high level of knowledge and sophistication about the fertility impact of breastfeeding. There are no incentives for family planning workers to educate mothers about optimal breastfeeding patterns (exclusivity and frequency) that would ensure limited fertility during lactation as well as improved infant health.

USAID's new reproductive health project, in line with the criteria from AID/R&D/POP, counts couple years of protection only if "modern" contraceptives are used.

Several ONAPO staff clearly explained the principles of lactational amenorrhea but insisted that breastfeeding was not a reliable method of contraception. Using conservative guidelines, failure rate in the first six months postpartum is 1.7% (*The Lancet*, 1988). The fact that women get pregnant while breastfeeding minimally at eighteen, 24, or 36 months is hardly surprising. For whatever fertility reduction it gives, breastfeeding needs to be protected. If overall duration or duration of exclusive breastfeeding declines, ONAPO programs will not make up the difference. One important issue that has not been looked into sufficiently is discontinued contraceptive use and possible opportunities for maximizing birth spacing by adding six months of the lactational amenorrhea method to the period of contraception.

### *Outreach Services*

ONAPO's system of volunteer family planning outreach workers (*abakangurambaga*) make house visits and encourage women to begin using contraceptives. At least one integrated maternal and child health/family planning project, being started by CARE, hopes to transform these volunteers into a community-based distribution network. Some of the nutrition centers also send workers into communities. Until this year, the maternal and child health centers related to a network of MRND members who were key players in community organization for the expanded immunization program (PEV). The successful immunization program now dominates the agenda in the maternal and child health system.

### *Oral Rehydration Programs*

Women who were in the oral rehydration therapy wards with their children were all breastfeeding. People were aware that children on bottles or other supplements suffered increased gastro-intestinal morbidity, and one doctor specifically mentioned increased acute respiratory infection as well. Universal breastfeeding is assumed; consequently, breastfeeding is seldom mentioned and not promoted.

### **International Donors**

#### *UNICEF*

UNICEF produced and distributed a number of materials promoting breastfeeding and planned to print and distribute another poster in 1992. Its local 1992 budget included US \$14,500 to support breastfeeding and \$256,000 for weaning and micronutrient programs. Breastfeeding information is also included in other related programs, such as the development of a "fiche maternel" that will include questions on infant feeding.

In 1992, UNICEF provided training materials, curriculum, and technical guidance for nutrition service personnel. This training will include information on breastfeeding and nutrition. Training sessions for Gitarama and Gikongoro prefectures began in June 1992. UNICEF offered to send the Director of the maternal and child health and family planning division to London in July 1992 for lactation management training.

UNICEF's Baby-Friendly Initiative materials arrived in Rwanda during our visit and was distributed in 1992. No one whom we interviewed in clinics, hospitals, or the MINISANTE was aware of the Ten Steps to Successful Breastfeeding. UNICEF is planning production of a poster with the "ten steps" for distribution to clinics. Since Wellstart International developed the Baby-Friendly assessment tool and trained the initial team of assessors, we agreed to contact UNICEF/New York and attempt to facilitate organization of a Baby-Friendly assessment in Rwanda before August of 1992. We also explored the feasibility of providing more Baby-Friendly and World Alliance for Breastfeeding Action materials to hospital personnel so that they are informed about the criteria used in the assessment and UNICEF's recommendations for Baby-Friendly services.

### **USAID**

USAID has not to date committed funds to breastfeeding nor is it integrated in the USAID support for ONAPO. This assessment is being prepared in anticipation of the new integrated reproductive health project which is in the design phase. Initial discussions with USAID staff indicate that breastfeeding and infant feeding/weaning will be included as subject areas for improved service delivery in the four prefectures where project activities will be focused.

### **Food Aid**

German, Canadian, and World Food Program food is still coming into Rwanda, but quantities and distribution systems and patterns were difficult to determine. We were told that the powdered milk that is being distributed is typically mixed with flour. Catholic Relief Services (CRS) formerly operated food programs in several locales, including the nutrition centers, but these programs ended in December 1988. The CRS feeding programs focused entirely on children with no feeding program for either pregnant or lactating women. Reasons for stopping food distribution included CRS' desire to concentrate on nutrition education and preventive services. Furthermore, the government took the position that food aid should only be rehabilitative and that Rwanda should cease to be dependent on food imports.

