THE BABY FRIENDLY HOSPITAL INITIATIVE: LEVEL OF IMPLEMENTATION IN TEN NEW ZEALAND HOSPITALS

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ABSTRACT

The potential benefits of breastfeeding are well documented. These include benefits for the infant which may extend into adult life, as well as benefits for the mother, the family, the economy, and the environment. Yet despite this, breastfeeding rates in New Zealand are not improving, and there is evidence of practices in New Zealand hospitals which have a negative influence on breastfeeding. One possible solution to this is to try to improve hospital policies and practices through implementation of the Global Baby Friendly Hospital Initiative (WHO/UNICEF, 1989).

The purpose of this study was to ascertain the level of implementation of BFHI related policies and practices in New Zealand hospitals which provide maternity services. A descriptive survey utilizing face to face interviews of groups of 2-6 participants was undertaken in ten hospitals located in the North Island of New Zealand. Respondents included midwifery managers, lactation consultants, midwives, and nurses, familiar with their hospital's breastfeeding policy and practices. An adapted questionnaire and classification system developed by Kovach (1995) classified hospitals within four levels of implementation ranging from high, moderately high, partial, and low.

Most of the hospitals were implementing six of the Ten Steps. The majority were not fully implementing Steps 1 and 2, and some hospitals had insufficient knowledge of current practices to be able to demonstrate implementation of Steps 3 and 5. The area identified as needing the greatest attention by hospitals is staff education on breastfeeding. Overall, five hospitals were classified as high implementers and five as moderately high, however no hospital was consider to be fully implementing BFHI.

The study identified four main findings: a lack of consistent breastfeeding definitions and insufficient knowledge of exclusive breastfeeding rates; current difficulties in obtaining data, particularly about self-employed Lead Maternity Carer (LMC) practices; a lack of staff knowledge and misperceptions about the BFHI; and a gap between recommended evidence-based practices and reported breastfeeding practices in the surveyed hospitals.

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INTRODUCTION

> The protection, promotion and support of breastfeeding is fundamental to achieving optimum health of the nation.
> (Ministry of Health, 1997, p. 2).

The negative effect of some hospital practices on the success of breastfeeding occurs globally (WHO, 1998). This includes New Zealand, where reports of factors which influence the duration of breastfeeding indicate many negative hospital experiences (Bradfield, 1996; McLeod, Pullon, & Basire, 1998; Vogel & Mitchell, 1998a). Although more than 90% of New Zealand mothers initiate breastfeeding in hospital, many discontinue after only a short time (Essex, Smale, & Geddis, 1995; Sinclair, 1997). One solution to reducing this decline in breastfeeding duration, is to change hospital practices.

The 'Ten Steps to Successful Breastfeeding' (referred to throughout the remainder of this document as the Ten Steps) are the foundation of a combined initiative launched in 1991 by the World Health Organisation (WHO) and the United Nations Children's Fund (UNICEF). This initiative called the Baby Friendly Hospital Initiative (BFHI) aims to reduce those health care practices which interfere with breastfeeding, and which are believed to have contributed to the erosion of breastfeeding (WHO, 1998). The authors of this publication (WHO, 1998) argue that attention to inappropriate maternity care may be a prerequisite for raising exclusive breastfeeding rates; and also, that until practices improve, attempts to promote breastfeeding outside the health service will be impeded. The Ten Steps of the BFHI summarize the maternity practices considered necessary to support breastfeeding.

Implementation of the BFHI is of relevance to all New Zealand health care professionals who work with pregnant women, breastfeeding mothers and breastfed infants, however the researcher has a particular interest in the effects of midwifery practices on breastfeeding. More than 60% of women in New Zealand choose a midwife as the lead professional for their antenatal, birth, and postnatal experience (New Zealand College of Midwives [NZCOM], 1999a). In addition, more than 98% of women birth in hospital in this country (Gulbransen, Hilton, McKay, & Cox, 1997), and a midwife must

be available at every birth, although not necessarily as the lead professional (Health Funding Authority, 1999a). Therefore it is reasoned that the majority of women in New Zealand will have contact with a midwife during each childbearing event.

The New Zealand College of Midwives is the professional body for midwives in New Zealand, and represents 83% of the current midwifery workforce (NZCOM, 1999a). Midwives may be either employed (e.g. by hospitals or agencies) or self-employed. The NZCOM supports breastfeeding and:

> believes that midwives promote, protect, support and maintain the art of successful breastfeeding by providing relevant accurate and culturally appropriate information to women, their whanau/family and society as a whole.
>
> NZCOM believes that it is the midwives [sic] responsibility to maintain an up to date accurate, research based knowledge, and where appropriate, collect and share data on all aspects of successful breastfeeding. This includes reference to community groups who support breastfeeding.
>
> (NZCOM, 1995).

The NZCOM sets ten standards for midwifery practice, all of which are relevant to practices which aim to protect, promote, and support breastfeeding (NZCOM, 1993). The midwife is expected to work in partnership with the woman; uphold each women's right to free and informed consent; and develop a plan of care with each woman.

To practice in New Zealand, the midwife must have an annual practising certificate issued by the Nursing Council of New Zealand which also sets minimum requirements for registration. These requirements include the ability to give the necessary supervision, care, and advice to women prior to and during pregnancy, labour, birth, and the postnatal period, and to the newborn/infant (Nursing Council of New Zealand, 1999). Performance Criteria 2.12 of the Competencies for Entry to the NZ Register of Midwives requires that the applicant "protects, promotes and supports breastfeeding" (Nursing Council of New Zealand, 1999, p. 8). Thus it is argued that the implementation of BFHI in New Zealand is of significance to all midwives - both in the way that midwives contribute to the implementation process and also in the way that midwives provide and evaluate their practice.

An additional reason for the choice of topic for this study was the researcher's awareness of colleagues' attempts to introduce policies and practices related to the Ten Steps into their workplaces, in the absence of any formal Baby Friendly Hospital Initiative in New Zealand.

Statement of the problem

Although some hospitals may be aware of their own progress, at the time of undertaking this study, there was no published research regarding the overall status of BFHI in New Zealand hospitals, and no NZ BFHI Authority to which New Zealand Hospitals could apply for accreditation of the Baby Friendly Hospital Award. The research question was thus, "What is the current status of BFHI related policies and practices in New Zealand hospitals?"

A study to describe the current status was seen as one way of highlighting which (if any) BFHI practices have been implemented in New Zealand hospitals, and of bringing evidence-based practices to the attention of midwives and other hospital staff who work with pregnant women, new mothers and neonates. Additionally, the study was expected to provide some baseline data on the degree of BFHI implementation, for anyone interested in establishing the BFHI in New Zealand. Due to time and financial constraints the study was limited to ten North Island public hospitals providing maternity services in New Zealand, however it has the potential for replication within the wider New Zealand hospital population at a later date.

The main objectives of the study were:

* to undertake a descriptive survey utilizing a study by Kovach (1995) which included a questionnaire which she developed, but which was adapted for the New Zealand setting;

* to obtain descriptive information from the hospitals studied about their current hospital policies and reported practices;

* to classify the hospitals studied as high, moderately high, partial, or low, in relation to their level of implementation of each of the 'Ten Steps to Successful Breastfeeding' and implementation of the BFHI overall;

* to identify barriers to implementation of the Ten Steps and the BFHI.

Overview of the study

One of the tenets underlying the WHO/UNICEF BFHI is that 'Breast is Best' and this underlying assumption was maintained by the researcher throughout the whole of the study. Therefore in Chapter One many of the benefits of breastfeeding are discussed and reasons are provided for the need to protect the practice of breastfeeding. Factors influencing the decline, incidence, and duration of breastfeeding are summarized. The reader is introduced to the Ten Steps - ten key concepts which are designed to guide evidence-based hospital practices which will support breastfeeding. This introduction is extended to include the WHO International Code of Marketing of Breast-milk Substitutes (WHO, 1981), referred to throughout the remainder of this document as the WHO Code; and the New Zealand Infant Feeding Guidelines for Health Care Workers (MOH, 1997). A short historical account of developments leading up to the introduction of the BFHI is also provided. This includes moves to implement BFHI as a national initiative in New Zealand.

As the BFHI provides the conceptual framework for this study, BFHI documentation is examined in more detail and a summary of the rationale and scientific basis is presented in Chapter Two. Following on from this, a study undertaken by Kovach (1995) is discussed, as her study and (adapted) questionnaire (Kovach, 1996, 1997) were utilized in the research design of this study. Literature reporting on BFHI related practices in overseas hospitals is also examined, and then the small amount of literature pertaining to studies of BFHI in New Zealand is reviewed. A second underlying assumption of this study was that the New Zealand Government would adhere to its stated commitment to introduce BFHI at some point in the future, therefore this study focuses on BFHI implementation rather than a critique of the actual BFH Initiative, or any assessment of other breastfeeding promotion programmes. The chapter ends with the researcher's conclusion that in New Zealand there is insufficient knowledge of accurate breastfeeding rates and the level of implementation of BFHI practices.

Chapter Three focuses on the research design and begins with a discussion of the relevance of utilizing the survey method. Justification is given for the use of groups, face-to-face interviews, and the questionnaire method of data collection. This section also details the reasons for selecting an existing questionnaire, and for the need to adapt it. Validity, reliability, and ethical

issues are addressed, prior to an explanation of the data analysis methods used.

The research results are presented in Chapter Four. Demographic and other selected characteristics of the surveyed hospitals are provided, followed by the collated responses of the group participants' responses to questions related to their hospital's breastfeeding policy and practices. Each hospital was classified as a high, moderately high, partial, or low implementer for each of the Ten Steps and then for the BFHI overall. In addition, the main themes identified through content analysis of responses to specific open-ended questions about hospital policy, goals, and BFHI implementation, are presented.

Chapter Five contains a discussion of these findings, the implications for practice, education, and service development, the limitations of the present study, and areas for further research. Four key factors are identified which should be addressed. These include the lack of national breastfeeding definitions for hospitals; differences in the delivery of maternity services within New Zealand; discrepancies between recommended and reported breastfeeding practices; and indications of lack of understanding of the BFHI and the WHO Code.

Chapter Six, the final chapter, contains a short summary of the overall findings and recommendations of the study.

Chapter 1

BACKGROUND TO THE STUDY

Introduction

One of the major premises underlying the Baby Friendly Hospital Initiative is presented in this chapter. On the basis of research it is reasoned that breastfeeding is the natural and best option for both mother and infant. The benefits of breastmilk and breastfeeding are explored in order to demonstrate the rationale for implementing a programme designed to protect, promote and support breastfeeding. Factors influencing the decline, incidence, and duration of breastfeeding are then summarized.

An historical overview of the developments leading up to the introduction of the BFHI as a global initiative is provided, as is a discussion of NZ Ministry of Health (MOH) initiatives designed to protect and promote breastfeeding. The chapter also includes a summary of moves to implement the BFHI in New Zealand.

The benefits of breastfeeding

In a joint statement (WHO/UNICEF, 1989) the Director General of WHO and the Executive Director of UNICEF acknowledge one of the premises of the BFHI - that, although discoveries are still being made about the benefits of breastmilk and breastfeeding, few people would openly contest the maxim 'breast is best'. Breastmilk is species specific, with human breastmilk being the ideal food for the human offspring (Ebrahim, 1980). It has evolved with each species and is specifically designed for the offspring of that species (Inch, 1996; Lawrence, 1999; Minchin, 1998; Palmer, 1993; Riordan, 1993a). Breastmilk is a living cellular fluid, containing necessary nutrients in readily bioavailable forms for the developing infant, and constantly changing to meet the needs of the infant (Henschel & Inch, 1996). The benefits of breastfeeding for the infant, mother, and their environment are well documented (Coates, 1993; Cunningham, Jelliffe, & Jelliffe, 1991;

Lawrence & Lawrence, 1999) and are summarized rather than detailed in this chapter.

Physiological and immunological benefits for the Infant

There is strong evidence for both the short-term and long-term health benefits of breastfeeding (Sikorski & Renfrew, 1999). Benefits include reduced mortality in pre-term infants (Golding, Emmett, & Rogers, 1997a; Jayanthi, Seymour, Puntis, & Stringer, 1998; Lucas & Cole, 1990), and reduced infant morbidity from gastro-intestinal infections (Golding, Emmett, & Rogers, 1997b; Howie, Forsyth, Ogston, Clark, & Florey, 1990; Scariati, Grummer-Strawn, & Fein, 1997). There is also evidence to demonstrate a protective benefit of breastfeeding against certain respiratory infections (Victora, Smith, Barros, Vaughan, & Fuchs, 1989) and middle-ear infections (Aniansson et al., 1994; Duncan et al., 1993; Teele, Klein, & Rosner, 1989).

Other suggested benefits of breastfeeding include reduced infant morbidity from urinary tract infections (Pisacane, Graziano, Mazzarella, Scarpellino & Zona, 1992); from lower respiratory tract infections (Wright, Holberg, Martinez, Morgan, & Taussig, 1989); from some allergies and atopic illnesses such as ezcema and respiratory wheeze (Kajosaari & Saarinen, 1983; Lucas, Brooke, Morley, Cole, & Bamford, 1990; Oddy et al., cited in Mitka, 1999); and an associated reduced risk of Sudden Infant Death Syndrome (Bernshaw, 1991; Ford, et al., 1993, McKenna, 1998).

Studies to date suggest an association between not being breastfed, and immune system disorders. Artificial (formula) feeding can lead to lymphoid hypertrophy and some of the immunologic phenomena associated with autoimmune diseases (Cunningham, Jelliffe, & Jelliffe, 1991). The use of formula has been demonstrated to accelerate the development of Coeliac Disease possibly due to the earlier introduction of gluten into the diet of artificially fed infants (Greco, Auricchio, Mayer, & Grimaldi, 1988) and is a risk factor for Crohn's Disease (Koletzko, Sherman, Corey, Griffiths, & Smith, 1989) and ulcerative colitis in childhood (Whorwell, Holdstock, Whorwell, & Wright, 1979).

The available literature suggests a relationship between cow's milk consumption and the development of insulin dependent diabetes (Harrison, 1997; Verge et al., 1995). Insufficient breastfeeding of genetically susceptible

infants may lead to beta-cell infection (Borch-Johnsen et al., 1984) and insulin dependent diabetes (IDDM) later in life (Mayer et al., 1988). It has also been suggested that an immune response to cow's milk proteins may be related to a progressive auto-immune process resulting in pancreatic beta cell destruction and ultimately in the clinical manifestation of IDDM (Cavallo, Fava, Monetini, Barone, & Pozzilli, 1996; Elliot, 1995; Vahasalo et al., 1996). Further research is required however (Scott, 1995; Virtanen et al., 1998).

Breastfeeding may have a role in preventing or modifying certain types of chronic liver disease (Udall et al., 1985; Sveger, 1985). In addition, having been breastfed, dramatically improves the success rate of kidney transplants from donors related to the mother of the recipient (Campbell et al., 1984; Kois, Campbell, Lorber, Sweeton, & Dafoe, 1984).

Children who are breastfed, especially for more than six months, have a lower risk of developing Hodgkin's Disease, and human milk may also make the breastfed infant better able to negotiate future carcinogenic insults Davis, 1998). Artificially fed infants have an increased risk of developing breast cancer in adulthood (Micozzi, 1995). A protective effect of breastmilk against cancer was also suggested by Freudenheim et al., (1994) who found a twenty five percent lower risk of breast cancer among women who had themselves been breastfed as infants compared with those who had been formula fed.

Developmental benefits for the infant

Breastfed infants are also believed to have a developmental advantage over formula fed infants (Horwood & Fergusson, 1998; Rogan & Gladen, 1993: Wigg et al., 1998). These small but significant increases in cognitive and educational achievement have been associated with the effects of long chain polyunsaturated fatty acid levels (Crawford, 1993). For example, Docosahexaenoic acid in breastmilk influences retinal function and visual development in humans, (Jorgensen, Hernell, Lund, Holmer, & Michaelsen, 1996) and has a likely role in brain function, particularly in higher cortical function and brain development (Neuringer, Reisbick, & Janowsky, 1994).

Several other studies suggest that breastfed infants have an intellectual advantage over formula fed infants (Florey, Leech, & Blackhall, 1995). Findings of studies on pre-term infants (Lucas, Morley, Cole, Lister, &

Leeson-Payne, 1992; Morley, Cole, Powell, & Lucas, 1988) should not be generalised to term infants however, and future studies must have sufficient statistical power to enable all known confounding factors related to infant development, to be taken into account (Bick, 1999; Jacobson, Chiodo, & Jacobson, 1999).

Breastfeeding has a measurable impact on oral-facial development (Escott, 1999), including the development of muscles which contribute to later clear speech in children (Broad & Duganzich, 1983). Other studies indicate a relationship between the method of infant feeding and malocclusion (Palmer, 1998; Riordan, 1993b). An increased duration of breastfeeding is associated with a decline in the proportion of children with malocclusion (Labbok & Hendershot, 1987) and there is also a significant association between exclusive bottle feeding and malocclusion (Davis & Bell, 1991; Meyers & Hertzberg, 1988). Factors such as sample size, intermittent bottle feeding, and use of pacifiers confound the results of some studies.

Benefits for the mother

As the infant suckles, the nerve endings in the nipple and areola are stimulated, signaling the maternal pituitary gland to release two important hormones - prolactin and oxytocin. One of the effects of prolactin is on ovarian function, contributing to lactational amenorrhoea (Kennedy, Labbok, & Van Look, 1996; Van Look & Fa, 1996) which acts as a natural birth spacer (Fildes, 1986; Kennedy & Kotelchuck, 1998). Oxytocin release during breastfeeding stimulates uterine contractions (Chua, Arulkumaran, Lim, Selamat, & Ratnam, 1994; Labbok, 1999) which aid the process of returning the uterus to its pre-pregnancy size, and more importantly, reduce the risk of postpartum haemorrhage.

