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Nutrition, Breast-Feeding and Ethnicity: Cultural Considerations for Preventing and Reducing Infant Mortality Among Recent Immigrants to Boston

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Nutrition, Breastfeeding, and Ethnicity:

Cultural Considerations for Preventing and Reducing

Infant Mortality Among Recent Immigrants to Boston

OVERVIEW OF THE PROBLEM

Meeting the special health needs of recent immigrants and refugees, and of other minorities, presents new demands and poses new challenges to the American health system. If the system is to respond to meet these needs, it must remove institutional barriers by becoming culturally literate about the ethnic diversity and variations of newcomer consumers through knowledge, information, and education. And, it must willingly take culture and ethnicity into account by translating established treatment protocols and strategies into appropriate, culturally syntonic practices, services, and policies. To do otherwise, either by design or default, severely compromises the ultimate effectiveness and efficacy of the delivery system, diminishes the quality of care to consumers, and jeopardizes the well-being of the immediate as well as the larger community.

There is much documentation to support the imperative to translate cultural considerations into clinical practice. Ample evidence teaches us that culture can affect the health of patients in ways that are not always easy to understand. Beliefs about causes of illness, ways to cure illness, family dynamics, religious beliefs, the use of non-Western methods of relief and cure, patient expectations of roles in the therapeutic process--are just some of the factors that enter into the alliance between the patient, the

provider, and the system (Kristal, et. al., 1983; Griffith, 1982; Kaplan, et. al., 1977). Therefore, it is both desirable and appropriate to institute special programs and services targeted to recent immigrants. And, indeed, there is historical precedence for such efforts. In the past, large influxes of immigrants into this country have led to major changes in the health care delivery system (Yankhauer, 1983)

Historically, immigrant populations have constituted a highly susceptible, highly vulnerable, high risk group for adverse health and social consequences and attendant problems. Women, as the primary agents of socialization, and children, as the primary recipients of the socialization process, bear a disproportionate share of the burden of assimilation and integration into the new society and surrounding. Similarly, they are disproportionately exposed to serious health hazards, as evidenced in the substantial disparities between the health status of immigrant women and children and the general population.

Yet, despite wide differentials and inordinate needs, these highly vulnerable groups receive less effective, less efficacious health care than majority groups. Although considerable progress has been made in recent years to lessen disparities and correct differentials, children who are born to mothers who are poor, non-white, non-English-speaking or who are minorities, minority immigrants or refugees, are at greatest risk for health deficits (Binkin, et.al., 1985; Egbuonu, et. al., 1982; Gortmaker, 1979).

Studies show that immigrant and minority mothers are more likely to exhibit higher, disproportionate maternal risk factors such as: poor

nutrition status, maternal morbidity and infection, lack of prenatal and overall medical care, greater exposure to occupational diseases and health hazards due to poor environmental and living conditions and substandard housing. They are also more likely to experience the adverse social consequences of low educational attainment, low income, low paying occupations, maternal mortality (Aykroyd, 1971; Egbuonu, et. al., 1982; Gortmaker, 1979). And, as would be expected, children born to immigrant or minority mothers are more likely to exhibit higher, more disproportionate infant risk factors such as: low birthweight, prematurity, morbidity, birth abnormalities, and failure to thrive (Binkin, et. al.; Egbuonu, et.,al; Gortmaker, 1979; Malina, et. al., 1980).

In light of these circumstances and inasmuch as maternal and infant risk factors, are sensitive indicators of individual, family, and community health status, the imperative to respond to issues of maternal and infant health among immigrant populations is clear. Moreover, the health care system, like other institutions of society, must reflect the pluralism and diversity of the nation and must move to elevate the health status of all its peoples.

One way to address concerns about maternal and infant health deficits among immigrant groups, specifically birth outcomes and in particular the infant mortality rate (IMR=number of infant deaths per 1000 live births) low birthweight (LBW=under 2500 grams or 5.5 pounds at birth), is to improve the nutrition status of mothers before, during, and after pregnancy, and thereby the fetus during gestation, the newborn during the critical first year of life as well as the child during the formative years. Another way is to encourage and promote the practice of breastfeeding among immigrant mothers.

To investigate these issues, the following discussion will: 1) describe birth outcomes among high-risk minority and recent immigrant mothers and children in Boston and examine the significance and implications of race, ethnicity and culture on infant mortality, low birthweight, maternal and infant nutrition and breast feeding; 2) discuss the role and influence of traditional and folk health belief systems regarding these issues; 3) examine relevant nutrition services, programs, policies, and policy implications with particular emphasis on the Women, Infants and Children program (WIC) and the need to encourage and promote breastfeeding as a low-cost, high pay-off measure to prevent, combat, and improve birth outcomes of mothers and children.

POPULATIONS AT RISK

While American blacks remain the largest of the "old" indigenous minority groups in Boston, in recent years, there has been dramatic growth in the Hispanic and Asian populations. For example, only a decade ago, minority groups were only one-fifth of Boston residents. At present, minorities are approximately one-third of the total city population: 22.4 percent of Bostonians are black, 6.4 percent are Hispanic, 2.7 percent are Asian (Boston Globe Magazine, 1/84). Since 1980, this Hispanic population, the majority of whom are Puerto Rican, has more than doubled; the Asian population, the majority of whom are Chinese, has increased by 84 percent (Advance Report Mass, 6/86). Much of this increase is attributable to the influx of refugees and immigrants from Southeast Asia (Viet Nam, Cambodia, Laos), Haiti, Central

America (El Salvador, Nicaragua, Guatemala, Honduras, and others), and various countries of South America and the Caribbean.

Between 1976 and 1985, Boston became home to over 7,000 Southeast Asian refugees who resettled here after the war. More difficult to enumerate are the numbers of immigrants, both legal and unregistered, residing in the city. Many of these individuals, often of dubious legal status, have come to the area to escape and seek sanctuary from civil war and repressive governments. Though no accurate figures are available, estimates place their numbers in the thousands: approximately 14,000 Haitians, 17,000 South and Central Americans (Mass. ORR Status Report, 6/84).

Despite the fact that Boston is home to the most sophisticated, technologically advanced, comprehensive health services available and that Boston is one of the world's leading centers for the care of high risk newborns, close scrutiny of the incidence and prevalence of infant mortality reveals a problematic picture of inequity and unevenness in health care delivery by ethnicity, by economic and social status and by neighborhood of residence (Wide, et. al., 1985). Children of color have a substantially higher chance of dying in the first year of life, and an even greater likelihood of dying in the first 28 days of life than their white counterparts (BDHH Health Perspectives, 1985).

Examination of the data on the distribution of infant mortality shows that while Massachusetts has the lowest fertility rate in the country (1,680 children per 1,000) (Shortridge, 1987) and the state infant mortality rate is generally lower than those of other states and the nation (Shortridge, 1987), there is an almost three-fold difference between the commonwealth's wealthiest

and poorest towns (Population Bulletin, 1982). Rates of infant mortality in Massachusetts' poorest communities are comparable to those of developing countries such as Costa Rica, Trinidad, and Portugal, and slightly worse than those of Jamaica, Greece, and Cuba (Health, U.S., 1983, U.S. Dept. of HHSS,PHS).