### **Non-governmental Organizations**

As far as we were able to determine, breastfeeding promotion is not included in the activities of women's organizations or non-governmental organizations, with the exception of a natural family planning program (SNAF) supported by CRS. SNAF began including the lactational amenorrhea method (LAM) in its programming last year. Two staff members from SNAF and a MINISANTE official attended a training program on LAM at the Georgetown University's Institute for Reproductive Health (IRH) in December 1991. They presented a proposal to USAID and UNICEF to look at quantity and quality of breastmilk; the proposal was not funded.

There is a network of *agree* centers run by the Catholic church with MINISANTE support. Some centers provide very good services with feeding and nutrition programs. There has been resistance in some *agree* centers over their responsibility as the resident clinics for MINISANTE/ONAPO family planning services, but on the whole, these blended services seem to work fairly smoothly.

CARE is another non-governmental organization with family planning activities. CARE recently began implementing a family planning/maternal child health project in Byumba prefecture. The project's primary focus will be on promoting and providing safe family planning services while also improving quality of care in pre- and post-natal services at health centers. Breastfeeding is not included as a specific interest in either the post-natal or family planning aspects of the project. The project manager did indicate that service delivery of contraceptives would include careful consideration of breastfeeding status (e.g., regarding distribution of combination pills), but the project has no written policy regarding breastfeeding.

## RESEARCH ACTIVITIES

Important research on HIV transmission via breastmilk is underway in Rwanda. To date, Dr. Van der Perre and colleagues have collected little information on the specifics of infant feeding practices. In future studies they may collect more detailed data on the nature, timing, and frequency of breastfeeding and other foods that are given to infants in their study cohorts. When they have such data, some of the more disquieting questions about HIV and breastfeeding may be answered.

A feasibility study for a protocol to examine breastmilk transmission of HIV will be conducted by van der Perre's group beginning in late summer of 1992. This study will provide well-to-do mothers with complete formula feeds for their infants. The presence of such a protocol may arouse fears about HIV transmission via breastfeeding and may further reinforce the prevalent belief that wealthier women do and can successfully bottle-feed. It will be the first time that any group of women has been encouraged to avoid breastfeeding in Rwanda.

The research being conducted and the programs being implemented on HIV and breastfeeding in Rwanda today set standards for the world. More data on feeding practices are definitely needed in all future studies of vertical HIV transmission so that both clinical and public health recommendations can be based on clear and specific information about patterns of infant feeding practices and their consequences.

## CONCLUSION

Recent and anticipated changes in the structure and management of health services were designed to increase integration of service delivery. Unfortunately, although breastfeeding is universally valued and practiced, it is not perceived as a component of service delivery.

Current investment to promote, support, or protect breastfeeding in Rwanda is minimal. Investment is limited to UNICEF training and materials. USAID's new initiative may integrate breastfeeding support into reproductive health services based on this assessment. Presently, there are two problems in the delivery of family planning services as they relate to breastfeeding. Family planning workers fail to explore breastfeeding practices with their clients. Secondly, there is little concern among administrators or service providers about potential impediments to breastfeeding, such as combination pills, changing roles of women, and changing household structures.

Investment in research regarding breastfeeding is entirely focused on the issue of HIV transmission. It is very important that this research include detailed and specific information about feeding patterns in order to develop appropriate policies and protocols and to answer the emerging questions of planners about HIV transmission.

## **POLICY, LEGAL, AND WORK ENVIRONMENT**

### **BREASTFEEDING POLICIES AND INFORMATION SYSTEMS**

There are no national breastfeeding policies or organizations dedicated to pursuing, monitoring, or implementing them. There are also no national policies on diarrheal disease and family planning. For the most part, practices in these areas appear to be supportive of breastfeeding, but recommendations and knowledge of health care personnel and health facility procedures are inconsistent and sketchy.

Very little systematic information is gathered on breastfeeding and infant feeding practices. Studies carried out over the past ten years have included infant feeding practices as part of a larger nutritional agenda. Distribution of results to decision-makers does not appear to be systematic.