Other benefits of breastfeeding for the mother include restoration of calcium stores after weaning thereby decreasing the risk of osteoporosis (Eisman, 1998; Kalkwarf & Specker, 1995; Kalkwarf, Specker, Heubi, Vieira, & Yergey, 1996), of hip fracture (Cumming & Klineberg, 1993), of fractures of the vertebrae (Aloia et al., 1985), and of the upper limb (Kelsey, Browner, Seeley, Nevitt, & Cummings, 1992). Additional benefits include protection against ovarian cancer (Rosenblatt & Thomas, 1993; Whittemore, 1994); and a reduced incidence of breast cancer (Enger, Ross, Henderson, & Bernstein, 1997; McCredie, Paul, Skegg, & Williams, 1998; Newcomb et al., 1994; Romieu, Hernandez-Avila, Lancano, Lopez, & Romero-Jaime, 1996),

however some studies have not been able to demonstrate this (Michels et al., 1996; Stuver, Hsieh, Berone, & Trichopoulos, 1997). In addition, the incidence of cancer in the unsuckled breast of post-menopausal women who have breastfed unilaterally has been demonstrated to be significantly higher (Ing, Ho, and Petrakis, 1977; Schaefer, 1969).

Benefits for mother and infant pair

It has been suggested that mothers and infants need each other for optimum physiologic and metabolic functioning and breastfeeding provides the key to achieve this. Stuart-Macadam (1995) highlights the close physiological interdependency between mothers and infant which is demonstrated in two research studies. The first by Freudenheim et al., (1994), reported that women who were themselves breastfed as infants, had a reduced risk of breast cancer as an adult; the second by Newcomb et al., (1994) found that women who breastfeed their infants have a reduced risk of premenopausal breast cancer. Therefore both mother and daughter benefit from the breastfeeding episode.

Advantages occur for both mother and infant throughout the duration of lactational amenorrhoea (LAM) which acts as a birth spacer and therefore has the potential to allow each mother more individual time with her infant, and each infant a longer opportunity for individual breastfeeding. Closely spaced births may deplete maternal reserves, producing a negative effect on the health of current and future offspring, as well as on the mother herself (Ellison, 1995; Fildes, 1986).

Ellison (1995) refers to the mother-infant breastfeeding relationship as a choreography, however much of his description focuses on physiological factors. Beasley (1996) on the other hand, calls attention to the over-emphasis of biomedical thinking which focuses on the physiological, rather than a balanced inclusion of the social, cultural, and experiential aspects of breastfeeding. One of these aspects include the woman's sense of achievement in coping with what Beasley (1996, p. 20) terms "the interaction between the domains of physical process and social forces."

Whilst the experience of breastfeeding varies between individuals and cannot be generalized (Beasley, 1996), there are studies which describe some of the positive aspects or benefits of breastfeeding. Some of these positive aspects include "the feeling you get with bonding; the endearing noises

made by a breastfeeding infant; the perfect excuse for a mother to take a well-earned rest; and the opportunity to be alone with your baby" (McLeod, Pullen, & Basire, 1998, p. 25). Findings reported by Dignam (1998, p. 89) suggest that "maternal satisfaction is evident when women experience intimate breastfeeding moments with their infants."

Another of the perceived benefits of breastfeeding is success. Jelliffe and Jelliffe (1988) described this as the woman who is successful in her own eyes. Leff , Gagne, and Jefferis (1994) found that although women in their survey had different perceptions of success, there were some common factors. Apart from infant health, the authors also included categories of success termed infant satisfaction, maternal enjoyment, desired maternal role attainment, and lifestyle compatibility.

Both Vares (1992) and Kitzinger (1995) extend the benefits of breastfeeding to include the potential for women to take control over, and confidence in, their own bodies.

Benefits for the family of the breastfeeding pair

Formula takes time to purchase, to prepare, and to administer, plus there are other associated costs such as bottles, teats, and sterilizing equipment, and the cost of obtaining, storing, and heating water and reconstituted formula (WHO/Wellstart, 1996). Suggested benefits for families of breastfed infants include savings through the use of breastmilk rather than purchasing formula, savings on workdays lost in caring for sick children, and savings on contraception and menstruation supplies (World Alliance for Breastfeeding Action [WABA], 1998).

In 1994 it was estimated that a million and a half infant deaths could be averted through effective breastfeeding (WHO, 1994). The associated loss that families have endured is immeasurable. In addition, disturbing examples of errors in production, nutrient deficiency or excess, and contamination have occurred in the manufacture of infant formulae, some of which may have on-going effects (Minchin, 1998; Palmer, 1993; Walker, 1993).

Ecological benefits

Perhaps the least acknowledged benefits of breastfeeding are the ecological and economical benefits in the wider community and on a global scale.

Breastmilk is a natural, renewable, worldwide resource which does not require the vast amounts of global energy resources such as electricity, to process breastmilk substitutes such as formula, nor does it need to be shipped long distances thereby using fuel in transportation and contributing to pollution (WABA., 1997a). Packaging of infant milk substitutes uses resources such as tin, paper, and plastic, and the production of feeding bottles and teats requires plastic, glass, rubber and silicone. These materials are rarely recycled so they increase our landfill, incineration, and other disposal problems (Radford, 1997a).

Most infant formulae are cow's milk based. Pollution of our environment from cattle includes methane gas which contributes to the 'greenhouse effect' and global warming; and ammonia which contributes to the problems of acid rain. Fertilizers used to grow animal feed leaches out of the soil and pollutes rivers and ground water. Deforestation takes place in order to clear land for cattle grazing, to grow crops which may be exported for cattle feed, and crops such as soya beans used in formula production. This contributes to depletion and erosion of the soil, an increase in greenhouse gases, and a reduction in animal and plant species. Apart from the destructive effects of land use, there may also be displacement of local human inhabitants and less locally produced food to sustain them (WABA., 1997a). Public concern has been raised over the use of genetically engineered seed to grow the crops that cattle feed on, and also products used in infant milk formulae such as soy. Concern has also been raised about genetically engineered human proteins introduced into cattle (Van Esterik, 1998).

Economic benefits

Many nations could save scarce foreign exchange currently used to import infant formulae and other baby foods if exclusive breastfeeding rates increased, as well as saving on the higher health care expenditure attributed to formula associated morbidity (WABA., 1997b). In New Zealand, the minimum cost to a mother of not breastfeeding an infant has been estimated to be between NZ$139 and NZ$770 in the first year - a cost that represents between 5-6% of some families' income (Bevin, 1999). Bevin did not include any health related expenses in this estimate.

In Australia, Drane (1997) estimated that an increase in the rate of infants exclusively breastfed up to 3 months of age from 60% to 80%, would reduce public costs of treating necrotizing enterocolitis (NEC) gastrointestinal

illness, upper respiratory tract infection, diabetes, and eczema by a minimum of A$11.5 million per annum. In the USA, the excess total direct medical costs of health care services incurred by never breastfed infants in the first year of life is totalled at billions of dollars annually (Ball & Wright, 1999; Riordan, 1997).

More recently an economic value for breastmilk has been calculated by a number of different authors in different countries, for example, Bevin (1999) estimates that breastfeeding women in New Zealand collectively produce a minimum of 9 million litres of milk every year and that it is worth NZ$20 per litre, therefore New Zealand women contribute NZ$180 million to the economy annually. Smith and Ingham (1997) point out that many studies calculate what it would cost to replace breastmilk with artificial formulae, however formulae are only superficially similar to breastmilk (e.g. they don't contain antibodies, living cells, hormones, or enzymes, and they don't vary from the beginning to the end of the feed, or from day to day, or from woman to woman, or baby to baby). Therefore, according to Smith and Ingham, the correct price for breastmilk must be adjusted for the superior health and nutritional qualities it has. Using three different methods for calculating the 1992 value of Australia's Human Milk production, Smith and Ingham calculated a cost range of A$1.7 to A$2.7 billion.

However, breastfeeding cannot be reduced to its economic aspects alone. It is a complex physiological, psycho-socio-cultural relationship between mother and child, which is in turn intricately related to the mother's family and the community or society she lives in (Smith & Ingham, 1997). Because breastfeeding can benefit all sectors of society economically, biomedically, ecologically, and socially, it is important to increase our efforts to support, protect, and promote breastfeeding. One way of doing this may be to address factors which contribute to a decline in breastfeeding. Some of these factors are discussed in the next section.

Factors affecting the decline of breastfeeding

Stuart-Macadam (1995, p. 7) points out that "for more than 99% of our existence all human beings have obtained their main nutrition through breastfeeding." Quite simply, for a huge part of human history, if a mother died and a wet-nurse wasn't available, the baby also died. Fildes (1988) gives a thorough commentary on wet-nursing, a practice which she claims was deeply ingrained and widely accepted in ancient civilizations. Wet-

nursing, or the breastfeeding of another woman's child either in charity or for payment, occurred in all civilizations in which the death of mothers in childbirth or during lactation was relatively common. Maternal death however, was not the only reason that wet-nursing was chosen. Social, political, and religious factors played an important role in determining the incidence and extent of professional breastfeeding in different societies throughout history (Fildes 1986, 1988, 1995).

Cereal grains to which liquid and other substances could be added to make gruel, first appeared about 10,000 years ago, and later, as the development of agriculture and animal husbandry facilitated the domestication of animals, animal milks were used as an alternative to human breastmilk (McCracken, 1971). Pottery vessels excavated by archeologists from burial sites, indicate that hand feeding of infants has been attempted for more than 3,000 years (Coates, 1993). Whilst it is not actually known why these infants were hand-reared, it is known that many of the world's infants received prelacteal feeds, for example honey, herbal teas, and in more recent times animal milks, even if they were later to be breastfed (Radbill, 1981). One possible reason for this, was to avoid giving colostrum, and this practice continues in some cultures today (Kannan, Carruth, & Skinner, 1999). In some cultures colostrum has come to be seen as impure, harmful, poisonous, stale, contaminated, containing pus, not good for the infant, or a sign that the mother is not yet strong enough to breastfeed (Lefeber & Voorhoeve, 1999; Morse, Jehle, & Gamble, 1990).

The change from being hunter-gathers to agriculturists was significant in the history of human breastfeeding, however the evolution to an urban, industrialist society was probably more significant (Palmer, 1993). Changing patterns of work result in changes in infant feeding practices (Van Esterik, 1995). Industrialisation, urbanisation, and writings about the role of mothers, all contributed to a decrease in the availability of `suitable' wet-nurses and in the popularity of wet-nursing, particularly in Europe and America (Fildes, 1995; Palmer, 1993; Sussman, 1992), and had the effect of contributing to the increase in artificial feeding during the last century. Additional factors include new technology which resulted in a proliferation of bottle feeding equipment as well as to the analysis and adaptation of cow's milk to produce proprietary formulae, along with medical domination for the instructions on, and regulation of it's use (Apple, 1980, 1986; Carter, 1995; Minchin, 1998; Palmer, 1993). At a later stage, mechanisation created a

surpluses, and marketing of breastmilk substitutes or their components, was extended to developing countries (Palmer, 1993).

In New Zealand the medical dominance of infant feeding practices was largely influenced by Sir Frederick Truby King (Mein Smith, 1986). King's strict 'by the clock' feeding, bathing and sleeping regimes, 'humanised milk', and concern with regularity of infants' bowel motions led to his being seen as a world-wide authority on infant rearing (Mein Smith, 1997) although his ideas were less well received in Australia than they were in New Zealand and England. Kitzinger (1995) claims that from the 1920s on, this type of advice given by so-called experts has been the main stumbling block to successful breastfeeding.

Breastfeeding declined noticeably after the Second World War (Minchin, 1998). In the USA the percentage of mothers breastfeeding at the time of discharge from hospital declined from 38% in 1946, to 21% in 1956, and 18% in 1966 - a decline which coincides with economic factors that were associated with major migration from rural to urban areas (Coates, 1993). During the 1970s to the mid 1980s there was an increase to 60% (Martinez & Krieger, 1985), dropping to 52% in 1989 but increasing again to almost 60% in 1995 (Ryan, 1997).

In the United Kingdom, Palmer (1993) reports similar post World War II patterns of decline, reaching an all-time low by the 1970s. In 1975 the breastfeeding initiation rate was only 51% and in 1980 it was 65%. The figures for 1990 were separated out as England and Wales 64%, Scotland 50%, and Northern Ireland 36% (White, Freeth, & O'Brien, 1992), indicating large geographical differences in initiation. Overall UK initiation rates for 1995 increased from 63% in 1990 to 66% in 1995 (Foster, Lader, & Cheesbrough, 1997). Lawson (1998) points out that although the overall breastfeeding rates in the UK have improved in recent years, rates in sectors which were previously low have not improved.

Apple (1994) reports a similarity between the trends of the United States and New Zealand, noting that although it occurred somewhat later, the shift from breastfeeding to bottle feeding occurred more rapidly in New Zealand.

The incidence and duration of breastfeeding

It is more difficult to demonstrate trends in New Zealand as there is no system in place for collecting national data, in the same way, for example, that the UK national statistics office undertakes a quinquennial national survey on infant feeding. Some regional breastfeeding data is available however. For example, an infant feeding survey in Tauranga (Dawson, Richardson, Carpenter, Blair, & McKean, 1979) reported that 77% of mothers were breastfeeding their babies on discharge from hospital, with 57% still breastfeeding 3 months later. Surveys in 1983-84 showed 80-82% of mothers breastfeeding on discharge from hospital. On average babies were weaned at about 4 months (International Baby Food Action Network [IBFAN], 1985).

Essex, Smale, & Geddis, (1995) obtained feeding data from a national longitudinal cohort study in New Zealand. At birth 93.8% infants were exclusively breastfed. At 6 weeks, 3 months, and 6 months postpartum, the breastfeeding rates were 79.5% (68.4% exclusive), 71.3% (47.6% exclusive), and 56% (2.5% exclusive) respectively. In 1997, figures released by the Royal New Zealand Plunket Society (Plunket), based on about 90% of all births for the previous six years, suggested that despite high initiation rates, the duration of breastfeeding was declining. For example, there was a steady reduction in the level of full breastfeeding at 2 weeks of age - from 83% in 1993 to 72% in 1997. At 5-6 weeks of age the rates showed a similar trend, having fallen from 75% in 1994 to 64% in 1997 (Sinclair, 1997).

Ford, Schluter, & Wild, (1996) noted that in Canterbury only half of all mothers were breastfeeding at discharge from hospital in 1968, but by 1990, the figure had risen to include 90% of infants. The authors also reported increased rates of exclusive breastfeeding in the period 1992 to 1994 - 82.2% of infants at discharge, 72.4% at 4 weeks, and 62.5% at 3 months of age.

In an Auckland study by Vogel, Hutchison, and Mitchell (1999) breastfeeding was initiated by 97% of mothers. Seventy five percent were still giving some breastfeeds at three months, and 44% were still fully breastfeeding. Another recent study by Turner, Hounsell, Robinson, Tai, and Whittle, (1999) found that 88% of mothers had initiated breastfeeding, however 15% of these mothers stated that they had failed to even establish breastfeeding. Only 62% of women were still fully breastfeeding six weeks after birth.

On a global scale, information obtained from a variety of sources shows different rates of initiation and duration of breastfeeding between different geographical areas (even within the same country) and with variation over time (Foster et al., 1997; Kocturk & Zetterstrom, 1999; Perez-Escamilla, 1994; Perez-Escamilla et al., 1995; UNICEF, 1998a, 1999a). In general however, among populations of developing countries, mothers who live in rural areas are more likely to breastfeed than those in urban areas. In addition, the better off or more highly educated and the higher social class mothers are less likely to breastfeed, although the extent of the inverse association between urbanization and breastfeeding is likely to vary among regions with different socio-economic and cultural backgrounds (Perez-Escamilla, 1994; Rogers, Emmett, & Golding, 1997; Salt, Law, Bull, & Osmond, 1994). Conversely, in developed countries it is the better off or more highly educated mothers who are more likely to breastfeed (Fok, 1997;. Foster et al., 1997; Ryan, 1997; Salt et al., 1994). Among immigrants, the cultures of both the country of origin and the adopted country will influence their breastfeeding pattern (Choi, 1986; Choudhry, 1997; Dell, 1997; Desantis, 1986; Goel, House & Shanks, 1978; Kocturk & Zetterstrom, 1986).

In New Zealand most mothers (98%) birth in hospitals (Gulbransen, Hilton, McKay, & Cox, 1997) and more than 90% initiate breastfeeding (Essex et al., 1995). Therefore it is understandable that most New Zealand studies have focused on predictors of early cessation of breastfeeding, or reduction from exclusive to partial breastfeeding, rather than predictors of breastfeeding initiation. Predictors of breastfeeding initiation may be different to predictors of early cessation of breastfeeding (Bick, MacArthur, & Lancashire, 1998).

Several studies referred to in the New Zealand literature on breastfeeding noted that many mothers failed to achieve their intended breastfeeding duration (Buckett, 1991; Davies, 1989; Dawson et al., 1979; Gunn, 1984; Hood, Faed, Silva, & Buckfield, 1978; Starling, Fergusson, Horwood, & Taylor, 1979). These studies are now dated and should not be interpreted in relation to current practices, however the most common reason given for weaning in these studies was perceived insufficient breastmilk. This was also identified as the most common reason for weaning (except for Pacific Island mothers) in the study by Essex et al., (1995), and more recently by Vogel, Hutchinson, & Mitchell, (1999).

