Infant Feeding Practices

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READINGS IN INFANT FEEDING PRACTICES—1
Infant and Young Child Feeding

The UNICEF Executive Director's General Progress Report to the 1981 Session of the Executive Board presents, inter alia, a wide-ranging and closely reasoned discussion on feeding practices for infants and young children the world over. Reference E/ICEF/681 (Part II) Add. 2.

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SUMMARY

"Poor infant feeding practices and their consequences are one of the world's major problems, and a severe obstacle to social and economic development."[1] "Breastfeeding is an integral part of the reproductive process, the natural and ideal way of feeding the infant, and a unique biological and emotional basis for child development."[2]

WHO recommends that breastfeeding should be continued if possible up to the age of 12 months, or longer in some circumstances to provide a valuable nutritional supplement.[3]. "Food complementary to breastmilk will need to be introduced by 4-6 months; when the nutrition of the mother is poor...it may often need to be introduced earlier."[4]

There has been remarkable progress in the technology of making infant formulas. Nevertheless, scientific evidence is reconfirming the superiority of breastfeeding because of its support of the bonding of mother and child and the psychological support of the child, the nutritional and physiological properties of human milk, its immunological properties and other health benefits extending into adult life, and its advantages for the mother.

Beginning earlier, but mainly in the twentieth century and especially since 1920, breastfeeding has been declining in urban industrial areas. There has been a decline in the proportion of mothers who start breastfeeding, and a shortening of the duration to less than three months ("premature weaning"). These trends are now being reversed in upper-income groups in many industrialized countries. In the rural areas of many developing countries, breastfeeding is maintained by a high proportion of mothers for 12 months or longer; in others it is falling. The fall off in low-income urban and peri-urban areas is very significant because of the immigration of rural population to these areas.

It is important for the health, development and even survival of infants that breastfeeding should be protected and encouraged, and weaning foods given at the appropriate age. The raising of the standing of women in their family and community, and the improvement of the nutrition of pregnant women and nursing mothers, are two of the most powerful ways to support mothers who want to nurse their babies. Good weaning practices can be encouraged by more information, help with home and local processing of weaning foods, and social welfare systems to supply foodstuffs to low-income families where required.

Infant mortality has declined to an average level of 13 per 1,000 live births in industrialized countries, but it is still at 120 per 1.000 live births in developing countries (excluding China), where there are 11 million infant deaths every year. Deaths during the period of weaning in developing countries are at a level 15 times higher than in industrialized countries. Infant mortality depends on many factors, and the available estimates cannot be directly related to breastfeeding and weaning. Nevertheless, experience shows that better infant feeding practices can make an important contribution to reducing infant mortality.

Child health problems related to infant and young child feeding practices have been a concern to the governing bodies of WHO and UNICEF throughout the 1970s. This concern resulted in the calling of the joint WHO/UNICEF Meeting on Infant and Young Child Feeding which took place in Geneva, in October, 1979. It set our recommendations for the protection of breastfeeding and the adoption of appropriate weaning practices, including the drafting of a code of marketing for breastmilk substitutes.

Important beginnings have been made in a number of countries, often with UNICEF co-operation, in support of breastfeeding and good weaning. They need to be widely extended.

As a follow up to the October 1979 meeting WHO and UNICEF have been working together on a joint programme of increased support to the practice of breastfeeding and the improvement of weaning practices, including the following main items:

- orientation of health professionals and other health workers;
- orientation of the education system and other extension services in contact with mothers and families;
- making information available to mothers through the health services, women's organizations and the media;
- improvement of health service practices at time of delivery;
- nutrition of pregnant women and nursing mothers, and infants and young children, whose diets need supplementing;
- family, community and social support systems for breastfeeding and good weaning practices; and
- introduction at international and national levels of a code of marketing of breastmilk substitutes.

The Executive Director recommends that the Board endorse the strengthening of UNICEF co-operation in country programmes in the above fields.

1. *Joint WHO/UNICEF Meeting on Infant and Young Child Feeding*, Geneva, WHO, 1979, "Statement", para. 1.
2. *Ibid.*, para. 7.
3. M. Cameron and Y. Hofvander, *Manual on Feeding Infants and Young Children*, Protein-Calorie Advisory Group, FAO, Rome, Second edition, 1976, p. 23.
4. *Joint WHO/UNICEF Meeting on Infant and Young Child Feeding, op. cit*, "Recommendations", p. 15.

I. IMPORTANCE OF BREASTFEEDING

Development of breastmilk substitutes

1. Until the second half of the nineteenth century, breastfeeding was accepted as the natural and inevitable way to feed infants; in fact it has been a prerequisite for the continuation of the human species. In a small proportion of cases, the breastfeeding was done by wet-nurses. From 1850 onwards there was more use of artificial feeds (animal milks or cereal paps), often with disastrous results.[5]

2. Chlorination of water was introduced in the United States in the 1880s; in the first decades of the twentieth century pasteurized milk became more widely available, and the kitchen ice-box made storage feasible. The use of home-made formulas based on cow's milk began to spread, especially in the 1920s. The introduction of tinned evaporated milk in the twenties made home formula preparation easier for many, and the duration of breastfeeding grew shorter Commercially prepared formulas came into use on a large scale in the 1950s and 1960s. As a result of considerable research and development, they came closer to the composition and digestibility of human milk.[6] Substantial declines in breastfeeding from the 1940s to the 1960s are documented for Poland, Sweden, the United Kingdom and the United States.

3. In so far as they led to the replacement of inferior breastmilk substitutes, these developments represented a great technical advance, and together with bottles and teats that can be kept clean in a modern kitchen, they saved many infant lives. Further, it can be safely assumed that more lives could be saved if formula was made available through social measures to families who need it but lack the income to buy it.[7] However, in recent decades extensive research has confirmed the general superiority of breastfeeding for both infants and mothers. Many of the reasons apply just as much in industrialized as in developing countries.

Bonding

4. Breastfeeding supports emotional and psychological bonding between the mother and child, and as a result, skin-to-skin contact and breastfeeding are now recommended during the first hours of the baby's life. The early close contact and the physical mother-child interaction, which they both enjoy, play an important role in the child's physical development (of mouth and voice) and psychomotor development. This interaction also provides for natural adjustment to the infant's dietary needs. "On demand" feeding rather than bottle feeding becomes more practical.[8]

Advantages of breastmilk

5. Breastmilk not only provides all the necessary nutrients for growth during the first four to six months of life, but carries antibodies which protect the child from infections while its own immune system is developing. Minerals such as iron and calcium are in a readily assimilable form.[9] Breastmilk is also economical; the cost of extra food for the mother is substantially less—usually only about a quarter of the cost of infant formula.

Nutritional and physiological properties of human milk

6. Human milk has classically been compared with cow's milk because the latter is the most available of the animal milks, and is the usual base for infant formula, whether home-prepared or manufactured. A joint commentary on breastfeeding by the Nutrition Committee of the Canadian Paediatric Society and the Committee on Nutrition of the American Academy of Paediatics says, "Differences in the composition of human milk and unmodified cow's milk for human milk have been known for many years. Early attempts to substitute unmodified cow's milk for human milk were unsatisfactory for feeding infants Newer knowledge of nutritional and physiological needs of infants and advances in technology have led to the development of newer infant formulas which provide many of the nutritional and physiological characteristics of breastmilk. However, there are still differences between infant formulas and breastmilk, and we believe human milk is nutritionally superior to formulas .."The statement goes on to discuss composition and factors affecting digestibility and absorption with regard to fat and cholesterol, protein and iron.[10]

5. Joe D. Wray' "Feeding and Survival: Historical and Contemporary Studies of Infant Morbidity and Mortality", paper to be published in *Advances In International Maternal and Child Health*, vol. II, Oxford University Press.

6. S. J Fomon, *Infant Nutrition*, Second edition, Philadelphia, Saunders, 1974, chapter 1; D.B. and E.F.P. Jelliffe, *Human Milk in the Modern World*, Oxford University Press, 1978, chapter 10; and B. Vahlquist, "Evolution of Breastfeeding in Europe", *Environmental Child Health*, February 1975.

7. On the other hand, there are unnecessary risks in using artificial feeding where breastfeeding could be done, especially in conditions of poverty, as explained below.