The Nutrition Officer at UNICEF has arranged for inclusion of several questions regarding breastfeeding frequency and complementary feeding in an agricultural survey that will be conducted twice yearly. Initial findings were not available at the time of this writing but should be investigated as soon as they are released. A maternal health card has also been modified to include breastfeeding and if tracked, could provide data on breastfeeding duration over time. The USAID Rwandan Integrated Maternal and Child Health/Family Planning (RIM) Project is planning to improve information and monitoring systems at the communal level. This information might become an important resource for tracking breastfeeding practices in the future.

### **MARKETING AND PROMOTION OF BREASTMILK SUBSTITUTES**

#### **Cost of Breastmilk Substitutes**

The national and institutional savings associated with breastfeeding have not been calculated. From an economic point of view, the cost of bottle-feeding is seen as a restraint, instead of the value of breastfeeding being recognized as a national asset. There is widespread recognition that "even if women wanted to, they could never afford to bottle-feed."

The two formulas available in the country are imported and very expensive. A 450 gram container of Guigoz costs 350 Rwandan francs while the same size of Morinaga sells for 500 francs. These prices were the same at both of the Kigali grocery stores that we visited. MINISANTE and health center personnel report that formula is not sold in most small stores in rural areas.

No official data were found regarding volume or market share of products. The one grocery store clerk interviewed reported that Guigoz was far more popular than Morinaga because of its lower price, while Morinaga was usually purchased by ex-patriots. Assuming that "for the whole first year, about 40 kgs of powdered milk are needed for 'adequate' feeding," (Konan, 1991) the cost of the less expensive formula for the first year would equal approximately US \$250, or nearly 78% of average Rwandan per capita income of US \$320, not including bottles, nipples, water, wood, time, etc.

### **Distribution of Breastmilk Substitutes**

The *International Code of Marketing for Breast-milk Substitutes* and the 1986 Resolution have not been adopted in Rwanda. No one interviewed was aware of any legislation regarding labeling, advertising, distribution of free samples, etc.

Food aid and food distribution programs appear, in most cases, to follow United Nations High Commission on Refugees (UNHCR)/WHO guidelines regarding distribution of milk products, but there is no official record of the policy's adoption at either a national or an organizational level. CRS reported the mixing of milk powder with flour both in its distribution program, which ended in 1988, and in current food distribution programs operated by other organizations. Occasionally the milk is distributed unmixed due to a shortage of flour. MINISANTE personnel indicated that milk is sometimes provided to children and infants at Nutrition Services, including infants whose mothers are given other food rations to improve milk supply.

None of the health centers or hospitals we visited distributed free samples. Health care personnel did report providing formula in very rare cases to mothers who were unable to breastfeed.

### **Promotion of Breastmilk Substitutes**

Labels on the two brands of infant formula that are sold in Rwanda do not contain pictures of babies or mothers. The Guigoz/Nestle brand label states, "ATTENTION: Breastmilk is best for babies. Before you decide to use an infant formula, consult your doctor or clinic for advice," in English and French. The Morinaga label, in English, reads as follows: "Healthy mother's milk is the ideal natural food for infants of first several months of life. This product is recommended for use along with medical professionals advise otherwise; misuse may lead to a lower level of health" (sic). The label is also in Spanish, with a slightly different text.

Nestle posters were spotted in two rural health centers. In one center, the materials appeared to be quite old, but in the other the poster was fairly new. No one in either center recalled any visits by formula company personnel or knew where the posters had come from.

The older posters were at Rukoma health center in Gitarama prefecture. One poster with instructions on the preparation of bottles was found in a consultation room. It was removed during our discussion of its message. Four posters in consultation rooms and hallways were concerned with weaning and breastfeeding. They all contained pictures of white mothers and children and appeared to be from the 1970's. In the nutritional service rooms at the Rukoma center, there were two small posters with pictures of smiling African children and the word "Nestle" at the bottom. At the Nemba Hospital nutrition service, a poster distributed by Guigoz/Nestle that appeared to be recent showed drawings of an African mother preparing a bottle.

No one interviewed was aware of any free samples, promotions, lobbying efforts or free gifts given by the formula companies. No advertising for formula or other infant feeding products was observed in or outside of Kigali. In general, there are few signs, billboards, or other marketing activities in Rwanda. MINISANTE personnel report that they have never heard an advertisement on the radio for either formula sold in the country.

