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CULTURE & BREASTFEEDING SERIES

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QUALITATIVE RESEARCH ON  
BREASTFEEDING IN KAZAKHSTAN



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INTERNATIONAL SM

**QUALITATIVE RESEARCH ON  
BREASTFEEDING IN KAZAKHSTAN**

**by**

**Ministry of Health**

**Scientific Center for Regional Problems of Nutrition**

**Wellstart International**

**September 1994**

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## TABLE OF CONTENTS

<b>RESEARCH TEAM AND ACKNOWLEDGEMENTS</b> .....	ii
<b>EXECUTIVE SUMMARY</b> .....	iii
<b>INTRODUCTION</b> .....	1
<b>Purpose of Study</b> .....	1
<b>Background</b> .....	1
<b>RESEARCH DESIGN AND METHODOLOGY</b> .....	2
<b>Methods</b> .....	2
<b>Site Selection</b> .....	2
<b>Sampling</b> .....	3
<b>SOCIAL, POLITICAL, AND HEALTH OVERVIEW</b> .....	4
<b>Social Situation and Social Change</b> .....	4
<b>Health Care</b> .....	5
<b>FINDINGS</b> .....	6
<b>General Perceptions of Breastfeeding</b> .....	6
<b>Infant Feeding in Maternities</b> .....	8
<b>Breastfeeding Practices</b> .....	12
<b>Perceptions of Breastfeeding Problems</b> .....	18
<b>Child Spacing and Breastfeeding</b> .....	22
<b>Medical Professionals</b> .....	22
<b>Sources of Information</b> .....	24
<b>ANNEX A: BIBLIOGRAPHY</b> .....	28
<b>ANNEX B: CHARACTERISTICS OF RESEARCH SITES</b> .....	29
<b>ANNEX C: ILLUSTRATIVE CASE HISTORIES</b> .....	33
<b>ANNEX D: STRUCTURE OF MATERNAL-CHILD HEALTH SYSTEM</b> .....	35



## RESEARCH TEAM AND ACKNOWLEDGEMENTS

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## EXECUTIVE SUMMARY

From March to May 1994, the Ministry of Health of Kazakhstan, Institute of Nutrition, and Wellstart International's Expanded Promotion of Breastfeeding Program collaborated on a qualitative study of infant feeding practices in Kazakhstan. The study relied principally on semi-structured, in-depth interviews with mothers, grandmothers, fathers, physicians, and nurses. Informants were selected primarily from the two main ethnic groups in Kazakhstan: Kazakhs and Russians. Both urban and rural sites were included in the study.

Breastfeeding is a strong tradition in Kazakhstan and carries a very positive image. Nonetheless, an overriding concern among health providers and mothers is "insufficient milk." Kazakhstanis attribute this to poor maternal diet and health. However, all cases of "insufficient milk" encountered in this study could be attributed to the specific way that breastfeeding was practiced. Breastfeeding practices in Kazakhstan that impede successful lactation are:

- separation of mother and infant at birth
- delayed initiation of breastfeeding (from one to four days after birth)
- giving water from birth
- giving of pre-lacteal feeds
- rigidly scheduled rather than on-demand feeding
- no night feeds
- possibly short duration of feeds
- common use of pacifiers
- frequent use of bottles

Maternal milk supply is largely a function of infant demand; however, in Kazakhstan the common recommendation for insufficient milk is increased supplementation rather than increased suckling, thereby exacerbating the problem. Further, the "indicators" of insufficient milk are not valid ones: a baby who cries, a soft breast, difficulty expressing milk. Other beliefs which hinder breastfeeding are the idea that breasts must be washed before feeds, that a mother should stop breastfeeding when she becomes pregnant, that it is not a good idea for mother and child to sleep together, and that milk can be "too fat" or "too watery" and needs to be adjusted through giving other liquids or foods.

Many of these ideas and practices are based on the old Soviet guidelines regarding child feeding and contradict current international standards which call for *exclusive* on-demand breastfeeding for six months with continuation of supplemented breastfeeding for at least one year. The old Soviet norms are reinforced through health staff training, maternity routines and physical layouts, literature and health education materials. Some mothers, fathers, and particularly grandmothers resist the official norms (especially scheduled feeds) and, in fact, advocate better breastfeeding practices than most health professionals. The popular resistance to counselling advice on breastfeeding has to some extent eroded health professional's credibility.



The study revealed a great deal of information on which to base a strategy for improving breastfeeding practices in Kazakhstan.

- **Policies:** New official policies on breastfeeding practices that are in line with international standards should be prepared, issued, and disseminated to health professionals and the public. Recommendations on the introduction of other liquids and semi-solids also need to be adjusted.
- **Training:** The health system is in close contact with virtually all mothers and provides a tremendous opportunity for promoting optimal breastfeeding, but unfortunately much advice contrary to establishing and maintaining good lactation is currently being given. Thorough pre-service and in-service training of all maternal-child health staff is needed. Training should not only teach the new norms but also the rationale for them. It should also include substantial practice in management of breastfeeding problems and in counseling skills.
- **Communication:** Communication should reinforce health professional's new training to improve their credibility. Both print materials and mass media should be used. Mothers should be reached principally through counselling by health staff and by print materials (most mothers have at least a high school education), and this information should be legitimized through selective use of mass media. Fathers and grandmothers should be reached through the same media.
- **Message Strategy:** A major theme for all target groups should be that on-demand, exclusive breastfeeding will resolve the problem of "insufficient milk" and give the baby all the nourishment *and liquid* that it needs for about the first six months of life. Messages for all should also reinforce the numerous advantages of optimal breastfeeding, including the fertility suppression benefit. For health workers, messages should emphasize the rationale for the new norms and the fact that they are the international standard. For mothers, fathers, and grandmothers, messages should emphasize that the new standards support the folk wisdom of older generations. It was originally hypothesized that fears of breast milk contamination might prevent mothers from breastfeeding; however, no mother expressed concern about this and unless the contamination study presently underway shows that this is a problem, this subject does not need to be addressed.



# QUALITATIVE RESEARCH ON BREASTFEEDING IN KAZAKHSTAN

## INTRODUCTION

### Purpose of Study

The Ministry of Health of Kazakhstan, Institute of Nutrition (WHO Collaborating Center on Nutrition and Scientific Research), and Wellstart International's Expanded Promotion of Breastfeeding (EPB) Program collaborated on a qualitative study of infant feeding practices from March to May 1994. The purpose of the study is to serve as a basis for formulating policy, for designing curricula and programs, and for developing a communication strategy. The study investigates current practices and the factors that determine them: cultural beliefs, health care practices, channels of communication, sources of advice. Particular emphasis was placed on the causes and effects of perceived insufficient breast milk.

This report describes the background and rationale for conducting the qualitative research, the study design and methods, the sociopolitical and health situation as it applies to infant feeding, and the research findings and their implications for development of a program to promote optimal breastfeeding activities in Kazakhstan.

### Background

The health benefits to the infant of exclusive breastfeeding until four to six months of age are undisputed, especially in countries (such as Kazakhstan) where acute respiratory infections (ARI) and diarrhea are leading causes of infant deaths. Breast milk provides optimal nutrition and contains anti-bacterial and anti-viral agents that protect the infant from disease. Exclusive breastfeeding (no prelacteal/postpartum fluids, no water, milks, or other foods whatsoever) for the first six months of life significantly reduces the rates of diarrheal disease and ARI, as well as other illnesses. Mothers also benefit from breastfeeding, which decreases their risk of postpartum hemorrhage, breast cancer, ovarian cancer, and anemia. Furthermore, the fertility-suppressing effect of breastfeeding makes it a free and effective short-term birth spacing method.

Until independence in December 1991, the Kazakhstan health care system received medical policies and decrees from Moscow. Soon the Kazakhstan Ministry of Health will issue a new policy on breastfeeding; meanwhile, health care providers continue to work under the Soviet medical recommendations. These recommendations call for breastfeeding by schedule--every 3-3 1/2 hours for a normal infant, with no breastfeeding at night. These medical recommendations contain a timetable for the introduction of other liquids and foods. Boiled water is given from birth. Broths and juice are to be introduced at one month; semi-solids at about two months.



## RESEARCH DESIGN AND METHODOLOGY

### Methods

This study is an exploratory investigation of factors bearing on infant feeding practices in Kazakhstan. The method used was qualitative, semi-structured, in-depth interviews with individual respondents. Mothers of infants under eight months of age were the primary focus of the study, but fathers, grandmothers, and health providers were included as well. Six different interview guides were developed for the following groups (see annex B, Instruments):

- (1) Mothers interviewed at home (or when necessary in polyclinics)
- (2) Mothers interviewed in maternities (health care facilities devoted to pregnancy, delivery, and postpartum care)
- (3) Grandmothers
- (4) Fathers
- (5) Physicians (either pediatricians or obstetrician-gynecologists)
- (6) Nurses

Researchers were encouraged to use the interview schedules as guides, but also to pursue any relevant or important new topics touched on by respondents.

### Site Selection

Most of the population of Kazakhstan is Kazakh or Russian (approximately 40% each), with much smaller percentages of Uzbeks, Tartars, Ukrainians, and Germans. Sites were selected primarily to sample these ethnic groups or "nationalities"<sup>1</sup>. In addition, because it was hypothesized that perceptions of contaminated breast milk might influence feeding practices, the sample included sites considered especially contaminated and one considered "clean." Both urban and rural locales were included for all sites outside Almaty.

