PROGRAMMES TO PROMOTE BREASTFEEDING

E. F. PATRICE JELLIFFE

SUMMARY

Modern concepts concerning the development of breastfeeding programmes are given, with special reference to maternal reflexes, the need for information and the health and nutrition of mothers. Motivation and education are needed for health professionals, families and administrators. Some successful programmes are mentioned including small-scale hospital activities and national programmes, notably the one developed in Brazil.

INTRODUCTION

Modern programmes to promote breastfeeding have become increasingly effective as it has become realized that success (or failure) depends on maternal reflexes, on **learned** knowledge concerned with practical "management" and, to a lesser extent, on the health and nutrition of the mother (Table I). Until the recent resurgence of concern with breastfeeding in the early 1970's, the worst lactators were in the best nourished communities in the world, including North America and Western Europe. Conversely, poorly nourished women in many rural areas in less technically developed countries breastfeed surprisingly well, although often to their own detriment ("maternal depletion syndromes").

E. F. Patrice Jelliffe
Lecturer, Population and
Family Health Division
School of Public Health
University of California, Los Angeles
California 90024, USA

COMMUNITY ANALYSIS

To develop a breastfeeding programme, some form of community analysis is required. Elaborate methodologically rigorous community investigations may be feasible occasionally and can yield most valuable results.[1] However, such studies are obviously complex, costly and difficult to undertake statistically and organizationally.

Most usually, programmes have to be based on far-from-complete data, and this type of non-statistical information has been criticized as being likely to be unrepresentative. Certainly, the best possible attempts should certainly be made to obtain as valid a population sample with as exact definitions as possible. However, this will be especially difficult (or impossible) with very limited resources in Third World countries.

Also, plainly the information required and obtainable will vary from limited programmes (such as those involving a hospital or district) to a national programme, especially in large, ethnically and geographically, diverse countries.

Information needs to be sought not only on the prevalence of breastfeeding, but also on the main social forces influencing the lactation reflexes, maternal knowledge concerning practical management and the health of mothers. Experience suggests that this can most usefully be obtained concerning four topics – general information and attitudes, health services, women in the work force, and the influence of the infant food industry (Fig. 1).

From all four sources, information needs collecting: on the occurrence of anxiety (or confidence) – inducing factors and the limitation or otherwise of opportunities

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TABLE I

MAIN CAUSES OF SUCCESS OR FAILURE IN BREASTFEEDING

		KEY INFLUENCES
Maternal reflexes	Let-down (milk ejection)	Confidence/anxiety
	Prolactin (milk production)	Sucking stimulus
Practical management	Traditional communities	Observation/*doula* support
	W. urban communities	Instruction/breastfeeding group support
Maternal health	General (infections)	
	Nutrition	Severely decreased calorie intake (pregnancy/lactation)

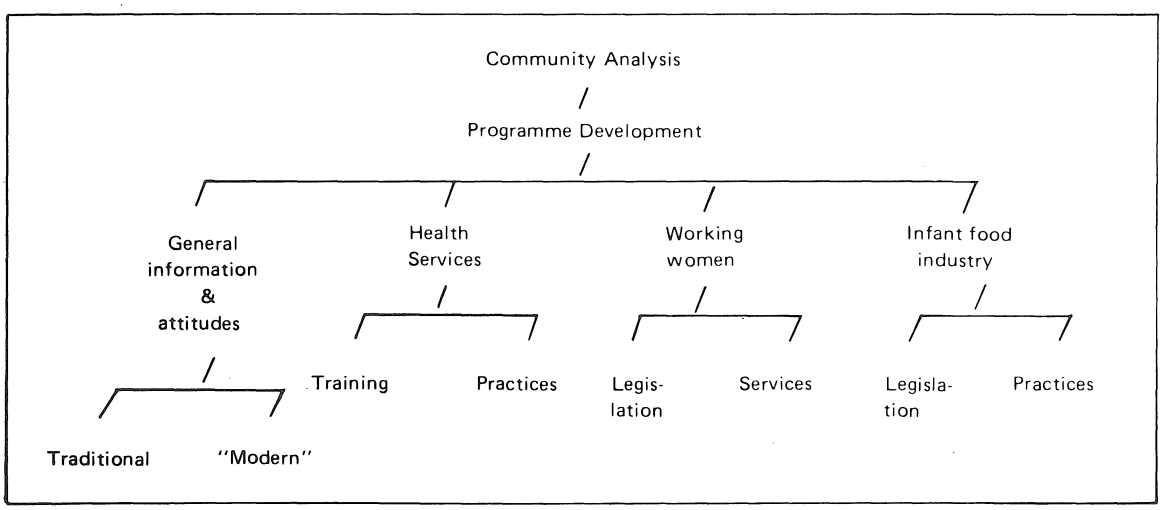

Fig. 1 Community Analysis and the Development of a Breastfeeding Programme.