Moreover, between 1984 and 1985, among all infants born in the City of Boston, there was a marked increase of 32 percent in the proportion who died before their first birthday-65 percent of whom were non-white, 42% in Roxbury alone. (BDHH Health Perspectives, 1985). Comparable pockets of high infant mortality are found among minority populations in the Boston neighborhoods of South and North Dorchester, the South End, and Mattapan. In the Mission Hill community, the black infant mortality rate during 1980-84 was 29.1 deaths per 1000 live births, significantly higher than the city-wide rate (BDHH Health Perspectives, 1985).

An even starker picture emerges when we focus on infants who die in the first 28 days of life (Neonatality rate). In Massachusetts, in 1985, of 81,776 live births, 747 died before their first birthday, an alarming 536 (72.2 percent) within the first 28 days (Mass DPH, 1987). In Boston, in 1985, of 8,917 live births, 138 died before their first birthday, an alarming 101 (73.1 percent) within their first 28 days (BDHH Health Perspectives, 1985). Thus, state and Boston neonatality rates tend to mirror each other.

It is a disturbing and unacceptable fact that 18 percent of Massachusetts infant deaths occurred in the city of Boston - 13 percent of the state total occurred in the aforementioned neighborhoods; 70 percent of the city total in these neighborhoods; and 20 percent of neonatal deaths in these

neighborhoods (Mass. DPH, 1987). Similarly, although the etiology and nature of low birthweight is not completely known or understood, there is abundant evidence that LBW is a prime determinant of infant mortality; that the same risk factors for LBW are identical to those for infant mortality; and that these same risks are even more severe for neonatal mortality (Binkin, et. al., 1985; Parreth, et. al., 1987; Gortmaker, 1979). The overwhelming majority of low weight births occur in poor neighborhoods to poor minority women (BDHH Health Perspectives, 1985).

Nationally, approximately 7 percent of all babies are born at LBW--the rate is almost twice as high for blacks (Binkin, et. al., 19885). Moreover, approximately two-thirds of infants who die are LBW; a LBW infant has half the chance of survival of a normal birthweight infant; is 50 times more likely to die in the first year; is 3 times more likely to suffer from a panoply of adverse consequences whose sequelae may cause lasting impairments.

Locally, in 1984, of 788 low weight births, 357 were to black women, 247 to white women, 75 to Hispanic woman, 41 to "others." Indeed, 12.5 percent of all births to black women were LBW, twice the percentage of 6.2 to white women, and nearly half (45.3%) of the citywide total. Altogether, 502 births, an alarming 63.7 percent, were to residents of poor neighborhoods (BDHH Health Perspectives, 1985).

Clearly, these figures demonstrate the urgency to target efforts to prevent and reduce LBW to residents of high risk neighborhoods.

THE SIGNIFICANCE OF NUTRITION AND BREASTFEEDING

Improvement in maternal nutrition decreases both the frequency of LBWs and perinatal mortality. There is much evidence that the fetus is sensitive

to the pre-pregnancy and gestational nutrition of the mother (Wittenberg, 1983); and that maternal under-nutrition and malnutrition in pre-pregnancy and during pregnancy significantly affects birthweights not only of the newborn, but the health of the infant up to 6 to 9 months of age as well as the nutritional health of the child during that critical transition to preschool up to age three years. (Whittenberg, 1983; Jelliffe and Jelliffe, 1981).

A liberal, nutritional diet in pregnancy is mutually beneficial to both mother and fetus. As mentioned, it lowers the risk of small size infants resulting from fetal malnutrition; increases the levels of fetal stores of nutrients such as vitamin A in the liver in that nutrient needs are mainly obtained from fetal stores; ensures that optimal nutrient stores in both the fetus and the mother; and lays down adequate lactation reserves in pregnancy in the form of fat needed as a major source of calories and fatty acids and subsequent breast milk production (Jelliffe and Jelliffe, 1981).

Breastfeeding can best be understood as nutritional, psychological, biological interaction and communication between mother and offspring, with each affecting the other (Jelliffe and Jelliffe, 1981). While the dyadic link, both transplacentally and in breast milk, between mother and fetus would appear to be biologically obvious, much of the practical significance and mutually beneficial nature of the breastfeeding process is still under-appreciated (Jelliffe and Jelliffe, 1981; Jelliffe and Jelliffe, 1984). The newborn can be thought of as an external fetus with the breast taking the place of the placenta as the primary source for meeting the food and nutrition needs of the infant (Jelliffe and Jelliffe, 1981). Indeed, the complex, species-specific nature of the nutritional and immunologic components of

breast milk are uniquely suited to meet the changing needs of the infant and are impossible to duplicate (Jelliffe and Jelliffe, 1981; Newton, 1967).

Furthermore, there is no way to replicate the ever-changing physiologic, psychological and developmental interaction which occurs between the nursing mother and her offspring (Jelliffe and Jelliffe, 1981). It is also true that the superiority of human milk and breastfeeding over formula and bottle-feeding applies to rich and poor families alike and persists whether the family lives in a wealthy community or a poor inner-city neighborhood (Mohner, 1979). Even though, until recently, the relative consequences of the two methods of feeding were considered to be of no real importance in urban societies, we now know that without question, the public health significance of breastfeeding and of human milk is greatest and has the potential for the greatest good in poor urban communities (Mohner, 1979; Bryant, 1982; Rassin, et.al., 1984.)

However, despite the resurgence of the practice of breastfeeding among United States women in recent years, blacks and other women of color are still less likely to breastfeed their infants than white women (Rassin, et. al, 1984).

By 1981, 57.6% of American newborns were reported to be breastfed when discharged from the nursery (Martinez, 1981) and the trend is that more mothers are continuing to breastfeed for as long as 6 months (Hirshman, 1981). However, this increase is not particularly evident in lower socioeconomic groups and in women of color (Rassin, 1984). For example, one study shows wide differentials in breastfeeding practices between ethnic groups - 43.5 percent for whites; 9.2 percent for blacks; 22.6 percent for Hispanics;

42.1 percent for others (Rassin, 1984). Another study showed a variance which was not as great - "Blacks were less likely to breastfeed than whites by 21 percent and 26.8 percent respectively" (Kowlessar, 1986).

Research on patterns of breastfeeding among immigrant women indicates striking urban-rural differences in the number of women who breastfeed, the duration of breastfeeding, and child's age at weaning (Graitcer, et.al., 1984). It appears that the abandonment of breastfeeding is principally an urban phenomenon, often not so much because urban mothers work as because bottle-feeding is one of the sophistications of city life the immigrant adopts. The case of Haitian migration as described in a study by Graitcer, et.al. (1984) is illustrative of this point. The study found that in the rural areas of Haiti almost all mothers breast feed their children up to 12 months, but in Port-au-Prince nearly 23 percent have stopped breast feeding before one year of age. Younger women in both urban and rural areas wean their children earlier than do older women. Nearly 10 percent of urban women living with their children never begin to breast feed their children and women in urban areas are more likely to wean children before one year or never begin breastfeeding compared to rural women. There is little difference in the weaning age of male and female children in both rural areas and in Port-au-Prince.