Originally, five sites were selected: Almaty, Kyzyl-Orda, Central Southern Kazakhstan, Kokshetau, and Ust-Kamenogorsk. The unexpected cancellation of almost all domestic flights (due to a fuel shortage) and the long train rides between sites necessitated cancelling research at Ust-Kamenogorsk.<sup>2</sup> The four research sites were:

- (1) Almaty, (formally Alma Ata) the capital of Kazakhstan, is a cosmopolitan urban center with diverse nationalities. Both Russians and Kazakhs are well represented. It is perceived as moderately contaminated.

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<sup>1</sup>In the former Soviet Union, ethnic groups are referred to as nationalities, a term that dates from tsarist times.

<sup>2</sup>The elimination of the northern site of Ust-Kamenogorsk with its large Russian population means that the sample has a preponderance of Kazakhs. However, differences in infant feeding practices between Kazakhs and Russians are minor, as described in the Findings section.



- (2) Kyzyl-Orda Oblast<sup>3</sup> in south western Kazakhstan is largely Kazakh and the people have the reputation of being fairly traditional. This oblast includes the environmentally devastated Aral Sea, whose salt, spread by the wind, is salinating the soil of southern Kazakhstan, and possibly other places as well.
- (3) Kokshetau Oblast in northern Kazakhstan, with a large ethnic Russian population, is widely perceived to be the least environmentally contaminated area in Kazakhstan (although this was an area of intensive uranium mining).
- (4) South Kazakhstan Oblast [Shimkent], a traditional area in Southern Kazakhstan, suffers from environmental pollution. Bordering Uzbekistan, it has a significant Uzbek minority. This oblast is the site of the most revered Muslim shrine in the country, which is found in Turkestan, an area renowned for its devotion to Islam.

### Sampling

The team interviewed 109 mothers of children under eight months old, 15 grandmothers, 19 fathers, and 65 health care professionals. In each oblast (except Almaty), respondents were chosen from the main city, as well as two primarily rural districts (*raiions*), to reflect the country's approximately 50-50 split in urban-rural residence.

Researchers chose mothers' names at random from polyclinic lists of mothers with infants under eight months of age. Mothers who were patients in maternities were selected on an ad hoc basis. Only mothers in the first stages of recovering from birth or who were ill were excluded. Most mothers were interviewed in their homes; when that was impossible they were interviewed in polyclinics.

All but two grandmothers interviewed were present in homes where mothers were interviewed. Polyclinics did not have lists of babies' grandparents, and there was no way to locate these women other than to find them at home with the reference mother.<sup>4</sup>

Fathers who were present in the homes when mothers were interviewed were also interviewed. Other fathers were interviewed in polyclinics as they brought their children for a routine examination or immunization.<sup>5</sup>

All respondents were interviewed privately. Any relative present when a respondent was interviewed at home was asked to leave the room. In each polyclinic, a private room was assigned to each interviewer.

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<sup>3</sup>An oblast is an administrative division roughly equivalent to a province or state.

<sup>4</sup>Grandmothers have great influence over mothers' breastfeeding decisions. Reports of the effect of mothers and mothers-in-law on infant feeding behavior were also obtained from mothers. Grandmothers' responses correlate well with the advice mothers say they receive from these relatives, so that this is probably a relatively unbiased sample.

<sup>5</sup>The sample is probably biased because fathers who are home during the day (the time that interviews were conducted) or who bring their children to the polyclinic for a well baby clinic may be more involved in child care than other fathers.



Pediatricians and nurses were interviewed either in children's polyclinics or maternities. Obstetrician-gynecologists (ob-gyns) were interviewed only in maternities. Most physicians interviewed were pediatricians because mothers say that they rely on pediatricians more than other health care providers for advice on infant feeding. Almost all physicians and all nurses interviewed were women, which reflects the distribution of women in these specialties.

## **SOCIAL, POLITICAL, AND HEALTH OVERVIEW**

### **Social Situation and Social Change**

The citizens of the former Soviet Union are highly educated: virtually everyone in Kazakhstan is literate. The least educated women in the sample are high school graduates, and most women have advanced training beyond secondary school. Literature is widely available and widely read. Mass media reach the population through the almost universal presence of televisions and radios in homes. A variety of newspapers and periodicals are available in cities, although they may be published sporadically because of paper shortages.

The current transition period in Kazakhstan is a difficult one. As factories and other work places close, unemployment is becoming a fact of life for the first time. Kazakhstan, with its wealth of natural resources, is in a better position economically than other Central Asian republics. However, certain social problems are increasing. Alcoholism has been growing since well before the transition period: "While the alcohol morbidity index of the [former Soviet Union] grew 1.4 times during the period 1975-1986, it doubled in Kazakhstan" (Welsby 1993). Fears about environmental degradation, including unsafe food, water, and air, abound (Welsby 1993; and this report, Findings).

The situation has a special impact on women, who constitute 48% of the work-force. As consumer goods become more expensive and more difficult to find, women spend more time shopping in addition to their jobs and domestic work (women are traditionally expected to shoulder virtually all household and child care duties, a role that does not seem to be changing). Divorce rates are increasing, with reports of one in three marriages ending in divorce (Welsby 1993).

Women currently receive 150 days of maternity leave for a normal pregnancy and more if they experience pregnancy complications. Women may choose how much of this time to use during pregnancy and how much to save for after the birth. After the 150 days, women must apply for additional maternity leave, but the application is pro forma. Women can be approved for up to three years of maternity leave, receiving a salary for one and a half of these years.



## Health Care

Kazakhstan's natality and mortality figures fall between those of Western industrial countries and those of the developing world. In 1991 the infant mortality rate (number of deaths per 1,000 children under 1 year of age) was 27.2. In the United States it was about 10, while the equivalent figure in Turkey in 1990 was 69. The life expectancy of women in Kazakhstan is 73 (based on pooled data for 1985-1992). For infants under one year of age, the leading cause of death is respiratory infection. Over two thirds of deaths during the first week of life are due to birth trauma and respiratory problems. Diarrheal diseases represent the third most prevalent cause of death in infants under one year (Welsby 1993). Demographic figures for the four research sites are found in Annex E.

Delivery of health care is provided through facilities at four referral levels: central, regional, district, and rural. These consist of:

- (1) Central republic hospitals and institutes;
- (2) Regional general hospitals and regional children's hospitals;
- (3) District hospitals;
- (4) Rural hospitals, ambulatory center/polyclinics, and *feldsher* stations (equivalent to dispensaries).

A pregnant woman usually attends a woman's consultancy, gives birth in a maternity (city, oblast, or district), and has her infant examined and infant feeding questions answered by staff of a children's polyclinic. Most physicians are specialists; relatively few general practitioners or family practice physicians exist. Currently, health care is provided for children in their own facilities, but the Ministry of Health is planning to initiate a family doctor program that integrates adult and child health care delivery.

The centralized structure of the Kazakhstan health care system is similar to that in the rest of the former Soviet Union. However, the Ministry of Health plans to decentralize the system, with more autonomy to oblast and district health departments. Maternal and child health has been a major focus of the Ministry of Health. The structure of the portion of the Ministry of Health devoted to maternal and child health is found in figure 1, Annex F.

In addition to polyclinics, consultancies, and hospitals for mothers and children, Kazakhstan has inherited from the Soviet Union another institution: the milk kitchen. Milk kitchens produce and distribute *kefir* (a local drink made from fermented cow's milk), pot cheese, and special milks. If a physician believes that a mother cannot adequately breastfeed her child, the doctor writes a prescription for milk kitchen products. Because milk kitchens are not distributed evenly throughout the country, some mothers have no access to one.

All formulas are imported through humanitarian aid. Western powdered milk is difficult to find and is much too expensive for most mothers. Formula from other NIS states is cheaper, but not generally available. Recently, there was an incident where formula from one NIS country was found to be poisonous. Formula manufacturers have started to advertise in Kazakhstan. Although formulas are expensive now, when the economic situation improves, their use could become much more widespread.



The health care system is severely strained at present. Essential drugs such as antibiotics, insulin, anesthetics, and others often are not available. The highly centralized health care system has a high ratio of health care providers to population. There is one doctor for every 328 people and one health worker for every 75 people (far more health workers per capita than in many western European countries). The ratio of population to hospital beds is also high (one hospital bed per 170 people). Furthermore, hospitals are distributed fairly uniformly throughout the country, assuring wide access to health care (Welsby 1993).

Perhaps because of the large number of health care personnel and available hospital beds, many cases in Kazakhstan are hospitalized that in the West would not require hospitalization or even a doctor's consultation. Long hospital stays are the norm. In the United States, mothers who have routine births are usually discharged one or two days postpartum, while maternity stays for normal births in Kazakhstan range from four to seven days. Conditions such as maternal anemia, which can usually be treated at home with iron pills, are cause for pregnant women's stays of weeks or even months in maternities.<sup>6</sup>

Leading physicians in Kazakhstan recognize that standards and training of health professionals in the former Soviet Union do not follow Western standards. Some of these physicians are working to change medical standards and education to bring them into line with modern medical research.