8. A.M. Raimbault, "Breastfeeding; Influence on the Child's Development", *Children in the Tropics*, No. 96, 1974.

9. "Background paper prepared by WHO and UNICEF" (FHE/IC/79 3) for Joint WHO/UNICEF meeting on Infant and Young Child Feeding, Geneva, 9-12 October 1979. See also L Hambraeue, "Proprietary milk versus Human Breastmilk in Infant Feeding" in *Pediatric Clinics of North America*, vol. 24, No. 1, February 1977.

10. "Breastfeeding", *Pediatrics*, vol. 62, 1978, pp.591-601.

Anti-infective properties

7. Human milk contains living anti-infective factors which colonize the infant's intestines and assist in resistance to infantile diarrhoea or gastro-enteritis, and respiratory and some other infections. Colostrum, in the first phase of lactation, is particularly rich in these. They do not exist in formula which has to be heat-treated.[11]

8. As a result, breastfed infants have lower rates of infection, both digestive and respiratory, than bottle-fed infants, and the episodes of diarrhoea are of shorter duration and less grave. This appears to be true not only under conditions of poor environmental sanitation, but also in middle-class communities in the United States.[12]

Other health benefits

9. There are other benefits as well. Breastfeeding minimizes early exposure to various foods that might produce allergies. Breastfeed infants have a lower incidence of allergic manifestations such as eczema, rhinitis and asthma in children and also later in life. Breastfeeding reduces chances of over-feeding in early life, which may thus tend to prevent long-term obesity. Cholesterol in human milk may help constrain cholesterol buildup later in life.[13]

Advantages of breastfeeding to the mother

10. In addition to the bonding process between mother and child, breastfeeding has a number of advantages for the mother, including promotion of the involution of the uterus, and loss of extra fat stored during pregnancy, and the restoration of the figure. Breastfeeding also extends the average period of contraception after giving birth. "Breastfeeding is best for the health of the young baby, but also for the health of the mother including the physical, emotional, and psychological aspects of her health."[14] If the mother is malnourished, these advantages may be more than counterbalanced by maternal depletion, [15] because she will continue to feed her baby reasonably well, at any rate during the first months, but at the expense of her own body stores (paras. 19-22).

Paediatricians' and public health recommendations for North America

11. The Nutrition Committee of the Canadian Paediatric Society and the Committee on Nutrition of the American Academy of Paediatrics concluded their review of breastfeeding with the following summary :

"(a) Full-term newborn infants should be breast-fed, unless there are specific contra-indications or when breastfeeding is unsuccessful;

(b) Education about breastfeeding should be provided in schools for all children, and better education about breastfeeding and infant nutrition should be provided in the curriculum of physicians and nurses. Information about breastfeeding should also be presented in public communications media;

(c) Prenatal instruction should include both theoretical and practical information about breastfeeding;

(d) Attitudes and practices in prenatal clinics and in maternity wards should encourage a climate which favours breastfeeding. The staff should include nurses and other personnel who are not only favourably disposed toward breastfeeding but also knowledgeable and skilled in the art;

(e) Consultation between maternity services and agencies committed to breastfeeding should be strengthened; and

(f) Studies should be conducted on the feasibility of breastfeeding infants at day nurseries adjacent to places of work subsequent to an appropriate leave of absence following the birth of an infant."[16]

12. The American Public Health Association in a policy statement on infant feeding in the United States said :

> "Since feeding of infants during their first year is an important determinant of lifelong growth, development, and health, education on infant feeding should be viewed as a current public health concern... The position (paper) and supporting documentation should be used by members of the Association to develop local policies and programmes to support breastfeeding

11. *Human Milk in the Modern World, op. cit.*, chapter 5.

12. A S Cunningham, "Morbidity in breast-fed and artificially fed infants", *Journal of Pediatrics*, vol. 90, No. 5' May 1977; S.R. Larsen and D. R. Homer, "Relation of breast versus bottle feeding to hospitalization for gastro-enteritis in a middle-class United States population", *Journal of Pediatrics*, vol. 92, No. 3, March 1978. On the other hand, F.O. Adebonojo, "Artificial versus breastfeeding: Relation to infant health in a middle-class American community", *Clinical Pediatrics*, vol. 11, 1972, p. 25, found no difference in resistance to infection,

13. "Background paper prepared by WHO and UNICEF", *op. cit.*, pp. 7-13.

14. *Joint WHO/UNICEF meeting on Infant and Young Child Feeding, op. cit.*, p. 22.

15. *Human Milk in the Modern World, op. cit.*, chapter 6.

16. "Breastfeeding", *Pediatrics, op. cit.*, p. 598.

> and informed infant feeding practices... Human milk from the healthy mother is the best known food for nourishing her infant. To ensure successful production of milk, education in breastfeeding should be provided during prenatal care and the postpartum period. Hospital obstetrical care procedures should facilitate early nurturing...[17]

Situation of poverty and underdevelopment

13. There are additional reasons why breastfeeding is superior to artificial feeding in situations of poverty and underdevelopment. Breastfeeding gives the young infant the liquid required and avoids the need to give water that is often not clean. The cost of formula is high in relation to average earnings, so it is often over-diluted, and the infant is underfed. Usually, there are no satisfactory facilities for cleaning and sterilizing bottles and teats. The cost of fuel is generally high either in money or in time spent gathering sticks. There is no refrigeration for keeping formula between feedings, so it should be freshly made on demand. As a result of the extreme difficulty of maintaining hygienic conditions, and the absence of immune agents in the formula, bottle-fed babies living in poverty conditions are at a much higher risk of diarrhoeas which, in turn, contributes substantially to precipitation of malnutrition. The continuation of diarrhoeas, respiratory infections and malnutrition leads to a higher infant death rate.

II. SUPPORTS REQUIRED FOR BREASTFEEDING

14. One of the obvious ways to protect and encourage breastfeeding is to make it more feasible for the mothers who want it. The breastfeeding mother needs the support of her family, her community and the society to which she belongs. The situation regarding two subjects, the status of women and maternal nutrition, is described below The section on policies and programmes takes up additional items (paras. 91-108).

Social status of women

15. While the mother is pivotal in matters affecting her child's health, she may not, in fact, be taking an active part in decisions affecting it. This depends particularly on her expectations about determining her own life-style, the information to which she has access, and the weight given to her opinions by her family and community. These factors are interrelated. Improving her education, her access to information and her literacy will also raise her influence; so will opportunities for earning income, e.g., through women's associations, co-operatives, etc. Raising the level of women's education and standing in the family is one of the most powerful means for improving the well-being of young children. This applies with particular force to infant feeding.

16. In feeding her infant the mother will choose, if she can, what she considers to be best for her child. The mother needs information on breastfeeding and on the interaction of nutrition, child diseases and child development. She and her family also need an understanding of the extra food required for her during pregnancy and lactation, of anaemia and of the risk of maternal depletion (paras. 19-22). In many instances, she does not have access to such information. Her instruction may come from her own mother, relatives, friends, or health workers. Where family and other support systems are not close by and the health services are either not available or unsympathetic, the possibilities for choosing breastfeeding are lessened considerably. For the disadvantaged, who may already feel inadequate, the chances of receiving positive information and instructions are even less.

17. Conflicting messages may come into play that may make it difficult for women to make the decision to breastfeed. For example, the traditionalist view in favour as opposed to the modernist who sees breastfeeding as limiting women to a nurturing role; erotic images of the breast depicted in the media as against its natural feeding function; and advertisements emphasizing the convenience of infant formula feeding as compared with feeding on demand.

18. For women to breastfeed, protection and support is needed at all levels. The objectives of UNICEF co-operation in programmes affecting expectant and young mothers is to assist them to become more self-reliant in the knowledge needed to make informed decisions, and in their opportunities for arriving at decisions that will provide the best child-rearing possible under the circumstances.[18]

Maternal nutrition

19. At the beginning stage of her pregnancy a woman weighing 50 kilogrammes (a weight typical of many women in developing countries), needs 2,000 kilocalories per day with moderate activity. During the second half of pregnancy the need for calories is increased by 16 per cent and that of protein by 30 per cent. During the first six monts of lactation the need for calories is increased by

17. "Infant Feeding in the United States", *American Journal of Public Health*, vol. 71, No. 2, February 1981, p. 207.

18. *Joint WHO/UNICEF meeting on Infant and Young Child Feeding, op. cit.* pp. 21-22, covers part of the above.