Likewise, data on Southeast Asian women shows that infants tend to be weaned early from breast to formula. This practice is partly due to the mother's need to leave the home and partly due to the higher status associated with formula (Wadd, 1983; Waldman, 1979; Groppo, 1981).

It is a disquieting trend that the use of powdered milk and bottles is becoming increasingly widespread among immigrant women with often disastrous results for infant health such as problems associated with nursing bottle syndrome - severe dental caries, oral malocclusions, nutrient deficiencies.

Breastfeeding is indeed a precious family, community and national resource and should be aggressively promoted. The promotion of breastfeeding is, of course, a multifaceted process, but in addition to the need for aggressive programmatic services and activities designed to inform, educate and advocate breastfeeding to health workers and health care institutions as well as public policy makers. Providers and facilities must modify attitudes, approaches, practices and policies to recognize and respond to this special need of this special population and make the promotion of breastfeeding an integral component of their maternal and infant health ideology.

For example, the results of a 1986 survey conducted in Boston area hospitals are troubling and telling. The findings showed that"...15 of 28 area hospitals routinely distribute formula milk gift packets to all new mothers, including those mothers who intend to breastfeed."

The results of another study conducted at Boston City Hospital and reported in the April, 1986 edition of the <u>American Journal of Diseases of Children</u> were equally disturbing and alarming. The study showed that women who were given commercial packets of formula were less likely to breastfeed, regardless of their intent when they first entered the hospital, than women who were given non-commercial packets containing breast pads and health education pamphlets which unequivocably advocated breastfeeding upon discharge. In addition, the study found that when lactation bedside

counseling supplemented the non-commercial packets, and there was follow-up telephone counseling after discharge accompanied by encouragement and support of the decision to breastfeed, the likelihood that mothers will begin and continue to breastfeed is even greater.

Social support from key, influential people, family members, and friends can be important in a woman's decision to begin and continue breastfeeding, and has implications for programs and policies. A study which examined the influence of social support systems and the decision to breastfeed found that among Anglo-American mothers, the male partner is clearly the single most important source of support in promoting breastfeeding. Support from a best friend was influential, but not as influential as the male partner (Baranowski et.al., 1983). Whereas, among Black-Americans, the most influential person was the best friend. The male partner had little influence among Mexican-American families, the mother of the birthing mother was the primary source of social support for breastfeeding. The male partner has less influence (Baranowski, et.al., 1983).

Reaching key, influential people in the support system can have implications for devising programs and services to promote and encourage breastfeeding among various ethnic groups. For example, programs targeted to Anglo-American families should include male partners; whereas programs targeted to blacks should involve female peers such as school, social or church groups. Groups which involve prospective grandmothers are good places to promote breastfeeding among Mexican-Americans.

Many myths, misconceptions, and superstitions have grown up around breastfeeding much of which has no basis in truth. For women who can

breastfeed, and who do decide and continue to breastfeed, there are decided advantages to both mother and infant. Among them are:

- o breastfeeding establishes a bond between mother and child
- o breastfeeding helps ward off or minimize postpartum depression
- o breastfeeding helps the uterus resume normal size and aids in the restoration of the figure
- o breast milk provides antibodies and friendly bacteria that helps babies resist infection and fortifies the immune system through the transfer of antibodies, hormones, enzymes and other biologic substances of unknown composition
- o breastfed babies have fewer illnesses and need to be hospitalized less often
- o breastfed babies are less likely to have allergies
- o breastfed babies are less likely to be fat in infancy and later on as well
- o breast milk is easily digested and contains the nutrients that babies need in the right proportions, is a steady and ready supply of sterile fluid of exactly the right composition and ideal temperature
- o breastfeeding aids in the mobility of mother and infant and obviates the need to tote extra baggage - bottles, formula, warming mixtures, etc.
- o breastfeeding is ecological and breast milk is a valuable natural resource

Nevertheless, notwithstanding the proven efficacy of breastfeeding, it is important to bear in mind that the practice is defined and shaped by cultural factors and must be translated and interpreted in terms of the individual's valuation of the experience which is deeply embedded in a complex family, social and cultural nexus. Because sex roles and states of being are an intimate part of the social systems of individuals, any manifestation of change take on meaning and rules of behavior and coping are strongly influenced by culture and are culturally constructed.

THE CULTURAL CONTEXT OF HEALTH AND NUTRITION

Understanding the cultural implications of illness and health care is even more important when dealing with new minority groups coming from cultures alien to traditional American health ideology than from indigenous minorities. Health care providers need to know not only about the health problems of immigrants that might be different from those they ordinarily encounter, but also be aware of the traditional health practices and cultural and religious beliefs of the immigrants and how these might affect their ability to receive and maintain care.

When a patient comes from a different country and culture, or social milieu, to effectively communicate with patients about their condition or illness or a treatment regimen, health workers must know something about how the patient conceives and conceptualizes their condition, its etiology, and therapeutics in general and develop a special understanding of the cultural constructs and context of traditional and folk beliefs and practices.

TRADITIONAL AND FOLK HEALTH BELIEF SYSTEMS

For many newcomers traditional and folk health belief systems and Western medicine are not mutually exclusive. For example, central to the folk systems of Latin America, Haiti, and Southeast Asia is the concept of humoral medicine which has its roots in Hippocratic, Western medicine. This is a belief system in which illnesses are classified as hot or cold. Food and medicine, also classified this way, are used to restore the natural balance in the body (Logan, 1975). Embodied in the concept of humoral medicine is the notion of health as a state of opposing forces - balance-imbalance, positive-negative,

male-female, hot-cold, Yin-Yang, there example in traditional Chinese medicine Wiese (1976) describes humoral medicine as follows:

> Although the particulars of humoral theory vary widely among various cultural groups, the underlying premise remains the same. The concept rest on the assumption that the elements exist naturally in a state of binary opposition and the effects of one element upon the other equalizes the valence of each. One common manifestation of humoral medicine is a hot/cold classification of foods. This classification does not depend on any physical property of heat or cold, but rather on an innate quality of that food to generate heat or cold on or within the body. The classification of foods is just one aspect of humoral medicine; the classification of body states and illnesses is another. Like that of foods, this system varies considerably among cultures. The premise upon which it is based, however, is the same: the equilibrium between hot and cold. Maintenance of health in such cultures is believed to depend upon meticulous care of this balance in everyday activities. Where these humoral classification systems intersect, they greatly affect behavior (Weise, 1976).

HUMORAL MEDICINE - "HOT and COLD"

In many Latin American cultures, the hot-cold (caliente-frio) dimension of the humoral concept dominates traditional medicine. Diseases are grouped into hot-cold classes, while medications and foods are trichotomized as hot, cold, or an intermediate category, "cool" (fresco) (Harwood, 1971). Cold classified illnesses are treated with hot medicines and foods, while hot illnesses are treated with cold or cool substances thought to neutralize them. Although the terminology of the hot-cold system suggests that it is based on temperature, the thermal state in which food or herbal medicines are taken is not relevant to the classification scheme (Logan, 1973; Logan, 1975) when new foods are introduced into the diet or medications prescribed, they are incorporated into the hot-cold system according to the effect they have on the body (Logan, 1975).