## FINDINGS

### General Perceptions of Breastfeeding

Breastfeeding is traditional practice in Kazakhstan and viewed positively. *"In ancient times our ancestors only exclusively breastfed their babies. Mother's milk is wholesome."* Women expect to breastfeed -- they do not make a formal decision to breastfeed -- and virtually all women do initiate breastfeeding. Breast milk is described as clean or pure (the Russian word has dual meanings). Most mothers ascribe one or more of the following advantages to breast milk: it is always available; it is convenient (no need to mix formulas or boil bottles); it is always the same temperature; it is natural; it is wholesome; it provides immunity; it is nutritious. Mothers also recognize the benefits of colostrum and the presence of immune substances in milk. *"It is very important to breastfeed because it helps the child to get his own immune system."* All mothers, even the few mothers who completely discontinued breastfeeding their babies, feel that breastfeeding is best for the health of the baby. Although almost everyone is concerned about finances, few mention the financial savings breastfeeding entails. Mothers also say that breastfeeding helps a mother and baby to feel closer, but no mother associates breastfeeding with any other positive benefit to the mother.

Most mothers can find no disadvantages to breastfeeding. No mother says that she wishes to protect the shape of her breasts at the expense of the baby's health. However, many mothers say that other women do not breastfeed because they are concerned about the effect of breastfeeding on their figures. Articles have appeared in the local press about such women.

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<sup>6</sup>Iron pills are not routinely given to women who are classified as anemic. Injections of iron are administered, but observers have commented that the dosage is too low to ameliorate the condition. Almost all medications are in very short supply, including injectable iron (Welsby 1993).



At the same time that pregnant women plan to breastfeed, a large minority say they know other mothers who have had problems with insufficient milk and worry that they themselves will experience the same problem.

### *Environmental Contamination*

Concern about environmental contamination is ubiquitous and almost everyone believes it is making them and their children sick. Mothers in Kokshetau worry principally about radiation, and mothers in other sites tend to worry about polluted air, water, and food, while some mothers just have a general concern about the polluted "atmosphere" or "environment." People attribute all sorts of maladies to environmental contamination: anemia in mothers and children, weakness, necessity for Caesarian section rather than vaginal delivery, low birth weight and prematurity. Almost all health care providers view the health of women in their district as poor. Health care providers in all study areas comment, *"Ninety [or 80 or 100] percent of the women in this district have anemia."*

In spite of pervasive fears about the effects of the environment on health, only five respondents of all persons interviewed (parents, grandmothers, and health care personnel) expressed concern that breast milk may be contaminated.<sup>7</sup> No mother said she thought that her own milk might be contaminated, and no physician indicated that she/he had seen a case of breast milk contaminated by the environment. The fear of environmental contamination affects breastfeeding indirectly by making women feel more vulnerable to disease and leading them to regard their bodies as functioning poorly. Almost all women (including physicians and nurses) view their mother's and grandmother's generation as much healthier than their own due to a less polluted environment. *"Our mother's generation was healthier because their nutrition was better. Now everything is worse because I work in the fields myself and I know that everything is chemically fertilized."*

### ■ ■ Program Implications

- Breast milk and breastfeeding are viewed very positively. Surprisingly, fears of environmental pollution have not influenced the concept that breast milk is wholesome. If the biomedical study finds that breast milk is indeed uncontaminated, communication messages should reinforce the belief that breast milk is a pure food source for an infant.
- Conduct of the research into breast milk contamination and dissemination of results should be handled with care. It is not anticipated that breast milk contamination will be found to be a problem, and care should be taken not to create fears where they do not now exist.
- Because of the strong association with the health of previous generations, linking breastfeeding to the maintenance of tradition may be beneficial.

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<sup>7</sup>To address concerns voiced by health professionals that breastmilk may be contaminated, a careful laboratory analysis of breastmilk from Kazakhstani women is currently underway. A large body of literature that looks at breastmilk contamination has found no significant impact on maternal or child health.



- In a similar vein, exclusive breastfeeding should be presented as having contributed to the health of women in the grandmothers' generation.

### *Prenatal Preparation*

**Prenatal visits provide an ideal opportunity for providing information about how to initiate breastfeeding and feed a child during early infancy. No special preparation of the breasts is necessary; even flat or inverted nipples are best dealt with by correct early positioning of the infant at the breast as soon after delivery as possible. Breast washing, particularly with soap, is not necessary and can lead to cracked and sore nipples.**

Mothers visit a women's consultancy (a clinic for women's reproductive health) during pregnancy for prenatal care. Much emphasis is placed on care of the breast, such as massage in preparation for lactation and washing with soap and water before breastfeeds. Mothers who exhibit flat or inverted nipples are given instruction on exercises and massages. Mothers follow this advice, which many also receive from their mothers or mothers-in-law.

One maternity devotes an entire room to various treatments to enhance breastfeeding: electrotherapy, sonography, massage, and light therapy. Pregnant women who enter the maternity before labor (due to complications) receive preventive treatment in this room. (The effectiveness of most of these techniques is unknown.)

### ■ ■ Program Implications

- Informational materials which provide updated information on breast problems, lactation, and infant feeding should be developed and distributed during prenatal visits.
- Service providers should be trained in positioning techniques to overcome problems with flat or retracted nipples.
- Harmful recommendations, such as the one to wash breasts with soap and water, should be discouraged.
- Other measures used to promote lactation such as sonography, massage, and light therapy should be assessed to determine their effect on breastfeeding and whether they should be continued.

### **Infant Feeding in Maternities**

In principle, breastfeeding is encouraged in Kazakhstan. However, maternity policies and routines are detrimental to breastfeeding. It is the norm to delay initiation of breastfeeding, to separate mothers and babies, to allow mothers to breastfeed only on schedule, and to give the infant water in a bottle between feeds. In addition, breastfeeding is often withdrawn because of many perceived contraindications as well as the high frequency of breast problems such as cracked nipples and engorgement.



### *Initiation of Breastfeeding*

**Placing the newborn on the mother's chest within the first half hour postpartum and allowing the baby to suckle helps to facilitate expulsion of the placenta, allows the newborn to benefit from the protective effect of colostrum (rich in anti-bacterial and anti-viral agents), aids in initiation of lactation, helps the mother and her baby to bond, and eases the stress of birth for mother and child. Nothing at all except breastmilk should be given to a young infant.**

Almost all mothers in Kazakhstan deliver in a maternity, one of seven perinatal centers, or in a hospital with obstetric facilities. The mother sees the obstetrician, usually for the first time, at delivery. After the baby is born, the mother and the baby stay in the delivery room for two hours but mother and baby are apart. During this time the obstetrician or nurse-midwife and neonatologist monitor the health of mother and child. The policies of maternities vary as to what happens during this period.

The Moscow recommendations are fairly good with regard to timing of the first breastfeed: *"Healthy newborns should be put to the mother's breast (in the absence of any contraindications) as soon as possible after birth, within the first two hours, regardless of whether there is milk or not."*

Nonetheless, few mothers are allowed to breastfeed soon after delivery. Most receive their babies for the first time from four to 48 hours postpartum. Delays of one to two days are not uncommon due to the large proportion of mothers or infants perceived to be having "problems." Personnel in some maternities have received information from physicians who attended the Wellstart-organized Maternal-Child health seminar and are beginning to give the baby to the mother to suckle immediately postpartum. However, maternity personnel do not seem to fully understand the purpose of this practice. Mothers at one maternity with a policy of giving the infant to the mother within 15 minutes after birth were only given the baby for a brief period, 3-5 minutes, and not always within the first 15 minutes. *"I got my baby within half an hour after she was born, but only for three minutes. She didn't suckle."*

In almost all birthing facilities, staff routinely give prelacteal and interlacteal feeds. Neonates are given glucose and water in a bottle before they are put to the breast for the first time, and also between feeds.

### *Rooming-in and on-demand feeding*

**Babies who are "roomed in," i.e., who stay with their mothers postpartum and are permitted on demand feeding have much lower rates of morbidity and mortality than babies who are separated. Immediate initiation and demand feeding during the early postpartum period ensures that the baby receives enough colostrum, encourages full milk production, and protects against engorged breasts.**

It is standard practice in Kazakhstan to separate mothers and infants, and to breastfeed on schedule. Those physicians trained at Wellstart are attempting to institute rooming-in and *ad libitum* feeding in their respective institutions. Even where rooming-in is practiced, with the exception of one maternity in Almaty visited by the research team, breastfeeding on demand usually is not permitted. This seems to be due to an incomplete understanding of the rationale for rooming-in, as well as persistence of the old medical recommendations for infant feeding. However, mothers whose babies are roomed in often feed on



demand, regardless of what doctors and nurses tell them. *"They [maternity staff] teach how to breastfeed ... they recommend a strict schedule ... I plan to breastfeed this baby on demand--why torture the baby?"*

Babies are brought to mothers every 3 1/2 hours for breastfeeding. The baby stays with the mother for about half an hour. The infant receives glucose solution or plain boiled water in a bottle, either when s/he cries between feedings or on a schedule. Some mothers find that babies are brought to them already full and asleep so they do not want to nurse. *"When they brought me my baby he was already full. I could see his mouth was shiny from glucose."*

Following the directives of the old medical recommendations, most maternities do not bring babies to their mothers between midnight and six o'clock in the morning. Staff of maternities say this is because, *"the baby and mother need to rest."* If the child cries at night, he or she is given water in a bottle. Maternity physicians and nurses explain that the baby is not fed because *"his digestive system needs to rest"* or *"as we learned, you should keep the intervals in order to allow the stomach to empty so that there is no digestive dysfunction in order not to have sour milk in the stomach."*

It also is commonly believed that babies must be kept in a nursery separate from their mothers because of the perception that it is unsanitary and dangerous for infants to sleep in the same bed as the mother.