Vogel and Mitchell (1998a, 1998b) reported on hospital and community influences on the establishment and duration of breastfeeding, gained through focus group discussions with mothers and health care workers. The study provides clear information about factors which are reported to influence the establishment and duration of breastfeeding in New Zealand, rather than just factors which are reported to be associated with weaning. Many negative initial hospital experiences were listed as influencing factors. These included overworked staff; lack of healthcare workers' skills; inconsistent advice; noise and embarrassment in four bedded rooms; and the impact of changes in the provision of maternity services and funding. Community influences included the importance of practical help; realistic role expectations; community acceptance especially amongst men; adequate leave before mothers returned to work, and help for those returning to work.

Dungy, Losch, & Russell (1994), suggest that maternal attitudes are better predictors of feeding method than are socio-demographic factors. Basire, Pullon, & McLeod, (1997) set out to investigate attitudes towards baby feeding and to identify reasons why women stop breastfeeding before their babies are four months old. They found that the women who were most likely to continue breastfeeding were those who reported that they enjoyed it. This factor was previously noted in New Zealand by Rosemergy (cited by McLeod, Pullen, & Basire, 1998) and by overseas researchers (Losch, Dungy, Russell, & Dusdeiker, 1995; Jones,1986). Basire et al., (1997) agree that whilst socio-economic variables are an important influence on breastfeeding duration, maternal attitudes to infant feeding are very important. These authors reported that reasons for weaning included such factors as tiredness, pain, cracked nipples, engorged leaking breasts, breast infections, lack of freedom, lack of enjoyment, and conflicting information from health professionals. They also refer to the suggestion by Newson and Newson (1962) that 'insufficient milk' may be reported, when the underlying reason is actually ambivalence about breastfeeding.

Perceived insufficient milk supply has been associated with the need to increase maternal knowledge and confidence in the breastfeeding process (Segura-Millan, Dewey, & Perez-Escamilla, 1994; Beasley, Chick, Pybus, Weber, MacKenzie, & Dignam, 1998). These latter authors raise concerns about the loss of a breastfeeding culture, in which "a mother would be more knowledgeable, 'experienced' and confident in her ability to produce

adequate milk for her baby's changing demands" (Beasley, Chick, et al., 1998, p. 68).

World-wide concern about the reduction in breastfeeding initiation and continuance rates, plus the perceived need to re-create a culture where breastfeeding rather than bottle feeding is the norm (Mulford, 1995), lead to a number of global initiatives to protect, promote, and support breastfeeding. Some of these initiatives are discussed in the next section.

Protecting Breastfeeding

Initiatives to Reduce the International Promotion of Breastmilk Substitutes

Although the artificial food industry is seen to have its beginnings in the mid nineteenth century, it wasn't until the mid twentieth century that infant formula became widely used and commercial bottle feeding was recognized as a major factor contributing to the decline of breastfeeding (Baumslag, 1989). In the 1960s and 1970s, international public concern began to grow in relation to the devastating effects of the widespread marketing and use of infant formulae, particularly in developing countries (Jelliffe, 1972; Marmet, 1993; Minchin, 1998; Palmer, 1993; Van Esterik, 1995).

As early as 1974, the 27th World Health Assembly (WHA) had noted the general decline in breastfeeding in many parts of the world and had been urging member States to promote breastfeeding and review the marketing activities of the producers of breastmilk substitutes. The 31st World Health Assembly in 1978, recommended the regulation of inappropriate sales promotion of infant breast-milk substitutes (WHO/Wellstart, 1996) however while members claimed to approve of the recommendation, they took no real action (Allain, 1999).

In 1979 therefore, a group of non-government organisation members attending a WHO/UNICEF Joint Meeting on Infant and Young Child Feeding in Geneva (WHO/Wellstart, 1996), formed an organisation called IBFAN in an attempt to stop what they saw as unethical marketing of breastmilk substitutes. After the WHO/UNICEF meeting in 1979, IBFAN groups and representatives worked together to draft the recommendations that resulted in a Code of Marketing of Breastmilk Substitutes (IBFAN, 1993).

The International Code of Marketing of Breastmilk Substitutes

The WHO International Code of Marketing of Breastmilk Substitutes was adopted by a Resolution (WHA34.22) of the World Health Assembly in 1981, and has since been amplified and clarified by a further ten resolutions. The aim, scope, and main points of the WHO Code are summarized in Appendix A.

Although voting in favour at the World Health Assembly in 1981, New Zealand did not adopt the WHO Code until 1983, in what the Ministry of Health (1997) describes as consensus and discussion rather than through legislation. A committee was established to monitor the Code but was disbanded in 1991. The monitoring role was then taken over by the Public Health Commission (PHC) which worked through public consultation and the distribution of a discussion document, to develop guidelines for a New Zealand interpretation of the Code (Scanlon, 1995a). When the PHC was disestablished in 1995, the responsibility and management for the Code were transferred to the NZ Ministry of Health. The Ministry of Health decided to develop voluntary guidelines (MOH, 1997) for health workers based on the WHO Code, and the infant formula marketing industry developed a voluntary, self-regulatory Code of Practice (NZ Infant Formula Marketers' Association, 1997). Both the guideline and the self-regulatory code are supported by a compliance programme. A code for bottles and teats which was expected to be developed by manufacturers (MOH, 1997) has not yet originated.

One of the concerns about voluntary guidelines and self-regulatory codes includes the difficulty in dealing with non-compliance (Bevin, 1995, 1999; Bevin & Annandale, 1997a; Birkbeck, 1996; Interagency Group on Breastfeeding Monitoring [IGBM], 1997; Peck, 1999; Taylor, 1998; WABA, 1992). A further concern is expressed by New Zealand health professionals who believe that the guidelines should cover infants up to one year, as happens in Australia (Scanlon, 1995b). The New Zealand interpretation of the WHO Code allows for advertising of follow-on formula which is designed for infants over six months.

Minchin (1998) emphasizes that the WHO Code has often been grossly misrepresented and points out that it does not ban the use of formula, or its sale to the public; apply only to poor countries; contravene national sovereignty or restrict the rights and democratic freedoms of free-enterprise

industries; nor restrict women's rights to choose how to feed their babies. In New Zealand however, there has been criticism of health worker practices in relation to the WHO Code. Ferguson (1998a, 1998b) writes of her experience of bottle feeding in New Zealand. She expresses her surprise (Ferguson, 1998b, p. 7) to find not only that "there was virtually no information on bottlefeeding available to New Zealand women, but there was also a campaign to keep them in the dark."

The Ministry of Health states that some health workers may not be fully cognisant of their responsibilities in relation to the Code (NZCOM, 1999b). Health workers have a dual responsibility in adhering to the Code, to promote and support women who are breastfeeding as well as provide information and support to parents/caregivers who choose to bottle feed, regardless of the reason. Whilst breastfeeding should be promoted as preferable to formula, if a caregiver/mother chooses to formula feed then appropriate information, education and support should be given. These and other health workers' responsibilities in relation to the Code were clearly outlined recently by Martyn (1999) and reiterated by the Ministry of Health (NZCOM, 1999b).

Promoting and Supporting Breastfeeding

One of the obligations of governments adopting the WHO Code (Helsing, 1990, p. 69), is to report regularly to WHO on progress in five areas of infant nutrition:"

- encouragement and support of breastfeeding;
- promotion and support of appropriate weaning (addition of non-breastmilk foods) practices;
- strengthening of education, training, and information;
- promotion of health and social status of women in relation to infant and young child feeding; and
- appropriate marketing and distribution of breastmilk substitutes."

In 1986, armed with this framework for breastfeeding promotion, the WHO European regional Office called a meeting of health workers, at which the idea of a European Strategy for Breastfeeding Promotion was promoted

(Helsing, 1990). In 1987, this Strategy was formulated at a meeting in the Netherlands. This was followed by a Workshop on Health Care Practices Related to Breastfeeding, held in 1988, in Washington D. C. One of the highlights of the workshop was the joint WHO/UNICEF Statement - Protecting, Promoting, and Supporting Breastfeeding: The Special Role of Maternity Services (Labbok, 1990). This statement included a summary of the ten essential elements that every maternity facility should implement to support mothers in a good breastfeeding start (Jolly, 1990). Each of the steps was accompanied with an explanation of the rationale for selecting it, and suggested actions that health care facilities might take in order to promote and facilitate the initiation and establishment of breastfeeding by the mothers in their care (WHO/UNICEF, 1989). The Ten Steps are summarized in Appendix B.

The Innocenti Declaration

In 1990, the Innocenti Declaration was produced and adapted by participants at a WHO/UNICEF policy makers' meeting in Italy entitled Breastfeeding in the 1990s: A Global Initiative (WHO/UNICEF, 1990). The Declaration was confirmed by 139 governments at the 1990 World Summit for Children and by all Member States of WHO in 1991 (Chetley, 1997). It calls for policies and the attainment of a breastfeeding culture, which enables women to breastfeed their children exclusively for the first four to six months, and then up to two years of age and beyond. The participants advocated for ways of increasing women's confidence in their ability to breastfeed; removing obstacles to breastfeeding within the health system, workplace and community; adequate nourishment for women; and appropriate family planning options. In addition, the Declaration calls for national authorities to integrate breastfeeding programmes into their overall health and development policies (WHO/Wellstart, 1996). The following operational targets were set:

By the end of 1995 all governments should have:

- appointed a national co-ordinator and established a multi-sectorial national breastfeeding committee;
- ensured that every facility providing maternity services fully practices all of the 'Ten Steps to Successful Breastfeeding' set out in the Joint WHO/UNICEF Statement (1989);

- taken action to give effect to the principles and aim of the International Code of Marketing of Breastmilk Substitutes and subsequent resolutions;

- enacted imaginative legislation protecting the breastfeeding rights of working women and established means for its enforcement.

The Declaration also called upon international organisations to:

- draw up action strategies for protecting, promoting, and supporting breastfeeding, including global monitoring and evaluation of their strategies;

- support national situation analyses and surveys and the development of national goals and targets for action;

- encourage and support national authorities in planning, implementing, monitoring, and evaluating their breastfeeding policies.

International BFHI Development

From the historical review contained in the previous sections of this chapter, it can be seen that there was a need to act in response to the global increase in use of infant feeding formulae and the strong decline in breastfeeding. As a way of acknowledging the success of hospitals which were implementing practices recommended in the WHO/UNICEF (1989) document 'Protecting, promoting, and supporting breastfeeding: the special role of maternity services' it was proposed that an award be made available (Minchin, 1998). Therefore, in 1991 WHO/UNICEF launched its global Baby Friendly Hospital Initiative (BFHI) to encourage hospitals and health care facilities, in particular, maternity wards to adopt practices that fully protect, promote, and support exclusive breastfeeding from birth, and for which they could apply for the award of Baby Friendly Hospital (BFH) status when full implementation was achieved. The goals of the BFHI are:

1. To transform hospitals and maternity facilities through implementation of the Ten Steps.

2. To end the practice of distribution of free and low cost supplies of breastmilk substitutes to maternity wards and hospitals. (WHO/Wellstart, 1996).

As part of this initiative UNICEF commissioned Wellstart International, a WHO collaborating centre in San Diego, California to develop assessment criteria and procedures. In addition, Wellstart was to convene a workshop to review the assessment tools and to train master trainers who would in turn train others in assessing the BFHI (WHO/UNICEF, 1993).

After the creation of the assessment documents and guidelines in 1992, assessments took place in twelve nations (Minchin, 1998). Since that time the number of hospitals achieving BFH status has gradually increased (UNICEF, 1999a). In Sweden, Oman, and Malaysia, 100% of all government hospitals have BFH status (WABA, 1998). By the end of 1999 there were 14,661 officially designated Baby Friendly Hospitals in 132 countries around the world (UNICEF, 1999b). Of these, 10 were in Australia, 3 in Fiji, 4 in Papa New Guinea, and 1 in Canada (Abdul Razak [WABA] personal communication, 24 November 1999). There are no hospitals designated as Baby Friendly in New Zealand.

Breastfeeding Promotion in New Zealand

The New Zealand government has made a commitment to promote breastfeeding directly through the Innocenti Declaration (WHO/UNICEF, 1990), the WHO Code of Marketing of Breastmilk Substitutes (WHO, 1981), and the United Nations Convention on the Rights of the Child (Smith, 1999; UNICEF, 1999c). Health promotion priorities for New Zealand, including early life nutrition were set out in a report by the Board of Health's Committee on Health Promotion (1988). The Committee stated (1988, p. 19) that "the importance of breastfeeding, particularly in the first weeks of life cannot be over-emphasized", and recommended that efforts be made to increase the nation's understanding of the importance of breastfeeding wherever and whenever the need arises. It was also noted that adequate childcare facilities close to the work place for mothers and adequate maternity leave provisions are essential. In addition, there was a recommendation for more research into the effects of the use of infant formulae and on the later development of food intolerances.

In 1992, the theme of World Breastfeeding Week was BFHI, and the Department of Health distributed a kit on this theme to the NZ Plunket Society and to maternity hospitals. In 1994, the Ministry of Health set two new breastfeeding objectives:

> to increase full breastfeeding at three months from 60 percent in 1991 to 70 percent by 1997, and to 75 percent by the year 2000;
>
> to increase breastfeeding (full or partial) at six months from 55 percent in 1991 to 70 percent by 1997, and to 75 percent by the year 2000.
>
> (Public Health Commission, 1995).

Reported levels achieved in 1997 were 48 percent full breastfeeding at three months, and 56 percent partial breastfeeding at six months (Ministry of Health, 1998a). Lennan (1997) and Coubrough (1999) point out that the Ministry of Health has not kept a national database for breastfeeding rates, relying instead on Plunket rates and those identified in various studies. Therefore it is difficult to get an accurate picture of what the current rates are and to make any comparisons.

The Ministry of Health's *Report on the Progress on Health Outcome Targets 1998,* highlighted five key points:"

- There has been no change in the prevalence of full breastfeeding at three months between 1994 and 1997.
- Comparison of breastfeeding rates between different studies is difficult due to the use of inconsistent definitions for breastfeeding and different survey designs.
- Developing a periodic survey to monitor infant care practices (including breastfeeding) is a priority for monitoring this target.
- A project to develop clear and consistent definitions will be used in the new infant care practices survey.
- Recent New Zealand qualitative data indicate that most women found breastfeeding more difficult than anticipated, and that information available about baby feeding was generally inconsistent, unrealistic and incomplete." (MOH, 1998a, p. 36).

The Ministry now concedes that the goals for full breastfeeding at 3 months set for 1997 and 2000 were based on erroneous data and the predicted progress was unrealistic (MOH, 1998a). Similarly there has been little significant change in the rate of partial or full breastfeeding at six months from 1987 to 1996. Following a workshop in March 1999 to review the

survey methodology for monitoring infant care practices, the recommendations made are to be used as a basis for developing a periodic survey of infant care practices. Priorities indicated by the Ministry of Health included:

- Developing nationally recognized breastfeeding definitions.
- Reviewing the current breastfeeding targets in 2000, using new baseline data
- Public education through MOH publications, posters and pamphlets which promote breastfeeding.
- Increased home midwifery visits (under Section 51 of the Health and Disability Act) which commenced March 1998.
- Advocating supportive environments for breastfeeding women.
- Development of a joint Australia New Zealand infant formula standard.
- Establishment of the NZ Breastfeeding Authority.
- Guidelines for NZ health workers on the NZ interpretation of the WHO Code, and monitoring breaches through a compliance panel.

The health of our nation is a significant reason behind the need to implement a programme which has the potential to improve the nutrition of New Zealand children. The *Child Health Strategy* (MOH, 1998b) contains recommendations on what is required to improve child health status of New Zealand's children from now until 2010, and was developed with the knowledge that our child health status is not as good, or improving as fast, as many other OECD countries. Mortality and morbidity statistics in New Zealand children clearly include factors which might be improved by increased breastfeeding rates and duration, particularly exclusive breastfeeding. For example, between 1992 and 1994, Sudden Infant Death Syndrome (SIDS) accounted for 29% (the most common cause) of deaths for all infants under one year of age. Lack of breastfeeding has been identified as an important SIDS risk factor in New Zealand (Ford, Taylor, et al., 1993; Mitchell, Brunt, & Everard, 1994).

Mortality data relating to the year 1994, and 1995 morbidity data provide the key source for data in *Our Children's Health* (MOH, 1998c). This publication

reports that respiratory conditions accounted for 14% of infant hospitalisations. For children aged 1-4 years, respiratory reasons are the most common reason for hospitalisation, reaching 26% in 1995. In the same year, respiratory conditions including asthma, pneumonia, influenza and bronchitis, were the second most common reason for the hospitalisation of children aged 5-14 years.

In 1995-6 tympanometry failure rates indicating chronic otitis media, were 7.6% for 3 year olds, and 8.5% for new entrants (National Audiology Centre, 1996). In addition, in 1996, approximately 4% of all children aged 0-14 years and 33% of all children with a disability living in NZ households, had a chronic health condition such as cancer, diabetes, failure to thrive or severe asthma (MOH, 1998c). Whilst it is not known how much lack of breastfeeding contributed to these disability-related health conditions, the evidence available on the benefits of breastfeeding suggests that there may an association.

The Health Funding Authority (HFA) which contracts with facilities to provide the services required to meet the Ministry of Health's targets has expressed its commitment to breastfeeding in the form of its Maternity Facility Service Specifications - both HHS and non-HHS providers. For example, Section 5.2 (ii) of the Maternity Facility Service Specification (HFA, 1999a) states that the service provided must be consistent with the principles of the Baby Friendly Initiative and ethnic breastfeeding practices. A commitment to breastfeeding is also indicated in the HFA contracts with LMCs pursuant to Section 51 of the Health and Disability Services Act, (1993) concerning the provision of maternity services, and direct contracts with non LMC providers (often referred to as non-Section 51 LMC contracts). Contract specifications pursuant to 'Section 51' require the LMC to provide information regarding pregnancy, childbirth education and preparation, plus parenting education and preparation in all three trimesters of the antenatal module. A care plan must be developed in consultation with the pregnant woman, which includes documentation of her breastfeeding or other infant feeding requirements. Both the labour/birth services and the postnatal module specifications call for assistance with initiation of, plus continuing assistance with, and advice about breastfeeding as in the woman's care plan (HFA, 1998). The specifications in the Direct Contracts for non-Section 51 LMC providers are similar. In addition, on the claim for

payment form, the LMC is required to indicate the category of breastfeeding, at the time of transfer to Well Child Services.