25 per cent and that of protein by 50 per cent, and vitamin A by 70 per cent. Also, there is an additional need for iron among women whose stores have been depleted.[19] An increase in the daily diet of, for instance, cereals, of about 200 grammes of cereal plus vitamins and minerals, would be needed to provide the additional needs for calories and other nutrients during late pregnancy and lactation

20. Under conditions of poverty, a dietary supplement even if available is often not eaten but shared with other members of the family. Women arrive at conception with depleted nutrient stores resulting from generations of poor nutrition, inadequate food intake, and the drain of infection, parasites, physical labour or closely spaced pregnancies. Weight gains during pregnancy are much below those in well-nourished women, anaemia from iron and folate deficiency is common, maternal mortality rates are high, and babies of lower birth weight are prduced who have a higher risk of perinatal morbidity and mortality. Although the foetus receives considerable protection at the expense of the mother, she is less able than a well-nourished mother to pass on nutrients for foetal needs, nor is she able to build up her own reserves to ensure prolonged and successful lactation. Many mothers may go on to their next pregnancy without an opportunity to achieve full nutritional recovery.

21. Improved maternal nutrition merits special attention for three major health objectives :

- Preservation and improvement of the health status of the mother so that she can be healthy, economically productive and socially active;
- Improved birth weight, which gives the newborn a better start for survival and healthy growth; and
- Provision of breastmilk for the infant in the first 4-6 months. The basic elements in a broad approach to maternal nutrition are skills for healthy living, improved diet, improved spacing in pregnancy and health care during pre-natal and post-natal periods.

22. Undernourished women who take dietary food supplements show increased maternal weight gain, a small improvement in the baby's birth weight and reduced morbidity and mortality in their infants.[20] There is also substantial positive experience with vitamin and mineral supplementation during pregnancy. Policies and programmes addressed to these needs are listed in section VII.

III. CURRENT SITUATION AND RECENT TRENDS

Women who cannot breastfeed or choose not to

23. In regions where breastfeeding is taken for granted as the natural way to feed infants in normal circumstances, nearly all infants are breastfed by their mothers. Only the death or illness of the mother prevents it. In traditional societies, fewer than 1 per cent of mothers are unable to breastfeed.[21] Thus the strictly "physical" constraints on breastfeeding are not extensive, unlike family, psychological and cultural constraints.

24. Successful breastfeeding requires psychological confidence on the part of the mother—she should not doubt her ability to breastfeed, nor worry about whether she is adequate, or whether substitutes would be better. It is probably an advantage to have seen breastfeeding by her own mother, or in her own surroundings. She needs the support of her family, of health workers who are in contact with her, and of the surrounding community and society. "Given adequate instruction, emotional support, and favourable circumtances, 96 per cent of new mothers can breastfeed successfully."[22]

25. In many "modern" communities these psychological underpinnings are no longer present. In such communities there is a significant percentage of mothers who want to breastfeed, but are incapable of doing so. Similarly, the period after which the mother's milk supply begins to decline, leading her to stop breastfeeding because of "insufficient milk", is largely culturally determined.[23] Presumably this confidence can be rebuilt, perhaps in the next generation. "With adequate teaching and support, almost all mothers are capable of breastfeeding and solving any problems which may arise: The best teachers will be breastfeeding mothers."[24]

26. A further group of mothers does not breastfeed because the physical support systems

19. *Manual on Feeding Infants op. cit.*, table 2.

20. "Report of the Third Metting of the Administrative Committee on Co-ordination/Sub-Committee on Nutrition, Consultative Group on Maternal and Young Child Nutrition", *Food and Nutrition Bulletin*, United Nations University, vol. 3, No. 1, January 1981.

21. "WHO Collaborative Study on Breastfeeding", MCH/79.3, table 2.1, p. 15. The number of rural mothers breastfeeding in Ethiopia, India, Nigeria and Zaire was recorded as 100 per cent at nine months.

22. Nutrition Committee of the Canadian Pediatric Society and Committee on Nutrition of the American Academy of Pediatrics, "Encouraging Breastfeeding", *Pediatrics*, vol. 65, No. 3, March 1980.

23. "WHO Collaborative Study on Breastfeeding", *op. cit.*, p. 14.

24. *Joint WHO/UNICEF Meeting on Infant and Young Child Feeding, op. cit.*, p. 10.

are lacking in the family or in society, e.g., they have to go out to work in circumstances where breastfeeding is not possible.

27. A further group may decide not to breast-feed for other reasons, including their own choice.

Current prevalence of breastfeeding

28. In most industrialized countries, a high proportion of mothers begin to breastfeed but stop quite soon, a phenomenon described as "premature weaning". In most developing countries, there is a big difference between the prevalence of breastfeeding in urban and rural areas. "Partial breastfeeding" is a further complication, e.g., the mother may be away from her baby at work and obliged to arrange for artificial feeds (unfortunately, the reduced infant sucking often leads to an insufficient milk supply and the early termination of breastfeeding). Thus, it is difficult to describe the present situation through the use of a single measure. Somewhat arbitrarily the following paragraphs use approximately four months as a convenient age at which to measure the prevalence of breastfeeding, where there is a choice of date. Though it is recommended to maintain breastfeeding for 12 months or even longer if possible, the most important period is the first four to six months.[25] After that age it is in any case, necessary to begin to introduce complementary weaning foods.

29. During 1975-1978, WHO organized a study of breastfeeding by collaborating centres in nine countries and covering 23,000 mothers.[26] The prevalence varies widely, suggesting that the situation is evolving, and is at different stages of evolution in different countries. However, there is a considerable uniformity of pattern within socio-economic groups :

(a) Among the economically advantaged, breastfeeding usually falls off rapidly with the age of the baby. While at 1-2 months, 61 per cent of infants are being breastfed in the Philippines; at 3-4 months the figure is 27 per cent. The comparable figures for Guatemala are 44 per cent and 29 per cent; for Chile the figures are 80 per cent and 56 per cent There are also countries where this fall-off has not occurred at the age of 3-4 months, e.g., 100 per cent in Zaire; 96 per cent in Nigeria; 84 per cent in India;

(b) At the other end of the socio-economic scale, rural populations in many developing countries maintain a high proportion of breastfeeding until the baby is 12 months old, such as 99 per cent in India; 98 per cent in Ethiopia; 97 per cent in Nigeria; and 96 per cent in Zaire. However, in some countries there has been a substantial fall-off also in rural areas, to levels such as 40 per cent in Chile, and 63 per cent in the Philippines.

(c) The urban poor are in an intermediate position between the economically advantaged and rural areas, with Ethiopia, India, Nigeria and Zaire showing a high level at 3-4 months, which is also well-maintained to 6-7 months; but Chile, Guatemala and the Philippines showing a substantial fall-of :

	Per cent of mothers breastfeeding	
	at 3-4 months	at 6-7 months
Chile	80	40
Guatemala	76	73
Philippines	61	53

Because of increasing migration from the country into peri-urban areas, this group is particularly indicative of current trends,[27]

Trends in industrialized countries

30. In industrialized countries, beginning early in the twentieth century, breastfeeding patterns showed a downward trend but it is now being reversed. In the United States and Western Europe, there was a dramatic decline beginning in the 1930s and continuing through the 1960s. For example, in the United States in 1920, two out of three mothers breastfed their first child, but between 1936 and 1940 only one in three mothers did so By 1972 only 28 per cent of infants born in the United States were being breastfed at one week; 15 per cent by two months, and 5 per cent by six months.[28]

31. Similarly, in Sweden, official statistics show that in 1944 about 85 per cent of the mothers were breastfeeding their infants at two months, and 55 per cent at six months. By 1970, 35 per cent were breastfeeding at two months, under 5 per cent at six months.[29] In England, it was estimated in 1969 that only 33 per cent of the mothers fully breastfed beyond the first four weeks, and in France an investigation of national scope in 1972 found that 36 per cent of the mothers were breast-

25. "Background paper prepared by WHO and UNICEF", *op. cit.*, p. 22.

26. *"WHO Collaborative Study on Breastfeeding", op cit.* The nine countries were Chile, Ethiopia, Guatemala, Hungary, India, Nigeria, the Philippines, Sweden, and Zaire.

27. *Ibid.*, table 2. 1.

28. *Infant Nutrition, op. cit.*, chapter 7; H.F. Meyer, "Breastfeeding in the United States", *Clinical Pediatrics*, December 1968, pp. 708-715.