## **WOMEN'S WORK**

### **Description of Women's Work**

The informal sector in Rwanda is relatively small compared to many other African countries although women do sell goods in the markets. Women are named as only 0.88% of registered business owners, but they are employed in the public and private sectors. Women represent the majority of health care personnel. Sixty-two percent of MINISANTE employees were women in 1990. There was also a strong representation of women in the Ministry of the Interior, mostly in social services, and in the Ministry of Primary and Secondary Education as teachers (Reseau des Femmes Oeuvrant, 1991).

In Rwanda women perform at least 54% of all agricultural labor. Among women who are economically active, nearly 98% are involved in agriculture (Regmi, 1990). Women plant, tend, and harvest most of the crops. Women and children collect water and gather fuel wood for cooking. Men help locate wood for building and for sale. They are responsible for any cash crops and usually make the decisions regarding sale of excess (or perceived excess) foodstuffs, beer made from sorghum or bananas, etc. When men are present, women have very limited access to and control of household income. Twenty-two percent of rural households are estimated to be headed by a woman (Konan, 1991). Although earnings are lower in female-headed households, available resources are also much more likely to be controlled by women.

The pressures on women's time combined with the depletion of sources for cooking fuel appear to be having a nutritional impact in at least some areas of the country. Over 95% of the country's energy needs are met with wood. Due to population pressure, the supply of fuel wood is diminishing; consequently, women are cooking less often and serving foods which require less time and/or heat before eating (Reseau des Femmes Oeuvrant, 1991 and interviews). This means, for example, that in a place like Kibungo, mothers are more likely to give their infants beans instead of bananas and sweet potatoes.

### **Maternity Leave and Provisions for Breastfeeding in the Formal Sector**

Maternity leave is legally twelve weeks with two-thirds pay. At least six of these weeks must be post-partum (Code du travail J.O. No.5, March 1, 1967). In practice, women employed in the public sector receive two months' leave postpartum, fully paid. In some private sector jobs, women arrange to take three months' leave. One month of this leave can be taken before the birth. Maternity leave legislation may discourage some employers from hiring women, although the differences in female access to education and more general cultural norms can also explain the relatively small number of women working in the formal sector.

Working women, most of whom live in Kigali and one or two other urban centers, are generally allowed an extra hour at midday to breastfeed for up to one year after the birth of the baby. As mentioned above, non-governmental institutions, banks, stores, and other businesses sometimes arrange three-month maternity leave as an alternative to the daily break for breastfeeding.

It appears that most organizations do comply with the policy of providing an hour of breastfeeding leave per day. There are virtually no creches or child care services in the work place; most working mothers leave infants at home with hired help. This limits the optimal use of the breastfeeding policy since it is difficult for some mothers to reach their homes, breastfeed fully, and return to work within the given period. It was reported that government

offices allow women to take the nursing break in conjunction with the standard lunch hour, thereby providing a two-hour break.

Observation at CHK and discussions with working women indicate that women often start to bottle-feed at the end of maternity leave and leave bottles with the infant caregiver when they return to work. Since maternity leave is usually for two months following birth, this means that many urban working mothers only exclusively breastfeed for seven to eight weeks.

### **Infant Feeding Practices in the Agricultural and Non-formal Sector**

Most women return to their full duties, including agricultural field work, within eight to ten days after birth. Babies are generally kept on women's backs as they work. However, it is common to leave small children with older siblings during the day. Estimates we received from various sources on when mothers begin leaving infants with other children vary from three months to one year.

The effect that this practice has on breastfeeding and supplemental feeding is unknown. Health care personnel consistently stated that children do not feed infants anything while tending them, but we are aware of no studies on this subject. Some informants responded that children go with the mother to the field but stay at the field's edge. When the baby cries, the mother breastfeeds. If the infant is eating complementary foods, the mother takes the food with her to the field. Other respondents reported that children stay at home while the mother works in various plots of land.

### **Support Systems for Women**

Two active non-governmental organizations that focus on women are Duterimbere, the Rwanda Women's World Banking affiliate, and the Reseau des Femmes Oeuvrant pour le Developpement Rural (Network of Women Working for Rural Development). There are also women's branches of political parties and over 800 registered women's groups. Most of these registered groups operate small "round robin" credit funds (UNICEF, 1992).