BFHI Development in New Zealand

Bevin and Annandale (1997b), Pelvin, (1997) and Vogel and Mitchell, (1998c) summarize the activities which have taken place, in particular with representatives from the New Zealand Lactation Consultants' Association, the NZ College of Midwives, NZ Plunket Society, and NZ La Leche League, trying to attain the necessary funding from the HFA for the implementation of BFHI in New Zealand. After a lengthy period of negotiating, the NZ Breastfeeding Authority (NZBA) was finally established in 1999, and funding provided by the HFA (HFA, 1999b) in order to allow for:

- a national stakeholders' meeting to determine membership, composition and terms of reference for a national advisory group to the NZ Breastfeeding Authority.
- development of a Mission Statement, goals and objectives, and an action plan for the implementation of BFHI in New Zealand.
- development of the documentation to be used in assessment, taking into account the principles of the Treaty of Waitangi and to further reflect New Zealand culture.
- national and regional training workshops for BFHI assessors.

The time frame for completion of the contract is 30 June 2000. (Wickham, 1999) but can be extended. New Zealand therefore now meets the part of the Innocenti Declaration of 1990, which called for the establishment of a multi-sectorial national breastfeeding committee (by 1995). A national convenor has been appointed to oversee the implementation process, however it is unclear whether this position will develop into the national co-ordinator position recommended in the Declaration. A national advisory group to the NZBA began meeting in December 1999 to 'New Zealandise' the BFHI assessment documents prior to wide community consultation.

Summary

This chapter has provided a detailed explanation of issues related to breastfeeding incidence and duration in New Zealand and overseas, plus

provided evidence to support recommendations for New Zealand women to breastfeed their infants. By detailing this country's objectives for breastfeeding, particularly those related to child health goals, the underlying reasoning is provided, in order to argue the need for an initiative such as the BFHI.

The development of the BFHI produced by WHO and UNICEF was also detailed. A joint initiative, the WHO/UNICEF programme was influenced by a convincing amount of statistical data indicating that breastfeeding rates had declined, particularly since World War II in developed countries, and with urbanisation in developing countries. The reasons put forward include social, economic, and cultural factors (WHO/UNICEF, 1989), in combination with an increase in the availability and marketing of breastmilk substitutes.

The literature available in New Zealand confirms that there is both a need and a stated commitment for a programme to improve the health of New Zealanders through increased breastfeeding rates and decreased promotion of breastmilk substitutes (MOH, 1997, 1998a, 1998b, 1998c). The BFHI has recently been confirmed as one way that this national programme will be provided (HFA, 1999b). As New Zealand lags behind so many other countries of the world with regard to implementation, the challenge to midwives is to play a key role in working with mothers, other health professionals, government organisations, and members of the wider community to facilitate implementation.

In the next chapter, the literature relating to BFHI implementation is discussed and a case made for the need to conduct a survey of New Zealand hospitals, in order to gain an understanding of the current level of implementation of BFHI associated practices.

Chapter 2

LITERATURE REVIEW

Introduction

In this chapter the literature relating to implementation of the BFHI is reviewed. This includes a description of the WHO/UNICEF documentation available to implement and assess the BFHI within hospitals, a discussion of the BFHI as a conceptual framework for evidence-based practice, and finally a review of the available evidence of BFHI implementation. The main purpose of the literature review however, was to establish what was already known about BFHI related practices in New Zealand hospitals.

An extensive search of the literature was undertaken using Ovid and SilverPlatter websites to search a number of databases including MEDLINE, CINAHL, PsycLIT, Eric, Clinical Medicine, and The Cochrane Library. Internet websites which included the New Zealand Ministry of Health, MIDIRS, publishing companies, and a range of breastfeeding organisations/groups were also visited. In addition publications were obtained from WHO in Geneva, and UNICEF in New York. Also included were journals, newsletters, and conference proceedings of various professional organisations within New Zealand in particular the College of Midwives, Lactation Consultants Association, La Leche, the Medical Association, and the Dietetic Association. The researcher also read local and national newspapers, popular [women's] magazines, and magazines for parents (eg Treasures), in order to locate any issues related to breastfeeding.

The first step taken was a review of the BFHI documentation provided by WHO/UNICEF, in order that the researcher could gain a clearer indication of why and how to use it.

The WHO/UNICEF BFHI Documents

A detailed document giving information on how the initiative can be implemented at the country or state level (WHO/UNICEF, 1991) and a small

brochure providing basic information on the BFHI (WHO/UNICEF, 1992a) are available. In addition, four tools for use in the assessment process at the hospital or health facility, are provided. These tools are the Global Criteria (Appendix C), the Hospital Self Appraisal Tool (WHO/UNICEF, 1992b), the Global Hospital Assessment for use by external assessors (WHO/UNICEF, 1992c), and the guide for scoring the Global Hospital Assessment, contained in the same publication (WHO/UNICEF, 1992c).

The BFHI documents for hospital self assessment and external assessment (WHO/UNICEF, 1992b, 1992c) are available in several languages and have been contributed to and reviewed by recognized 'experts' in the field of breastfeeding and/or infant nutrition. One of the limitations of these documents is a lack of clear definition of some of the concepts used, however all administrators and policy makers are invited to attend a short course (generally 10-12 hours) to learn about BFHI, and country level assessors are trained by international assessors who have attended a formal training programme. In addition, there is a recommended education programme available for health workers (WHO/UNICEF, 1991).

The Hospital Self-Appraisal Tool, designed for hospitals to assess how their practices compare to the Ten Steps has a series of questions to be answered in a yes/no format. Several of these questions require dual or triple responses. Unless the Global Criteria are read in conjunction with the questionnaire (as suggested in the questionnaire guidelines), responses may be neither reliable nor valid, as the questionnaire alone does not provide clear enough definition of the concepts/criteria used during (later) external assessment. Because the self-appraisal tool is completed by a hospital staff member, there is a possibility of response bias however as an audit tool it appears to be effective in assisting hospitals to decide whether they are ready to apply for external assessment, or whether they need to ask the local BFHI Committee for more assistance/advice.

The External Assessment of Hospitals involves a questionnaire administered by a non-hospital-staff assessor. This assessment utilizes individual interviews with staff and with mothers, observations, and review of documents. Because the process takes a 'snap-shot' view of practices during a period of one to three days, there may limitations in obtaining random samples. This may be particularly so in societies where women do not welcome strangers at the birth, where no antenatal classes are provided, where an interpreter is required, where there is early discharge or transfer

(eg within a few hours of birth), where there are a high number of 'at risk' mothers or infants, or where there are a low number of births.

A critical review of the rationale and scientific basis for the Ten Steps was carried out by Saadeh and Akre (1996) and later by Vallenas & Savage (WHO, 1998) and is discussed in the following section. These authors claimed that sufficient evidence exists to fully support the implementation of the Ten Steps in all maternity facilities. In addition, reports claiming that BFHI has proved effective are made by UNICEF in other publications (UNICEF, 1998b, 1999a). The BFHI was tested during 1991 in twelve countries. By the end of a set deadline all twelve countries reported that the goal of ending free or low cost supplies of formula had been met (Kyenkya-Isabirye, 1992).

Data on breastfeeding prevalence and duration may serve as another indicator of success. This is reportedly being stored in a 'Global Data Bank on Breastfeeding' which aims to disseminate information in the form of reports on breastfeeding trends (WHO/Wellstart, 1996). Where BFHI has been introduced, it may be possible to discuss changes in these reported rates in relation to implementation.

Various reports by WHO/UNICEF including some in 'BFHI News' (a newsletter available from UNICEF by mail or website) indicate that following reviews of current literature, the global criteria are updated/amended. Unfortunately the way of disseminating these changes appears piece-meal, however this may have been more difficult in New Zealand where up until recently there was no established BFHI Authority with which to communicate. A document which provides guidelines for reassessment of health facilities which have previously been designated as Baby Friendly (WHO/UNICEF, 1998), was produced following feedback from hospitals and assessors. The basic principles of the Baby Friendly Hospital Initiative as set down in the Guide for Developing A Reassessment Process (WHO/UNICEF, 1998) are provided in Appendix D.

The WHO/UNICEF BFHI self-appraisal and external assessment process are audit tools, rather than a research process. The difference according to Rees (1997, p. 8) is that "research consists of extending knowledge and understanding through a carefully structured systematic process of collecting information which answers a specific question in a way that is as objective and accurate as possible. It has similarities to the process of audit,

but goes further in the way that it increases understanding and is placed within a context of professional knowledge." What the BFHI does provide is a conceptual framework which outlines practices likely to enhance the initiation and duration of breastfeeding through the provision of evidence-based practice.

At first glance the BFHI documents appear to take a prescriptive, one best way approach, which is inconsistent with a midwifery model of practice in which women make informed decisions in partnership with midwives (Bryar, 1995; Pairman, 1999) however these documents are supported by numerous references to associated research, thus facilitating evidence-based practice.

Studies related to the Ten Steps

A number of studies were undertaken prior to WHO/UNICEF's development of the BFHI. Some raised awareness of hospital practices associated with a negative influence on breastfeeding. Others provided the scientific rationale to support certain practices. A few seminal studies were undertaken some time ago but remain relevant in terms of the influence they have. For example, studies by Illingworth, Stone, Jowett, and Scott, (1952) and Jackson, Wilkin, and Auerbach, (1956) reported the association between rooming-in and an increased incidence of breastfeeding. Salariya, Easton, and Cater, (1978) found that early initiation of breastfeeding and demand feeding influenced the overall duration of breastfeeding, and Samuels, Margen, and Shoen, (1985) reported that the most rapid decline in breastfeeding occurred in the first two weeks and was related to formula supplementation. Bergevin, Dougherty and Kramer, (1983) concluded that mothers who received free samples of formula on discharge, breastfed for a shorter duration. In addition, Lawrence (1982) noted that whilst physicians reported that they advocated breast feeding, they didn't initiate any discussion of breastfeeding with mothers and many still advocated formula supplements. This literature review does not provide a critique of the literature on health care practices which facilitate or interfere with breastfeeding as this has already been done in a satisfactory manner (Saadeh & Akre, 1996; WHO, 1998).

McIntyre (1993) provides a list of forty eight journal articles which support or discuss the Ten Steps. The articles are separated out to demonstrate their relevance to a particular step. Whilst she provides a one or two sentence

description of each study, she does not carry out any critical analysis. At the time of publication, the reference list may have been a helpful resource to anyone interested in learning about BFHI.

Saadeh and Akre (1996) in their role as technical officers in the nutrition unit of WHO, summarize the rationale and scientific basis for the Ten Steps. In this document it is not clear whether there were any inclusion or exclusion criteria used to decide which research would be included in the summary. These authors claim that the available research affirms the five principles outlined in the joint WHO/UNICEF (1989) statement which have been synthesized into the Ten Steps. These principles state that mothers should be counselled correctly and enabled to make and carry through informed choices; mother-infant contact should be unrestricted; infants should be fed when they indicate a desire to feed; newborns should be given no food or fluid other than breastmilk, not even water; and mothers should be supported during the postnatal period.

Vogel and Mitchell (1998c) provide a helpful discussion of several observational and experimental studies which contribute to the scientific basis for the Ten Steps. The review is of particular value to the New Zealand reader, as the authors discuss the findings in relation to the New Zealand context. In a similar way, Lennan (1997) sets the scene for a study which aimed to ascertain information on breastfeeding in the North Health Region of New Zealand. Although her literature review summarizes rather than critiques the studies reviewed, a large number of studies are cited. This author warns against the trend in New Zealand to promote breastfeeding as a nutritional issue, and encourages additional promotion of the wider issues that make breastfeeding a positive experience for the woman and her child/family.

Vallenas and Savage (WHO, 1998) conducted a literature search of randomized controlled studies. They also included some quasi-experimental studies in which a 'before and after intervention' design was used. The publication contains over 100 pages of the summarized findings of more than 200 studies. One of the contributions this report makes, is that the methodological limitations are highlighted so that the reader can be aware of a weak argument for evidence-based practice. All the studies were assessed using pre-established criteria. Studies with several major limitations were excluded. Methodological limitations identified by Vallenas and Savage included self-selection of participants; confounding variables;

over 10% attrition rate; unreported attrition and/or poorly documented methodology; long recall periods; unclear definition of breastfeeding indicators; and studies based on planned breastfeeding behaviour as opposed to actual practice.

The main conclusions reached by Vallenas and Savage (WHO, 1998) indicate clearly established evidence for Step 3 (Inform all pregnant women), Step 5 (Show mothers how to breastfeed and maintain lactation), and Step 10 (Foster breastfeeding support groups). It is stated that there is good evidence in principle for Step 4 (Initiation of breastfeeding within ½ hour of birth); and highly suggestive evidence for Step 7 (Rooming-In) and Step 8 (Breastfeeding on Demand). While there is a strong association between the use of supplements (Step 6) and the use of artificial teats or pacifiers (Step 9) with premature cessation of breastfeeding, it is not easy to demonstrate a causal relationship. It is maintained that it is necessary to have a policy and provide training (Steps 1 and 2) in order to facilitate the implementation of all the other steps. The authors conclude that the basic premise of the BFHI, (which requires maternity facilities to implement all, rather than just some, of the Ten Steps) is valid. Selective implementation of only some steps is not recommended.

The literature review undertaken in relation to hospital factors which influence breastfeeding, plus use of the extensive review already undertaken by Vallenas and Savage (WHO, 1998) assisted the researcher to conclude that whilst hospital practices are not the only factors which can have a negative influence on breastfeeding, the elimination or reduction of negative hospital practices in New Zealand may be a prerequisite for raising breastfeeding initiation and duration. However some of the overseas studies should be supported by New Zealand research, particularly those where there are differences in the delivery of service, or cultural and ethnic practices.

Studies related to BFHI Implementation

The literature surrounding BFHI implementation comprised a mix of studies and reports of BFHI. At the first level were letters to journals which merely indicated the fact that a country had implemented, or intended to implement BFHI (Ejidokun, Norton, & Ramaiah, 1998; Wolf, Charrondiere, & Helsing, 1993). As there was no discussion of pre- or post implementation research, and little or no discussion of important breastfeeding issues within that

country, these items are not discussed here in any detail, however they did serve to provide an indication of what various countries are doing. In a similar vein some of the literature was really just a summary for readers of BFHI or the Ten Steps (Jones & Green, 1993; Kyenkya-Isabirye, 1992; Radford, 1997b).

The World Alliance for Breastfeeding Action (WABA) publications and the organisation's website assisted the researcher to understand the role of WABA, particularly its focus on stimulating and supporting public interest groups and international non-governmental organizations' involvement in the BFHI. In addition, statistics on the number of hospitals in various countries which have achieved Baby Friendly status have been provided. In a similar way the publication by UNICEF entitled 'BFHI News' provides considerable information about recent studies on breastfeeding, and reports of countries' progress in implementing BFHI. In the main however, these publications are a secondary source of information, which may require location of the primary source prior to any review.

Breastfeeding breakthroughs in conjunction with BFHI implementation are claimed in *The State of the World's Children* (UNICEF, 1998b). According to this report, only 4% of infants in Chile were exclusively breastfed for the first six months of their lives, but one year after BFHI was introduced in 1991, the rate had risen to 25%. In Cuba the 1990 rate of exclusive breastfeeding on discharge from hospital was 63%, but six years after BFHI was implemented the rate was 98%. In China, the number of infants still exclusively breastfed at four months in 1992, was 10% in urban areas and 29% in rural areas. Two years later the rates were 48% and 68% respectively. As a final example, UNICEF (1998b) reports that exclusive breastfeeding in Iran increased from 10% to 53% between 1991 and 1996, and infant formula imports dropped by 75%, saving the country an estimated $50 million annually. Whilst all these examples appear to support claims that the BFHI is a valid and effective intervention, none of these reports are referenced, so it is impossible to comment on their strengths or limitations.

A study which preceded the global introduction of BFHI, looked at practices and policies in the initiation of breastfeeding (Renfrew-Houston & Field, 1988). This piece of research is significant not only because of the authors' findings but also because it influenced other research studies once BFHI was developed (Freeman & Lowe, 1993; Kovach, 1997). Renfrew-Houston and Field (1988), used a semi-structured questionnaire to survey all hospitals

with maternity services in Alberta, Canada. The authors' findings were that the majority of hospitals' reported practices were neither researched based nor flexible.

By far the largest majority of reviewed literature relating to BFHI, focused on surveys undertaken to ascertain whether hospitals were carrying out BFHI related practices. In other words, these studies were conducted in hospitals which had not actually implemented BFHI, but measured or described practices related to some or all of the Ten Steps. Three common findings are contained in the conclusions of the majority of these studies: in general, hospital policies did not adequately incorporate the Ten Steps (or the WHO Code where this was measured); practices which research had identified were likely to have a negative affect on the initiation and/or duration of breastfeeding, still persisted; and more education for health care professionals and mothers was recommended (Beeken & Waterson, 1992; Freeman & Lowe, 1993; Karra, Auerbach, Olson, & Binghay, 1993; Kovach, 1997; Levitt, Kaczorowski, Hanvey, Avard, & Chance, 1996; Nikodem, Schelke, Enraught-Moony, & Hofmyer, 1995; Syler, Sarvela, Welshimer, & Anderson, 1997).