29 S. Sjolin, *Semper Nutrition Symposium*, Stockholm, 1973.

feeding their child on the fifth day.[30]

32. In the last decade there has been a reversal of these trends in both Europe and North America. In Sweden, for example, a WHO study in 1976 showed that 93 per cent of the mothers in the sample initiated breastfeeding after delivery, and at four months almost 50 per cent of them were still breastfeeding, although with regular food supplements.[31] Other reports of substantial increases in breastfeeding have come from Australia, Denmark, France, Japan, Norway and the United States. The report of the French study concluded with an interesting observation, that among French women, breastfeeding is not viewed as a survival of the past; on the contrary, it is associated with modern techniques (use of contraception and health checkups during pregnancy).[32]

Trends in developing countries

33. The situation in developing countries has been studied less than that in industrialized countries, and the information reported does not go as far back The situation revealed at the moment of the WHO collaborative study seems to be a "still photo" of a process of decline in breastfeeding. As mentioned above in paragraph 28, breastfeeding among urban economically advantaged families falls off rapidly with the age of the child. Unlike the situation in industrialized countries, women with more education were breastfeeding less. Among urban low-income families breatfeeding also falls off in many countries, though less rapidly. In rural areas in many countries breastfeeding is well maintained until 12 months or longer. This seems to confirm what commonsense suggests, that trends spread from the economically advantaged to the new migrants into urban areas, and then back to the rural areas with which they maintain some contact. Furthermore, countries whose "modernization" has been going on longer, e.g., the Philippines, Guatemala, and Chile have a generally lower breastfeeding rate in rural areas than say Nigeria and Zaire.[33] In the Phillippines in 1955, 90 percent of babies born in low-income areas of Manila were still being breastfed at 12 months postpartum, but by 1964 the proportion had fallen to 50 per cent,[34] which seemed still to be the proportion in the collaborative study. Declines have also been documented in Brazil, Chile, Mexico, and Thailand.[35]

Information and Promotion

35. In 1910, Dr. I.E. Holt in an article "Infant and mortality and its reduction, especially in New York City"[36] said "Little or nothing has been done systematically in this country to encourage maternal nursing... In New York we have been so much engaged in the furtherance of the best methods of artificial feeding that means of promoting maternal nursing have not received due consideration. We must be on our guard lest with our day nurseries and milk depots and other means we do not encourage artificial feeding and discourage maternal nursing.,' In 1910, 85 per cent of mothers were reported to be breastfeeding for at least three months.

36. Diversion from breastfeeding through practices in medicine and health services is a matter of concern to this day. In recent decades the problem has been accentuated by the promotion of commercial breastmilk substitutes through advertising to the public and through medical and health personnel and health service systems. There is fairly general agreement, including in codes that have been adopted by some of the infant formula companies that such promotion e.g., through the use of milk nurses, direct promotion to the mother, etc., must be controlled.

37. The WHO collaborative study noted that in some developing countries where the prevalence and duration of breastfeeding was low, there was also intense marketing and sales of breastmilk substitutes. In some countries information about commercial products was sometimes provided within and through the health services, be it through printed material, direct contact with representatives of commercial concerns or through free-sample distribution.[37]

38. On one occasion, Dr. G.J. Ebrahim, Institute of Child Health, London University, received letters from some 50 concerned paediatricians working in 13 developing

30. "Background paper prepared by WHO and UNICEF", October 1979, PHE/ICF/ 79.3, pp 19-20; Y. Hofvander and S. Sjolin, "Breastfeeding, trends and recent information activities in Sweden", Department of Paediatrics, University of Uppsala (Sweden) 1979.

31. *Ibid*

32. C. Rumeau-Romquette and M. Deniel, "L' allaitement maternel au cours de la periode neonatale", *Archives Francaises de la Pediatrie*, 1977, vol. 34, pp. 771-780.

33. "WHO Collaborative Study on Breastfeeding", *op. cit.*, table 2. 1.

34. Background paper prepared by WHO and UNICEF, *op. cit.*, p. 20.

35. *Human Milk in the Modern World, op. cit.*, chapter 11; J. Knodel and N. Debavalya "Breastfeeding in Thailand: Trends and Differences, 1969—1979", *Studies in Family Planning*, vol. XI, No. 12 (1980).

36. *Journal of the American Medical Association*, vol. 54, 1910, pp. 682-690.

37. "Background paper prepared by WHO and UNICEF", *op. cit.*, p. 22.

countries describing promotional practices they had observed.[38]

39. Measurement of effects of specific promotion is known to be difficult. Nevertheless, certain approaches are commonly used because of a general acceptance that they have some significant effect. Hence advertising to the public in the media and promotion at point of retail sale are assumed to be effective inducements. Since it is impossible to direct such promotion only to those who have decided not to breastfeed, otherwise acceptable messages can have harmful side effects. A flow of controversial statements and demands through the media and advertising interact with other aspects of changes through urbanization to disrupt the sense of security that is needed for successful breastfeeding.[39] Professor Sjolin, University Hospital, Uppsala, Sweden, in a recent letter *Lancet* (7 March 1980), said that normal marketing methods should not be used for breastmilk substitutes.

40. T.H. Greiner, in a study in St. Vincent, found that infant food brand-name recall by the mother was associated with earlier supplementation with commercial infant foods and earlier weaning [40]

41. Recent studies of a low-income population by the Institute of Preventive Medicine of the Paulista School of Medicine have shown the permeation of promotion of milk powder and formula through medical and health personnel to the mothers at maternity clinics. Only 6 per cent of mothers received information on breastfeeding but most were informed about formula feeding. The majority of the doctors interviewed (82 per cent) believed that the free distribution of breastmilk substitutes had great influence on the decline of breastfeeding.[41]

IV. WEANING

42. Weaning [42] is the second main aspect of infant and young child nutrition, and in conditions of ignorance or poverty presents serious problems of child health and development.[43] Normally, breastfed children grow at the same rate all over the world up to the age of four to six months, when the mother's milk is no longer sufficient and complementary semi-solid or solid foods should be introduced. Typically, in low-income areas the infant's growth begins to falter at this age, i.e., it falls behind the reference pattern of the well-fed.[44] While mortality is highest during the first year of life, the proportion of malnourished children (among survivors) is highest during the second and third year of life, and typically reaches a peak at about 24 months. In rural areas where breastfeeding is almost universal, the current pressing nutritional problems are to protect breastfeeding and to ensure the timely introduction of complementary foods, and prevent and treat diarrhoeal diseases. It is a problem of information as well as poverty, because the requirements of the infant are small in relation to family food consumption.

43. In addition to the risk of an insufficiency of complementary food, the change-over from sterile breastmilk with its anti-infective factors to animal milk, semi-solid and solid foods which often have to be acquired, stored and fed in unsanitary fashion brings the highest rate of infection, particularly of the gastro-intestinal tract, that the child encounters in an entire lifetime.[45] The young child mortality rate (between one and four years), though much lower than for infants, is typically 15 per 1,000 for each year, some 15 times the rate found in industrialized countries.[46] Thus the average of 30 deaths per thousand during the two-year weaning period (taken as the second and third year of life) amounts to one quarter of the average 120 deaths per 1,000 during infancy.

44. "Foods that are locally available in the home can be made suitable for weaning, and their use should be strongly emphasized in health, education and agricultural extension programmes. Foods traditionally given to infants and young children in some populations are often deficient in nutritional value and hygiene, and need to be improved in various

38. *The Lancet*, November 27 1976, p. 1194.

39. Stig Sjolin, *Semper Nutrition Symposium*, Stockholm, 1973. See also *Human Milk in the Modern World*, *op. cit.*, pp. 225-233

40. T.H. Greiner, "Infant Food Advertising and Malnutrition in St. Vincent", Cornell University, Ithaca (New York), 1977.

41. Research project on the impact of dietary habits on the nutritional condition of nursing infants and pre-school children, April, 1980.

42. "Weaning" as used in this paper means the transition from mother's milk or formula to regular family food, and usually extends over 18-30 months (the "weaning period"). It is *not* used to denote the moment at which nursing stops.

43. N.S. Scrimshaw aud B.A. Uuderwood, "Timely and appropriate complementary feeding of the breastfed infant - an overview:', *Food and Nutrition Bulletin*, United Nations University, vol. 2, No. 2, April 1980, p. 21.