for sucking; on the knowledge of the practical management of breastfeeding (modern or traditional methods) by mothers; and on maternal health and nutrition.

For example, anxiety may be induced by worry about "loss of figure", possible sibling or husband rivalry, embarrassment concerning feeding in public and, very commonly, concern that the milk supply will be inadequate ("too little" and/or "too weak"). This last example can be related to a blend of different factors, including, for example, cultural concepts, unsupportive and ill-informed health professionals and/or the subtly undermining influence of formula promotion. Inadequately appreciated is the fact that anxiety concerning a sufficient milk supply is likely to become a self-fulfilling prophecy. Conversely, culturally traditional galactagogues, or emotional support of families, health professionals and breastfeeding mothers' groups, or increased status of breastfeeding are effective confidence builders. Breastfeeding is in very large measure a "confidence trick".[2]

Similarly, situations which limit sucking and hence, prolactin secretion, such as separating the new born and

mother, or the use of complementary bottle feeds, or the necessity for mothers to leave the baby at home while going out to work, need to be identified in such community analyses.

Especially in urban *doula*-less communities lacking traditional female support, the practical management of lactation needs to be investigated. Breastfeeding is **not** instinctive, but is partly reflex interaction and partly learned behaviour. Repeated studies have shown that minor-seeming modifications in management, such as mother-neonate positioning, can increase both the supply and ejection of milk and avoid the two main avoidable anxiety-inducing problems – cracked nipples and engorgement. In addition, beneficial and potentially harmful traditional practices need to be known about, such as colostrum rejection.

The influence of these four areas on the general health and nutrition of mothers also need to be investigated in relation to their possible impact on breastfeeding. Limitations in the dietary intake in pregnancy, in the puerperium and in lactation need to be known, and whether these are due to economic or cultural reasons, or to overwork. In particular, **serious and substantial calorie deficits** are most likely to be relevant, especially in already malnourished mothers.

In most malnourished communities, women breastfeed remarkably well, but sometimes to their own detriment. However, in very severe calorie deficiency, or in famine circumstances, secretion can cease. The critical level of calorie intake is difficult to ascertain. Many other factors, such as the mother's present nutritional status, individual variation in adaptability and coincident events likely to inhibit the let-down reflex (and availability of calorie-rich, high-fat hind milk), need to be considered at the same time.

GROUPS NEEDING CONVICTION

Programmes need to alter attitudes and to stimulate motivation in the general public, and especially to influence behaviour change in mothers (and fathers). At the same time, they also have to convince and motivate other groups whose actions can support breastfeeding or make its accomplishment easier or more difficult. These include policy-makers and legislators, health workers of various types (including hospital administrators), research scientists, industrialists and the infant food industry. Some major issues in motivating and convincing these groups are given in Table II.

For the health professional, there are a number of procedures which need modification (notably "rooming-

TABLE II
MOTIVATION-CONVICTION FOR DIFFERENT GROUPS WITH REGARD TO NEED FOR BREASTFEEDING PROGRAMME

General Public		Health and economic advantages. Status. Allaying anxieties. Availability of assistance and information.
Policy makers, Legislators		Agro-economic advantages.
Health workers	: Hospital Administrators	Economics/convenience in maternity units.
	: Paediatricians and nursing staff	Up-to-date biochemical, nutritional, immunological data, etc., and positive advantages.
		Scientific evidence concerning psycho-physiology and health service's role in assisting.
	: Family planner	Considerable role in combined family planning programme.
Research scientists		Wide range of evidence concerning breastfeeding and human milk.
Industrialists		Financial advantages of creches (e.g. contented, uninterrupted trained female workforce).
Infant food industry		Need for **least** cost, non-advertised alternatives.