One of these studies (Kovach, 1997) is detailed here because it was utilized in the design of this researcher's own study. Kovach's stated aim was to describe practices and policies and the degree to which hospitals in the southeastern Pennsylvania Delaware Valley, were implementing the Ten Steps. A non-randomized sample of staff from 38 hospitals were interviewed using a questionnaire developed by Kovach (1996), based on the WHO/UNICEF self-appraisal tool, and influenced by the studies of Renfrew-Houston and Field (1988) and Freeman and Lowe (1993).

A classification system was developed which then enabled Kovach to discuss the degree of implementation occuring on each step, rather than just overall compliance on all of the Ten Steps. Most of the surveyed hospitals were found to be either moderately high (34%) or partial implementers (58%) - the other two categories being high (3%) or low (5%). Areas identified as needing the greatest attention by hospitals were education for health care professionals, breastfeeding initiation, and support of the breastfeeding mother, particularly after hospital discharge. Limitations of the study include the potential for researcher bias during the interview, use of assistant interviewers, self-selection of participants, and knowledge that reported practice may not be a true reflection of actual practice.

Only a small number of studies undertaken in hospitals implementing BFHI (although not awarded Baby Friendly Hospital status) were identified. One of these was a comparative study carried out by Dasgupta, Bhattacharya, Das, Chowdhury, and Saha (1995). A survey was conducted in 1994 six months prior to BFHI implementation, and a similar study was undertaken six months after implementation. The results indicate a significant overall reduction in the time gap between birth and the first feed in all types of birth; a significant decrease in the number of prelacteal and supplementary feeds; and a decrease in the use of feeding bottles and teats. However some non-evidence based practices remained including the giving of prelacteal feeds of breastmilk substitutes. The authors conclude that a co-ordinated effort between all categories of staff is required to change to, and maintain new BFHI practices.

Chee and Horstmanshof (1996) describe surveys undertaken in Hong Kong in 1994 and 1995. Although BFHI was formally incorporated in 1994, it is not clear whether this was before or after the first survey, however it was still possible to measure improvements made over the previous year. Improvements were noted on six of the seven steps studied, but not on Step 6, where formula was given to breastfed babies more often. The 'any breastfeeding on discharge' rate rose from 19% in 1992 to 32% in 1995. Although there was an overall improvement in compliance with the BFHI, there were still examples of non-evidence based practice, and 75% of hospitals were still receiving free infant formulae.

An evaluation of practice in one hospital in China was undertaken by Chamberlain (1997), however no pre-implementation data are provided as a comparison. Compliance with the Ten Steps was not achieved. Although there was a breastfeeding policy and nurses were provided with 72 hours of breastfeeding theory the overall implication alluded to by the researcher is that the staff were practicing using outdated textbooks and carrying out practices without necessarily understanding the rationale behind them. The author concluded that there was still a great need for education for both health professionals and consumers.

Wright, Rice, and Wells (1996) set out to compare hospital feeding practices before and after implementing the Ten Steps. This included changing the hospital's policy in accord with BFHI. Interviews of postnatal women took place in 1990 and 1993, before and after BFHI implementation. By 1993 more babies were put to the breast in the first hour following birth; fewer infants

received food or drink other than breastmilk; and more mothers received guidance from hospital staff. The duration of breastfeeding was longer for babies who received no formula in hospital, when no formula was given in discharge packs, and when mothers had roomed-in more than 60% of the time. Some non-evidence based practices remained however. In addition, nurses were not required to attend inservice education sessions, and they were not accountable for giving formula to breastfed babies.

Rather than just focus on differences in practices before and after BFHI implementation, the study by Wright et al., (1996) was the only one to report on the relationship of hospital practices to the duration of breastfeeding. Interviews with mothers undertaken after the implementation of BFHI indicated that infants given formula in the hospital were significantly less likely to be partial or fully breastfeeding at one and four months of age, as were infants who roomed in for less than 60% of their hospital stays. Infants of mothers who received formula or coupons in their hospital discharge packs were significantly less likely to be breastfed at one month. Mothers given the names of support persons were significantly more likely to be fully breastfeeding at four months.

It can be difficult to control confounding variables, and changes in behaviour/practice may not be directly attributable to BFHI implementation nor to BFHI implementation alone, however there is merit in comparing breastfeeding rates before and after BFHI implementation. None of these four studies compared pre- and post-implementation breastfeeding initiation or duration rates, appearing to assume that change in practices should be the key measure of success. Changes in policies and/or education programmes for staff and mothers which promote evidence-based breastfeeding practices, and which are associated with greater compliance on the Ten Steps, are reported to be of value (WHO, 1998). However there is a also need for more studies which demonstrate that implementation of the Ten Step Initiative will contribute to increased breastfeeding initiation, higher rates of exclusive breastfeeding, longer breastfeeding duration, and/or greater reported maternal satisfaction.

Studies related to BFHI practices in New Zealand Hospitals

The final section of this chapter looks at New Zealand research related to BFHI. Two studies were identified.

The first, (Si, Chong, & Mitchell, 1995) assessed compliance with the Ten Steps in four Auckland hospitals. The study involved two medical students who conducted interviews with 80 health workers and 130 mothers. The study was not published, however a copy of the unpublished report was provided to this researcher for review, and also the findings are summarized in Vogel and Mitchell (1998c). Si et al., (1995) concluded that although there was partial implementation on some of the steps, none of the hospitals were fully implementing the Ten Steps. There was considerable variance between staff and women/mother's reports of hospital practices. The compliance levels in this study fell well below what would have been required to achieve BFHI status.

Limitations of the study include non-random selection of participants, no evidence of pre-testing of the questionnaire for content validity, use of more than one interviewer with no evidence of interviewer training, and a potential bias toward interviewing more than the recommended number (WHO/UNICEF, 1992c) of mothers with babies in special care - i.e. 30 out of the 68 mothers interviewed at one hospital. The sample also included a woman who had birthed at home, and at one hospital none of the 12 women interviewed had birthed there so data collection was incomplete in relation to that hospital. However the study makes a valuable contribution as it is the only study of its kind known to exist in New Zealand.

The second piece of research is a scoping report undertaken for the North Health Funding Authority (North Health) by Lennan (1997). After providing a detailed literature review of breastfeeding issues, Lennan presents a summary of information obtained through semi-structured interviews with key informants from major stakeholder groups including hospitals, well child care providers, community organisations, breastfeeding support groups, and professional and educational organisations. Lennan's overall recommendation was that North Health support and work with hospitals/maternity service providers toward achieving BFHI status. She suggested that BFHI implementation be preceded by meetings/hui/workshops to work on breastfeeding promotion strategies; encouraging the Ministry of Health to set up a national data collection system to monitor breastfeeding rates; and initiation of a nationwide longitudinal survey of current breastfeeding practices in conjunction with the (recommended) Ministry of Health's data collection system. In addition, she recommended a national database of breastfeeding research; evaluation

of childbirth education classes; an evaluation of existing breastfeeding promotional material; and improved media promotion to send positive messages about breastfeeding.

Furthermore, Lennan recommended that the Health Funding Authorities work with contracted midwives and doctors (LMCs) on their delivery of information to women during the antenatal period of breastfeeding preparation and the reality of early discharge; look at including attendance at a yearly study day on breastfeeding as part of the contract for all LMCs; and liaise with all teaching institutions to discuss the way in which breastfeeding could be included in their curriculums. Other recommendations included investigation of the feasibility of establishing breastfeeding (lactation) centres, and the promotion of 'breastfeeding friendly' workplaces through developing strategies aimed at employers.

Summary

The review of the literature involved an extensive search covering multiple aspects of breastfeeding far in excess of the BFHI. The details outlined in the background Chapter One, plus the reviewed material in this chapter combined to give the researcher a far more in-depth understanding of the factors affecting breastfeeding initiation and duration in New Zealand. The material summarized in this chapter suggests that the BFHI provides a sound conceptual framework for a programme aimed to protect, promote, and support breastfeeding founded on evidence and that changes in hospital policies and practices are associated with greater compliance on the Ten Steps. However, despite Government, Ministry of Health, and more recent HFA commitment to BFHI, implementation in New Zealand has been very slow. The paucity of information available indicates that there is insufficient knowledge in New Zealand of accurate breastfeeding rates and the current level of implementation of BFHI practices in hospitals.

It was with this increased understanding and clarity that the researcher set out to design a study of BFHI policies and practices in New Zealand hospitals. The study design is detailed in the next chapter.

Chapter 3

THE RESEARCH PROCESS

Introduction

In addition to the literature searches described in the previous chapter, a search of the literature was also undertaken in order to decide the most appropriate research design and methods to answer the research question. This chapter presents the rationale for the chosen research design, beginning with a discussion of the relevance of utilizing the survey method. Justification is given for the choice of face to face group interviews, using a questionnaire. The reasons for selecting an existing questionnaire and for the adaptations made to it, are also detailed. Following a discussion of reliability, validity, and ethical considerations, the method of data analysis is explained.

Research Design

In this research a descriptive survey design was used, based on the work of Kovach (1995, 1996, 1997). Data was obtained during a single group interview of two to six participants, in each of the ten hospitals surveyed. One questionnaire was completed during each interview.

Rationale for using the survey design

The researcher specifically set out to describe the policies and reported practices of the participating hospitals. A non-experimental descriptive survey design was considered the most appropriate as it "focuses on obtaining information regarding the status quo of some situation, often by means of direct questioning of a sample of respondents" (Polit & Hungler, 1995, p. 654).

The survey is one of the most frequently used research designs in the social sciences (Sarantakos, 1994). Rees (1995a) suggests that midwifery researchers have also found that this method of collecting data ideally suits many of the questions they wish to answer. Surveys are a popular design because they

can be less intimidating than some other forms of data collection, and enable a large amount of data to be collected with a single data collection instrument (Rees, 1997). The basic principle on which surveys are based is that if you want to know what is going on, then the best way to find out is to ask people (Rees, 1995a).

Rees (1997) outlines two problem areas in relation to the use of surveys. The first relates to the representativeness of the sample and to the researcher's ability to generalize the findings to similar people in the wider population. This study design allows for the collection of basic demographic details so that some comparison can be made for similarity but not for generalizing to the wider population of hospitals. The second problem area relates to validity. Rees (1997) points out the words/deeds dilemma must be recognised. In other words, what hospitals say is included in their policy and what they report staff do in their practice(s) may not necessarily be what actually exists/happens. Eliciting the truth cannot always be guaranteed by the researcher but the research design can be devised carefully to take any limitations of the method into account. Some of the means available to the researcher include use of the face to face interview, use of group interviews where all participants' opinions are sought, a commitment to respect anonymity, and providing the opportunity for participants to elaborate on their responses. These strategies are explained in more detail in the next section.

The face to face interview

Interviews consist of "data gathering through direct interaction between a researcher and respondent where answers to questions are gathered verbally" (Rees, 1997, p. 91). Polit and Hungler (1995) suggest that because humans have the unique ability to communicate verbally on a sophisticated level, systematic questioning is likely to remain popular as a data collection method. For this particular study there are a number of reasons why the face to face, or personal interview is appropriate.

The first, is that in order to gain sufficient information relating to hospital policy and all of the Ten Steps, any questionnaire used is likely to be long. Several authors (Parahoo, 1997; Polit & Hungler, 1999; Rees, 1997) warn against using self-administered questionnaires and telephone interviews when they are long.

Second, interviews allow for the collection of data from groups of individuals. This is important for example, where the researcher wants to gain a consensus of opinion about whether the hospital policy includes specific topics, and whether specific practices are carried out within the hospital.

Face to face interviews have a higher response rate than self-administered or telephone questionnaires (Parahoo, 1997; Polit & Hungler, 1999). Rees (1997) suggests this may be because so many people have been asked to participate in research using self-administered questionnaires. Additionally in New Zealand, it is possible that telemarketing may have contributed to a dislike of telephone interviews.

Parahoo (1997) sees the presence of the researcher (as interviewer) as being beneficial in several ways. This includes preventing respondents from consulting other sources in answering the questionnaire, offering clarification without changing the meaning of the questions, and watching for non-verbal behaviour which may indicate confusion or lack of understanding of certain questions. In addition, if the researcher records the responses, the problem of having to decipher a respondent's handwriting is eliminated.

In a face to face interview the respondents are less likely to give 'don't know' responses or to leave the question unanswered, and the interviewer has control over the order of the questions, that is, the respondent can't choose to go to the end of the questionnaire first (Polit & Hungler, 1999). These authors also point out that the researcher has greater control over the sample, for example, when choosing a self-administered questionnaire method there may be no way that a researcher could tell if the questionnaire was given to someone other than the intended respondent, to complete.

One disadvantage of the face to face interview is that it negates the potential for the respondents to remain anonymous to the researcher (Parahoo, 1997). The researcher therefore has to take care over issues of anonymity when reporting. Another disadvantage is that face to face interviews are generally more expensive than self-administered, or telephone interviews (Polit & Hungler, 1999). Other disadvantages relate to reliability and validity, and are discussed in a later section relating to those issues.

When a questionnaire is administered during an interview, the process can take the form of a structured, semi-structured, or unstructured interview (Rees, 1997). A structured interview, or interview schedule, virtually takes the form of reading out the questions from a questionnaire and recording the answers. Neither the wording, nor the sequence of the questions are altered. A semi-structured interview, or interview guide has a list of standard questions, plus the flexibility to probe and explore areas that seem appropriate. This allows the interviewer to provide clarification of any questions, and ask for elaboration on any answer provided by the respondent. An unstructured interview is usually associated with a qualitative study design, whereas the more structured interview is often associated with a quantitative study (Rees, 1997).

Use of a questionnaire

The survey design was chosen in order to be able to allow participants to report on their breastfeeding policies and practices in relation to BFHI, rather than to observe their practice. The use of the interview setting was considered an appropriate way to obtain data from a group of participants. However, attempting to ascertain whether New Zealand hospitals were practicing in accordance with the Ten Steps and with the Infant Feeding Guidelines for New Zealand Health Workers (MOH, 1997), was viewed by the researcher as potentially an overwhelming task unless the study design addressed this. Therefore it was considered necessary to a) carry out the survey using only a sample of hospitals, and b) structure the interview in some way to allow the researcher to ensure sufficient data were collected in a controlled way, rather than just encourage free discussion by participants until saturation point or a specified period of time had been reached. The use of a questionnaire was perceived to be an appropriate way for the researcher to attain this control.

Questionnaires are reported to be of benefit when collecting large amounts of information from a large number of people scattered over wide geographical areas; when evaluating practice and policy; or when collecting demographic data (Parahoo, 1997). The questionnaire offers the possibility of using a range of question formats such as checklists, and multiple-choice questions, plus open-ended questions. Rees (1997) recommends the questionnaire as a possible choice if the study aims to find out what people say or do, or if it relates to areas where individuals themselves are in the best position to accurately supply the information.

The greater the number of closed questions, the more highly structured the questionnaire (Parahoo, 1997). As the researcher was predominantly interested in knowing "are they doing X", then closed questions were considered appropriate. In this study, the intent was also to give respondents the opportunity to explain why, or why not, and to comment on BFHI implementation in New Zealand if they wished. The use of a semi-structured questionnaire was therefore considered to be the most appropriate tool to gather data within the interview setting.

The literature search had identified other researchers who had also chosen to use a questionnaire in their studies on BFHI or the Ten Steps. In addition, WHO/UNICEF uses two questionnaires in the BFHI assessment - a self-assessment questionnaire for hospitals working toward Baby Friendly Hospital (BFH) status, and a Global Hospital assessment questionnaire used by external assessors in the BFHI accreditation process.

These WHO/UNICEF questionnaires are designed for audit, either by hospital staff, or by a team of specially trained external assessors. Neither tool was designed for use by a researcher outside the described capacity. It was therefore necessary to design or find an assessment tool which included questions that measure the dimensions identified by WHO and UNICEF as key criteria of each of the Ten Steps. Once the Delaware Valley Questionnaire, developed by Kovach (1996) was identified, a decision was made to replicate the use of this questionnaire instead of developing a new tool.

The Delaware Valley Questionnaire

The Delaware Valley Questionnaire was developed using three previously tested questionnaires. These were the WHO/UNICEF Hospital Self-Appraisal Tool (WHO/UNICEF, 1992b); a questionnaire designed by Renfrew-Houston & Fields (1988), also used in a replicated study by Freeman & Lowe (1993); and a third questionnaire used in an unpublished New York Hospital survey (Kovach, personal communication, 19 October 1999).

The researcher decided to use Kovach's Delaware Valley Questionnaire for three reasons. First, because the Delaware Valley Questionnaire aims to describe the policies and practices of hospitals and to evaluate to what degree the hospitals implement the Ten Steps. Rather than just asking if a

practice occurred (which would elicit a yes or no response), participants were asked to report whether the practice occurred 25 percent or less of the time; some of the time (between 26 and 74 percent); or 75 percent or more of the time. Hospitals were then classified as high, moderately high, partial, or low implementers on each individual Step. In addition to classification on each step Kovach also developed a classification system for overall implementation of the Ten Steps.

Using Step 1 (Policy) as an example, this allows the researcher to make a distinction between those hospitals which have a complete policy, those which have partial policies, and those which have no policy. Although it is necessary to meet the BFHI Global Criteria on all of the Ten Steps in order to achieve BFH status, by using Kovach's classification system it is possible to identify where hospitals are close to meeting the criteria, and where they would need to put in a lot more effort on specific steps.

A second reason for utilizing Kovach's questionnaire is that the WHO/UNICEF Hospital Self-Appraisal Tool asks some dual- and sometimes treble-barrel questions, for example:

> 4.1. Are mothers whose deliveries are normal given their babies to hold, with skin contact, within a half hour of completion of the second stage of labour and allowed to remain with them for at least the first hour?
> (WHO/UNICEF, 1992b: Hospital Self-Appraisal Tool, Step 4).

The Delaware Valley Questionnaire poses some of these questions separately.