The hot-cold classification has implications for maternal and infant health care. For example, during pregnancy a woman is careful to avoid hot foods or medications to prevent her baby from being born with an "irritation" (a rash or red skin). An important consequence of the avoidance of hot substances during pregnancy is that many women will not take "hot" iron supplements or vitamins. However, to "cool" or neutralize these "hot" medicines women can be encouraged to take them with fruit juices or herbal teas (Harwood, 1971; Logan, 1975). Another example of food avoidance concerns post-partum practices. Harwood reports (1971) that, "Many women avoid eating cool foods after delivery on the ground that they impede the flow of blood and therefore prevent complete emptying of the uterus and birth canal."

As discussed previously, like the majority of other minority mothers, Hispanic mothers tend not to breastfeed. Therefore, perhaps the most important implication of the hot-cold system concerns the feeding of infants and the use of commercial formula. Evaporated milk, the formula base usually recommended to mothers upon leaving the hospital, is considered a hot food whereas whole milk is considered cool. Because "hot" evaporated milk is thought to cause rashes in the infant, mothers prefer to feed their infants "cool" whole milk and almost immediately begin the transition from evaporated milk to whole milk. This transition can be abrupt or gradual using cool substances such as barley water, magnesium carbonate and marnitol to supplement the formula and neutralize the effects of evaporated milk. Health workers should be alert to this practice because these neutralizing foods have a cathartic and diuretic effect when taken in insufficient quantity and may cause dehydration and diarrhea and other side effects in infants (Harwood, 1971).

Similarly, the hot(cho)-cold(fret) system is a salient feature of traditional medicine in Haitian culture (Laguerre, 1979; Wiese, 1976). In addition to being a classification system for illness, medications and cures, the system ascribes qualities of "light" and "heavy" to foods and the method of preparation affects food groupings (Wiese, 1976).

Similarly, according to Haitian tradition, there is a belief that not all foods are good at all times for the human body; the use of food must be in harmony with the individual life cycle. There are foods for babies, foods for adults, foods for menstruating women, foods for the sick, and foods for the elderly. Some foods are forbidden to people at different stages of the life cycle.

Pregnant women are particularly subject to food taboos or special food practices (Lagueine, 1979). They are permitted to "eat for two" (manger pour deux) and therefore gain considerable weight during pregnancy. They are also cautioned to avoid spices, but red fruits and vegetables (for example, beets, pomegranate) are thought to build up the baby's blood.

Other examples of food taboos relative to maternal and infant nutrition are: eating "cool" tomatoes or white beans after childbirth because they are believed to induce hemorrhage; the body of a woman is believed to be "hot" during the weeks after childbirth; lactating women are thought to be particularly susceptible to illness and any illness, it is believed, affects their milk in various ways; the milk of a lactating mother is believed to be stored in her breast, and the mother must eat very well to be able to produce healthy milk to her child; although breast milk is believed to be a nutrient for both mother and baby, it can also be detrimental to the health of both if

it is too "thin" or too "thick"; if milk is too thick, it is said to cause impetigo (bouton) in the child; breast milk can become thin when a mother is "frightened" which causes the milk to move to her head causing acute headaches or postpartum depression in the mother and diarrhea in the baby (Laguerre, 1979).

Again, among Southeast Asian cultures, the humoral notion is evidenced in the concept of Yang-Yin which postulates that the universe, and consequently a human being is made of two opposing forces: male, positive energy or Yang that produces light, warmth, dryness and fullness; and Yin, or female negative energy that produces darkness, cold, wetness, and emptiness (Mandenson, et.al, 1981). In that the causes of an illness or imbalance are attributed to metaphysical forces, hot and cold theory becomes a factor in the belief system.

Therapeutic adjustment of the diet requires consideration of the hot-cold natures of food, cooking methods, and the nature of the illness. Although among Oriental cultures, the notion of hot-cold is similar to the aforementioned groups, it is more difficult to decipher and translate with precision. However, in general, most fruits and vegetables, along with fish, duck, and other things that grow in water are considered "cold"; and most meats, sweets, coffee, and spicy condiments such as garlic, ginger and onion, are "hot". "Hot" foods and beverages are believed to replace and strengthen one's blood; therefore, after surgery of childbirth, "hot" drinks are preferred, and cold drinks, jello and juices are avoided (Muecke, 1983). Pregnant women are encouraged to eat special herbs and foods to insure the baby's health as well as her own. Various "health" foods are carefully

prepared and provided for the mother. One such health food is ginseng herb which is taken and believed to be a general strength tonic for the expectant mother and the postpartum mother (Chung, 1977).

ORTHODOX RELIGIONS

Related and intertwined into the health belief system are traditional and religious beliefs and practices. Often there is no clear distinction between orthodox religion, folk religion, folk healing, and Western medicine.

For example, although Catholicism is the predominate official religion of Haiti, at the same time, many Catholic Haitians strongly hold and combine the beliefs and practices of Vodum (voodoo), a complex system of beliefs and rituals derived from African traditions, with Catholicism and experience no contradiction in the practice of both systems. Moreover, the distinction between physical and spiritual healing is not fully drawn. Disease and illness are frequently attributed to supernatural causes and possession by spirits (mystere). Therapeutics and cures may be sought singularly or in combination from parish priests, voduum priests (Houngon) and priestesses (Mambo), spiritual doctors, healers, readers, or diviners, as well as Western medical doctors (Laguerre, 1981).

Catholicism in Latin American cultures combines with traditional healing systems. Depending upon the nationality and ethnic group, the folk healing system includes the practice of Espiritismo, a religious cult of European origin based an ethical code which is concerned with communication with spirits and the purification of the soul through moral behavior (Scott, 1974); Santeria, a blend of African beliefs and Catholic practices which unlike

Espiritismo takes no moral position. The leader or santero, works solely on behalf of the practitioner of the faith and his activity can be beneficial, of no import, or harmful to others (Scott, 1974).

Less familiar are the non-Christian, non-Western religions prevalent in Asian cultures where conversion to Christianity has been minimal. The majority of Southeast Asians identify with the orthodox religious indigenous to Oriental cultures which are briefly described along with their implications for health beliefs:

> Buddhism, the main religion of Southeast Asia, is much less a matter of organized and institutional orthodoxy than a state of mind. Buddhism teaches that life is suffering; suffering is a reality of life; suffering can be accepted as a divine punishment for wrongdoing and therefore is not universally accepted as a symptom of disease. Adherence to this belief system can lead to undue delay in seeking medical care.
>
> Confucianism is a code of ethics emphasizing hierarchy in society and stressing the worship of ancestors. The opinion of the older member of the family is sought in making decisions about medical care.
>
> Taoism or Naturalism advocates taking no unnatural action to achieve conformity to the "TAO" or the creative principle that orders the physical universe. When things are allowed to take their natural course, they move toward perfection and harmony. This belief reinforces passivity and procrastination in seeking medical care.
>
> Animistic Belief, most commonly practiced by the hill tribes of Laos, who believe in gods, demons and evil spirits as a way of life and that they must communicate with the spirits of deceased ancestors to obtain their beneficial protection. When illness occurs, cures are sought through the rituals of the shaman or by wearing symbolic objects on the body to ward off harmful spirits.