Some health care personnel encourage milk expression to keep up milk production. *"The doctors told me to express my milk to have a better supply."* Expressed milk is collected by a special nurse. It is then boiled and stored in the maternity's milk bank. Babies whose mothers cannot breastfeed them are fed with donor's milk or formula.

In Kazakhstan, infants are swaddled at birth, and kept swaddled for two months or longer. The precise implications for breastfeeding are unknown, but some neonates are swaddled so tightly that they seem to have difficulty opening their jaw.

#### *Management of breastfeeding problems*

**The baby should be positioned at the mother's breast so that the whole areola (rather than just the nipple) is in the baby's mouth. Correct positioning aids in preventing cracked nipples. In order to prevent cracked nipples, the mother should also refrain from applying drying substances, such as soap, to her nipples and areola. Cracked nipples can usually be treated by correctly positioning the baby at the breast, changing the breastfeeding position, and applying a few drops of milk to the nipples and letting them air dry.**

Nurses in maternities help new mothers -- particularly first-time mothers -- to place the baby on the breast. Nurses are not necessarily aware that the whole areola should be placed in the baby's mouth. *"If the nipple is normal, [the mother should] give [the baby] only the nipple."*

The old infant feeding recommendations from Moscow prescribe thorough washing of breasts, chest, and upper arms and application of antiseptic prior to each breastfeeding. Some maternities are more vigilant than others in making sure that mothers adhere to these practices. The more insistent the maternity, the more mothers and medical staff report the occurrence of cracked nipples. In one maternity, *"every second*



*mother has cracked nipples.*" Staff of this maternity insist that mothers adhere to the washing and antiseptic routine and also apply another antibiotic to the breasts after feeding. Physicians attribute the high incidence of cracked nipples to mothers' failure to follow the prescribed infant feeding schedule (babies are roomed in at the facility). *"Although we tell [mothers] to breastfeed every 3 1/2 hours, they don't listen to us and if the baby is fussy they give the breast. There is not sufficient milk in the breast [to breastfeed more often] and [mothers] get cracked nipples."* Cracked nipples are treated by exposure to a quartz lamp. Other maternities treat cracked nipples with antiseptic.

Delayed initiation of breastfeeding and scheduled feeds make postpartum engorgement common. Instead of remedying the situation with more frequent breastfeeding, mothers are encouraged to express their milk after breastfeeding. In some cases mothers who are not allowed to breastfeed their babies are told to express their milk several times a day. Other mothers do not receive this advice. *"When my baby wasn't given to me [for four days because the umbilical cord was wrapped around her neck] my breasts became engorged. I started expressing milk on the advice of the other mothers in the ward. The doctors didn't tell me anything."*

#### *Perceived Contraindications to Breastfeeding*

**The World Health Organization recognizes only the following contraindications to breastfeeding: infants weighing less than 1000 grams or born prior to 32 weeks of gestation; infants with potentially severe hypoglycemia; infants whose mothers have severe maternal illness (i.e., psychosis, eclampsia, shock); infants with inborn errors of metabolism; infants with acute water loss; infants whose mothers are taking medication contraindicated for breastfeeding.**

Maternities and other birthing facilities in Kazakhstan consider almost any variation from the norm in mother or neonate as a contraindication to breastfeeding. In these cases, the mother and child are separated for two days or more. Breastfeeding is not permitted during this time, although in some cases the mother may express milk for the child. "Abnormalities" may include a baby who is larger than average, the mother's episiotomy or Caesarian section, any birth injury, any prematurity, low birth weight, delivery that is faster than average, Rhesus incompatibility, etc. If mother and child are judged normal and healthy, the mother may be allowed to breastfeed the child before leaving the delivery room.

#### ■ ■ Program Implications

- The practice of placing the newborn on the mother's chest following delivery and allowing it to suckle should become standard in all maternities. Staff of maternities should receive thorough training in the rationale for and practice of this method and mother should be oriented to know what to expect.
- Rooming in with on-demand feeding should be universally instituted. Behavioral trials to test the acceptability of infants sleeping with their mothers should be conducted.
- Health providers need up to date information on the practical management of breastfeeding, including how to prevent and treat breast problems, and proper latch-on and positioning techniques.



- The Ministry of Health should consider adopting the World Health Organization list of contraindications to breastfeeding and including them in the new infant feeding policy.

## Breastfeeding Practices

### *Demand or Schedule Feeding*

**Frequent, on-demand feeding is recommended for infants in the first months of life. Frequent feeding is needed because breast milk is a complete food and quickly absorbed by the infant's stomach, because it assures good nutrition for the infant, it keeps up the mother's milk supply, and maximizes the fertility suppression effect for the mother. For the very young infant, approximately 12 feeds per 24 hour period are needed.**

The Moscow recommendations indicate that infants should be fed six times per 24-hour period, scheduled every 3.5 hours with a 6.5 hour interval at night. Upon returning home after giving birth, many first-time mothers and a few experienced mothers try to feed their babies on schedule as they were taught in the maternity. Many mothers who begin by schedule feeding quickly switch to feeding on demand. By the end of six weeks postpartum the great majority of mothers (including first-time mothers) are breastfeeding on demand. About three times as many mothers feed on demand as feed by schedule.

Other mothers *"try to stick to the schedule"* but *"feed the baby whenever he cries"* because they feel that babies often cry because they are hungry. A mother who was instructed by the doctor to feed on schedule explains why she does not follow the advice: *"But I looked at my child. How can I stop feeding if he is crying so bitterly?"* In spite of their own instincts, some mothers feel they cannot counter the physicians advice: *"I fed the baby 10-12 times during the day and two to three times at night ... whenever the baby cried. When the baby was one month old, the doctor [from the children's polyclinic] said I had to feed the baby by schedule, every 3 1/2 hours. I changed to feeding by schedule and followed the doctor's advice."*

Mothers who have more than one child are less likely to breastfeed on schedule. Mothers of all educational levels experiment to decide how to feed their babies. If a mother has one child and she has fed formula or fed by schedule and is dissatisfied with the results (the baby was sick frequently or was fussy), she is more likely to feed her next child on demand regardless of what instructions she receives from doctors and nurses. *"The first child was breastfed on schedule, but I breastfeed this child on demand because my mother's instinct says this is better. I examined my experience with my first child and thought I could avoid the problems if I breastfed on demand."*

Grandmothers tend to support on demand feeding, as that is how they fed their infants: *"We never looked at a clock."*

The assumption that many more urban women feed by schedule than rural women is not borne out by this sample. Women feed on schedule because they have been advised to do so by books, brochures, physicians, or relatives (usually sisters or sisters-in-law) or because the mother has a great deal of work to do and feeding on schedule is more convenient for her. Rural women often have much work to do in the house, as well as caring for animals and gardens. Perhaps for this reason they are almost as likely



as urban women to feed on a schedule. *"I have a big house and much work to do. Feeding on schedule is convenient for me."*

A few mothers fear that a child fed on demand will be over-nourished. More Russian than Kazakh mothers are concerned about "over-nourishing" their infant. *"You mustn't over-nourish a child." "The child's stomach must not be full. I know a mother who fed on demand and her child is so fat and he always asks for the breast."*

It is not known how many times per day a baby fed on demand is fed. Almost all mothers feeding on demand identify crying as the primary cue when the baby is hungry. Since babies are swaddled, however, they cry less and may not be "demanding" to be fed frequently enough. Russian mothers generally swaddle babies for about the first two months of life, while Kazakh babies are usually swaddled for much longer than this.

### ■ ■ Program Implications

- In a new policy, breastfeeding on demand, including at night, should be recommended for children 0-6 months.
- Training programs for health care providers must fully explore the differences in on demand and schedule feeding to put to rest concerns about on demand feeding.
- It is desirable that infants sleep with their mothers, but it is likely that cultural resistance will be encountered. The acceptability of infants sleeping with their mothers should be tested.
- Educational materials should reinforce the mothers' strong inclinations to feed on demand and dispel the idea of over-nourishment.
- Specific ways that family members can assist mothers who feel too busy to demand feed need to be identified.

### *Duration of a Feed*

**Breastfeeding episodes should continue as long as it takes to empty the breasts and satisfy the child (10-15 minutes per breast).** Per recommendations from Moscow, most mothers give only one breast at a feed, but alternate breasts from feed to feed. Mothers report that the average length of time a baby suckles is 15-20 minutes per session. Some mothers stop their babies from suckling after 10-20 minutes because they have too much work and not enough time to continue to feed. *"My breast is not a pacifier."* A few mothers limit the baby's suckling because they are afraid the baby will be "over-nourished." The majority of mothers allow the baby to suckle as long as she/he likes. One of these mothers cites a Kazakh proverb to support the practice: *"It is necessary to feed a baby as long as he wants because the child will be calm and if a child is not allowed to suckle as much as he wants, he expects nothing good from his future."*



## ■ ■ Program Implications

- Observational research is needed to determine duration of feeding sessions and whether they are adequate.
- Feeding from only one breast per session is not a problem unless the child is still hungry after emptying one breast. Mothers and health providers should be assured that in this case it is acceptable for the child to continue feeding from the other breast.
- Training of maternity and polyclinic physicians and nurses should include information on the effect of duration of suckling on milk production. Information for mothers on breastfeeding techniques should mention duration of breastfeeds and the importance of emptying the breast (probably occurs in 15 minutes per breast).