44. As recorded for example in the guidelines on "growth charts:' *(A growth chart for international use in maternal and child health care*, WHO, 1978).

45. Mannal on Infant Feediug, *op. cit.*, chapter 3.

46 *World Development Report, 1980*, World Bank, table 21, average of low-income and middle-income countries

ways. Mothers need guidance to improve these traditional foods through combinations with other foods available io them locally. Countries should determine the need for subsidizing weaning foods or otherwise helping to ensure their availability to low-income graups."[47] Section VII refers to action about these points.

45. The use of complementary or weaning foods may need to be continued to the age of between one-and-a-half to two-and-a-half years, by which time a transition to the household diet can be completed. The nature of the household diet affects the age at which the weaning process can be finished, according to its bulk, its lack of protein, the presence of strong spices, etc.

46. Industrially produced weaning fonds are a convenience; usually the lower-income families cannot afford them. UNICEF for many years was co-operating in country programmes to produce lower-priced milk products or weaning foods: however, in low-income countries these could not be made available to the low-income population through subsidy on a sufficient scale. Hence, UNICEF is now focusing its co-operation on programmes for the preparation of local foods in the household or in the community.

V. INFANT MORTALITY

47. It has been pointed out above that breastfeeding avoids sources of infection; conveys protection against infection; and produces a better nourished and more resistant infant, especially in families who cannot afford the necessary quantities of breastmilk substitutes (paras. 5-10). Poor infant feeding practices lead to illness on a large scale, and death on a much smaller scale. Usually it is only the latter that is recorded in the statistics.

48. There is no simple connection between estimates of infant mortality rates for a country and bottle feeding; infant mortality results from far too many other factors as well. Infant mortality [48] appears to have been declining during the nineteenth and twentieth centuries in the now industrialized countries, and during the twentieth century in the developing countries. The decline began long before the introduction of bottle feeding and has continued during the bottle-feeding period. Rural areas of countries where traditional ways of life continue and where breastfeeding is high, also have high infant mortality (e g , Nigeria, Zaire). The reasons include lack of education and information among mothers, poor maternal nutrition, lack of knowledge and resources for weaning foods, and lack of health services. There is sufficient evidence to show that under conditions of rural poverty, risk of infant death would be even higher in the absence of breastfeeding. In other words, breastfeeding has a very important role in preservation of infants' lives and prevention of further deterioration in areas of high infant mortality.

49. The important fact is that in developing countries infant mortality remains alarmingly high, on the average 10 times the level of industrialized countries. Hence the search for all available measures to reduce it, to which the improvement of infant feeding and weaning can make a signiticant contribution.

Industrialized countries

50. The earliest records are for death rates of the population as a whole, rather than infant mortality. However, wherever the death rate is high, infant mortality accounts for a substantial part. Hence, it is significant that in modern times, records show a declining death rate beginning first in Sweden in the eighteenth century, and in the nineteenth century beginning in France and England.[49] There are also Swedish records of infant mortality, with a decline beginning in the mid-eighteenth century.[50] In the 1870's infant mortality was still nealy 300 per 1,000 live births in southern Germany, but had fallen to 100 in Norway. The decline in most industrialized countries was particularly rapid in the first half of the twentieth century, and is now down to 13 per 1,000 live births.[51] The decline in mortality was followed some decades later by a decline in the birth rate, thus completing the demographic transition from high birth rates and high death rates to low birth rates and low death rates. In industrialized countries, where immunization, drugs and health services are available, the loss of the protection afforded by breastfeeding appears to result in higher morbidity rather than higher mortality.

Developing countries

51. Infant mortality rates for developing countries are usually based on a nation-wide sample of the population, and under that system it is not possible to make a reliable

47. *Joint WHO/UNICEF meeting, op. cit.*, p. 15. See also "Report of the Third Meeting of the ACC/SCN Consultative Group on Maternal and Young Child Nutrition", *Food and Nutrition Bulletin*, United Nations University, vol. 3, No. 1., Jauuary 1981.

48. Infant mortality is defined as occurring during the first 12 months of life, and is recorded as number of deaths per 1,000 children born during the same year.

49. Thomas McKeown, *The Modern Rise of Population*, New York, Academic Press, 1976. p. 28.

50. B. Vahlquist, cited in *Human Milk in the Modern World, op. cit.*, chapter 10.

51. *World Development Report, 1980*, World Bank, table 21 for high income industrialized countries.

breakdown into economically advanced areas, poor urban areas, and rural areas (as used above in para. 29), however, it is generally believed to be much higher in the last two areas [52] and one of the objectives of primary health care is to improve their situation. The protection and promotion of breastfeeding and better weaning practices is part of the primary health care strategy.

52. At the beginning of this century, infant mortality in the country as a whole was often 200 to 300 per 1,000 live births, as it had been 100 and 150 years ago in the countries that are now industrialized. There have been striking declines in recent decades, particularly from the 1930s to the 1960s.[53] The rate is now down to a global average of 120 for developing countries (excluding China)—approximately 10 times the rate of the industrialized countries. The target for the year 2000 included in the International Development Strategy of the Third Development Decade is to bring the rate down to 50, still four times the level of industrialized countries.[54]

Measures for reducing infant mortality

53. The reduction of infant mortality calls for many measures in an economic, social and cultural complex. They include clean water, better hygiene, better environmental sanitation, immunization and access to health services; better feeding practices; and above all, the education and status of women, which affect the preceding factors.[55]

54. Since poor infant feeding practices result not only in illness, but also in death, improvement in mortality rates could come about particularly by reducing the deaths due to diarrhoeas, infections and weakened resistance caused by poor nutrition. "Evidence from the developing countries indicates that infants breastfed for less than six months, or not at all, have a morality rate five to ten times higher in the second six months of life than those breastfed for six months or more."[56]

Number of infant deaths

55. Approximately 12 million infants die every year, 11 million of them in developing countries. If the rate of infant mortality is brought down to the target level of 50 per 1,000, this will mean saving approximately 6 million infant lives. At high rates of infant mortality, one third or approximately 4 million of the infant deaths occur in the neonatal period (0-28 days of age).[57] These are due to low birth weight, tetanus and other infections, accidents and miscellaneous causes. Better maternal nutrition could reduce the number of infants born with low birth weight (para. 21). The other two thirds of infant deaths (from 28 days to one year of age), amounting to approximately 7 million, are caused *inter alia* by malnutrition, gastro-intestinal, respiratory and other communicable diseases, and could be substantially reduced by better feeding practices, especially protecting and promoting breastfeeding and the timely introduction of weaning foods.

VI. ACTION BY THE INTERNATIONAL COMMUNITY

56. Confirmation on the part of the medical and scientific communities of the importance of breastfeeding led the international community to give more attention to the question of appropriate infant and young child feeding. During the 1960s the Protein Advisory Group (PAG) of the United Nations system [58] encouraged studies in infant feeding and in 1969 established an *ad hoc* working group on feeding the pre-school child. In 1971, the Group published its report, "Feeding the Pre-School Child", [59] which in section 4 treated the "sociocultural dynamics for breastfeeding" and drew attention to a dangerous decline. The Group also organized the preparation and publication of a manual for professional field-workers on feeding infants and young children, which has been translated into many languages and has become a standard text used by health services and voluntary organizations. It has been frequently cited above.[60]

57. At the same time the advertising of infant formula and free distribution of samples by the infant food industry became a matter of

52. In Thailand, see J. Knodel and A. Chamratrithirong, " Infant and Child Mortality in Thailand: Levels, Trends and Differentials as derived through indirect estimation techniques", Papers of the East-West Population Institute, No. 57, 1978.

53. *The Determinants and Consequences of Population Trends*, United Nations, 1973, vol. I, chapter V, paras.58-70.

54. General Assembly resolution 35/56, para. 48.

55. Thomas McKeown, *The Modern Rise of Population, op. cit.*, p. 28. Walsh McDermott analysed New York city's decline in infant mortality during the period 1900 to 1930, "Modern Medicine and the demographic disease pattern of overly—traditional societies: A technological misfit", *Journal of Medical Education*, vol. 41 (supplement) 1966.

56. "Maternal and Child Health:', report by the Director–General, WHO, (A/32/9), 1979, para. 45.