It should be noted that within each of these major religions, there is much variation and diversity. As well, these variations occur in different forms among and between nationalities, ethnic groups and within each ethnic group of Southeast Asia (Groppo, et.al., 1981; Manderson, et.al. 1981, Wadd, 1983).

Given the foregoing illustrations of how religion, food and health are inextricably related, it becomes clear that the food habits of any group of people must be seen systematically as an integral part of their social matrix. Moreover, it is important to recognize that in almost every society there is close connection between food and religion, food as an object of religious symbolism, food and the body as it relates to states of health, food as it is interpreted through the disciplines of medicine and nutrition. And, while people bring their food habits with them when they move from one country and culture to another their eating patterns are inevitably disturbed. This is especially true when the countries are as different as the United States and the countries of Southeast Asia, Haiti, and South and Central America in cultural climate and the availability of foodstuffs; and in ways of preparing, purchasing, and storing food, and so forth. In addition, factors such as taste, smell, and appearance strongly influence the acceptability of new foods, but what is more important is the degree to which new foods are introduced and assimilated and can fit into traditional eating habits (Carlson, et.al., 1982; Logan, 1973; Hargreaves, 1983).

There is substantial evidence that immigrants and refugees are in general more likely to suffer from deficits in nutrition status and studies further suggest that the adverse effects of inadequate nutrition are intergenerational (Aykroyd, 1971; Carlson, et.al., 1982; Greener, et.al., 1981; Harwood, 1982). Similarly, since food preferences are continued through generations, nutrition status likewise is a part of family history. Because, like other factors of culture, food, diet and eating habits are a learned way of life and are passed on from generation to generation, conditions fostered by six or eight

generations of inadequate diet cannot be remedied by the current generation of mothers although nutrition status can be improved and good nutrition does make a difference (Aykroyd, 1971).

For these reasons and many others, even under the most ideal circumstances, the changing of food ideology is made more difficult. Programmatic and policy initiatives designed to modify eating behavior often meet with resistance and frustration.

PROMOTING SOUND NUTRITION: RELEVANT SERVICES, PROGRAMS, POLICIES, POLICY IMPLICATIONS

Given the importance of nutrition status to maternal and infant health status and their direct correlation with infant birthweight, infant morbidity and mortality, it is unfortunate and shortsighted that nutrition services are almost never the central mission of an agency or program. Rather, in most cases, nutrition services are fragmented, under-staffed, inadequately funded and regarded as expendable and for the most part, are represented by a pot pourri of categorical programs which are rarely coordinated and integrated into total patient care. For example, in the majority of situations, nutrition programs such as the Women, Infants and Children (WIC) program have substituted for comprehensive nutrition services which should be offered by local health facilities and which should be a primary mission of these facilities. To view nutrition services as superfluous, expendable extras is not only wrong but represents false economics.

The WIC Program and Breastfeeding. The WIC program is the most important nutrition program targeted to and designed to serve mothers and

children during critical periods of growth and development. The program targets these groups because their socioeconomic status makes them more likely to develop nutritional deficiencies and they are particularly vulnerable to nutritional insult caused by insufficient or inappropriate food intake (Aykroyd, 19171).

To participate in the WIC program, federal legislation establishes two broad categories which individuals must meet in order to receive services: (1) eligibility criteria, (2) priority group system.

According to federal guidelines, to be eligible for WIC benefits, an applicant must meet the following four eligibility criteria:

1. Categorical Eligibility - pregnant, breast-feeding, or post partum woman; an infant to 1 year; a child up to 5 years.
2. Geographic Eligibility - must be a resident of Massachusetts
3. Income Eligibility - be living at less than 185% of poverty level
4. Nutritional Risk - be at nutritional risk as determined by a nutritionist.

In addition to the above eligibility criteria, the following priority system for serving target populations have been established:

1. Priority I Group - pregnant women, breast-feeding women, and infants at nutritional risk due to a nutrition-related medical condition demonstrated by hematological or anthropometric measurement.

2. Priority II Group - infants, not designated in Priority I Group, whose mothers were WIC participants during pregnancy, or whose medical records document that they were at nutritional risk during pregnancy.

3. Priority III Group - children at nutritional risk because of nutrition-related medical conditions.

4. Priority IV Group - children at nutritional risk because of inadequate dietary intake.

5. Priority V Group - post partum, non-breastfeeding women at nutritional risk.

The above criteria and priorities form the framework and policy structure of the WIC program. Yet, they do not reveal whether or not it accomplished tasks it was designed to accomplish.

For example, we know that good prenatal nutrition does not make a difference and that good maternal nutrition is a fundamental antecedent to sound infant nutrition and successful breastfeeding and acts as a hedge against low birth weight, infant mortality and morbidity (Wishnik, 1974). It is therefore in the best interest of all to develop strategies to alleviate, prevent and improve the nutrition status of mothers and infants and to maximize the impact of existing nutrition services and policies such as WIC.

However, despite the proven efficacy of the WIC program, findings of the 1983 Massachusetts Nutrition Survey showed that chronic malnutrition is a significant public health problem in low-income pre-school children in the state; and that a significant proportion of at-risk individuals who have been identified as income-eligible and nutritionally eligible are not receiving WIC services.

The survey reports figures which estimate that there were 191,000 Massachusetts residents financially eligible for WIC benefits. Available funding was adequate to serve only 40,000 WIC recipients which represented only 21% of eligible children. In spite of this, several Boston neighborhoods known to have high concentrations of eligible mothers and children, 5,000 WIC slots go unfilled.

Although the precise reasons for the under-utilization WIC is not clear, one possible explanation is that cut backs in the funding of the program have

seriously curtailed all aspects of the services. Federal funding levels must be re-established to allow for expansion of case loads to include and provide services to children at all priority levels. Resources must be provided which allow for aggressive out-reach activities to assure that all children who are financially eligible and have documented nutritional deficiencies are enrolled and receive services.

Another, more complex explanation for the under-utilization of WIC services may be that significant numbers of potentially eligible participants may be recent immigrants whose traditional diets and cultural beliefs may discourage participation and inhibit successful intervention of the WIC program.

For example, it is crucial to consider that the dietary restrictions imposed by traditional and cultural belief systems transcend all other barriers, even relocation into alien cultural settings. Considering the recent influx of large numbers of immigrants to Boston, an understanding of folk systems is invaluable to health workers working with nutritional problems of these groups. By failing to take into account the possible impact of folk systems on diet, any effort to combat these problems will meet with frustration and be ineffective.

Still another barrier to utilization is the way the WIC program is structured, the application procedures of the WIC program, and the WIC diet itself. The WIC diet is developed and based upon nutrient standards and requirements which meet the United States Department of Agriculture "Dietary Guidelines for Americans." It is conceptualized as four packages of

foodstuffs--one for pregnant women, one for postpartum and lactating women, one for infants up to 12 months, and one for children 1 to 5 years. Each package consists of designated, proscribed food groups and food combinations and food items for each category of individual - eggs, non-fortified cereals, fruit juices, peanut butter or dried peas/beans, milk, milk products, and milk substitutes for pregnant and lactating women and children 1 to 5 years; formula for newborn infants; cereal and juice for infants after four months.