in") (Tables III, IV), which facilitate the maternal reflexes, supply practical information and support, and make breastfeeding easier. Such changes also help reorient the training of medical and nursing staff and form an immediate part of direct health education of the public by visible example. For both the general health professional and especially for the research scientist, it is necessary to widen the perspective from over-attention to one, often very narrow, aspect (inevitably requiring ever more and more research) to a broad-spectrum view of the ranges of evidence available concerning the types of benefits obtained by breastfeeding (Fig. 2). The emphasis in this motivation will need to vary. In less technically developed countries, considerations of protection against enteral infection, over-all nutritional benefits, economics and child-spacing loom large. In more technically developed countries, the different psychophysiological interchange, detailed biochemical considerations (e.g. taurine, carnitine) and minimization of the prevalence and severity of many childhood infections need to be emphasized, as well as probably partial aetiological significance in some cases of necrotizing enterocolitis, sudden infant death syndrome and the "intractible diarrhoea syndrome".

DETAILS OF THE PROGRAMMES

Small scale

Breastfeeding programmes can be (and have been) successfully undertaken on a relatively small scale, often in hospitals, by modification of existing maternity unit practices which have evolved with no rational scientific justification in the so-called western world during the present century, and, unfortunately, have been exported to other cultures. Undoubtedly, the most significant "package" of activities for the hospital is "rooming-in". Positive results from hospitals in several European countries (Table V) and from hospitals in various less technically developed countries are available.[4] Particular success has been reported from the Philippines[5] and Costa Rica.[6]

The impact of changes in maternity unit procedures reinforced by follow-up home visits has been most dramatically shown in the Puriscal region of rural Costa Rica.[7] Results showed a marked increase in breastfeeding on discharge accompanied by very substantial declines in neonatal morbidity from infections, associated with a median breastfeeding rate in Puriscal of 6.9 months compared with 1.8 months for Costa Rica as a whole.

National Programmes

Various and very different countries have shown an increase in breastfeeding in the past 25 years. Most usually, this has not been part of a national programme but has been led by mothers' support groups, such as La Leche League in the USA, NMAA (Nursing Mothers' Association of Australia) and *Ammehjelpen* in Norway. Their effectiveness is as *doula*-surrogates, making available psychological support and practical information.

In addition, during the past 10-15 years, national programmes of different degrees of complexity and coverage have been initiated in numerous countries, often with the backing of WHO, UNICEF and/or USAID.

TABLE III

PUERPERAL PRACTICES INTERFERING WITH LACTATION *VIA* THE PROLACTIN AND LET-DOWN REFLEXES (MODIFIED FROM HAIRE 1973)[3]

Practice	Effect on Lactation (*via* maternal reflexes)
Delaying first breast-feed Sedated newborn (excess maternal anaesthesia) Supplying prelacteal and complementary feeds Regular, limited feeds (4 hours) (with no or limited night feeds) Mother and infant separated ('nurseries')	Limitation of sucking and prolactin secretion.
Uninformed, confused mother Tired mother (no food or drink in labour) Routine episiotomy (pain) Weighing before and after (test feeds) Restricting visitors Unsympathetic or ambivalent health staff ('anti-*doula* effect') Lack of privacy	Anxiety and interference with let-down reflex.

TABLE IV

SOME POSSIBLE MODIFICATIONS IN HEALTH SERVICES DESIGNED TO PROMOTE BREASTFEEDING IN A COMMUNITY[2]

Health service	Modifications
Prenatal care	Information and support concerning breastfeeding (preferably from breastfeeding mothers.) Breast preparation (especially inverted nipples). Maternal diet. Emotional preparation for labour.
Puerperal care	Avoid maternal fatigue/anxiety/pain (e.g. allow to eat in early labour; avoid **unnecessary** episiotomy; husband permitted during delivery; relatives and visitors allowed; privacy and relaxed atmosphere; organization of day with breastfeeding in mind). Separate mother and newborn as little as possible. Stimulate lactation (e.g. no prelacteal feeds; first breastfeeding as soon as possible; avoid **unnecessary** maternal anaesthesia; permissive schedule; **rooming-in).** Lactation 'consultants' (advisers-preferably women who have breatfed). Forbid routine use of formula discharge packs. First post-natal visit earlier (7-10 days), if feasible.
Premature unit	Use of expressed breast-milk (preferably fresh). Contact between mother and baby with earliest return to direct breastfeeding.
Children's wards	Accommodation in hospital (or nearby) for mothers of breastfed babies.
Home visiting	Encourage, motivate, support.
Health Centre	Supplementary food distribution (e.g. formula and weaning foods) according to defined, locally relevant policy.
General	Supportive atmosphere from all staff. Avoid promotion of unwanted commercial infant foods (e.g. samples, posters, calendars, brochures, etc.). Adopt minimal bottle-feeding policy and practical health education concerning 'biological breastfeeding'.