### *Duration of Breastfeeding*

**International guidelines recommend that a baby be breastfed for at least one year, but if mother and child so desire, it is beneficial to breastfeed two years or longer.** Determination of duration of breastfeeding seems to depend on a concept of an "ideal age" rather than on cues from the child. Most mothers would like to be able to breastfeed their children for either one year or one-and-one-half years. However, many state the following caveat: *"if I have enough milk."* The choice of one year or one and a half years or more varies by ethnic group and location. In Almaty, for example, a majority of mothers of all nationalities hope to breastfeed for one year, while in rural southern Kazakhstan a majority of mothers plan to breastfeed for one-and-a-half years or more. Uzbek mothers plan to breastfeed for the longest period, two years or more. In Kokshetau, a majority of Russian and Kazakh mothers who express opinions say they plan to breastfeed for about one year. Some mothers justify their ideal length of breastfeeding by tradition or group norms. A Kazakh mother in Almaty says, *"I will breastfeed the baby for one year. That's what everyone does. It's traditional."*

Some believe that it is not good to breastfeed for more than a year because it will harm a baby's character, or because the milk is too weak after a year. Some physicians and mothers indicated that infants must be taken off the breast if their mother becomes pregnant. It is thought that breastfeeding under these circumstances can be harmful to the fetus.

## ■ ■ Program Implications

- The new policy should encourage breastfeeding for two years.
- Messages for mothers should recommend two years of breastfeeding and link this to past traditions as well as to the scientific reasons for long-term breastfeeding -- particularly prevention of disease -- because mothers do recognize that breastfeeding protects the infant from certain illnesses.



- Many mothers worry about having enough milk to breastfeed for a year or more. Messages about breastfeeding for two years should be linked to messages providing information about insufficient milk and supporting all mothers' ability to breastfeed for as long as they would like.
- Physicians and mothers should be reassured that a woman can breastfeed while pregnant. In these cases, however, the importance of eating three meals containing a variety of foods should be emphasized to meet the mother's nutritional needs.

### *Use of cradles*

The vast majority of babies sleep in their own beds rather than with their mothers. Russian babies tend to sleep in a baby carriage. Kazakh babies in southern Kazakhstan and some in Almaty and Kokshetau sleep in the besik, a traditional Kazakh cradle. Uzbek babies also sleep in a besik, although the Uzbek besik differs in form slightly from the Kazakh version.

Infants are swaddled and held in the besik by padded (often velvet) strap(s). Tradition dictates how the baby is swaddled and fastened within the besik. Some babies stay in the besik only at night while they sleep, others only during the day, and still other babies are in the besik only part of the day or part of the night. Some babies stay in the besik all the time and are only taken out for morning and evening massage and exercise sessions with mothers or grandmothers. Some mothers are able to breastfeed the baby without removing her/him from the cradle, while other mothers find this uncomfortable. The longest length of time the besik is used is one year. Babies kept in besiks are noticeably calmer than other babies.

#### ■ ■ Program Implications

- The possibility that the besik keeps a baby calmer and therefore reduces the "demand" for breastfeeding should be explored. If so, then use of the besik should not be discouraged completely, but utilized less frequently. Kazakhstani researchers may also want to explore the impact of swaddling and the besik on motor development.

### *Use of Pacifiers*

**Use of pacifiers can interfere with a child's desire to breastfeed.** As mothers value a calm child, pacifiers are used by mothers of all nationalities to help keep the child calm. Pacifiers are widely available for sale, even at many children's polyclinics.

#### ■ ■ Program Implications

- Pacifiers should not be sold through Ministry of Health facilities.
- Materials developed for mothers should discourage the use of pacifiers.

### *Exclusive Breastfeeding / Supplementation*

**Exclusive breastfeeding – without any water, other liquids, or foods – is the key breastfeeding behavior which confers maximum health benefits to mother and child. Premature supplementation can introduce pathogenic organisms, precipitate allergic reactions, and reduce the amount of suckling so that the mother produces less milk. Feeding from artificial nipples requires less energy than suckling at the breast and can lead to a refusal of the breast. Provided the child is fed frequently enough, it is unnecessary to give an exclusively breastfed child water because breast milk is about 90% water.**

There is virtually no exclusive breastfeeding in Kazakhstan. Almost all babies are fed boiled water from birth because many mothers and health care providers believe that boiled water is necessary for the child's digestive system to function normally. Physicians view newborns as very susceptible to dehydration.

Other supplementary liquids are given at a very early age. Mothers are advised, on the basis of the Moscow recommendations, to give broths at three weeks and juice at one month. Physicians in southern Kazakhstan and some in Almaty recommend giving babies tea; this is a local custom, not the medical recommendation. Physicians from the North are appalled at the idea: "*Tea? For babies?*".

Only a small minority of mothers, most of them ethnic Uzbeks, practice exclusive breastfeeding. Those who do have usually been encouraged to do so by their mothers-in-law or mothers. (Few ethnic Uzbeks were included in the sample and the typical length of exclusive breastfeeding among them is not known.) Mothers who have delivered at the maternity that encourages exclusive breastfeeding are also following this practice. One young mother is exclusively breastfeeding because, after seeing one of the members of the research team on television promoting good breastfeeding practices, she decided to implement everything (including demanding that her infant be given to her to suckle immediately after birth). Another mother is exclusively breastfeeding because she read Wellstart literature in the maternity.

The age at which semi-solid foods are introduced varies somewhat among mothers. Most babies are eating semi-solids by three months, but some are doing so as early as a month. The first semi-solid food given to the baby is usually fruit (often apple) puree. It is followed by vegetable purees and porridges. Egg yolks are sometimes given at four or five months. Bottles are commonly used for giving water and a liquid porridge while purees and juices are given using a spoon.

Most mothers do not use formulas. However, there is a perception that bottle feeding is becoming more prevalent, and there is a sizable minority that uses formulas in addition to breastfeeding. Only a few mothers replace breast milk with formula or other animal milks. Animal milks are most frequently used in rural areas where they are more readily available. Substitutes are usually used when the mother or her physician diagnoses insufficient milk.

The most frequent reasons for supplementing with foods other than water and juice include: a doctor or the mother making a diagnosis of insufficient milk; the doctor recommending supplementing in accordance with the Soviet medical recommendation; the mother reading that it is the age to supplement; the mother thinking that her baby is hungry and needs additional nutrition; the mother or doctor deciding that the baby



has too many or too few bowel movements; seasonality. One mother decided to give her baby puree at six weeks because, *"It is winter and I do not have enough vitamins in my milk [for the baby]."* Although mothers think that their milk is very nutritious for the child, it does not prevent them from believing that the baby needs vitamins found in juice and fruit puree. In other words, breast milk is considered nutritious but not adequate by itself for nourishing an infant for at least four months.

Mothers and physicians are watchful of children's bowel movements. If the physician thinks the baby has too many or too few bowel movements, s/he will recommend supplementation. *"I started giving water on the strong recommendation of a doctor who explained that the baby could be dehydrated and that the baby had too many bowel movements per day (eight to ten)."* Some physicians and mothers diagnose "too many bowel movements" (sometimes 8-10 per day) as diarrhea. Too many or too few movements may mean that the mother has fat milk and should replace some breast feeds with another liquid. One premature infant was given an enema because he had not had a bowel movement that day; he was also given water to remedy the "constipation" and the mother's perception that her milk was "too fat."

### ■ ■ Program Implications

- The new policy should call for exclusive breastfeeding for the first four to six months and include new guidelines for introduction of supplementary foods. It is advisable to develop a well-designed wall chart indicating infant feeding at various ages to serve as a reference and give legitimacy to the new policy.
- Mothers' belief that breast milk is nutritious should be supported and linked directly to the need for exclusive breastfeeding for the first four to six months.
- Training and educational materials are needed on the importance of exclusive breastfeeding. Messages need to address the widespread belief that infants need to have boiled water for their digestive system. The idea that breast milk meets all requirements for hydration, digestion, and nutrition should be addressed.
- Emphasis on the significance of bowel movements should be decreased. An infant's bowel movement patterns vary and except in obvious cases of diarrhea or prolonged lack of defecation, no intervention is required.
- The fact that mothers who deliver at the maternity promoting exclusive breastfeeding accept the practice indicates that this behavior may be easily amenable to change if sufficient support and encouragement is given.
- Messages about exclusive breastfeeding and the new schedule should also be directed to grandmothers (perhaps on television). Messages for grandmothers should emphasize that four to six months of exclusive breastfeeding is a return to the practices of the grandmothers' own grandmothers. The messages should also include the scientific basis for the change in the schedule for introducing supplementary foods.



## Perceptions of Breastfeeding Problems

### *Insufficient Milk*

Research in other parts of the world has shown that it is only in rare cases that a woman is physiologically incapable of producing enough milk to exclusively breastfeed for at least four months. Supply of milk is principally determined by demand; almost all cases of insufficient milk are caused by insufficient suckling. Unless a mother is severely malnourished, the quantity of her milk will not be affected as long as she allows the child to suckle sufficiently. There is pervasive concern in Kazakhstan with "hypogalactia" (insufficient milk). Health professionals consistently raise this issue when talking about breastfeeding. A very high proportion of mothers in the sample -- slightly over half -- say they themselves experienced insufficient milk.