In addition, each food item in the package is a designated type and/or brand name and must be purchased in specified quantities or weights. For example, participants can purchase only certain types of cheese - American, Brick, Colby, Cheddar, Monterey Jack, Mozzarella, Muenster, Provolone, Swiss. Any brand of cheese can be purchased up to a given weight. However, only Kellogg's Product 19, General Mills Cheerios, Post Bran Flakes, Uncle Ben's Cream of Wheat, etc. up to 36 ounces are allowed on the diet. Similarly, only specified brands, weights, and quantities of fruit juices are allowed.

As discussed earlier, to be eligible for the WIC program, an individual must live in Massachusetts, have a moderate to low income and have a nutritional need for WIC foods. To apply for WIC, the individual must have proof of income; must be examined, assessed and certified by a physician or nurse; and be referred to the program, preferably by a physician. Although nutritionists can refer individuals to the program, they prefer to have physicians do it in the event that serious medical problems are detected which require medical treatment.

When applicants are accepted into the program, they are issued food vouchers. These vouchers can be used only at WIC authorized grocery stores and are non-transferrable and valid for thirty days only.

In interviews with staff associated with the WIC program at several sites in Boston, I asked their views of reasons and explanations for consumer underutilization of the program. Commonly mentioned problems were:

- difficulty translating traditional food items and diets into the WIC framework
- difficulty determining which traditional food items are acceptable substitutes for designated WIC food items
- difficulty calibrating and converting traditional food items into caloric and nutrient equivalents of WIC items
- difficulty in purchasing traditional food items in quantities and weights specified by WIC
- difficulty in finding traditional food items in WIC authorized grocery stores
- difficulty understanding an navigating the complexity of American supermarkets
- difficulty identify, reading and comprehending food labels due to lack of or limited English proficiency
- difficulty adapting traditional methods of food preparation to those recommended by WIC program
- higher prices of traditional foods, if they are available in WIC authorized stores, compared to prices in stores which cater to ethnic groups
- difficulty adapting traditional shopping habits to suggested WIC shopping habits (eg. immigrants are accustomed to shopping daily for fresh foods whereas WIC assumes periodic visits to the grocery store)
- difficulty adapting traditional methods of food storage to American methods - refrigerator, frozen food section
- difficulty adapting to food processed in unfamiliar ways such as dried milk, dried beans, frozen fruit juice
- difficulty resisting influence of mass media advertising of "junk" foods

When asked their views on problems of underutilization relative to the structure and procedures of the WIC program itself, frequent responses were:

- budget and resources constraints
- poor accessibility of WIC sites
- limited staff in general
- few bilingual/bicultural staff
- limited or lack of knowledge of general culture and culture relative to traditional diets of participants
- staff lack experience dealing with new immigrant groups and program lacks links to immigrant communities
- standardized forms and educational materials are not available in native languages of immigrants
- vouchers are not translated into native languages
- lack of or limited resources of capacity to engage in aggressive, on-going out-reach activities to promote program and enroll participants
- difficulty in the application and certification and re-certification process - if a woman works, she must take time off from her job to apply and be certified, and then be re-certified every three months, and is likely to lose wages and vacation time. Therefore, any savings accrued by using food vouchers may be off-set by loss of wages and time.

Compounding the problems associated with overcoming barriers to utilization and instituting sound nutrition programs is the difficulty in educating policy makers about the salience and long-term health and economic benefits of sound nutrition. An article in a recent edition of the Brookline Tab ("Formula Battle-Burke advocates for more resources for breast-feeding mothers" 6/9/87) is alarmingly telling and vividly illustrates attitudes and sensitivity to issues of breastfeeding of policy makers at the highest levels. According to the news report, the Chairman of the state legislative Health Care Committee, in response to concerns that hospitals throughout the state are not doing enough to support mothers who choose to breastfeed their new babies, sponsored legislation to require hospitals who give free formula milk

gift packets to new mothers to also provide for breastfeeding mothers a gift of "equal economic worth."

When the Chairman urged his colleagues to support the bill, the reaction of the law-makers was that of indifference and out-right derision. The article states that there was "snickering around the chamber." One Senator strongly suggested that the bill be "dispatched to the place where it belongs --onto the Senate's circular file" and further remarked, "If this isn't the absolute height of the silly season, to think that the Massachusetts Senate is going to get into some arbitration between mothers who breastfeed and mothers who don't," just before moving to delay the bill. Another legislator characterized the bill as "absolutely so pathetic."

The sponsor of the bill charged that the Senate rules had been manipulated to keep the bill from getting to the floor for nearly three months even though it was reported favorably from the Health Care Committee. He said that his colleagues' reaction to the bill was, "lukewarm to cold" and describes their attitude as perhaps the result of traditional opinions in a male-dominated Senate, "...that this was some sort of ridiculous, pointless piece of legislation" and notes that, "It provokes a lot of jokes among male legislators, and not a lot of information."

Clearly, in light of this exchange, there is an urgent need, not only to inform and educate key elected policy makers, but to apply pressure in ways that they understand and which forces them to take the matter seriously and respond to it in a serious manner. It is unacceptable that elected officials whose mandate is to make public policy for the public good, do not recognize the efficacy of promoting breastfeeding as a simple, cost-effective public

health measure to prevent and alleviate death and lasting illnesses which in the long-term are far more expensive and much more costly, both in human and economic terms.

Given this situation, the following suggestions for nutrition and breastfeeding services, programs, and policies are offered:

Nutrition

- State government and officials and legislators must become educated about the importance of nutrition services and encouraged to set funding and policy priorities favorable to maternal and child nutrition services

- Existing nutrition programs and services must improve internal coordination by developing and refining nutrition surveillance and health data in order to document the utilization of services; the efficacy of existing programs and services; the need for continued and increased services; to monitor the impact of nutrition programs on the nutrition and health status of mothers and children

- Health information systems must be established where none exist, and current systems must be reviewed and improved so that they are capable of producing timely, up-to-date information which can identify individuals, sub populations and geographic areas at greatest risk for poor nutrition status; identify available interventions offered or planned to address those risks; determine whether or not individuals and groups at risk are receiving the interventions they require; determine if the interventions are improving the nutrition of the target populations

- Concerned community organizations, advocacy groups, task forces, and lobbyists must exert pressure in the appropriate places to urge support for nutrition services by third party payers. States could simply require that health insurance policies cover a minimal set of benefits for children and pregnant women.

Breastfeeding

- Before pregnancy, out-reach to key, influential persons (partners, best friends, grandmothers, family and relatives, others in social network) and groups who are important in the decision to breastfeed and who can provide support and encouragement to continue

- During prenatal period, education and information on breastfeeding (preferably from breastfeeding mothers); on breast preparation; on maternal diet; on emotional preparation

- o After normal delivery, assume privacy and relaxed atmosphere; organization of day with breastfeeding in mind; stimulate lactation so that first breastfeeding begins as soon as possible; lactation counseling; adequate "lying-in" period

- o After premature delivery, use of expressed milk; contact between mother and baby with the earliest possible return to direct breastfeeding

- o Postpartum period - lactation counseling, encouragement, motivation, support; home visits by health workers; health centers provide supplementary food programs such as WIC

- o Health provider training, formal and informal training in nutrition, infant feeding, psychophysiology, modern knowledge on properties of human vs cow's milk, practical management in theory and practices of breastfeeding; methods of preventing and treating common breastfeeding problems

- o Community education, promotion via posters, calendars, brochures, video tapes, radio, television, newspapers, advocacy activities, legislation

The level of maternal nutrition should be viewed in relation to prevalent food customs, especially in disadvantaged communities, and in relation to the cumulative impact of repeated reproductive cycles common in poor women, an impact often compounded by hard work and sometimes by cultural limitation of the diet for women in general, especially in pregnancy and during lactation.