In all cases, such programmes have comprised consideration of the four aspects mentioned previously (Fig. 1) and have attempted to include motivation and action directed through one (or preferably all) of these channels. The blends of methods used have varied according to local needs. Results have often been striking in terms of coverage and of increase in breastfeeding in maternity units and some communities.[4]

Briefly, breastfeeding programmes work when based on a "tripod" approach — support maternal reflexes, supply practical information on management, and preserve the health and nutrition of pregnant and lactating mothers.

Details of such programmes obviously will vary with different social, cultural, economic and geographical situations. The most complete programmes seem to be those in Indonesia and Brazil.[7] The latter is outlined in Appendix I.

Inclusion of legislation and services for working women seems usually (but **not** always) to represent a major activity, as does monitoring the activities of the infant food industry's marketing practices. The feasibility of breastfeeding mothers' support groups varies, but, when practicable, can be highly significant, as it usually involves the "trend-setting" educated elite.

However, probably the two most universal, initial components for such programmes are the modification of maternity health services (with accompanying reorientation of training of different categories of health professions),[8,9] and information *via* the mass media, based on modern concepts of "social marketing".[10] However, above all else is the need for actively supportive legislators. This requires impetus from health profes-

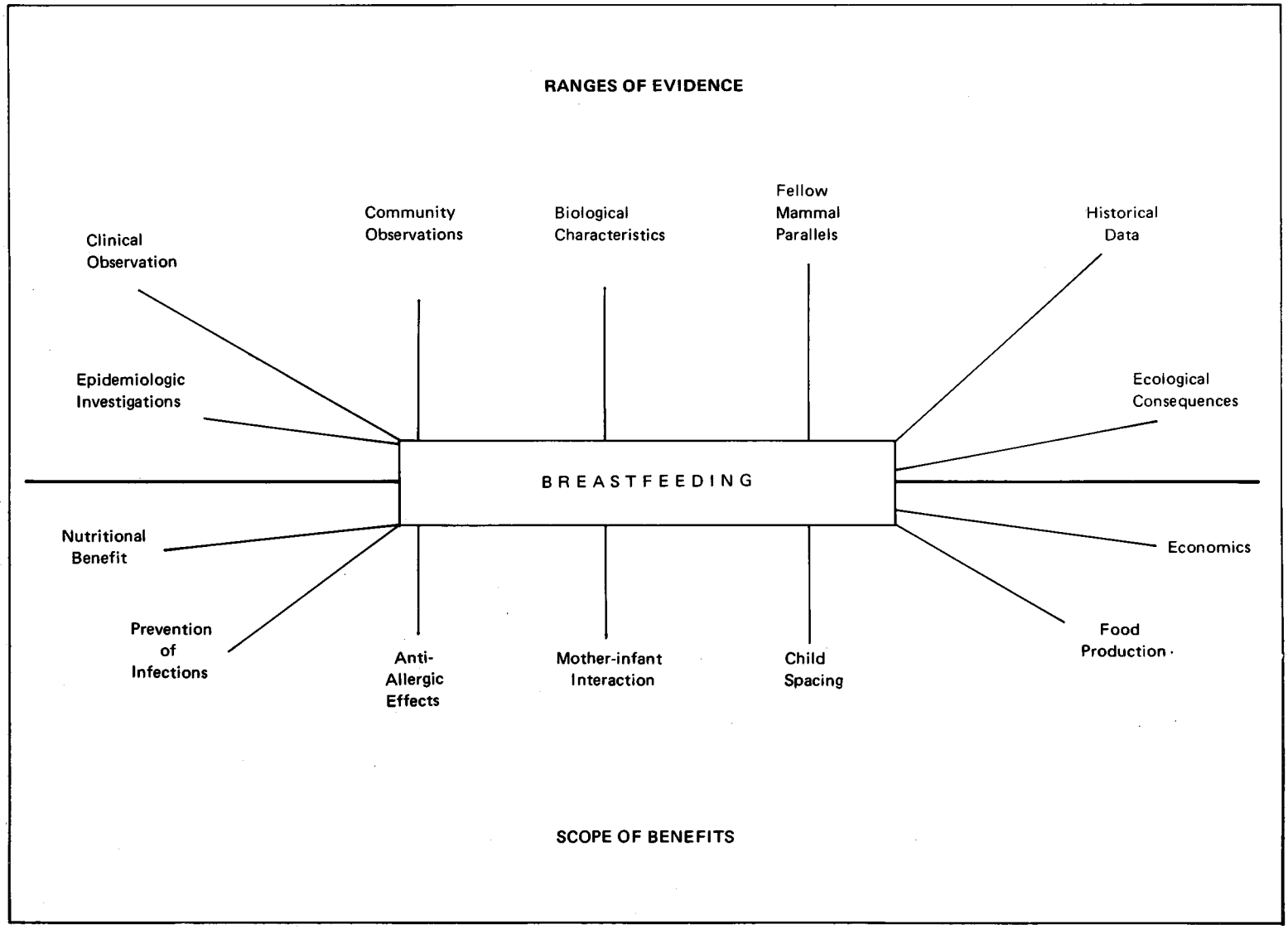

Fig. 2 Ranges of evidence and scope of benefits.

sionals, including nutritionists, who are not only well-informed on both modern scientific knowledge and practical management based on few information concerning the psychophysiology of lactation, but are also **positive** advocates.

APPENDIX: THE BRAZIL NATIONAL PROGRAMME

A very complete and innovative programme has been undertaken in Brazil in recent years, using the steps as mentioned here.

STEP 1. In 1980, the Brazilian National Nutritional Institute (INAN) with UNICEF assistance, produced an audio-visual slide-tape presentation on the declining breastfeeding rate in the country, especially in the large cities, and its effects on infant health and nutrition, and on national economics. This audiovisual had a profound effect on senior administrators and officials, who decided that action to promote breastfeeding must be taken.