A 1986 survey indicated that just over 9% of women in Rwanda belonged to a local group (*groupements*), mainly focused on communal agricultural activities (Regmi, 1990). Not all of these groups are women's groups. Anecdotal evidence from MINISANTE personnel and NGO staff involved in project work with rural community groups indicates that the *groupements* are often quite transitory ("some of them can even last a few years; others a few months").

## **CONCLUSION**

In general, few people are concerned about the protection and support of breastfeeding because it is widely practiced. Most people have very positive attitudes about breastfeeding. Although policy makers do not appear to be resistant to having breastfeeding policies, they do not see a need for them. They believe that the high cost of formula and the low level of income of the vast majority of the population make breastfeeding the only option. Furthermore, breastfeeding is regarded as a necessary scheduling factor, not an important women's right or health issue.

Policies alone, of course, cannot change breastfeeding practices and attitudes. They can, however, provide the institutional and legal framework for breastfeeding support and protection. The erosion of exclusive breastfeeding in the city of Kigali and the existence of formula posters in even a few health centers indicate a need to protect the “breastfeeding friendly” atmosphere which currently prevails in Rwanda.

Policies can also bring visibility to efforts by government agencies, donors, NGOs and private companies to support breastfeeding. The interest of all of these players is needed to support the investigation of specific issues such as feeding patterns in both urban and rural areas and the links between women’s time, wood supply, and nutrition.

## **INFORMATION, EDUCATION AND COMMUNICATION ACTIVITIES**

Currently, there is no breastfeeding communication effort in Rwanda. This situation is not surprising for several reasons:

- ▶ There is no perceived need;
- ▶ There is no perceived threat since there has been no recent promotion of breastmilk substitutes;
- ▶ There has been no recent knowledge, attitude, and practices study to elicit concern or to base the design of information, education, and communication (IEC) efforts;
- ▶ Conversation between health workers and mothers is minimal unless a problem is detected. No problems are reported with breastfeeding, so typically no messages are given;
- ▶ Mass media is limited, consisting of two state-controlled radio broadcasts. The second station began broadcasting only recently and plays service announcements (e.g., funerals, emergency notices, invitations);
- ▶ Public health IEC campaigns have not focused on breastfeeding. They have been conducted primarily through print media at health centers and via one-on-one community contact and interpersonal communication in family planning and immunization programs; and,
- ▶ There is no local clearinghouse for information or materials on breastfeeding or weaning.

Evidence of previous IEC efforts was apparent in health centers. Breastfeeding posters provided last year by UNICEF and MINISANTE were posted in most centers. Nestle posters of chubby bottle-fed babies were seen in two rural centers.

UNICEF is planning to print and distribute two posters in the next year, one with a general message promoting breastfeeding and the other a copy of the Georgetown Institute for Reproductive Health's guidance/steps to successful breastfeeding. The latter poster will be directed toward mothers. Another poster under consideration would target health center and hospital personnel with the ten steps to successful breastfeeding. UNICEF's promotional efforts will also include distribution of two books on breastfeeding and weaning to nutrition service personnel participating in a training program.

## RECOMMENDATIONS

In Rwanda, promotion of breastfeeding is not needed, but action to protect current breastfeeding practices is urgent. To protect these practices, the following actions are recommended:

### POLICY

- ▶ Develop breastfeeding norms, policies, and procedures for health service delivery.

An example of a norm that is needed is one that discourages the introduction of complementary foods before six months. The focus on weaning needs to shift from timing to quality (density), quantity (feeding frequency), and hygiene (preparation and handling).

- ▶ Encourage non-governmental organizations to integrate breastfeeding standards into appropriate health interventions.
- ▶ Consider adoption of the *International Code of Marketing for Breast-milk Substitutes* and the 1986 Resolution.

It appears that enforcement of the policy would be relatively simple at the moment. Initiating small-scale activities now might prevent the need to mount a massive effort to counteract efforts of formula companies at some future date.

### RESEARCH

- ▶ Invest in research to demonstrate to policy makers and service providers the importance of protecting breastfeeding in Rwanda.