In practically all societies, beliefs about infant feeding are a conglomerate of folklore and variant pediatric practices and environmental influences. Taboos on all food except milk are found almost everywhere and it is important to understand that infants are born without any innate food habits, are reared so that as adults they approach food in a definite way, have definite attitudes toward food and that biological hunger is transformed into a culturally patterned appetite.

In more affluent circumstances, such as those generally found in this country, little overt malnutrition is seen except for the common problems of

iron deficiency and obesity (Chopra, et.al., 1970). However, as in all countries, including the United States, and here in Boston, disadvantaged communities do exist in which circumstances approximate, more than is appreciated, severe nutrition conditions of developing countries.

Infant mortality is an important index of a community's appreciation of the common human needs of all its peoples. It is imperative that the healthcare system respond to meet the needs of minority and immigrant populations in culturally-relevant ways.

REFERENCES

Aykroyd, W.R., Nutrition and mortality in infancy and early childhood: Past and present relationships. The American Journal of Clinical Nutrition, 1971, 24, 480-487.

Baranowski, T., et.al., Social support, social influence, ethnicity and the breastfeeding decision. Social Science and Medicine, 1983, 17 (21), 1599-1611.

Binkin, N.J. et.al., Reducing black neonatal mortality: Will improvements in birth weight be enough? Journal of the American Medical Association, 1985, 253, 372-375.

Brittin, H.C., Zinn, D.W., Mean buying practices of Caucasians, Mexican-Americans, and Negroes. Journal of the American Dietetic Association, 1977, 71 (6), 623-628.

Bondes, A., Couture, A., For the People, For a Change, Bringing Health to the Families of Haiti. Boston: Beacon Press, 1978.

Boston Department of Health and Hospitals. Health Perspectives, 1985 Unpublished Report.

Bowering, J., et.al., Influence of a nutrition education program (EFNEP) on infant nutrition in East Harlem. Journal of the American Dietetic Association, 19788, 72 (4), 392-397.

Bryant, C.A., The impact of kin, friend and neighbor networks on infant feeding practices. Social Science and Medicine, 1982, 16, 1757-1769.

Cardenas, J.,et.al., Nutritional beliefs and practices in Primagravid Mexican-American women. Journal of the American Dietetic Association, 1976, 69 (3) 262-265.

Carlson, E.et.al., Feeding the Vietnamese in the U.K. and the rationale behind their food habits. Practice of Nutrition and Society, 1982, 41 (2), 229-237.

Carlson, E., et.al., An evaluation of a traditional Vietnamese diet in the U.K. Human Nutrition and Applied Nutrition, 1982, 36 (2), 107-115.

Centers for Disease Control. Morbidity-Morality Weekly Report, 8/24/71; 1/1/80.

Chopra, J.G., Camacho, R., Kevany, J., Thomson, A.M., Maternal nutrition and family planning. American Journal of Clinical Nutrition, 1970, 23 (8), 1043-1058.

Currier, R.L., The hot-cold syndome and symbolic balance in Mexican and Spanish American folk medicine. Ethnology, 1966, 5, 251-263.

Dempsey, P.A., Gesse, T., The childbearing Haitian refugee-cultural applications to clinical nursing. Public Health Reports, 1983, 98 (3), 261-267.

Egbuonu, L., Starfield, B., Child health and social status. Pediatrics, 1982, 69, 550-557.

Gortmaker,S.L., Poverty and infant mortality in the United States. American Sociological Review, 1979, 44, 280-297.

Graitcer, P., Allman, J., Amedee-Gedeon, M. Duchett, E., Current breastfeeding and weaning practices in Haiti. Journal of Tropical Pediatrics, 1984.

Greener, T., Latham, M.C., Factors associated with nutritional status among young children in St. Vincent. Ecology of Food and Nutrition, 1981, 10, 135-141.

Griffith, S., Childbearing and the concept of culture. Journal of Gynecological Nursing, 1982, 11 (3), 181-184.

Groppo, C., et.al., Bridging cultures: The Vietnamese American Family--and grandma makes three. Maternal Child Nursing, 1981, 6 (3), 177-180.

Haitian Refugees - GFSC Programs Respond to a need. American Friends Services Committee, 1982.

Hargreaves, A., Ann Hargreaves returns from fact-finding in El Salvador. Massachusetts Nurse, 1982, 52 (3), 6

Harwood, A., The hot-cold theory of disease: Implications for treatment of Puerto Rican patients. Journal of the American Medical Association, 216 (7), 1153-1158.

Hoang, G.N. Bridging the cultural gap: Issues in health and mental health care for Southeast Asian refugees. ORR-1 Technical Assistance Paper, 1984.

Hollingsworth, A.W. et.al., Indochina moves to Main Street--The refugees and childbearing: What to expect. Registered Nurse, 1980, 43 (11), 45-48.

Hunt, I.F., et.al., Effect of nutrition educaiton on the nutritional status of low-income pregnant women of Mexican descent. American Journal of Clinical Nutrition, 1976, 29 (6), 675-684.

Jelliffe, D.B., Jelliffe, E.P.P., Prevalence of protein-calorie malnutrition in Haitian preschool children. American Journal of Public Health, 1960, 50, 1355-1366.

Jelliffe, D.B., Jelliiffe, E.F.P., The nutritional status of Haitian children. Acta Tropica, 1961, 18, 1-45.

Jelliffe, D.B., Jelliffe, E.F.P., Advances in international maternal and child health, Oxford University Press, 1981.

Jelliffe, D.B., Jelliffe, E.F.P., Advances in international maternal and child health, Clarendon Press, 1984.

Kaplan, B.H., Cassel, J.C., Social support and health. Medical Care, 1977, 15 (5), 47-58.

Kniotal, L.et.al. Cross-cultural family medicine residency training. Journal of Family Practice, 1983, 17 (4), 683-687.

Laguerre, M.S., The Haitian niche in New York City. Migration Today, 1979, 7, 12-18.

Laguerre, Michael G., "Haitian Americans" in Ethnicity and Medical Care, Harvard University Press (Cambridge, Mass) 1981.

Logan, M.H., Humoral medicine in Guatemala and peasant acceptance of modern medicine. Human Organization, 1973, 32, 385-395.

Logan, M.H., Selected references on the hot-cold theory of disease. Medical Anthropology Newsletter, 1975, 6 (2), 8-11.

Lowenstein, F.W., Review of the nutritional status of Spanish Americans based on published and unpublished reports between 1968 and 1978. World Review of Nutrition and Diet, 1981, 37, 1-37.