STEP 2. In 1981, a baseline survey study focussed on the knowledge, attitudes and practices of mothers in sample populations in two large cities, Sao Paulo and Recife.

STEP 3. A national breastfeeding campaign was initiated and launched for 45 days. Radio and television time was made available without cost, as a public service, by a Sao Paulo advertising company (CBBA), in collaboration with UNICEF and the National Breastfeeding working group. Media strategies were based on careful research into the psychological anxieties of mothers, and aimed at enhancing the status of breastfeeding. Well-known personalities were used, e.g., actresses, female radio announcers, prominent sportsmen in the field of soccer (who reassured husbands also about the benefits of breastfeeding). These 60-second television and radio spots are repeated at prime time, free of charge.

STEP 4. Most importantly the National Programme was coordinated by the national breastfeeding group created by the Ministry of Health and based in the National Nutrition Institute (Brasilia), with a president (a paediatrician), assisted by a full-time UNICEF physician loaned to the programme and by representatives from the Ministries of Health, Social Welfare and Assistance, Education and Culture, Paediatrics, the Federation of Obstetricians and Gynaecologists, UNICEF and the World Health Organization.

STEP 5. Target groups. These included well-to-do mothers, "trend setters" (mostly living in cities); health professionals; and those working in the field of general education.

STEP 6. Activities achieved. The activities achieved by 1985 are given in Appendix, Table I. These include the following:

APPENDIX TABLE I

NATIONAL BREASTFEEDING PROGRAMME : BRAZIL (1981-84)

Some achievements todate:	Training No.
Seminars – 3 days	115
Training health professionals	12,300
Training health auxilliaries	15,000
Training community leaders	19,000 (Min. of Education) 6,000 (Min. of Interior)
Regional and National meetings	8
Revision curricular (medical/nursing students)	32 (schools)
Rooming-in: Government maternities	60%
Milk banks	30+
Books: Rooming-in	3
Training: counselling mothers	500
Training: teachers' basic schools	600
Revision school curricula	15 states
Assistance – state health secretaries	22

1. Training activities at different levels for all health professionals using slide sets, textbooks, translated articles, courses (new, retraining and refresher courses), visual aids, including a flip chart for training in the public health service. Observation by trainees of breastfeeding mothers in hospitals and clinics.