Diagnoses of insufficient milk occur most often either in the maternity or around two to three months. Cases during this later period are usually diagnosed by the mothers themselves. They cite a number of "indicators" for this condition:

- The baby cries or is fussy, especially right after feeding: *"At four months I started giving cow's milk because the baby was fussy after feeding ...they say many mothers have the same problem."*
- The mother has trouble expressing milk.
- The mother's breasts are soft or feel empty: *"When he was two months old I suddenly felt that my milk was not sufficient. My breasts were empty and when he suckled it was painful. It was not a sharp pain. The breast was empty."*
- The baby begins to suckle longer than customary for the child.

Physicians make the diagnosis of insufficient milk by either accepting the mother's self diagnosis or weighing the child and deciding that the baby is too small (using an absolute standard of growth, rather than evaluating the child's own growth trajectory.) *"When she was one month old, her weight was taken and the doctors told me she was less than average, so they recommended to start giving supplementary food. The doctor gave me formula, but the child spit it out. Then we started giving cow's milk ..."* "Test weighs" are also conducted, whereby the infant is weighed, the mother breastfeeds, and the infant is again weighed to determine whether there was sufficient milk intake.

All mothers reporting insufficient milk were engaged in one or more practices which are known to reduce milk supply: feeding on schedule rather than on demand, giving supplementary liquids or foods too early, using a pacifier and/or bottle, decreasing frequency of breastfeeding because of mastitis.

Insufficient milk is generally attributed to poor health of the mother, which in turn is attributed to the degraded environment, poor diet, and stress. Except in Kokshetau (perceived to be environmentally clean), environmental concerns weigh heavily on everyone's mind, and it is thought that industrial pollution, pesticides, and radiation are making everyone ill. *"We have no healthy mothers here [because of] the ecology."* Even before the mounting concern with the environment, insufficient milk was associated principally with inadequate diet and rest. The Moscow recommendations state: *"The prevention and treatment of hypogalactia is entirely based on a mother getting good nutrition, drinking fluids, and getting sleep and rest."*



Poor nutrition is believed to be rampant because of the present economic strain in Kazakhstan. *"Mothers [in our clinic area] have poor nutrition. [They can afford to eat only] cabbage, carrots, potatoes, bread, tea, kefir and milk (but not everyday)."* Meat plays such an important role in the traditional diet of all ethnic groups (but especially Kazakhs) that the severely reduced quantity of meat is perceived as causing undernutrition.<sup>8</sup> Several even associated it with "starving." Although a few mothers whose husbands are unemployed say they are able to afford only tea and bread, most mothers' diet appears to be sufficient, although largely lacto-vegetarian.

In addition to recommending dietary improvements, physicians usually advise mothers with insufficient milk to supplement and may give them a prescription to take to the milk kitchen. This exacerbates the problem of insufficient milk by further decreasing the amount of time the infant will wish to suckle. Many mothers have experiences similar to this one: *"After I gave her the formula [in a bottle] every other feeding, I lost my milk completely."* Only a few physicians recommend more frequent suckling to address perceived insufficient milk.

The literature on insufficient milk assigns a significant role to a mother's expectations about her ability to breastfeed successfully. In Kazakhstan, concern about insufficient milk often begins during pregnancy. Mothers who have already experienced insufficient milk with prior infants or have heard about problems other mothers have had worry that they will experience the problem with their next child. The link that people make between milk production and diet, the environment, and stress/overwork, further intensifies these worries. It is possible that, in addition to breastfeeding behaviors which inhibit good lactation, these anxieties contribute to difficulty with let-down, which is then interpreted as insufficient milk.

#### ■ ■ Program Implications

- In order to address the perceptions of insufficient milk, understanding the cause and treatment is key to achieving optimal breastfeeding practices. Health professionals, mothers and family members need to know the relationship between breast milk supply and demand; i.e., the more the child nurses the more milk is produced. Women require specific guidance on how to feed more frequently, what frequently means and some clues to watch for in their children.
- Changing maternity practices to include immediate initiation, rooming-in, and on-demand feeding should remedy most cases of "insufficient milk" found in maternities. Giving health personnel skills in positioning and other lactation management capabilities will enable them to further assist mothers in establishing good lactation.
- Since there is a strong association between insufficient milk and diet, messages should support the need for good nutrition and intake of sufficient fluids during lactation. However, this should not be portrayed as the main cause or cure of the problem.

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<sup>8</sup>Ironically, research has shown that consumption of red meats should be severely restricted in order to reduce incidence of heart disease and other illnesses associated with cholesterol and animal fats. Therefore, the decrease in meat consumption should result in better diets in Kazakhstan.



- "Indicators" of insufficient milk are inaccurate. Physicians and mothers need to know that the breasts normally will feel softer after a couple of months, that infants undergo growth spurts and require more feeding during these times, that infants become more "expert" and may begin to fill their stomachs quickly and terminate feeding sessions earlier. Reliable indicators that the infant is getting sufficient milk, such as frequent wet diapers and monthly weight gain, need to be taught.
- Medical training should include information on infant growth patterns, especially growth patterns of exclusively breastfed babies, and interpretation of growth charts.

### *Poor Quality Milk*

A mother's or physician's perception of the quality of breast milk affects feeding decisions. Milk is diagnosed as "too thin" or "too fat", as low in vitamin content, or as causing allergic reactions in the child.

**The nutrient content of breast milk does not suffer unless the woman is very malnourished. Lactating women secrete foremilk for the first few minutes of the feed. It has a higher water content than hind milk, the milk secreted later in the feed. Hindmilk is higher in fat content than foremilk. The baby needs both types of milk.**

Neither health care providers nor laywomen are aware of the existence of these two types of milk in one breastfeed. Many mothers report suffering from "watery milk." They diagnose watery milk if their baby is fussy or cries after feeding or if their expressed milk has a thin and watery appearance. Diagnosis of "watery milk" is also made by grandmothers and physicians. Mothers with "watery milk" begin giving the baby formula, cow's milk, and sometimes other foods.

Physicians, mothers, and grandmothers diagnose "fat milk" if the expressed milk is very yellow and/or creamy looking. Mothers with fat milk may decrease the number of times they feed the baby and add more water feeds, and some replace some breastfeeds with formula.

**The incidence of true allergic reactions to mother's milk is extremely rare in human populations studied to date. Few children are lactose intolerant. Research has shown that children who have been exclusively breastfed have far fewer allergies than other children.** Many babies in Kazakhstan have rashes on their faces and elsewhere. Physicians often diagnose these rashes as an allergic reaction to breast milk. They prescribe formula and alternative milks for the child as a replacement for some or all breastfeeds. This not only causes the mother to produce less milk, but also may motivate her to stop breastfeeding entirely.

### ■ ■ Program Implications

- Training and communication materials should emphasize the similarity and high nutritional content of all mothers' milk, explaining why no mother has "poor quality milk." The duration of a breastfeed should be stressed so the infant receives the full nutritional value of the milk.



- Training and reference materials for health care providers should state that only in cases of lactose intolerance, which is rather rare, is the child "allergic" to breastmilk.

### *Breast Problems*

**For cases of mastitis, engorgement and cracked nipples, the mother should continue to breastfeed. These problems affect the breast, not the milk. In addition, breastfeeding actually helps remedy the problem.**

Breast problems -- particularly mastitis, engorgement, and cracked nipples -- are common. Many mothers experience engorgement in the maternity. Whenever the case occurs, physicians generally prescribe antibiotics and counsel to express the milk from the affected breast. Some physicians say that if the case is in the early stages, the woman may continue breastfeeding and need not express her milk. Kazakh women may receive treatment from their mothers-in-law or mothers, who often recommend hot, freshly baked bread be placed on the afflicted breast. In one case a rural Kazakh mother-in-law took her daughter-in-law to a folk healer to cure her mastitis.<sup>9</sup> Some mothers experience insufficient milk after a bout of mastitis. One husband laments, *"In the second month [postpartum] my wife had mastitis. After mastitis she didn't have any milk. ... Our mistake was not to take prophylactic action so our wives didn't get mastitis. Our doctors and our maternities are guilty. We are young and we didn't know."*

Cases of cracked nipples are especially common where breast washing routines are vigorously advocated. For this problem, doctors tell mothers to apply antiseptics to the nipples, but this does not always provide relief. Most mothers suffer through the incident with cracked nipples and do not stop breastfeeding. However, some begin substituting cow's milk for breast milk because it hurts so much to breastfeed. Mothers do not mention receiving advice from the polyclinic on how to position the baby in order to relieve and avoid cracked nipples. However, two women received such advice from the baby's grandmother and one mother relieved her cracked nipples by changing the position of the baby at feeding, something she had read about in a book.

### ■ ■ Program Implications

- The new policy should contain guidelines for treating breast problems that are consistent with international recommendations.
- Education regarding the treatment and management of breast problems needs to be a part of the medical curriculum.
- Materials for mothers should provide succinct information on home care of breast problems.

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<sup>9</sup> It is not known how common use of folk healers is for breast or other problems. Under Soviet rule, belief in and use of folk healers was strongly discouraged, and people may still be unwilling to talk about this.

## Child Spacing and Breastfeeding

**Under certain conditions, breastfeeding can suppress fertility. A woman who is exclusively breastfeeding on demand (at least ten times daily), will have delayed ovulation and delayed return of menses. While this practice, the lactational amenorrhea method (LAM) for family planning suppresses fertility, by six months postpartum other methods should be used.**

Some mothers and grandmothers know that breastfeeding is related to fertility, but few connect how a woman breastfeeds with whether she is protected from pregnancy.