#### Feeding Practices

- Analyze existing rural (agriculture study) and urban (HIV study) data on *duration of exclusive and total breastfeeding*.
- Collect information on actual *feeding practices of women working in the agricultural sector* to determine methods of supporting and protecting breastfeeding in rural areas.
- Encourage more detailed data collection and analysis in Dr. van der Perre's research and other AIDS research on *infant feeding practices and outcomes among HIV-positive and HIV-negative mothers* so that future policies can be based on complete information.
- Analyze *DHS data*, when available, for purposes of further defining current practices, monitoring trends using WHO indicators, and carefully modeling the contribution of breastfeeding to birth spacing and total family size in Rwanda.

### Impact

- Model the *impact on fertility* of potential/probable changes in breastfeeding practices in Rwanda.
- Specify, in greater detail, the *economic benefits and costs* (if any) of breastfeeding in Rwanda and model the economic impact of changes in infant feeding practices.

These two analyses could be done as a guided exercise by policy makers as part of the training and policy workshop. If approached in that manner, there would be no additional cost for those analyses.

### Maternal Nutrition and Lactation

- Consider technical and financial support for Dr. Cyprien Munyanshongore's proposal to study *insufficient breastmilk among malnourished mothers*. There is a lot of misinformation about this topic. It is one rationale for the promotion of early supplementation. Local data will be more persuasive than a literature review. The research could be used to pilot test a maternal supplementation approach to early infant growth faltering.

### TRAINING

- ▶ **Invest additional resources in training.**
  - Provide intensive *lactation management education training* for professional health service providers. The first team for participation in Wellstart International's Lactation Management Education (LME) Program would preferably be from one of the institutions in which research is underway on HIV transmission through breastmilk.
  - Conduct *in-service training* of hospital, clinic, and primary health care personnel as needed, based on an assessment of knowledge, attitudes, and practices regarding lactation management.
  - Organize *awareness and situational analysis training* for policy makers, administrators, and chiefs of services from the regions as well as Kigali. The objectives would be to:
    - Study the impact of breastfeeding on fertility, mortality, morbidity, and nutrition;
    - Analyze the role that current practices play today in birth spacing, infant mortality reduction, and economic savings; and
    - Define policies and norms for breastfeeding support and protection in the design and delivery of health services.

The DHS data, once available, will provide a basis for factual discussion and debate. A rapid ethnographic assessment of the knowledge, attitude, and practices regarding infant feeding and weaning among a stratified sample of households would further enrich the process.

- Schedule *policy and norm implementation training* for health workers at the service delivery level. This training need not be intensive or extensive and can be done over a period of months or years. A rapid assessment of the knowledge, attitude, and practices of cosmopolitan and traditional health workers would be advisable prior to design and implementation of the training.

## INFORMATION, EDUCATION, AND COMMUNICATION

- ▶ Support training activities with modest information, education, and communication efforts. Integrate simple breastfeeding messages into IEC outreach efforts.

## FAMILY PLANNING PROGRAMMING

- ▶ Integrate breastfeeding in all reproductive health and child survival programs. Health workers need enough knowledge to ensure that they do not give mothers inappropriate guidance or dismiss, as insignificant, practices that may lead to increased child morbidity and shorter birth intervals.
- ▶ Include instruction on LAM as one contraceptive option for the first six months.
- ▶ Investigate the reasons women in Rwanda terminate contraceptive use. If women are terminating contraception when they do not want another pregnancy, it behooves program planners to promote modern contraceptives as late in the birth interval as is safe to do so. If women typically stop using contraceptives after fifteen months, then it is preferable that they begin using a modern method at six months rather than immediately postpartum or at six weeks.
- ▶ Focus programs on marginal gains in birth intervals by adding modern contraceptives to LAM while continuing to promote the notion of smaller completed family size. This strategy would result in greater efficiency of family planning services.

## PRIVATE SECTOR/NGO INVOLVEMENT

- ▶ Stimulate private sector/NGO involvement in the production of a weaning food and maternal biscuits. The issues of fuel and time constraints in households mean that convenient, hygienic weaning foods are urgently needed. Biscuits or other products targeted at pregnant and lactating women might find a market based on the high level of concern and the already present notion of special foods for mothers. The DHS data should provide a basis for informed decision making on this issue.