A newsletter promoted by the Brazilian Paediatric Society is distributed, and deals with promotion of breastfeeding.

2. Training guide for schoolteachers so that breastfeeding may be incorporated into the curriculum of second and third-grade students.

3. Literature for mothers. As well as the mass media programme, a small, simple booklet for literate mothers is distributed in hospitals and clinics.

4. Modifications in health services. Rooming-in has been successfully introduced into most hospitals (Appendix, Table II). **Education regarding breastfeeding** in hospitals and clinics (mothers' classes – presentation of subject and discussion of problems encountered by women). Family planning services are integrated into health services. **Breast milk banks** have been established successfully in several hospitals. **Mothers' support groups.** These have now spread widely to very many groups in poorer slums *(favellas).* **Lactation counsellors and clinics.**

APPENDIX TABLE II

SOME ACHIEVEMENTS TODATE: PROMOTIONAL ACTIVITIES (1981-84)

National level – photograph contests: 2
Weekly columns – Sunday newspaper *(El Globo)*
School competitions: drawings of breastfeeding (6,000 children)
Breastfeeding kits: 4,000 paediatricians
Mothers' breastfeeding clubs: 1,500
Television spots – soap operas
Active assistances – religious groups

These activities were started in August 1982, on an experimental basis.

Legislation: lactation benefits and creches. Despite legislation established in 1943 at government level, which would require factory owners employing over 30 women to provide creches for their employees, a pilot study undertaken by the Ministry of Labour (1979) showed in the state of Santa Catarina, that, in fact, legislation was not enforced by the majority of these small factory owners. Following two modifications, registration of existing creches by the Federal Department of Labour and by specially instituted inspections, by the end of one year, the rate of available creches had increased from 10% to 85% and were used by 60% of mothers.

Literacy campaign. Two organisations, the Ministries of Education and Culture (MOBRAL), and of the Interior (RONDON) are able to deploy 17,000 extension agents throughout the country (MOBRAL) and 70,000 University students for 1 or 2 months yearly to work in rural areas (RONDON). Presently both agencies have introduced breastfeeding as a major programme in their booklets and brochures.

STEP 7. Evaluation. A repeat of the initial base-line study is in the process of development. This is complicated by the size of the country, logistical difficulties and funds. However, the general enthusiasm regarding the promotion of breastfeeding among the different agencies involved is remarkable and infectious as seen in terms of continued growth, thanks to the dedication of all groups involved. This programme could serve as a model for other countries who may be dismayed at the immensity of the problem facing them. It is only when unity exists among groups striving for the same goal that a successful programme can really become part of what was once a traditional way of life.

REFERENCES

1 Marchione T J, Helsing E. Rethinking infant nutrition policies under changing socio-economic conditions. *Act Paed Scand* 1985; Suppl. 314:1–61.

2 Jelliffe D B, Jelliffe E F P. *Human milk in the modern world.* Oxford: Oxford University Press, 1978.

3 Haire D. The cultural warping of childbirth. *J Trop Pediat* 1973; 19 : 171–176.

4 Jelliffe D B, Jellife E F P. *Programmes to promote breastfeeding.* Oxford: Oxford University Press, 1986.

5 Clarano N R. Mode of feeding and its effects on infant mortality and morbidity. *J Trop Pediat* 1982; 28: 287–291.

6 Mata L, Carvajal J J, Garcia M E. Promotion of breastfeeding, health and survival of infants through hospital and field interventions. In *Malnutrition Determinants and Consequences.* New York: Alan Liss Inc., 1984: 123–138.

7 Marin P, De Oliveria Y P. The breastfeeding programmes in Brazil. In Jelliffee D B, Jelliffe E F P. (eds.) *Programmes to promote breastfeeding.* Oxford: Oxford University Press.

8 Naylor A. Learning the management of breast-feeding experience of the San Diego Lactation Clinic. *Adv Int Mat Chld Hlth* 1984; 4:59–64.

9 U.S. Department of Health & Human Services. *Report of the Surgeon General's Workshop on breastfeeding and human lactation.* Washington, D.C.: DHHS publication, No. HRS-D-MC 84-2, 1984.

10 Manoff R. *Social marketing.* New York: Praeger, 1985.