Third, the Delaware Valley Questionnaire gives respondents the opportunity to elaborate on some responses through the use of open-ended questions during an interview, thereby providing the researcher with additional information.

Permission to replicate the study and use the questionnaire was obtained from Andrea Kovach in 1998 (Appendix E). A replication study involves "the deliberate repetition of research procedures in a second investigation for the purpose of determining if earlier results can be repeated" (Polit & Hungler, 1999, p 713). Following a telephone discussion with Kovach (personal communication, 20 March 1999), a review of the Delaware Valley Questionnaire, and a review of the research design section in Kovach's doctoral dissertation, the researcher concluded that replication could not be

could not be achieved, and a study was planned based on Kovach's design, using an adapted questionnaire.

Questionnaire Design - The Adapted Questionnaire

The researcher elected to adapt the Delaware Valley Questionnaire for several reasons. The first was her perceived need to "New Zealandise" some of the language and terms used. This included changes of terms such as "delivery" to "birth"; "postpartum floor" to "postnatal ward"; and "physician" to "doctor" or "obstetrician", as was appropriate. Other changes made were to include a Lead Maternity Carer (LMC) option which is not a feature in American maternity services; plus changes to Section One (Demographic Data) where issues such as insurance and private/public mix were not the same as in New Zealand. Other changes included a small number of questions in which Kovach (1995) had used the term "mothers", whereas the WHO/UNICEF Step actually uses the term "pregnant women".

A copy of this study's questionnaire adapted from the Delaware Valley Questionnaire, is included as Appendix F. In order to demonstrate the adaptations made, all changes to Kovach's original questions are highlighted in *italic* font. As a result of changes made to questions it also became necessary to adapt Kovach's coding system and classification system for data analysis. Additional questions to those scored by Kovach (1995) were included in the classification because the researcher further separated out some of the dual response questions, therefore more questions overall were asked. In addition, a number of questions about test feeding; bottle, teat, and pacifier use; and the promotion of breastmilk substitutes were added. The reason that Kovach did not include these is not known, but may be related to the American rejection of the WHO Code in earlier years.

Not all questions in Sections B to K of the questionnaire were included in the classification system for individual steps The questions that were included are contained in Appendix G and have been identified on the questionnaire (Appendix F) by placing an asterisk immediately following the question number (e.g. B2*). All other questions were designed for analysis even though not included in the separate classification system. Content analysis of the open-ended questions is discussed at the end of this chapter.

Coding of the questions related to classification was dependent on how the question was structured. For example, some questions were dichotomized to

yes and no categories; some related to the degree to which a practice occurred (e.g. 75-100%); and others required coding based on the number of "correct" responses given.

I. For dichotomized questions, a yes response was coded as 3 and assigned a value of three points; a No response was coded as 1 and assigned a value of 1.

II. Questions requiring responses such as all/most of the time, sometimes, or seldom/none of the time were analysed as follows:

All/most of the time (75-100%) were coded as 3 and assigned a value of 3;

Sometimes (26-74%) were coded as 2 and assigned a value of 2;

Seldom/not at all was coded as 1 and assigned a value of 1.

Kovach does not elaborate on the reason for assigning these specific percentages in either her unpublished doctoral dissertation or her published article detailing her assessment tool (Kovach, 1996). However the researcher found them appropriate for the present study for two main reasons. First, the WHO/UNICEF (1992c) External Examiners' Guide for Scoring the Global Hospital Assessment sets a 'pass mark' of 80% for the majority of questions, therefore the category of 75% or more used in Kovach's study approximated this closely enough to satisfy the researcher when deciding whether to replicate the study design or design a new study. Second, by identifying the top and bottom quarter of the reported practices the researcher believed she was better able to identify high and low implementers of specific practices. This might be an advantage in future studies undertaken on behalf of hospitals where feedback is required on specific practices which need attention.

III. This researcher included three questions which were not included by Kovach (1995) but considered important in order to meet content validity requirements. A separate coding category was developed for these. The three questions required selection from a list of responses. Responses were coded as 3 if 'correct', and 1 if 'incorrect', based on the Ten Steps and assigned a value dependent on the number of 'correct' responses recorded. This is detailed for each of the three questions, in Appendix H.

Reliability and Validity

To be reliable requires that the methods being used will give the same results over time, irrespective of who is administering them (Mulhall, 1998), In other words, the reliability of an instrument is the degree of consistency of the tool's measurement. According to Parahoo (1997), when questionnaires are structured and pre-determined and cannot as a rule be varied, both in their wording and in the order in which they are answered, they have a fair degree of reliability, especially if they are also piloted. However there are still many design and administration factors that researchers need to be aware of, in order to improve reliability and validity (Rees, 1995b) and some of the factors relevant to this study are discussed in this section.

The researcher provided definitions for terms where it was envisaged that clarification might be requested by participants (See Questionnaire, Appendix F). This included either UNICEF Global Criteria and WHO definitions, or the researcher's own operational definitions where a definition by WHO/UNICEF or Kovach (1995, 1996) could not be found.

Due to the length of the questionnaire, and the number of response options provided for some of the closed questions, the researcher provided a copy of the whole questionnaire for each participant to refer to during the interview. The reasoning for this, is that participants could not be expected to remember all the options that were read out, and might otherwise have been inclined to choose the last option if they could not recall earlier ones (Polit & Hungler, 1999). Also in some cases they were requested to indicate other options. Thus it was considered appropriate for them to be able to study the list in order to see what was missing. Participants were instructed to focus on the question being read by the researcher and not jump ahead; to refrain from writing on their copy of the questionnaire (as it would be used in subsequent interviews); and to return all copies at the completion of the interview. The coding system used for data analysis was not included on the participants' copies of the questionnaire. A copy of the instructions read by the researcher immediately prior to the interview is contained in Appendix I.

It is acknowledged that many of the questions asked in the Delaware Valley questionnaire could suggest the appropriate answer. These questions were retained as it was felt that to attempt to change them would substantially

alter the questionnaire, and reduce any claim of adaptation. WHO/UNICEF pose questions in the same format in both their BFHI questionnaires.

Information on the Ten Steps and recommended practices is freely available in posters and publications. Additionally, in an attempt to ensure informed consent, the Information Sheet (Appendix J) advised potential participants of Kovach's publications. Therefore prior knowledge of the questions or at least the subject material, was available and the researcher was reliant on the honesty of the participants as to their actual policies and practices.

Validity refers "to the degree to which an instrument measures what it is supposed to be measuring" (Polit & Hungler, 1999, p. 418). The adapted questionnaire was read over several times, initially by the researcher, who concluded that the instrument *looks* as if it will enable the researcher to describe reported BFHI related policies and practices in any hospital studied; and also that the questions are representative of all the questions that might be asked in any study on this topic.

In her study, Kovach (1995) used pre-testing and piloting, and then revised questions in response to the results of these efforts. The adapted questionnaire used in this New Zealand study was screened for face and content validity by a university nurse/lecturer with expertise in breastfeeding education and practices; and two experienced hospital midwife/lactation consultants who were not employed in the hospitals surveyed. All three had a good knowledge of the BFHI.

The researcher also pre-tested the adapted questionnaire on two separate occasions, with hospital midwife/lactation consultants, in order to practice and improve on her interview technique, gain an indication of likely duration, and obtain feedback on questions which lacked clarity. Practice of the interview technique to improve interviewer skills and increase confidence was considered essential. It was imperative that there was some structure and control, in order to keep the length of the interview reasonable, collect only a manageable amount of data, and avoid the introduction of bias. As there was only one interviewer (the researcher) the introduction of bias by other interviewers was avoided, and the reliability of the study strengthened.

During the pre-testing stage the researcher decided that the demographic data in Section One of the questionnaire (Appendix F) should be completed

prior to the interview. As Section One only involved statistical data such as annual number of births, the researcher believed that collection just prior to the interview would not affect the reliability or validity of the study, but would decrease the amount of time taken during the interview. Participants were told of the prior collection and the responses were read out by the interviewer in order to ensure that the participants were both aware of, and agreed with the data provided.

Contact with participating hospitals.

In order to carry out the research, the assistance of a 'Contact Person' was sought. This person was frequently a Manager. Once identified through the initial request to the Hospital CEO (Appendix K), a letter was sent to this 'Contact Person' by the researcher with a request that they help identify potential participants (Appendix L). It is acknowledged that this person could have chosen individuals who would represent the hospital in a positive light, however when using the WHO/UNICEF Global Hospital Assessment Questionnaire (UNICEF, 1992c) the external assessor both selects people by their role, and by a limited sample of staff present on the day. Those chosen by role are expected to be able to provide statistical and policy related information. In this study therefore, it was considered appropriate to suggest these people as potential participants, in order to get accurate information. The letter to the Hospital CEO stated that no staff member should be instructed or coerced into participating.

All potential participants were advised on the Information Sheet, the Consent Form (Appendix M), and the instructions read immediately prior to the interview, that they were free to withdraw at any time. Whilst there is no guarantee that a participant will not feel obliged to respond in a particular way, these actions plus assurances regarding confidentiality, were attempts to try to reduce bias. In addition, by interviewing a group of participants, the researcher was able to avoid obtaining only one person's opinion.

All participants had received an Information Sheet disclosing that the researcher was a midwife and lactation consultant. This may have suggested a "pro-breastfeeding" stance, and could have influenced the respondents' replies. Additionally, in this study respondents were expected to report on practices, often in the presence of their managers, even if they did not conform to policy or to BFHI recommendations. It was therefore considered important to explain that there was no correct or incorrect answer, and that

the researcher was not in any way connected with BFHI accreditation. Additionally it was considered that by asking respondents to report on all practice, they had the option of reporting that a percentage of other staff did not do "X" rather than implicate themselves.

To maintain consistency and reduce responses biases (as well as meet ethical requirements) all participants were given the same Information Sheet; all were read the same instructions at the commencement of the interview; and all questions were read in same order.

The Study Population

The study population comprised any hospital in New Zealand providing (but not limited solely to) maternity services. At the time of the study there were 86 such facilities, however there was a range of different ways that these were funded (e.g. as public or private hospitals, or health centres, or run by trusts) and also in what type of service they provided (e.g. postnatal care only, paying clients or non-paying clients).

In her doctoral study Kovach (1995) surveyed 38 hospitals, but she was also assisted by seven research assistants. Following discussion with Kovach (personal communication, 21 October 1998) and the researcher's supervisor, it was decided that whilst there was a need to obtain sufficient data to be meaningful, there should be a manageable limit applied to the number of hospitals chosen for this study, rather than to sample the whole population of New Zealand hospitals. The researcher believed that a small sample could still provide valuable information about the current status of BFHI related breastfeeding policies and practices in New Zealand.

At the time of the study, New Zealand hospital maternity services were provided within twenty two provider regions called Hospital Health Services (HHS). There were fifteen HHS in the North Island and seven in the South Island. A decision was made to limit the study to ten out of the total population of twenty two HHS and where there was more than one hospital in an HHS, to select the largest (base) hospital providing maternity services. To select more than one hospital in the same HHS might have meant the same managers attended more than one interview, and there was a possibility that the same policy would be discussed twice.

A further decision was made to restrict the study to hospitals in the North Island of New Zealand, due to time and financial resource constraints. Two

hospitals meeting the criteria were excluded, as the researcher was known to staff members, had close knowledge of policies and some practices, had recent work experience in both, and may have been working in these hospitals during the survey period. Of the remaining thirteen hospitals a non-random sample of ten hospitals spread throughout the North Island was selected. The sample included a range of what the researcher considered were small through to large hospitals. In summary, the inclusion criteria for hospitals were:

- Public hospital located in the North Island of New Zealand.
- The main hospital of the HHS providing maternity services.
- Provides antenatal, birth, and postnatal services.
- Prior consent given by the CEO (or appropriate equivalent).

The Research Sample

Because the researcher intended to try to gain a consensus response to the questions asked, the minimum number of respondents in each interview was set as two. The maximum number of six was selected because the researcher believed that the interview duration might be prolonged through the time needed for a larger group to reach a consensus. It was believed that the information required could be provided by a small number of participants as long as they had the required knowledge.

A letter to the nominated 'Contact Person' (Appendix L) requested that they identify potential participants and provide them with an Information Sheet which invited them to participate in the study. Following the initial letter to the 'Contact Person' communication was then either by telephone or e-mail, in order to arrange interview dates, times, and other related details. In summary, inclusion criteria for participants were:

- Current experience of their hospital's breastfeeding policies and practices.
- Written consent given on the appropriate form prior to the study.
- Available on the day of interview.
- Fluent in English.

Ethical Issues

The potential participants were identified by their experience of the hospital's breastfeeding policy and/or practices, and approached by the Contact Person. This was considered to be in keeping with the WHO/UNICEF BFHI assessment process, in other words, whilst one person may complete the Hospital Self-Appraisal Tool, it is considered quite appropriate to consult any other staff member in order to complete it.

The Information Sheet was devised with the intention that all participants were able to make an informed choice. The Sheet lists the participant's rights. Additionally the Consent Form reiterates those rights. The researcher provided the Information Sheets with sufficient time to allow participants at least one week to decide. No queries were received prior to the interview. At the time of the interview the researcher asked each participant if s/he had received the Information Sheet prior to the interview day, and gave a further opportunity to ask any questions before signing of the Consent Form. No participant was interviewed unless a Consent Form had been signed.

Anonymity could not be guaranteed, especially in a group situation, however the participants were requested not to disclose the individual responses of other participants outside of the interview. No potential for harm to participants, hospitals, the researcher, or the university was envisaged. All participants were advised in writing and verbally of their right to decline to take part, including the right to withdraw during the interview.

Hospital CEOs and participants were advised that a summary of the survey findings would be forwarded to each participating hospital on completion of the research project. Participants were also given the opportunity to request an individual copy.

The researcher anticipated no conflicts of interest. No research was undertaken in any hospital where the researcher was working. The researcher has not received any funding from the hospitals involved. She was not contracted to carry out any research on their behalf, nor on the behalf of any professional association. There were no identifiable conflicts of professional roles or of professional standards of practice. The researcher was aware of her obligations under the Nursing Council of New Zealand Code of Conduct for Nurses and Midwives (1995); the NZNO Code of Ethics

(NZ Nurses' Organisation, 1995); the NZCOM Code of Ethics and Standards for Midwifery Practice (NZ College of Midwives, 1993); and the NZLCA Standards of Practice for Lactation Consultants (NZ Lactation Consultants Association, 1997). No legal concerns were identified. Approval to undertake the study was obtained from the Massey University Human Ethics Committee in June 1999.

Finalizing and reviewing the research plan

As well as consultation throughout the planning phase, the Research Supervisor provided feedback and advice on the research proposal, and research plan, including the proposed timeline as it was developed and reviewed. The Research co-supervisor was consulted with regard to data analysis, where it was agreed that due to the small number of hospitals surveyed, computerised statistical analysis of the data would not be required, and Chi square analyses would not be performed. All data was collated manually, as described in the following section.

The Empirical Phase

Data Collection

All interviews were undertaken by the researcher and were held on separate days. An identification number was assigned to each questionnaire rather than the name of the hospital. Due to the length of time taken to obtain policies during the first interview, prior to all other interviews the researcher arrived early and requested a copy of the hospital's policy(ies) to be used during the interview.

The first interview took place in late July and all ten interviews were completed by early August 1999.

The Analytic Phase

Analysis of the data did not take place until after all ten interviews were completed. As in Kovach's (1995) study, all of the hospitals were classified by the following criteria:

a) specific hospital characteristics;

b) a separate classification of level of implementation for each of the ten index variables (representing the Ten Steps of the WHO/UNICEF BFHI);

c) a classification that indicated overall level of implementation of the BFHI (high implementers, moderately high implementers, partial implementers, and low implementers).

Specific Hospital Characteristics.

Kovach (1995) collected the hospital demographic data in order to carry out statistical analyses not included in this study design. For example, in her study, Chi-square analyses were performed to examine the relationships between variables which were thought to be important characteristics of the hospital, and hospital implementation levels on each step. In this study hospital demographic data were collected primarily in order to demonstrate that a range of North Island public hospitals had been surveyed.

Classification on each of the Ten Steps

To obtain a rating for each index variable, questions identified as measures of implementation on each step were grouped by dimension (sub categories within each step). This follows the design developed by Kovach (1995) and is summarized in Appendix G. Values assigned to responses in each dimension were totalled and divided by the number of questions in each dimension. Dimension totals were then summed and this figure divided by the number of dimensions to receive a mean score for each step. This produced an equally weighted numerical rating for each hospital on the basis of each step. These numerical ratings were then compared to defined ranges for each category:

Categorical Rating 4: High implementers (range = 2.65 to 3.00);

Categorical Rating 3: Moderately high implementers (range = 2.15 to 2.64);

Categorical Rating 2: Partial implementers (range = 1.65 to 2.14);

Categorical Rating 1: Low implementers (range = 1.00 to 1.64).

These categories were designed for descriptive use to indicate levels of implementation by hospitals on each step (Kovach, 1995) and not based on any specific statistical model. Kovach's explanation for not simply dividing the categories into even quartiles (personal communication, 19 October 1999) is that the result would not give a meaningful reflection of the distribution of the degree of implementing the step. In other words, using quartiles might not have differentiated between a hospital which achieved a lot of 2s

and some 3s on individual questions, and a hospital getting only 1s and 3s. The former might be actively working toward implementing evidence-based practices to meet all of the Ten Steps but only partially achieving change, whereas the latter might not be actively working on some of the steps at all.

Classification on Overall Implementation level of the BFHI

Hospitals were classified as high, moderately high, partial, or low implementers of the BFHI using the criteria shown in Table 3.1.