## **HIV PROGRAMMING**

- ▶ **Emphasize the prevention of HIV transmission rather than a retreat from breastfeeding. A precipitous retreat from current breastfeeding practices would have disastrous consequences for fertility, infant mortality, and nutrition in Rwanda.**
  
- ▶ **Monitor the knowledge, attitude, and practices of mothers and health workers vis-a-vis breastfeeding if any recommendations other than universal prolonged breastfeeding are made to HIV-positive mothers. Should concern about HIV transmission become widespread, an aggressive promotion program targeting both health workers and parents should be undertaken immediately to counteract any negative trends.**

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## **APPENDIX A**

### **Future Data Sources**

There are three potential sources of information on infant feeding practices in Rwanda.

#### **1. 1992 Ministry of Agriculture Study**

The Division of Agricultural Statistics, with support from UNICEF/Rwanda, conducted a study that is reported in "Nutrition and Household Food Security in Rwanda: Preliminary Results" by Rwamasirabo and Tardif-Douglin, 1992. Included in the study were questions on frequency of breastfeeding and complementary feeding, based on 24-hour recall. The survey also gathered data on maternal and infant nutritional status data in a sample of rural households. To date, the data have not been processed or analyzed.

#### **2. Kigali Hospital center HIV Study**

There is an ongoing study of approximately 300 mothers and infants in the Kigali Hospital Center. The focus of the study is on HIV. Mothers are asked every month whether they are breastfeeding and what, if any, supplements they are giving the child(ren). The data do not include frequency, quantity, or quality of feeds, but if analyzed would give a unique longitudinal picture of duration of exclusive and total breastfeeding. To date, the cohort has been followed for three years. The researchers are willing to have someone analyze the unprocessed feeding data.

Although neither of these recent data sources is ideal for a study of breastfeeding practices (since neither was designed for that purpose), they could provide useful comparisons and an indication of trends if analyzed and contrasted with Munyanshongore's data which were collected in 1981-82.

#### **3. Demographic and Health Survey**

A Demographic and Health Survey was discontinued due to armed conflict in October of 1990. Current plans are to begin the survey again before the end of 1992. With DHS data and the two previously cited sources, a fairly complete statistical picture of practices could be put together in 1993. This information, if complemented with an ethnographic rapid appraisal, would provide an excellent basis, at a relatively low cost, for monitoring and programming breastfeeding practices.

## APPENDIX B

### CONTACT LIST

#### Rwandan Breastfeeding Assessment

April 21 - May 8, 1992

Wellstart staff: Chloe O'Gara, Director  
Anna C. Martin, Program Assistant

USAID Contacts: Chris Grundman, TAACS Officer  
Bill Martin, HPO

#### Ministry of Health (MINISANTE):

Division of MCH/FP: Leon Nsengimana, Director  
Christine Mukashema  
Sophie Nakazina

Director General, Epidemiology: Dr. Sosthine Bueyana

Director of Integrated Medicine: Dr. Sosthine Rukundo

Director of Nutritional Services: Dr. Martin Nyirimbibi

#### Health Services:

##### At Kabuye Health Center:

Emelienne Nyirabaraturwango, Nurse (A3)

Rose Musenge, Training Nurse

##### At Gihara Health Center:

Sister Esperanza Cuesta, Director

Staff nutritionist

##### At Rukoma-Sake Health Center, Kibungo:

Laurence Nyirandorimana, Agent of the Nutritional Service

Marie-Josée Mukanoheli, Nurse- Nutritionist

Veneranda Nyirahira, Clinic Birth Attendant

Three mothers, at the center to attend a meeting for mothers of children at risk, failed to record their names.