Physicians and nurses appear to be unaware of the hormonal changes caused by lactation, and do not connect breastfeeding practices with changes in these levels. Few believe that breastfeeding can be reliably used to protect against pregnancy. Some physicians and nurses who have successfully remained pregnancy-free while breastfeeding are accepting of the idea that breastfeeding can have a contraceptive effect. However, even these medical personnel are unaware of how the lactational amenorrhea method works.

Many mothers in southern Kazakhstan are unaware of the existence of any contraceptive methods. The only method known to the rest of the mothers in the sample who discussed their fertility plans is the intrauterine device (IUD). Women were not asked about abortion, the primary family planning method used in the former Soviet Union.

### ■ ■ Program Implications

- The new policy should include information about contraception and breastfeeding.
- Training for physicians and nurses should include information on LAM and the use of contraceptives.
- Existing informational materials for physicians and nurses on LAM should be translated into Russian and disseminated at trainings.
- Brochures on family planning for mothers and fathers should be easily available at maternities and children's polyclinics; materials should focus on creating awareness and discussing methods available in Kazakhstan.

### Medical Professionals

Although physicians and nurses continue to rely on the old medical recommendations, there is a great deal of variation in their implementation. Physicians and nurses in polyclinics who are themselves experienced mothers tend to be more flexible on issues such as on-demand feeding as are pediatricians who were born in villages and observed animal behavior while growing up (and who often come from large families). However, some of these physicians believe they must recommend feeding by schedule to the mother because of the Moscow recommendations: *"I fed my own children on demand. I gave them water, but I didn't insist on it. But I have to write the schedule down on mothers' cards."*



Nurses in maternities, regardless of where they have grown up and how many children they have, tend to be most rigid about adhering to the decree. Young physicians who were raised in cities also appear to be very inflexible about deviating from Moscow recommendations.

The one maternity where mothers were encouraged to breastfeed exclusively and on demand and provided with current information on breastfeeding is also the only maternity that has had a series of seminars on breastfeeding by leading experts in Kazakhstan. Receptivity to training in general is high. Maternity staff who attend just one conference often try to implement what they have learned, but their imperfect understanding after only one brief training makes their efforts uneven. For medical staff, more than attendance at one conference will be needed to convince medical staff to take action. *"I attended a conference [that included breastfeeding], but I don't [use the recommendations that I was given] because the climate of Geneva [location of the World Health Organization] is very different from Almaty's."*

Staff members who are sent to a conference or seminar are then expected to brief their colleagues about what they have learned. This results in information being lost or confused. When questioned, staff members recounting what they have learned from colleagues returning from meetings may be unable to explain the information they have learned or relay some correct and some incorrect information.

#### ■ ■ Program Implications

- A training program should be designed, along with reference materials for health care providers, to introduce the new infant feeding policy. The program might begin with a national conference just prior to releasing the policy (similar to the recent family planning conference that brought together pediatricians from throughout the country). For the follow on training that is needed, one lecture or conference per site will not be sufficient to introduce the new guidelines. Sending only a few staff members from a health care facility to a medical meeting or training does not seem to ensure that the intended message will be received by other staff. If possible, all medical staff of maternities and children's polyclinics should participate in training workshops in the new policy.
- Since many of the beliefs upon which the old recommendations are based are deeply ingrained, medical providers' training should include a participatory approach. This will enable trainees to air their own beliefs and concerns about the new approach to infant feeding. Trainers will then be able to present the new recommendations in the most appropriate and believable way. Technical assistance in participatory training methods and other techniques of training should be provided.
- The seven perinatal centers might serve as model maternities and resource centers for the maternities in their oblast. However, staff of most of the perinatal centers will require a relatively long training (probably at least two weeks) in order to serve as consultants to maternity staff. Training content should include how to serve as a consultant. Nurses should be included in this training to serve as resources to maternity nurses. If staff of perinatal centers serve as resources, it will be important for them to have frequent refresher trainings to update them on new scientific findings and assure that the information they transmit is always accurate and up to date.



## Sources of Information

### Family

Many urban and rural women live in extended families with their mothers-in-law. A large majority of mothers say they would go to their own mothers or their mothers-in-law for advice on breastfeeding. Books and brochures are another very popular source of information. Mothers mention many books, but Dr. Benjamin Spock's book on baby care seems to be read most frequently. Mothers also seek the advice of pediatricians, although less frequently than they ask the baby's grandmothers. Several mothers consult elder sisters or sisters-in-law. Although many mothers say they discuss breastfeeding with friends and neighbors, few seem to seek or follow these peers' advice. Only two mothers mentioned receiving breastfeeding advice from their husbands.

Mothers with several children believe themselves to be experts in childrearing and do not think that any further advice or information is needed. *"Everybody asks my advice about breastfeeding. I know everything." "I gave my daughter apple juice and apple sauce at one-and-a-half months because I am an experienced mother. My older son is seven years old and I know everything. I know that apples are wholesome. In the maternity the doctors told me to feed every three hours on schedule, but I did not listen and I feed on demand."*

Of all groups (mothers, grandmothers, fathers, physicians, and nurses) grandmothers of all nationalities tend to have the greatest amount of correct information on breastfeeding. Uzbek grandmothers are especially forceful in their promotion of exclusive and on-demand breastfeeding, although some say that an infant should feed exclusively beyond the optimal four to six months. *"You shouldn't give water to a child. Only when he's one year old you should give him porridge, milk, and cherries. ... My mother-in-law told me to take my child into my bed and keep him with me at night and then I will be kind. She said the words were written in the Koran. And now I repeat all those words to my own daughter-in-law."* A young Russian mother who would like to begin giving supplementary liquids and foods to her six-week old baby girl says that her mother-in-law *"tells me to breastfeed: don't use supplementary food. If she wants to suckle, let her suckle as long as she wants. Don't stop her."* An urban Kazakh grandmother counsels her daughter-in-law, *"I recommend not to stick to the schedule. My daughter-in-law follows my advice. I think [my daughter-in-law] should breastfeed for one and a half to two years ..."*

Husbands are very supportive of breastfeeding and feel it an integral part of motherhood, but do not have specific advice. *"If she wants to be a real mother she will breastfeed."* Another: *"I feel joy when my wife breastfeeds. I feel that my child is being fed the way a child should be. ... When the baby cries I play songs for her and give her to my wife to breastfeed. My baby likes to listen to Bach."* A few participate in devising "solutions" to breastfeeding problems, such as one who thought of mixing penicillin powder mixed with Vaseline to soothe his wife's sore nipples. Occasionally a husband is not supportive of breastfeeding. One suffered the consequences, *"My husband brought home some formula, but I shouted at him, 'You can eat it yourself; I'm going to breastfeed the baby!'"*



## ■ ■ Program Implications

- Since grandmothers have a strong influence on mothers and offer good advice, the grandmother should feature prominently as a good source of advice and support for breastfeeding. Messages should be developed for grandmothers on optimal breastfeeding practices, emphasizing that these practices follow the wisdom of tradition.
- Television, as well as print materials, might be good channels for messages by grandmothers.
- Experienced mothers who believe they do not require any further information may need to be targeted specially, i.e. the program may need to develop separate materials for new and for "experienced" mothers.
- Fathers' general support for breastfeeding should be reinforced and specific, culturally acceptable ways that fathers can support mothers defined. Correct information on the solution of problems can become part of the messages directed to husbands.

### *Print Materials*

Kazakhstan is a reading culture. Literacy is nearly universal and people are influenced by what they read. Many mothers consult books on child care. Although Dr. Spock is the most frequently mentioned author, there are many books and brochures available that contain information on infant feeding. Books and brochures published in the former Soviet Union generally adhere to the old medical recommendations. The presence of old print materials that mothers refer to and use to guide their behavior can sabotage attempts to introduce better breastfeeding practices. In the only maternity where mothers are encouraged to breastfeed exclusively on demand and receive up-to-date information, one mother plans to give the baby water when she returns home because *"it was written in books. I read a lot of literature during my pregnancy."* Another mother plans to feed on schedule: *"It is my second child so I have some experience. I follow my relative's advice and I have a brochure on child care ... there is a scheme for feeding babies on schedule [in the brochure]."*

## ■ ■ Program Implications

- New brochures on optimal breastfeeding practices should be developed for mothers to facilitate introduction of the new policy. It should be clear that this is the most up-to-date material.
- Key books on breastfeeding, especially practical guides for mothers, should be translated into Russian.
- A variety of new materials should be developed and advertised on television and radio and in newspapers. Advertising should emphasize that the information in the new brochures, etc. is based on the latest information, is specific to Kazakhstan, and replaces old, outmoded information previously available. Popular formats such as articles in the newspapers, etc. should be sought.
- Libraries should begin replacing outdated literature on infant feeding with the new materials.



### *Physicians and Nurses as Sources of Advice*

A significant minority of mothers ask physicians about breastfeeding problems. Many other mothers have a negative attitude toward physicians that in extreme cases borders on contempt. The way women feel they have been treated by physicians and the advice physicians give them on breastfeeding or other matters lead mothers to ignore physicians' directions. *"We listen to the physician. He takes [the baby's] weight. But we do everything by ourselves [i.e., make all decisions]."* Mothers do not ask nurses for advice very often, but when nurses' give advice, they are as likely to be ignored as physicians. *"The nurse advised me to breastfeed on schedule. I listened politely, but I do what I think is best."*

In Kazakhstan, it is possible for many to achieve a high level of education since access is equal for all. Therefore, there are many physicians, and the friends and relatives of many mothers include physicians. Mothers tend to listen to these physicians more than to their own pediatricians. Unfortunately, not all physician friends who give advice are pediatricians, and these other physicians are not trained in infant feeding.