57. *Determinants and Consequences of Population Trends, op. cit., para. 69.*

58. The Protein Advisory Group, later renamed Protein-Calorie Advisory Group, consisted of experts in fields related to nutrition aud advised agencies in the United Nations system.

59. Protein-Calorie Advisory Group document 1 14/5.

60. *Manual on Feeding Infants and Young Children, op. cit.*

concern. In November 1970, in Bogota, Colombia, the Pan American Health Organization (PAHO) and UNICEF sponsored an international meeting of paediatricians, nutritionists, and representatives of the infant-food industry to discuss the problem. As an immediate result of the meeting, at least one of the larger companies changed some marketing practices.

WHO AND UNICEF actions

58. During the early 1970s, the UNICEF Executive Board took note of concern over the decline of breastfeeding on a number of occasions. The report of the Lome Conference[61] noted that most of the country studies revealed a lack of knowledge of proper weaning procedures and that this was leading to an abrupt or premature ending of breastfeeding without the gradual introduction of transition foods. As a result, increased co-operation was recommended for nutrition education for pregnant women and lactating mothers and the production of weaning foods locally produced.

59. A report on policy and programmes concerning the young child [62] considered by the UNICEF Board at its 1974 session, suggested a number of actions to encourage breastfeeding, including the study of reasons for its decline; orientation and training of medical and health personnel; public education; and support for nursing mothers. The Board agreed that UNICEF should increase its assistance in these areas. Support was also approved for the Protein-Calorie Advisory Group to promote, along with its other sponsoring agencies, co-operative action by paediatricians, government agencies and the infant-food industry in minimizing problems in early weaning.

60. In 1974, the World Health Assembly passed a resolution recommending the encouragement of breastfeeding as the ideal feeding in order to promote harmonious physical and mental development of children; calling for adequate social measures to support breastfeeding mothers; and urging Member States to review promotion activities for baby foods (WHA. 27/43).

61. In 1975 the UNICEF Executive Board considered a report on "Priorities in child nutrition in developing countries", prepared under the direction of Dr. Jean Mayer, then Professor of Nutrition, Harvard University School of Public Health. One of the recommendations was that "UNICEF should continue to support efforts to protect and promote the practice of breastfeeding infants".[63] The Board conclusions included the following :

"Particular emphasis was given to the effort to arrest the decline of breastfeeding. Among the many measures that might be advisable was the control of advertising of infant and weaning foods, for which it might be useful to prepare model legislation and adopt social measures for nursing mothers when they worked outside their homes."[64]

62. In reviewing UNICEF work in the field of child nutrition during the Board session of 1977, several delegations said that considerably increased emphasis was required to discourage premature weaning from breastfeeding. The Board was informed that the WHO collaborative study was under way and hoped that it could lead to consideration in the UNICEF/WHO Joint Committee on Health Policy, and "a more systematic approach by UNICEF to the problem".[65]

63. The following year the board was informed that work had started in several countries with WHO and UNICEF assistance to identify the main factors influencing the decline of breastfeeding and to develop means of countering these factors.[66] The Board expressed its support of an expansion of UNICEF co-operation in this area, with WHO.

Meeting on Infant and Young Child Feeding, October 1979

64. Intersecretariat consultations on the WHO and UNICEF programme led to a joint decision to convene a meeting on infant and young child feeding in October 1979 in Geneva. With representatives participating from Governments, international agencies, the health professions, the infant-food industry and non-governmental organizations, the meeting recommended changes in hospital practices; more support for the encouragement of breastfeeding through information and guidance under the health care system; measures to

61. *Children, Youth, Women and Development Plans in West and Central Africa,* report of the Conference of Ministers, Lome, Togo, May 1972 (UNICEF, Abidjan).

62. "The Young Child: Approaches to Action in Developing Countries", (E/ICEF/L. 1303).

63. "Priorities in Child Nutrition in Developing Countries, General Recommendations to UNICEF and Governments", vol, I (E/ICEF/L. 1328).

64. *Official Records of the Economic and Social Council,* Fifty-ninth session, Supplement No. 6 (E/ICEF/639, para. 66).

65. *Official Records of the Economic and Social Council,* Sixty-third session, Supplement No. 12 (E/ICEF/651, para. 120).

66. "General progress report of the Executive Director, Chapter II: Programme progress and trends" (E/ICEF/654 (Part II), paras. 162-167).

ensure that women's nutritional and health needs were met, especially during pregnancy; changes in obstetrical procedure and practices to facilitate breastfeeding; more information to the health professions during training, and orientation of other professions in contact with the public; and stronger support system for women working while continuing to breastfeed.[67]

65. The meeting recommended follow-up activities by various groups :

(a) Governments have a major responsibility to work with communities to give the necessary support to families living below the income level which would enable them to provide food for pregnant and nursing women, and infants and young children. Often social measures are also required for the support of breast-feeding, especially for working mothers;

(b) The health services and health professions have a prime responsibility for the advice given to women, the organization of maternity and mother and child health care services, and the training of professional, auxiliary and community health workers;

(c) Industry has the responsibility to continue to make supplies of breastmilk substitutes of good quality for those who need them, but promotion to the public should stop;

(d) Women's organizations should play a larger part in community and national decisions in this field, including the organization of information campaigns, support networks for breastfeeding mothers, and assistance in monitoring good marketing practices; and

(e) The information media have an important role for several audiences—families, mothers, youth and others.

66. The meeting also recommended the promotion and support of appropriate weaning practices, with emphasis on the use of locally available foods.

67. While recognizing that manufactured infant formulas were excellent products for infants who were not breastfed—and in fact needed by many families who cannot afford them—the meeting stated that promotion to the public and to mothers should stop There should be an international code of marketing of infant formula and other breastmilk substitutes. This should be supported by both exporting and importing countries and observed by all manufacturers. WHO and UNICEF were requested to organize the process for its preparation, with the involvement of all concerned parties.

68. The World Health Assembly in May 1980 endorsed the statement and the recommendations of the October meeting, and the work under way for preparation of the international code. UNICEF's co-operative effort with WHO was endorsed in discussions of the UNICEF Board at its 1980 session. Consultations with concerned Governments, the infant-food industry and non-governmental organizations have taken place and a draft code (WHO document EB67/20) was considered by the Executive Board of WHO in January 1981, and recommended to the 34th World Health Assembly in May 1981 for adoption as a "recommendation" to Governments in the terms of the WHO constitution (Article 23).

Substance of the Code

69. The most important provisions of the proposed Code [68] are contained in the following extracts, which apart from the first two on aim and scope, are generally taken from the opening sentences of the various articles :

> "The aim of this Code is to contribute to the provision of safe and adequate nutrition for infants, by the protection and promotion of breastfeeding, and by ensuring the proper use of breastmilk substitutes, when these are necessary, on the basis of adequate information and through appropriate marketing and distribution." (Article 1)

> "The Code applies to the marketing, and practices related thereto, of the following products : breastmilk substitutes, including infant formula; other milk products, foods and beverages, including bottle-fed complementary foods when marketed or otherwise represented to be suitable, with or without modification, for use as a partial or total replacement of breastmilk; feeding bottles and teats. It also applies to their quality and availability, and to information concerning their use." (Article 2)

"Governments should have the responsibility to ensure that objective and consistent information is provided on infant and young child feeding for use by families and those involved in the field of infant and young child nutrition..." (Article 4.1)

"There should be no advertising or other form of promotion to the general public of products within the scope of this Code." (Article 5.1)

67. *Joint WHO/UNICEF Meeting on Infant and Young Child Feeding*, Geneva, WHO, 9-12 October 1979.

68. *Draft International Code of Marketing of Breastmilk Substitutes, Report by the Director-General*, WHO, (EB67/20), 10 December 1980.