Table 3.1. Overall Level of Implementation Coding Scheme

Classification of Hospital	Rating on Individual Steps
High	A 3 or 4 categorical rating on at least 8 to 10 steps with at least 4 of these steps having a rating of 4.
Moderately High	A 3 or 4 categorical rating on 6 to 7 steps with the remaining steps receiving a 1 or 2 rating.
Partial	A 3 or 4 categorical rating on 3 to 5 steps with the remaining steps receiving a 1 or 2 rating.
Low	A 3 or 4 categorical rating on 1 to 2 steps with the remaining steps receiving a 1 or 2 rating.

Kovach (1995) calculated contingency correlation coefficients in order to identify if she could demonstrate relationships between the levels of implementation of two or more steps, and the level of implementation overall. This study did not follow that part of her study design, as the aim of this study was only to describe the degree of implementation, rather than to demonstrate any predictive value of implementation on one step for level of implementation overall. The sample size was small, and the researcher was relying on some estimated data such as breastfeeding rates, and 'reported' practices. The use of statistical analysis to attempt to demonstrate relationships between variables was not appropriate in this study.

Content Analysis

Dispersed throughout the interview were invitations to the participants to respond to questions designed to gather further data, or to allow them to elaborate in some way. For example, Question K2a (Appendix F) asks "If yes....please describe what is done" The two final questions K7 and K8 (Appendix F) seek further information regarding differences in implementation of policy, and the hospital's goals. Kovach (1995) states that she found the open-ended questions to be valuable in helping her develop

insights into the issues surrounding implementation. The main objective of this study was to describe the degree of implementation without attempting to establish causation or correlation, and this researcher was well aware that the interview process would require at least ninety minutes. However the value of including an objective focusing on barriers to implementation was acknowledged, and the researcher included open-ended questions.

Responses to these questions were not tape recorded, but were instead recorded verbatim on the questionnaire by the researcher. This was not an easy task when the group contained up to five participants. The researcher made no attempt to gather rich data by delving into meanings and feelings, or trying to gather in-depth information, to discuss a response until saturation point, or to focus on a person's subjective experience of a phenomenon.

Content analysis was used to report on the responses to the open-ended questions asked at the end of the interview. Polit & Hungler (1999, p. 214) describe this method as one used "for quantifying the content of narrative communications in a systematic and objective fashion." Prior to data collection it was not possible to decide exactly how the responses would be reported. At the beginning of the data analysis phase, all questionnaires were read and a decision made to use themes as the unit of analysis because the participants' responses generally took the form of sentences or phrases, rather than individual words. Thus it was possible to see if there was any pattern of responses in more than one hospital, and also to use the information obtained to validate that obtained through the closed questions.

Summary

This chapter has presented the rationale for the chosen research design - a descriptive survey involving face to face interviews and utilizing a semi-structured questionnaire. The results of the data analysis are presented in the following chapter.

Chapter 4

RESULTS

Introduction

The results of the data analysis are presented in this chapter, which has been organised into five sections:

a) demographic characteristics of the hospitals in the study

b) other selected characteristics of the hospitals

c) group participants' responses to closed questions relating to each of the Ten Steps

d) classification of the hospitals on each of the Ten Steps, and overall level of implementation of the Ten Steps

e) content analysis of selected questions asked at the end of the interview.

For brevity throughout the remainder of this document, the researcher has used terms including 'hospitals reported' and 'hospitals stated' to mean that the group participants of the surveyed hospitals reported or stated (the practice). In addition, in keeping with the percentages used in the survey questionnaire (Appendix F), unless otherwise stated, references to 'the majority' and to 'all/most of the time' should be read as 75% or more.

A third factor requiring explanation is that some New Zealand hospitals are just the facility in which self-employed midwives or doctors attend birthing and/or postnatal women. In other words, these hospitals do not provide a Lead Maternity Carer (LMC) service, although they do provide staff to support the self-employed LMC who is the 'primary caregiver'. Strictly speaking a hospital cannot be an LMC, only an individually named employee of the hospital (Browne, [HFA], personal communication, 9 February 2000), however the use of a generic term describing the hospital as the LMC has developed, and is used in this document to mean that a hospital employed midwife(wives) or doctor(s) provided the care. For

further explanation, the relevant HFA documents should be consulted (Health Funding Authority, 1998, 1999a).

Demographic Characteristics of the Hospitals

The demographic data are presented in Table 4.1. All of the ten hospitals which were invited to participate in this study, agreed to do so. All were government funded (public) HHS hospitals providing general and obstetric services; two at Level III classification (providing secondary and tertiary maternity services), and two at Level II (providing secondary maternity services. Eighty percent of the hospitals had between 20 and 39 maternity beds, whilst the remaining twenty percent had between 40 and 49.

Table 4.1: Demographic Characteristics of Surveyed Hospitals (n=10).

Hospital Characteristics	n
Maternity Hospital Classification	
Level I	0
Level II	8
Level III	2
Total Maternity Bed Capacity	
20-29	4
30-39	4
40-49	2
Annual Number of Births	
Under 1000	1
1001-2000	7
2001-3000	0
3001-4000	1
4001-5000	0
5001-6000	1
Caesarian Births as a % of all births	
16-20%	5
21-25%	4
26-30%	1
% of live births < 1000gms	
0 - 0.5%	7
0.6 - 1%	0
1 - 1.5%	3
Average Length of Postnatal Stay:	
Uncomplicated Vaginal Births	
25 to 48 hours	5
over 48 hours	5
Uncomplicated Caesarian Birth	
49 to 72 hours	1
over 72 hours	9

Seventy percent of the hospitals had annual births of between 1000 and 2000 babies. One of these hospitals provided an estimated figure only, based on previous average monthly figures. There was a wide range in the reported

percentage of babies admitted to the special care or neonatal intensive care unit, however because not all hospitals were able to provide reliable data, it is not reported in this section.

All hospitals reported an 'estimated breastfeeding on discharge' figure of greater than seventy five percent. This figure included babies who had received fluids other than breastmilk or oral medication at some point during the hospital stay, and also babies who had received expressed breastmilk via bottle and teat. No hospital was able to provide accurate figures for exclusive breastfeeding, as defined for this study (Appendix F).

The percentage of births by Lead Maternity Carer (LMC) category is presented in Table 4.2. Data from one hospital was not available. One hospital was never the LMC for the birth, and another only rarely. In other words, large numbers of self-employed midwives and doctors provided the LMC care during birth using the hospital as a facility only. The significance of this is discussed in Chapter Five.

Table 4.2: The Percentage of Births in Surveyed Hospitals by LMC Category.

Hospital	Hospital Staff	Independent Midwife	Private Obstetrician	General Practitioner	Total %
a	0	48	46	6	100%
b	< 1	97	2	< 1	100%
c*	10	30	40	20	100%
d	22	44	3	31	100%
e	33	35	11	21	100%
f	36	58	1	5	100%
g	37	62	0	1	100%
h	62	24	11	3	100%
i	72	26	0	2	100%
j**					

*Based on average monthly figures - not the actual annual figure.

** Data unavailable.

Selected Characteristics of the Hospitals

Eight hospitals stated that they had a method for collecting statistical information about breastfeeding. Seven used a computerised database and one collected data manually, however the statistics were only collated and used for reporting in two of the hospitals. All hospitals reported that they had at least one person actively supportive of breastfeeding (irrespective of their position), in other words a person who was perceived to have had a

positive stance or influence on the hospital's breastfeeding culture, such as taking a political stance, lobbying, teaching staff, encouraging mothers to breastfeed, supporting the establishment of lactation positions, and influencing changes in breastfeeding policy. In all hospitals the persons mentioned were staff members, specifically, midwives and/or lactation consultants, and in one case a paediatrician.

All hospitals provided some antenatal services such as 'inpatient' admission for which they were able to charge (e.g. for non-NZ residents). None of the seven hospitals providing antenatal classes, charged for them.

Eight hospitals used the services of pool, bureau, agency, or locum staff, when staffing levels necessitated this.

Reported Hospital Practices in Relation to each of the Ten Steps.

Step 1: Policy

All ten hospitals reported having an explicit, formal, written breastfeeding policy which was available for all staff to refer, however it was only available to women/clients in fifty percent of the hospitals. In forty percent of the hospitals the policy was only applicable to the maternity unit rather than the whole facility. Responses confirming the inclusion of items related to each of the Ten Steps are summarized in Table 4.3.

Only thirty percent of the hospitals specifically prohibited or restricted the promotion of breastmilk substitutes, bottles, and teats in their policies; and no hospital policy specifically included a prohibition of group instruction for the use of breastmilk substitutes.

Overall, six hospitals included all of the items related to the Steps in their policies. Two hospitals included six steps; two included five steps; and one none of the steps. Steps 2, 4, 5, 6, and 8 were the steps most often included (80% of hospitals). Although audits of some breastfeeding practices had been carried out in three hospitals, no hospital had a formal method of evaluating whether all of the Ten Steps and hospital practices related to the WHO Code were being met.

Hospitals were asked whether five categories of professionals (obstetricians, paediatricians, hospital midwives/nurses, independent midwives, and non-hospital doctors) followed their hospital policy. No hospital had audited

this, and policies varied considerably in their content. Respondents estimated that over seventy five percent of all five professional categories supported breastfeeding in principle.

Table 4.3: Formal Breastfeeding Policies of Surveyed Hospitals (n=10).

Formal Policy Items Reported	n
Step 1. Hospital has written, formal policy	10
Policy calls for:	
Step 2. Formal in-service for staff	8
Step 3. Inform pregnant women of benefits	7
Step 4. Initiate breastfeeding within one hour	8
Step 5. Procedures to maintain lactation if separated	8
Step 6. Restrict infant supplementation	8
Step 7. Encourage 24-hour rooming-in	7
Step 8. Encourage breastfeeding on demand	8
Step 9. Restrict the use of pacifiers	9
Step 9. Restrict the use of bottles and teats	8
Step 10. Refer mothers to community resources	8
Step 10. Refer problems to appropriate resources	9
Policy prohibits:	
promotion of breastmilk substitutes	3
group instruction on breastmilk substitutes	0
Mechanism for evaluation:	
No	10
Availability of Policy:	
Available so all staff can refer to it	10
Policy posted for mothers, infants, children	5

Step 2: Staff Training

Nine hospitals reported that the majority of their staff who cared for mothers and infants had been orientated to the hospital breastfeeding policy. In all but one of these nine hospitals, orientation to the policy occurred within the first two weeks of a staff member taking up their position. Formal breastfeeding education programmes were only provided for staff in three of the ten hospitals, and only two of these hospitals included staff other than midwives, maternity ward nurses, or neonatal nurses. Of the three hospitals offering formal education programmes, all provided the opportunity for staff to attend within six months of appointment. In addition, these three hospitals reported that at least eight of the Ten Steps, plus information on hospital practices related to the WHO Code were included in the

programme content. All three also reported having a written outline or curriculum for the programmes offered.

None of the hospitals estimated that the majority of their staff would meet the WHO/UNICEF global criteria of 18 hours formal breastfeeding education in total, including three hours of supervised clinical experience. The range of responses is detailed in Tables 4.4 and 4.5.

Table 4.4: Estimated hours in basic formal breastfeeding training by staff category (n=10).

Staff Category	n
Obstetricians:	
Less than 3 hours	10
Paediatricians:	
Less than 3 hours	7
3-8 hours	3
Midwives:	
3-8 hours	1
18 hours or over	9
Neonatal Nurses:	
Less than 3 hours	3
3-8 hours	6
18 hours or over	1

Although some hospitals employed other health professionals such as dietitians and speech therapists, all selected the "non-applicable" response with regard to training.

Table 4.5: Estimated hours of supervised clinical breastfeeding experience by staff category (n=10).

Staff Category	n
Obstetricians:	
No supervision	10
Paediatricians:	
No supervision	10
Midwives/Nurses:	
No supervision	7
Less than 3 hours	3
Neonatal Nurses:	
No supervision	9
Less than 3 hours	1

Eight hospitals reported that at least one staff member had undertaken advanced training in breastfeeding management. All were either midwives or nurses who had also trained as lactation consultants. No staff member from any other professional category within the hospital was reported as

having this advanced training or qualification. Six of these eight hospitals reported that they had at least one staff member with some responsibility for breastfeeding programmes. In three of these six hospitals the staff member concerned was employed in a dedicated lactation consultant position. In the remaining three hospitals, the person concerned was qualified as a lactation consultant but undertook the responsibility for the programme in addition to her midwifery or nursing duties, or in her own (unpaid) time.

Step 3: Informing all Pregnant Women of the Benefits of Breastfeeding.

Antenatal classes were provided by seven hospitals. Two hospitals did not provide classes and were unable to provide information on their local classes which were funded by the HFA, but provided by non-hospital organisations. The remaining hospital did not provide classes but did provide the services of a lactation consultant at the local (non-hospital) antenatal education class. Because of the knowledge of the programme's content and delivery, this hospital's responses were included as if it was the provider, therefore the reports of eight hospitals in total were analyzed.

All eight of these hospitals stated that breastfeeding was discussed in classes for <u>all</u> pregnant women, not just those choosing to breastfeed; and that artificial feeding was discussed individually not in classes for <u>all</u> pregnant women. In relation to the content of the classes, all eight hospitals reported at least two items related to the benefits of breastfeeding, and at least two items related to the management of breastfeeding. Six hospitals reported that they had a written course outline or curriculum describing the minimum breastfeeding content of the antenatal education programme.

Six of the ten surveyed hospitals reported that the majority of pregnant women (not just those attending antenatal classes) received printed or audio-visual breastfeeding information from hospital staff. None provided material on breastfeeding which was produced by a formula manufacturer. Seven hospitals routinely asked pregnant women about their plans for infant feeding, and six hospitals routinely recorded the response on the hospital record. The record indicating the woman's decision was available at the birth in all six of these hospitals, and in one additional hospital it was available although in most cases, it only indicated where a mother had elected to artificially feed. All mothers were asked about their infant feeding plans at some point, but in three hospitals the infant feeding plan was not

usually discussed with hospital staff until the woman was on the postnatal ward.

All ten hospitals reported that the majority of their staff were aware of the effects of medications on breastfeeding and were aware of where to obtain further information.

Step 4: Initiating Breastfeeding

All of the hospitals reported that the majority of mothers were encouraged to hold their babies within half an hour of uncomplicated vaginal birth (see definition in Appendix F) or half an hour following recovery from caesarian section birth. For mothers experiencing an uncomplicated vaginal birth, the majority in all ten hospitals held their babies without interruption for as long as they wanted - at least 30 minutes; and breastfeeding was usually initiated within 30 minutes, however this was not achieved in two hospitals for women undergoing caesarian section birth. In these two hospitals, for the majority of mothers undergoing caesarian section birth (although able to respond to their babies after the operation), contact was interrupted and the initial breastfeed delayed for more than one hour.

All hospitals reported that their staff were available if requested to help women to initiate breastfeeding.

Step 5: Breastfeeding Instruction and Maintaining Lactation

Nine hospitals reported that the majority of breastfeeding mothers routinely received instruction regarding breastfeeding techniques. The remaining hospital reported that all primiparae (first time mothers) were offered this assistance, but not all multiparae, therefore they did not reach the seventy five percent level. Staff assistance with breastfeeding occurred within at least the first six hours after birth, in all of the hospitals surveyed. This assistance was available on the delivery unit and the postnatal ward; was available with the first feed; at the mother's request; and at any time during the postnatal admission. No hospital offered assistance for <u>every</u> feed. In addition, all of the hospitals reported at least six of the possible responses to question F6 (Appendix F), indicating that they gave extra attention and support to mothers, ranging from those who had never previously breastfed through to those requesting assistance or referred by their LMC, and those women who were either unwell themselves or had babies in special care.

Staff gave assistance, information, or advice on expressing breastmilk to some mothers, but this was not given routinely to the majority of mothers in any of the surveyed hospitals. In fact in six of the hospitals less than twenty five percent of mothers were shown. Two hospitals provided information on expressing to the majority of mothers, three hospitals provided this information sometimes, whilst the remaining five hospitals provided this information less than twenty five percent of the time. Two hospitals advised the majority of women where to get additional help with expressing, but in five of the hospitals less than twenty five percent of women were advised about additional help.

The most frequently reported method used to demonstrate breastmilk expression was an electric breast pump, and was demonstrated in all ten hospitals. Hand expression was also demonstrated in all of the hospitals, but to a lesser extent. Two of the hospitals reported demonstrating the use of a hand pump but not to the majority of the mothers. In ninety percent of the hospitals, the majority of mothers with infants in a special care unit were helped to express. Whilst this figure was lower in the remaining hospital, the mother's expressed breastmilk was available for her baby, in all hospitals.

Step 6: Restricting Breastmilk Substitutes Unless Medically Indicated

Babies whose mothers intended to breastfeed received their mother's breastmilk as their first oral feed all or most of the time. Glucose was occasionally given as the first oral feed in one of the hospitals. More than twenty five percent of babies received formula as the first oral feed in one hospital, but it was seldom or never given as the first oral feed in the remaining nine hospitals. Test feeds were not given in any of the hospitals surveyed.

It was reported that the giving of supplements between breastfeeds never occurred in two of the hospitals and seldom occurred in seven. In the remaining hospital it was estimated that whilst supplementary feeding did not occur throughout each infant's entire hospital feeding history, more than seventy five percent of breastfeeding babies received one or more supplementary feeds prior to discharge. Of the eight hospitals reporting the use of supplementary feeds, four used formula only, three used formula or water, and one water only.

Some infants (less than twenty five percent) received one or more complementary feeds prior to discharge in all ten hospitals. Six of the hospitals reported the use of formula, and four reported either formula or water was given as the complementary feed. There were several unsubstantiated reports that complementary feeds were more likely to be given at night. (Supplementary and complementary feeds are defined at the end of the questionnaire in Appendix F).