Malina, R.M., Zavaleta, A.N., Secular trend in the stature and weight of Mexican-American children in Texas between 1930 and 1970. American Journal of Physical Anathropology, 1980, 52 (4), 453-461.

Mandenson, L., Matthews, M., Vietnamese attitudes towards maternal and infant health. Medical Journal of Australia, 1981, 1 (2), 69-72.

Martinez, A., Minority Response to "Disease concepts in the Barrio today." Community Nursing Research, 1973, 6, 197-200.

Massachusetts Department of Public Health, 1985 Massachusetts Infant Mortality: A summary and preliminary analysis of data, February 6, 1987.

Massachusetts Legislature Senate Committee on Ways and Means Advance Report No. 4. Gateway Cities: Shock absorbers for United States foreign policy, May, 1986.

Massachusetts Office of Refugee Resettlement Status Quarterly Report, June, 1984.

Mohrer, J., Breast and bottle feeding in an inner-city community: An assessment of perceptions and practices. Medical anthropology, 1979, 3, 125-145.

Mosley, W.H., Nutrition and Human Reproduction New York: Plenum Press, 1978.

Newton, N., Newton, M., Psychological aspects of lactation. New England Journal of Medcine, 1967, 277, 1179-1188.

Paneth, N., et.al., Social classs indicators and mortality in low birth weight infants. American Journal of Epidemiology, 1982, 116, 364-375.

Population Bulletin, Vol. 37, No. 1, 1982.

Rassin, D.K., et.al., Incidence of breast feeding in low socioeconomic group of mothers in the United States: Ethnic patterns. Pediatrics, 1984, 73 (2), 132-137.

Rawson, I.G., Berggren, G., Family structure, child location and nutritional disease in rural Haiti. Journal of Tropical Pediatrics, 1973, 19, 2888-298.

Scott, C.S., Health and healing practices among five ethnic groups in Miami, Florida. Public Health Reports, 1974, 89 (6) 524-532.

Shortridge, Barbara G., Atlas of American Women, Macmillan Publishing Co. (New York) 1987.

Sirinith, K., et.al., Nutritional value of Haitian cereal legume blends. Journal of Nutrition, 1965, 86, 415, 423.

Sloper, K., et.al., Factors influencing breastfeeding. Archives of the Diseases of Childhood, 1975, 50, 165-170.

Smith, L.K., Mexican-American views of Anglo medical and dietetic practices. Journal of the American Dietetic Association, 1979, 74 (4), 463-464.

Solien, N., Scrimshaw, N., Public health significance of child feeding practices observed in a Guatemalan village. Journal of Tropical Pediatrics, 1957, 3, 99-104.

Starfield, B.H., Child health and socioeconomic status. American Journal of Public Health, 1982, 72, 532, 533.

The new Bostonians, Boston Globe Magazine, January, 1984.

U.S. Bureau of the Census, Current Population Reports, 1980 Census of the U.S. Population Series and Supplementary Reports, 1980, 1981, 1984.

Wadd, L., Vietnamese postpartum practices: Implications for nursing in the hospital setting. Journal of Gynecological Nursing, 1983, 12 (4), 252-258.

Waldman, E.B., et.al. Health and nutritional status of Vietnamese refugees. South Medical Journal, 1979, 72 (10), 1300-1303.

Webb, R.E., Ballweg, J.A., Fougere, W., child spacing as a component of nutrition education programs. Journal of Nutrition Education, 1972, 4 (3), 97-99.

Wiese, H.J.C., Maternal nutrition and traditional food behavior in Haiti. Human Organization, 1976, 35, 193-200.

Winikoff, B., Baer, E.C., The obstetrician's opportunity: Translating "Breast is best" from theory to practice. American Journal of Obstetrics and Gynecology, 1980, 138, 105-117.

Wide, P.H., et.al. Racial and Socioeconomic disparities in childhood mortality in Boston, New England Journal of Medicine, 1985, 313 (6), 360-366.

Wishnik, S.M., Lichtblau, N.W., The physical development of breast-fed young children as related to close birth spacing, high parity and maternal undernutrition. Paper presented at the annual meeting of the Child Development Section, American Academy of Pediatrics, October 20, 1974.

Wittenberg, C.K., Summary of market research for "Healthy Mothers, Healthy Babies" campaign. Public Health Reports, 1983, 98 (4), 356-359.

Yankhauer, A., Southeast Asian mental health in the Western context: Grief Process, disaster reaction, cultural conflict. Proceedings of the Southeast Asia Refugee Mental Health Symposium, sponsored by Region I Office of Refugee Resettlement/DHHS and Region I NIMH, 1983.

FOOTNOTES

Alan Guttmacher Institute, Financing maternity care in the United States - Blessed events and the bottom line. 1987.

Austen, G., Child health-care financing and competition. The New England Journal of Medicine, 1984, 311 (17) 1117-1119.

Boston Department of Health and Hospitals. Health Perspectives, 1987.

Boston Foundation, Boston At Risk-A Report from the Boston Foundation Primary Health Care Seminar, Sept. 1985.

Buka, S.L., et.al., Better health for children: Action for the eighties. Proceedings of a conference sponsored by the Department of Maternal and Child Health and Aging, Harvard School of Public Health, April 17, 1982.

Edelin, K.C., Jennings, J. Testimony presented to the Health Care Committee Healthy Start: Reducing infant mortality in the commonwealth, March 1987.

Feldman, P.H., Mosher, B.A., Preserving essential services: Effects of the MCH block grant on five Boston neighborhood health centers. Harvard School of Public Health, July 1984.

Hart, Jordana, Hub has country's highest black infant mortality rate. Brookline Tab, 5/3/88.

Lamb, G.A., Wise, P.et.al., The impact of economic hardship on children's health: The recent experience of Boston. Massachusetts Journal of Community Health, 1985 (Spring/Summer) 15-21.

Lawton, S.W., Budget reconciliation-the new legislative process. The New England Journal of Medicine, 1981, 305 (21) 12197-1300.

Massachusetts Department of Social Services, A closer look at the safety net-the human and social impact of selected welfare changes in Massachusetts. January, 1984.

Massachusetts Department of Public Health, Closing the gaps: Strategies for improving the health of Massachusetts infants. Task Force on Prevention of Low Birthweight and Infant Mortality, May 1985.

Massachusetts Department of Public Health, 1985 Massachusetts infant mortality: A summary and preliminary analysis of data. February 6, 1987; June 12, 1987.

Massachusetts Department of Public Health, Improved prenatal care utilization and birth outcome project (SPRANS). October, 1987.

Massachusetts Department of Public Health, Healthy Start program evaluation. March 22, 1988.

Project Mattapan opens its doors, The Medical Foundation Reports, 1988 (Winter) 5

Shortridge, B.G., Atlas of American Women, Macmillan Publishing Co., (New York) 1987.

Survival of the fittest: Infant mortality and the poor, Harvard School of Public Health Services Report, 1985 (January/February) 1-4.

Tye, Larry, Harvard, Mission Hill to battle infant death - alliance forged in prenatal program. Boston Globe, 5/7/87.

United States House of Representatives Staff Report of Select Committee on Children, Youth, and Families, Opportunities for success: Cost-effective programs for children, 1985.