#### ■ ■ Program Implications

- The medical curriculum needs to be updated to reflect current scientific information. An expeditious and cost-effective way of developing a curriculum would be to have the Wellstart 18-hour course translated into Russian and then have a local committee review and adapt it with a technical expert.
- Physicians and nurses in maternities and polyclinics should be thoroughly trained in the new policy and the scientific bases of its recommendations. The Ministry of Health and Institute of Nutrition should also assure that the text of the new policy appears in professional medical journals of all medical specialties.
- Training for medical personnel should include skills in communication and counseling, and should encourage a client-centered approach.

### *Radio and Television*

The mass media have nearly universal reach in Kazakhstan. Not everyone has a radio, but virtually everyone has a television. Although almost every family owns a television, it appears that little time is spent watching it. Most mothers watch one or two programs on television. Some mothers and fathers say they are too busy to watch television. Grandmothers and great grandmothers, if they are older, spend much of their time tending to grandchildren and watching television. They share information from television, as well as information they derive from reading, with daughters and daughters-in-law. It also appears that radio listenership is limited. Most mothers do not listen to the radio, but some keep it on all day as background to their work.

Television is publicly controlled. The local presentation style is fairly stilted and "top down."



Mothers say they prefer news and "entertainment programs." Both mothers and fathers say they watch "Your Family Doctor." Mothers and fathers complain about the lack of programming on children's health. *"There are many programs about older children, but nothing about babies."* *"We need good information. Why isn't there good information on all problems so young people will know what to do?"* The stated preference for health programs may, however, be due to the fact that the interview was addressing health topics.

#### ■ ■ Program Implications

- Both radio and television provide good channels access into the home. However, more information on listenership and viewership should be obtained.
- Television is a good channel for reaching grandmothers, who provide most of the advice on infant feeding and who have time to watch television.
- Even though current interest in television appears to be limited, this may be due to the types of programs available and the way that information is presented. Training for local media persons in how to produce engaging, informative, and motivational TV spots and programs based on qualitative research results is likely to have a significant impact.



## ANNEX A: BIBLIOGRAPHY

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## **ANNEX B: CHARACTERISTICS OF RESEARCH SITES**



**TABLE B-I  
DEMOGRAPHIC CHARACTERISTICS OF RESEARCH SITES**

	Population TOTAL	Urban	%	Rural	%
Republic of Kazakhstan Oblasts	16,853,400	9,504,600	56.4%	7,348,800	43.6
Kokshetau Oblast	668,000	260,400	39%	407,600	61%
Kokshetau- Izuchinsky District	95,245	56,100	-	39,145	-
Kokshetau- Zerendinsky District	30,150	not available	-	not available	-
South Kazakhstan Oblast	1,955,000	768,200	39.3%	1,186,800	60.7 %
Kyzyl-Orda Oblast	603,000	363,400	60.3%	239,600	39.7 %
Syr-Darinsky District					
Almaty	1,170,400	1,170,400	100%	NA	NA



TABLE B-II

	Children 0-14 years	Infants 0-1 year	Women of Reproductive Age	Infants 0-1 year (in 1992)
Republic of Kazakhstan Oblasts	5,332,700	288,576	4,224,900	303,989
Kokshetau Oblast	205,400	10,149	160,200	11,029
Kokshetau- Izuchinsky District	24,915	1,033	-	-
Kokshetau- Zerendinsky District	9,283	460	-	-
South Kazakhstan Oblast	744,300	48,339	451,600	52,850
Kyzyl-Orda Oblast Syr-Darinsky District	242,700	15,001	138,700	14,340
Almaty	268,100	13,061	347,800	13,732



TABLE B-III

	Death Rate (number of deaths per 1,000 population on April 1, 1994)	Infant mortality during the first three months of 1994 (absolute number)	Infant mortality rate during the first three months of 1994
Republic of Kazakhstan Oblasts	9.2	2,094	26.6
Kokshetau Oblast	9.7	68	24.5
South Kazakhstan Oblast	7.5	346	24.3
Kyzl-Orda Oblast Syr-Darinsky District	8.1	132	29.3
Almaty	10.9	66	19.5



## ANNEX C: ILLUSTRATIVE CASE HISTORIES

### **Advice from acquaintances and relatives who are physicians**

☛ A 19-year-old first-time mother has a six-month old baby boy. She breastfed her son until he was nearly three months old. When she breastfed, she alternated giving the baby her breast for one feeding and expressing her milk and giving it to her son in a bottle because he preferred milk in a bottle.

From birth to two months, the mother fed the baby on a schedule, but the baby was so fussy that the mother sometimes broke the schedule. Since the baby was fussy, the mother thought her son was "overnourished." She mentioned the baby's problem to an acquaintance who is a pediatrician. The mother told her acquaintance that the baby had bowel movements seven to eight times a day. The acquaintance responded that the baby was overfed and recommended putting the infant on a diet.

When the baby was two and-a-half months old, the mother put him on a three-day diet. She gave the baby only expressed milk beginning with 20 milliliters per feeding. She adhered strictly to the schedule of only feeding the baby every three-and-a-half hours with no feedings at night. Gradually, over three days she increased the breast milk per feeding to 100 milliliters. In alternate intervals between feedings, she gave the baby salt water or water sweetened with sugar. After this diet the mother had no milk at all, but she was satisfied because her baby only had bowel movements three times per day.

☛ A grandmother has a six-month-old grandson. The grandmother is a physician specializing in biochemistry. She sees the baby's mother (her daughter-in-law) every other day and gives advice freely on infant care and feeding. She advises her daughter-in-law to feed her baby on demand, "but you should go through this yourself in order to understand everything in detail." She counsels her daughter-in-law to let the baby suckle as much as he wants and not to follow the schedule the daughter-in-law was given by her pediatricians. "I think there should be no schedules because each child makes his own schedule."

### **First child fed on schedule, subsequent children fed on demand**

☛ A 33-year-old mother of two fed her first child on schedule. She breastfed the baby for three months, but the child was very thin and cried a good deal. Doctors recommended supplementing with kefir (a yogurt-like drink). When the child began eating kefir from a bottle he refused the breast, so she breastfed him only once a day after that. Reflecting on her experience, the mother concluded that her baby "had cried all the time because he was hungry." She decided to feed her second child, now about three months old, on demand, "everything she wants, she gets."



### **Grandmothers' influence**

☛ A 56-year-old Kazakh grandmother lives with her sons, two daughters-in-law, and their children. Her youngest grandchild is six months old. She advises her daughter-in-law about breastfeeding. When her daughter-in-law returned home after giving birth, she gave the new mother butter with pot cheese because it is very healthy for mothers. New mothers who eat this will have a lot of strength and will quickly recover after delivery. She tells her daughter-in-law that she should start giving the baby water only after five or six months. She says that she herself fed her own children only breast milk until they were one year old, then she gradually added other foods.

When her daughter-in-law had mastitis while breastfeeding her first child, she took her to visit an old man in another village. The man is a folk healer who has a good reputation. During the three days they stayed with the old man, the man massaged the daughter-in-law's breast and recited incantations. The daughter-in-law was told to express her milk in the affected breast and to feed her baby with the other breast. After three days the daughter-in-law's mastitis was cured and the mother-in-law brought her home.

### **Insufficient milk**

☛ The mother of a seven-month-old son had read two books on child care and tried to follow all the advice, but found she could not breastfeed on schedule, so she breastfed on demand. She began giving apple juice when her baby was one month old. She started other juice at one-and-a-half months. At two months she started giving the baby apple puree on the advice of a nurse. At four-and-a-half months she started giving porridge because the baby was fussy right after breastfeeding. She thought he was undernourished because she had insufficient milk. She tried massaging her breasts and taking a traditional herbal remedy, but nothing helped. She still had insufficient milk.

☛ Another mother of a seven-month-old son breastfeeds on demand. She never gave the baby water because he has never liked it. She started giving the baby juice and puree, on the advice of her pediatrician, when her son was three months old. She experienced insufficient milk shortly afterwards. She knew she had insufficient milk because the baby was very fussy. She thinks she did not have much milk because she wasn't eating very much back then. The doctors advised her to give the baby formula, but the baby refused it, so she continues to breastfeed her son.

## **ANNEX D: STRUCTURE OF MATERNAL-CHILD HEALTH SYSTEM**

### **Ministry of Health of the Republic of Kazakhstan**

Scientific Research Institute of Pediatrics

Republican Scientific Research Center  
of Mother and Child Health Protection

Children's Republican Clinical Hospitals

Children's Republican Sanitorium  
"Ala-Tau"

### **Oblast Health Department**

City Health Department  
(cities of Almaty and Leninsk)

Oblast Children's Hospitals

City Children's Hospital-Preventive

Oblast Maternities

Establishments and City Maternities

Children's Sanitoria

Perinatal Centers

Orphanages

### **Central District Hospitals**

Village Rural Hospitals

Village Medical Dispensaries

Feldcher-Midwifery Posts

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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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