"The health authorities in Member States should take appropriate measures to encourage and protect breastfeeding and promote the principles of this Code..." (Article 6.1)

"The use by the health care system of professional service representatives, mothercraft nurses or similar personnel, provided or paid for by manufacturers or distributors, should not be permitted." (Article 6.4)

"Donations to institutions...of infant formula .. should only be used or distributed for infants who have to be fed on breastmilk substitutes." (Article) 6.6)

"Health workers should encourage and protect breastfeeding..." (Article 7.1)

"...Health workers should not give samples of infant formula to pregnant women, mothers of infants and young children, or members of their families.' (Article 7.4)

"Labels should be designed to provide the necessary information about the appropriate use of the product, and so as not to discourage breastfeeding." (Article 9.1)

"The quality of products is an essential element for the protection of the health of infants and therefore should be of a high recognized standard." (Article 10.1)

"Governments should take action to give effect to the principles and rules of this Code, as appropriate to their social and legislative framework, including the adoption of national legislation, regulations or other suitable measures .." (Article 11.1)

UNICEF co-operation in programmes to support breastfeeding and good weaning practices

70. In all regions, UNICEF co-operates in some activities and services in support of breastfeeding and appropriate weaning practices, some of which are of long standing. Much wider extension is needed. UNICEF's co-operation includes support for :

- Reorientation of training of health personnel, both pre-service and in-service, in co-operation with WHO;
- Information programmes for use by women's organizations and other local support systems;
- Introduction of mother and child weighing as a routine in maternal and child health services;
- Maternal, infant and young child supplementary feeding through community involvement, especially in primary health care services;
- Local studies of infant and yong child feeding practices;
- Extension of day-care facilities, especially in low-income urban areas; and
- Local weaning food production through agricultural planning, agricultural extension, "applied nutrition", home or community processing of foods, etc.

Some examples are given in the following paragraphs.

Africa

71. In *Kenya* the gathering of data on breastfeeding has been incorporated into the country's household sample survey system. A research project is in process on the knowledge, attitudes and practices of health workers with respect to breastfeeding. The medical curriculum is also being reviewed to remove gaps or defects wich might lead to faulty counselling and practice. The Kenya Institute of Education is co-ordinating the study.

72. Over the past two years UNICEF has been co-operating in a programme of courses for women on nutrition education and the preparation of weaning foods in the *United Republic of Tanzania*. Co-operation has also been extended for a project on the production of soya beans, a main ingredient of the weaning food *Iisha*.

Americas

73. In *Brazil* the promotion of breastfeeding forms part of an overall country plan aimed at incorporating the needs of children in national development plans. UNICEF is co-operating in a mass information and communications programme providing support for technical advice. This programme aims at :

- Enabling health centres and other relevant parts of the public health network to educate the mother, family members, community workers, etc.;
- Educating medical and health personnel; and starting to modify medical curricula;
- Motivating and influencing hospital administrators, architects, the judiciary system, etc., so that efforts are made to set up systems and attitudes that support and facilitate breastfeeding in hospitals, work places, maternity clinics, etc.:
- Influencing maternal attitudes to breastfeeding; and
- Influencing the infant food industry.

74. The Government is undertaking a systematic evaluation of the efforts under way, including major action programmes in Sao Paulo and Recife where breastfeeding had declined rapidly over the past decade.

75. Special programmes to promote breastfeeding have been supported in the *Caribbean* since the mid-1970s, beginning with surveys on infant feeding partices in Jamaica; motivation of professional, voluntary and extension groups through training sessions; and panel discussions and promotion via mass media. Building on this experience, the Caribbean Food and Nutrition Institute, with assistance from UNICEF and PAHO, organized a technical group meeting in 1979 to draft guidelines to promote successful breastfeeding. Since then, the Institute, with some assistance from UNICEF, has produced a breastfeeding promotion package consisting of a manual, slides, tapes and posters for the sensitization of policy makers and health teams.[69]

76. There is concern about the decline of breastfeeding throughout *Central America*. Following the October 1979 meeting in Geneva, the Institute for Nutrition in Central America and Panama, with WHO support, brought together representatives of the health, education, social services and planning ministries of six Central American countries in Tegucigalpa, Honduras, in March 1980. Recommendations now form the basis for national action in each country. A recommendation for "noting" a subregional programme is before the current Board session (E/ICEF/P/L. 2043 (REC)). It requests assistance for training seminars and workshops; preparation of educational materials; pilot activities in mass media promotion; and monitoring compliance with existing and forthcoming national codes regulating the promotion of breastfeeding substitutes.

77. The UNICEF regional office in Santiago supported a seminar on breastfeeding in 1980. One project for strengthening services for children in areas of extreme poverty, in which UNICEF participates in Chile, covers a number of fields including the extension of breastfeeding. It provides for the training of health personnel who, with the help of an orientation manual and audio-visual material, are promoting breastfeeding among mothers using the health services.

78. In *Mexico* a rooming-in programme is being supported by the *Sistema Alimentario Mexicano,* a network of government agencies involved in promoting improved food production and consumption habits, with the objective of encouraging breastfeeding and close mother/child contact.

Asia

79. *Bangladesh.* After substantial efforts at attitudinal change about weaning with rural women who were reluctant to consider the use of local ingredients and locally produced weaning foods because these foods are not considered important, 8,000 rural women in 20 unions are participating in training on their preparation and use.

80. In *Burma* studies undertaken since 1957 have shown a high incidence of protein-calorie malnutrition, especially in children aged one to two years (late weaning period). A seminar on breastfeeding and weaning practices held in 1979 reviewed approaches to bridge the wide gap between requirements for calories and their consumption during weaning, and to develop an action programme to address the problems. It was agreed that emphasis should be put on introducing appropriate complementary foods from four months onward. UNICEF is now supporting a study on successful examples of complementary foods from different regions of the country.

81. Breastfeeding promotion has been a part of UNICEF co-operation in *Indonesia* since the mid-1970s. Information materials, including a slide/sound presentation, were developed to help lay a base for programmes to combat the decline of breastfeeding in urban areas. An informal working committee was organized composed of government officials, representatives of women's groups, and the medical profession. Studies to provide data about infant feeding practices were supported, and a mass media campaign was developed and carried out in 11 cities during 1980.

82. In the *Philippines,* the under-six clinic of the Baguio General Hospital, known for its pioneering work to encourage breastfeeding rooming-in, has been designated a national centre for training health personnel, focusing on breastfeeding as the most important way of reducing infant mortality rates. UNICEF has provided some equipment and training stipends to the centre. Support is also being given for the expansion of the under-six clinic concept for training trainers, and later all health personnel including doctors, nurses and midwives of one region of the country.

83. In February 1981, as a follow-up to the October 1979 meeting, the Ministry of Health and Social Affairs of the *Republic of Korea* sponsored with UNICEF a seminar on infant and young child feeding involving some of the country's leading paediatricians and nutrition specialists. The seminar focused on the status and problems in breastfeeding and weaning practices; approaches to promotion; the mother's role; and education, training and information. A task force was established to carry out recommended actions in the main subject areas.

69. *Guidelines for Developing Strategies to Promote Successful Breastfeeding.* Caribbean Food and Nutrition Institute, PAHO/WHO, 1979.

84. *Thailand*. Much of UNICEF co-operation in recent years has been directed towards the training of primary health care volunteers and the training of trainers at different levels in applied nutrition, nutrition surveillance, promotion of breastfeeding. village-level food processing and community gardening. A campaign in support of breastfeeding began in 1975 as a part of a basic services project in 16 provinces of north-eastern Thailand. To date, over 1 million mothers have received basic health and nutrition information with special stress on breastfeeding.

Eastern Mediterranean

85. In the *Gulf Arab States* UNICEF is currently supporting studies on infant feeding practices. At a regional workshop on nutrition related to mother and child health in the Gulf countries held in Bahrain in April 1980, the participants concluded that despite the high purchasing power of most of the population and the availability of foods on the market, nutritional problems are prevalent in the society and are mostly affecting infants and pre-school children. Available studies indicate the prevalence of wasting, stunting and anaemia in this age group, in addition to the high infant and childhood mortality rates. The participants formulated several recommendations on the use of mass media in encouraging breastfeeding for the health and nutrition of the population, particularly the mothers.

86. Breastfeeding remains by far the predominant practice in the *Sudan*. Commercial substitutes however are sold. At this stage there is little information available on the volume of commercial breastmilk substitutes imported into the country, their distribution, or most importantly, the long-term trends in their use by nursing mothers. A study is currently being supported to research these and related questions.

Advocacy/information

87. In many countries, the encouragement of breastfeeding is a theme of advocacy. Considerable attention is being given to the development of core materials that can be adapted for the use of health workers, mothers and mothers-to-be, non-governmental organizations and the public at large. They include slide/sound presentations (Brazil, Chile, the Caribbean, Indonesia) , booklets and manuals (Afghanistan, the Caribbean, the Republic of Korea), radio messages, posters, etc.