##### At Gitarama Communal Health Center:

Dr. Francois Niyodusenga, Director of Health Services

##### At Rutobwe Health Center:

Rosalie Mukamutara, Nursing Assistant

Laetitia Hizabimbuto, Nutrition worker

Alexia Mukarusanga, Health Worker  
Febronic Uwambaje, Administrator

At Nemba Hospital in Ruhengeri Prefecture:

Dr. Marianne Aranaz, Head of the Maternity Ward  
Theodora Kuradusenge, Nutritional Monitor  
Maria Nakabonye, Head of the Nutritional Center  
Elizabeth Nyiranzabonimpa, Outreach/Infant Consultation  
Capitoline Nisengwe, Outreach/Prenatal Consultation  
Jeanne D'arc Nyiramuturo, Outreach/Prenatal Consultation

At the Centre Hospitalier of Kigali (CHK):

Dr. Andre De Clercq, Head of Ob/Gyn  
Dr. Van Goethen, Head of Pediatrics  
Gilberte Gasirabo, Project Chief, Etude Transmission  
Materno-Enfantile (ETME)  
Jeanine Uurimurila, Assistant, ETME  
Assumpta Tuyishimire, Assistant, ETME  
Bernadette Nyirangerageze, Head of CHK ONAPO Office

Several nurses

Six mothers with newborns in the maternity wards

Two PME Nutritional Center workers

Four mothers and babysitters, waiting with babies for PME

Dr. Philippe Van de Perre, Rwandan National AIDS Program

At Rusatira Health Center:

Tharcisse Nshimiyimana, Administrator  
Appolinaire Iyamuremye, Nutrition auxiliary worker

Traditional Birth Attendants:

Esperance Mukasewabo, Rukoma-Sake sector, Kibungo  
Therese Uwamariya, Giko sector, Gitarama

Home visit, near Rutobwe Health Center:

Daphrose Nyirabaforomo

Marie Clementine Katumwa (her daughter)

Three children living there, two (aged 5 and 3.5), the children of Mme Daphrose's son and one 2 year-old, daughter of Mlle Katumwa, recently hospitalized for malnutrition at the Rutobwe center.

At Catholic Relief Services: Stephanie Laughlin

At CARE: Sixte Zigurumugabe, Project Manager

At UNICEF: Kathy Krasovec, Nutrition Office

At Project San Francisco: Jeff Sands

At University of Butare: Dr. Cyprien Munyanshongore, Professor

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## WELLSTART INTERNATIONAL

Wellstart International is a private, nonprofit organization dedicated to the promotion of healthy families through the global promotion of breastfeeding. With a tradition of building on existing resources, Wellstart works cooperatively with individuals, institutions, and governments to expand and support the expertise necessary for establishing and sustaining optimal infant feeding practices worldwide.

Wellstart has been involved in numerous global breastfeeding initiatives including the Innocenti Declaration, the World Summit for Children, and the Baby-Friendly Hospital Initiative. Programs are carried out both internationally and within the United States.

### International Programs

Wellstart's *Lactation Management Education (LME) Program*, funded through USAID/Office of Nutrition, provides comprehensive education, with ongoing material and field support services, to multidisciplinary teams of leading health professionals. With Wellstart's assistance, an extensive network of Associates from more than 40 countries is in turn providing training and support within their own institutions and regions, as well as developing appropriate in-country model teaching, service, and resource centers.

Wellstart's *Expanded Promotion of Breastfeeding (EPB) Program*, funded through USAID/Office of Health, broadens the scope of global breastfeeding promotion by working to overcome barriers to breastfeeding at all levels (policy, institutional, community, and individual). Efforts include assistance with national assessments, policy development, social marketing including the development and testing of communication strategies and materials, and community outreach including primary care training and support group development. Additionally, program-supported research expands biomedical, social, and programmatic knowledge about breastfeeding.

### National Programs

Nineteen multidisciplinary teams from across the U.S. have participated in Wellstart's lactation management education programs designed specifically for the needs of domestic participants. In collaboration with universities across the country, Wellstart has developed and field-tested a comprehensive guide for the integration of lactation management education into schools of medicine, nursing and nutrition. With funding through the MCH Bureau of the U.S. Department of Health and Human Services, the NIH, and other agencies, Wellstart also provides workshops, conferences and consultation on programmatic, policy and clinical issues for healthcare professionals from a variety of settings, e.g. Public Health, WIC, Native American. At the San Diego facility, activities also include clinical and educational services for local families.

*Wellstart International is a designated World Health Organization Collaborating Center on Breastfeeding Promotion and Protection, with Particular Emphasis on Lactation Management Education.*

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