88. During 1980, 14 two-minute radio programmes were distributed dealing with breastfeeding, reasons for encouraging the practice, and other information about infant feeding, both in the developing and industrialized countries. Each language version (English and French) was distributed to all National Committees for UNICEF, field offices and several radio networks.

89. A working group of WHO and UNICEF staff has been established on information and liaison with non-governmental organizations, with a number of publications and activities scheduled. They include background kits of information materials for the media and non-governmental organizations on the importance of breastfeeding, the need for its protection and support, and the contents of the draft code. Articles have appeared in *UNICEF News* and *World Health*. Other publications are being encouraged to include articles on various aspects of the subject.

90. Meetings and workshops in developing countries with the participation of non-governmental organizations, particularly women's and consumer groups, are being scheduled by several UNICEF country offices for late 1981. It is anticipated that they will lead to improved support systems for women who breastfeed, and more information being made available through non-governmental organizations about the benefits of breastfeeding.

VII. PROPOSED FUTURE PROGRAMME

91. The preceeding sections have shown that the protection and promotion of breastfeeding and good weaning practices can make an important contribution to the well-being and development of children, with effects lasting into adulthood. A wide range of national policies and services are needed. Many of them were put into operation, mostly on a pilot scale, during the decade of the 1970s. The WHO/UNICEF meeting of October 1979 resulted in a more comprehensive outline, some elements of which have been further elaborated since. WHO and UNICEF have been co-operating in many of these prorgammes at the national level, and their scale now needs to be substantially increased.

92. The following paragraphs summarize the relevant fields in which it is proposed that UNICEF should increase its participation in country programmes. WHO standards and guidelines are involved in varying degrees in all of them. For some, WHO would be the prime mover and UNICEF would have a supporting role. In others, UNICEF would have a larger role, particularly at the country level.

Surveillance of breastfeeding trends

93. Countries need to be able to follow the trend of breastfeeding and weaning practices in urban and rural areas, and at different income levels. Experience has been gained

through the WHO collaborative study, and WHO has a general methodology under preparation. It is proposed that the methodology should be tested in a number of countries and then diffused through regional working groups. UNICEF will be invited to contribute to the costs. Countries would undertake surveys periodically, for example every five years, and some will seek UNICEF participation for this.

Orientation and training of health professionals and other health workers

94. Advice given to pregnant women by obstetricians, nurses, auxiliaries, primary care workers, midwives and other health workers is an important factor in their decision whether or not to breastfeed, a decision usually made before delivery. Breastfeeding can be made easier by certain preparations. Professionals and other health workers need to know how to give advice to mothers and families, and also how to handle problems that may arise, e g , breastfeeding during sickness. These questions have been neglected in health training curricula in recent decades. Health administrators also need to be adequately informed in this field. WHO is preparing training modules for different levels of training, and will also prepare core teaching materials. These will then have to be adapted to differen countries. Refresher courses and the production of teaching materials in large quantities. particularly for lower-level workers, would be supported by UNICEF.

Orientation of teachers and extension workers

95. In addition to health workers, school-teachers and extension agents in contact with the community should be informed about breastfeeding and weaning, and be able to give information and advice consistent with what the health services are providing.

96. This is particularly important for primary and secondary schoolteachers and for literacy teachers. Many girls leaving school will be entering motherhood within a few years. Thus, it is impo tant to introduce training modules into teacher training colleges, and into the material being prepared for literacy campaigns. Such material would be mainly prepared at country level, but some core material is needed. The collaboration of UNESCO would be sought, along with WHO with respect to technical content.

97. Agricultural and home economics extension workers, community development workers and co-operative advisers are all in a position to influence the community. Orientation materials need to be prepared in co-operation with FAO and WHO. The League of Red Cross Societies is also ready to help in this. Core materials would be prepared and then adapted to local needs, country by country. UNICEF support would be sought towards the costs.

Informational material for mothers

98. Developing countries will need help with information material for mothers and families that can be distributed through their health facilities during pre-natal and mother and child health consultations. Core material prepared with WHO's help will have to be adapted to individual country needs. Some governments will seek UNICEF's support for this, and for reproduction (though UNICEF would not have the means to help with all the quantities required)

Health service practices

99. A number of hospital practices at time of delivery affect the initiation and duration of breastfeeding. These include the information given to mothers, the supportive attitude of the staff, the avoidance of too deep sedation during childbirth, immediate skin-to-skin contact and nursing of the newborn, the avoidance of pre-lacteal and supplementary bottle feeds during the first days of life, and avoidance of the distribution of samples of infant formula.

Nutrition

100 Inadequate nutrition presents a serious problem for pregnant women, for nursing mothers and for infants and young children whose family resources are insufficient to supply the food they need. Long term improvements in family and community capacity for supporting better maternal nutrition and better weaning foods can be obtained through more information and education for women and their families. Support for family food production and adequate storage is also important, as is the lightening of women's work, and community level action to have community gardens and community facilities for the storage and processing of weaning food. UNICEF should expand its co-operation in these fields.

101. Where there are malnourished infants and young children other services are also necessary that can give more rapid results than those just discussed; they also should be undertaken in a form which leads to long-term arrangements and self-reliance. For improved maternal and young child nutrition, the health services will need to monitor the health and nutritional status of the mother and child: to provide nutritional guidance; to reach needy women and young children in the community; and to take additional measures such as distributing food or food coupons to low-income families where required. External aid for children's food is available from the

World Food Programme and other sources, but because of national and international financial, logistical and administrative constraints, it covers the needs of only a small percentage of the population of developing countries. Food entitlement and assistance present both administrative and financial problems, which are under study in a number of organizations, including UNICEF. Based on the outcome the Executive Director may have further recommendations for the next session.[70]

Professional health non-governmental organizations and other non-governmental organizations

102. The organizations of obstetricians, paediatricians, nurses and midwives are in a position to help substantially in encouraging their members to provide the information needed by mothers and families. The corresponding international non-governmental organizations have consultative status with both WHO and UNICEF, and mutually useful co-operation can be developed further.

103. Also other non-governmental organizations can provide information on the promotion and protection of breastfeeding, in keeping with their constituencies. Women's organizations have a particular role to play (paras. 15-18) in both developing and industrialized countries, especially with respect to promoting, and providing support services for nursing mothers. Some organizations are deeply involved in these activities; more should be encouraged to undertake them.

104. UNICEF in its co-operation with non-governmental organizations both through its Committee of Non-Governmental Organizations and with particular organizations engaged in providing developmental services at the country level, is encouraging more co-ordination of activities in this field and the undertaking of pilot support projects in poor urban and rural communities in developing countries.

Information media

105. The information media, if motivated, especially radio but also increasingly television, would be in a position to provide information to the many who are not in touch with health services, and to arouse their interest in seeking the guidance of health workers where they are available. UNICEF should continue to help countries in production of substantive material for use by the media, in co-operation with the health and other concerned ministries. Slide and sound projections are required for meetings, and for places where people gather, such as markets,

Social support systems

106. Social support systems need strengthening in a number of fields. The WHO/UNICEF meeting recommended maternity leave of at least three months; some countries now extend this to six. Arrangements for flexible working hours and facilities for breastfeeding in work-places are very helpful in industrialized countries, and at present apply to only a small precentage of the population in developing countries. Experience has shown that both creches and day-care centres can be developed in residential areas on a community basis and within the limits of community resources. UNICEF has helped such arrangements as part of its participation in urban services, and this should be very much expanded.

Code of marketing of breastmilk substitutes

107. A number of promotional and marketing practices of breastmilk substitutes should be revised. These are now set out in the draft code which goes before the World Health Assembly for approval in May 1981. The Director-General of WHO and the Executive Director of UNICEF have proposed that this should be approved as a "recommendation" rather than a "regulation". The Executive Board of WHO has endorsed the draft code and recommended its adoption in that form (EB67/20 and EB67.R12). Some countries will be seeking advice and help from WHO and UNICEF about the preparation of suitable national measures to give effect to the code *(The code has since been adopted by the World Health Assembly as the International Marketing Code for Breastmilk Substitutes, vide resolution WHA34/22).*

Board action

108. The Executive Director recommends that the Board endorse UNICEF participation in the above activities to improve infant and young child feeding practices.

70. Funds to make some start with this work during the next twelve months are recommended in E/ICEF/P/L. 2026 (REC).