All hospitals reported that they purchased infant formulae at greater than eighty percent of the normal retail price, and that they did not display any materials promoting infant formulae, nor was printed information about bottle feeding and newborn formulae routinely distributed to breastfeeding mothers. Seven hospitals distributed a commercially prepared discharge pack and one hospital provided its own pack. These hospitals reported that the packs were screened (albeit at irregular intervals) for any information that contravened the Infant Feeding Guidelines for NZ Health Workers (Ministry of Health, 1997). All ten hospitals stated that their gift packs contained no free samples of bottles, teats, nipples shields, pacifiers, or infant formulae.

Respondents were asked to report on practitioners' understanding of the World Health Organisation's list of acceptable reasons for prescribing food or drink other than breastmilk to breastfeeding infants. None of the hospitals had audited evidence of knowledge, and the majority of the respondents themselves were unaware of these 'acceptable medical conditions' (Appendix F). therefore all responses were estimated levels. Only one hospital estimated that the majority of paediatricians, hospital and self-employed midwives, neonatal nurses, and general practitioners were aware of WHO's recommendations.

Step 7: Rooming-In

All of the hospitals reported that they both encouraged and offered 24-hour rooming-in for breastfeeding mothers. Over seventy five percent of mothers in all but one hospital were accommodated in this way. In the remaining hospital it was reported that some mothers were encouraged by staff to have the baby sleep in separate accommodation during the night, therefore the rate of rooming-in was below seventy five percent even though it was available. As all hospitals offered 24-hour rooming-in, question H3 relating to partial rooming-in was not included in the analysis.

No hospital had criteria for well mothers and babies which had to be met prior to rooming-in, and no infants were routinely taken to a well-baby nursery for an initial stay. Rooming-in was not offered to the mothers of babies in special care. Following uncomplicated vaginal birth, well mothers and babies were not separated in any of the hospitals. Following uncomplicated caesarian section birth, mothers and babies in two hospitals were separated, and in one of these hospitals more than seventy five percent of these mothers and infants were separated.

Step 8: Breastfeeding on Demand.

Babies were either never or seldom fed according to a fixed schedule, unless medically indicated, according to the participants in all of the hospitals surveyed. The majority of mothers were encouraged to breastfeed their babies on cue in nine of the hospitals. All of the hospitals reported that the majority of breastfeeding babies were breastfed by their mothers at night, and that the length of suckling at each feed was not limited.

Step 9: Restricting Teats and Pacifiers.

A range of feeding methods used for well babies was reported by each hospital (Table 4.6). 'Finger and feeding tube' and 'Lactaid' were generally limited to 'special circumstances' and had infrequent use. Of the remaining devices used, bottle and teat is not recommended by WHO/UNICEF for routine use, however it was available in all the surveyed hospitals.

Table 4.6 Reported Feeding Devices Used for 'Breastfed' Babies (n=10).

Feeding Device	No. of Hospitals reporting use
Cup	9
"Soft cup" bottle	2
Spoon	7
Syringe	7
Bottle & Teat	10
Finger and feeding tube	6
Lactaid	7

All of the hospitals reported that pacifiers were seldom or never given to breastfed babies. Additionally, all ten hospitals reported that they received no free supplies such as bottles, teats, or pacifiers; and provided no infants supplies of bottles, teats, or pacifiers which contained formula company

information or logos. In eight of the hospitals the majority of babies were cared for without any bottle and teat feeds.

One hospital reported that less than twenty five percent of babies were cared for without any bottle feeds for the whole of their hospital stay, and one reported the rate as between twenty six and seventy four percent. All hospitals stored breastmilk expressed by mothers for their own infant, however no hospital had a human breastmilk donor bank.

Step 10: Fostering the establishment of breastfeeding support groups and making referrals on discharge.

Eight of the hospitals provided a postnatal midwifery service involving visits to the woman's home following discharge. In one of these eight hospitals, the hospital itself was not the LMC, that is, the service was provided by hospital midwives through subcontracts with obstetrician LMCs. In the two hospitals which provided no postnatal community midwifery service, a service from self-employed midwife LMCs was available to all women. Because all women were offered a postnatal community-based service following discharge, all hospitals were classified as high implementers, and the questions relating to postnatal classes, family support, peer counsellors, and support groups meetings on hospital premises, were analysed but not included in the scoring classification for this step. This is further discussed in the following chapter.

Nine of the hospitals offered some additional form of support to the majority of mothers following discharge. This included telephone advice, a range of neonatal home care services, and in three of these hospitals the service of the hospital lactation consultant. The remaining hospital offered a telephone service where any woman could phone if she had questions however this was not related specifically to breastfeeding support and the rostered staff member taking the calls was not necessarily trained in breastfeeding management. None of the hospitals offered postnatal breastfeeding classes or hospital support groups. In addition no breastfeeding support groups such as La Leche League, met on hospital premises.

Staff of eight hospitals encouraged key family members to attend antenatal classes with the pregnant woman, but as no postnatal classes were offered group instruction was also unavailable to family members. Trained peer

counsellors were not utilized for postnatal education or support in any of the hospitals. Five hospitals reported that they advised the majority of breastfeeding mothers about the non-hospital support available following discharge. The community groups/agencies named in the responses of participants are listed in Table 4.7.

Table 4.7: Breastfeeding Support Group/Agency Named by Surveyed Hospitals when advising Postnatal Mothers (n=10).

Name of Breastfeeding Group/Agency	n
Family Support Unit (eg Plunket)	9
Plunket Society	8
La Leche League	8
Private Lactation Consultant	4
Parent Centre	3
Multiple Birth Group	2
Maori Health Initiative Group	2
Public Health Nurse	2
General Practitioner (not LMC)	1

Classification of Hospitals on individual Steps and Overall Level of Implementation on the Ten Steps.

Following analysis of each group's responses to the questions asked during interview, each hospital was given a rating of high, moderately high, partial, or low on each of the Ten Steps. The method used for calculating this rating was discussed in Chapter Three.

The number of hospitals rated at each level of implementation on each individual Step is summarized in Table 4.8. All of the hospitals were classified as high or moderately high implementers on six of the Ten Steps. These were Step 4 (Initiating Breastfeeding), Step 6 (Restricting Breastmilk Substitutes), Step 7 (Rooming-In), Step 8 (Breastfeeding on Demand), Step 9 (Restricting teats and pacifiers), and Step 10 (Support after discharge). Hospitals ranged from high to partial implementers on Step 5 (Breastfeeding Instruction and Maintaining Lactation); and from moderately high to low implementers on Step 1 (Policy) and Step 2 (Staff Training). The widest range of classification was on Step 3 (Informing Pregnant Mothers) where ratings ranged from high to low.

Table 4.8: Level of Implementation on each of the Ten Steps in Surveyed Hospitals (n=10).

Step	Content of Step	High	Mod.High	Partial	Low
1	Policy		4	4	2
2	Staff Training		1	3	6
3	Informing Pregnant Mothers	7	1		2
4	Initiating Breastfeeding	8	2		
5	Breastfeeding Instruction	2	3	5	
6	Restricting Substitutes	6	4		
7	Rooming-In	9	1		
8	Breastfeeding on Demand	9	1		
9	Restricting teats/pacifiers	8	2		
10	Support after discharge	10			

Table 4.9 demonstrates the categorical rating reached by individual hospitals on individual steps. In an attempt to maintain anonymity, the hospitals are not presented in the same order as in Table 4.2, in other words, Hospital 1 does not equate with Hospital a, and so on. No hospital was consistently rated as reaching the same level of implementation on all of the Steps, for example, no hospital was classified as high on every step, moderately high on every step, and so on.

Table 4.9. Level of Implementation of the Ten Steps in each surveyed hospital indicated by rating category (n=10).

Hospital	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10
1	M	L	H	M	H	H	H	H	H	H
2	M	P	L	H	M	H	H	H	H	H
3	M	P	H	H	M	H	H	H	H	H
4	P	M	H	M	H	M	M	H	M	H
5	M	P	H	H	M	H	H	H	H	H
6	P	L	H	H	P	H	H	H	H	H
7	P	L	H	H	P	H	H	H	H	H
8	P	L	M	H	P	M	H	H	H	H
9	L	L	H	H	P	M	H	M	M	H
10	L	L	L	H	P	M	H	H	H	H

Categorical Rating: L = Low; P = Partial; M = Moderately High; H = High.

Overall, five hospitals were classified as high implementers, and five as moderately high implementers of the BFHI.

Content Analysis of Selected Questions.

Both open-ended questions and instructions were used throughout the questionnaire/interview, in order that the researcher could gain further information or request respondents to elaborate on a response. Terms used included "Tell me more about that," and "please explain". Two aspects of practice were explored - differences in policy implementation, and goals related to BFHI implementation.

Differences in Policy Implementation.

Participant groups were asked "Are there any differences in the way midwives and doctors implement policy? (If yes, please give examples)." All ten of the participant groups answered "Yes". Examples were grouped within four themes (Table 4.10).

Table 4.10. Group participants' responses regarding differences in breastfeeding policy implementation (n=10).

Obstetric staff leave it to midwives
Medicalisation of Breastfeeding
Influence of the Paediatricians
Doctors lack Breastfeeding Knowledge

Current Goals in Relation to Hospital's Policy

Participants were asked "What are the hospital's current goals regarding breastfeeding policy? What changes would you like to make?" Responses were provided by the group participants of nine of the surveyed hospitals Table 4.11. The participants from the remaining hospital stated that they were unaware of any plans to change either hospital policy or goals for breastfeeding, and that they knew of no plan to introduce BFHI in their hospital. Four of the hospitals reported that they were actively working toward implementation of BFHI practices even though BFHI assessment was not available in New Zealand.

Table 4.11: Group participants' responses regarding current goals goals and planned changes to breastfeeding policy in surveyed hospitals (n=9).

Improve statistical collection and definitions
Improve written policy
Increase knowledge of/implement BFHI
Stop routine availability of bottles and teats
Decrease amount of formula use/complementary feeds
Appoint Lactation Consultant (part-time)
Increase number of staff with IBCLC qualification
Improve/increase regular staff training
Improve breastfeeding assistance to mother whilst in recovery
Educate families not just the women
Breastfeeding peer group meeting on hospital premises
Improve referral to community breastfeeding groups
Provide transitional care (some rooming-in) in SCBU
Improve diet of women
Investigate setting up of Human Milk Bank
Improve the community midwife availability after hours
Recommend women intending not to b/feed bring own formula

As a follow-on from the discussion of goals, participants were asked "What problems are there in implementing BFHI? What issues have you identified?" Apart from the fact that there was no formal process to apply for Baby Friendly status within New Zealand, participants responded with issues which they perceived needed to be taken into account prior to BFHI implementation in this country. The most frequently occuring responses were that BFHI would be impossible to achieve all of the time and that it took away women's choice (e.g. if they wanted to give complementary or supplementary feeds); that women are often made to feel guilty about formula feeding; and we must respect cultural practices (e.g. associated with not giving colostrum). Another concern was that BFHI would be seen as 'the strong-arm of breastfeeding'. A summary of responses is presented in Table 4.12.

Table 4.12: Group participants' responses regarding issues which need to be addressed in relation to BFHI implementation in New Zealand (n=10).

Impossible to achieve all of the time
What about women's choice/ Right to be individual?
Guilt - do we cause/create it?
Respect for different cultural beliefs and practices
Privacy/space in hospitals
Influence of a generation of bottle feeders
Someone has to be responsible for policing of policy
Limitations of staff and resources
Needs to take account of LMCs and who provides ante/postnatal
Have to work in partnership with LMCs
Don't know enough about BFHI
BFHI definitions/terminology not clear or not well understood
Use of pacifiers and New Zealand recommendations
Need to change way antenatal education is delivered
Doesn't take community postnatal into account
New Zealand has lack of community facilities
Need for support and facilities for women returning to work

Summary

The results of this study indicate that none of the surveyed hospitals was meeting the criteria for all Ten Steps or for the BFHI overall. The findings detailed in this chapter will be discussed in the following chapter, in particular their implications for hospital administration, education of staff and women, and clinical practice.

Chapter 5

DISCUSSION OF RESULTS

Introduction

The Baby Friendly Hospital Initiative (BFHI) aims to protect, promote and support breastfeeding through addressing hospital administrative, educational, and clinical practices. Therefore although all of the hospitals in this descriptive survey were classified as high or moderately high implementers on Steps 4, 6, 7, 8, 9, and 10, it is of concern that no hospital was fully implementing all ten Steps. The majority of hospitals were not fully implementing Steps 1 and 2, and some hospitals had insufficient knowledge of current practices to be able to demonstrate implementation of Steps 3 and 5.

In this chapter the results provided in Chapter Four are discussed. Implications for midwifery practice and suggestions for future research are included in a discussion of each individual Step. Four major factors are addressed: - the lack of consistent breastfeeding definitions for New Zealand hospitals; the delivery of maternity services within New Zealand hospitals; the existence of hospital based practices which do not reflect recommended standards or evidence-based practices; and concerns about BFHI. The limitations of the study are also identified.

Breastfeeding Definitions for NZ Hospitals

No hospital was able to provide accurate figures for exclusive breastfeeding, as defined for this study (Appendix F). According to this definition, any feed given by bottle and teat (including the mother's own expressed milk) was deemed to mean that the mother was not exclusively breastfeeding. Some hospitals used an 'exclusive breastmilk feeding' definition however it included the use of breastmilk given by bottle and teat, a practice not recommended by WHO/UNICEF under Step 9. The definition used in this study is also used by the WHO Global Data Bank on Breastfeeding which aims to collect international data for comparison and indications of trends

over time, thereby requiring consistency in the reporting of data if comparison is to be meaningful.

The difficulty in achieving international consistency in breastfeeding definitions was discussed by an Interagency Group for Action on Breastfeeding (IGAB) meeting in 1988 (Armstrong, 1991; Labbok & Krasovec, 1990), and a recommended schema and framework promoted. More recently a report was prepared for the NZ Ministry of Health (Coubrough, 1999) although there is no evidence that the final recommendations of that report were ever circulated to hospitals and other interested groups, for consultation. Therefore despite a claim that new definitions would be used in an infant care practices survey (MOH, 1998a), at the time of the survey, hospitals still had not been given any national directive regarding definitions or monitoring strategies.

When requested to estimate breastfeeding rates, no hospital was able to claim a 75% exclusive breastfeeding rate although two estimated that they were close to that figure. The majority of hospitals which did collect breastfeeding statistics focused on 'breastfeeding at discharge' rates, indicating a possible bias towards 'any breastfeeding' rather than 'exclusive breastfeeding'. If staff were educated about and required to report on exclusive breastfeeding, their awareness might be raised about the amount of complementary and supplementary feeds given during the hospital stay.

The Delivery of Maternity Services Within New Zealand

Despite pre-testing the questionnaire, the researcher was unprepared for the effect of a wide variety of maternity service contracts across the country, particularly in Hospital Health Service (HHS) areas where a large percentage of the LMCs were self-employed midwives. In these cases, hospital staff were not involved with much of the care, except on the postnatal ward, and even then any care plan was the primary responsibility of the self-employed LMC and the woman.

There is evidence that hospitals do not have accurate knowledge of the practices occuring within their facility when it is being utilized by self-employed LMCs. The relevance of this is that during the interviews undertaken in this survey, hospitals were unable to report that certain practices were occuring or ultimately that specific Steps were being implemented, because they had no system of auditing what practices were

occuring. For example, where there were self-employed LMCs providing care, hospitals were often unable to report whether antenatal information was given to women by these LMCs; whether the woman's intention to breastfeed was discussed and documented antenatally; whether there was uninterrupted contact between mother and baby within 30 minutes of the birth and the opportunity to breastfeed initiated; or whether assistance with the first breastfeed was offered by the LMC.

In addition, there was little evidence of self-employed LMCs being orientated to breastfeeding policies and/or attending hospital breastfeeding education classes (although there is no requirement for the latter). Respondents were unable to state how many hours of basic breastfeeding training self-employed LMCs had undertaken. There was also no demonstrated way of obtaining information about the postnatal advice given to women by these LMCs with regard to breastfeeding support groups or peer counsellors.

All self-employed LMCs are currently required to sign an access agreement with the facility (e.g. hospital or birthing unit) prior to practising there. The midwives and doctors holding access agreements are required to be a member of a relevant professional body; participate annually in a peer/standards review process approved by their professional body; show evidence of continuing professional education; participate in an orientation to the clinical area they intend accessing; and comply with reasonable administrative requirements including documentation. In addition procedures should be based on current practice standards; consistent with the principles of the Baby Friendly Hospital Initiative and ethnic breastfeeding practices; and provide choice, flexibility, individualised care and education, and support to each woman (HFA, 1999a).

In some cases, some of the breastfeeding data required to achieve Baby Friendly Hospital (BFH) status already exists but remains uncollated for evaluative purposes. An example of this, is data which has been entered on to a computer database by the LMC following a birth. This data may include time and length of skin contact between mother and infant, type and time of first oral feed, and whether rooming-in commenced immediately or separation occurred. Hospitals which have this information already should be encouraged to report and evaluate it, and other hospitals should be encouraged to set up information systems and train LMCs how to enter the data.

An additional issue related to the delivery of maternity services in New Zealand involves questions about how a hospital is assessed when care is provided by more than one hospital or facility, for example, when women transfer from one facility to another soon after birth. It may be necessary to identify and exclude these women from any external assessment interviews, or adapt the existing assessment tool. The BFHI documents are also unclear as to whether facilities which only provide birthing, or only postnatal services can be assessed for BFH status. These are issues about which the New Zealand Breastfeeding Authority (NZBA) will need to seek guidance prior to designing the assessment process for New Zealand.

Finally in relation to the delivery of maternity services within New Zealand, some hospitals were unable to respond to questions about antenatal education. No hospital could provide an accurate figure for the percentage of women who attend publicly funded antenatal education (Preparation for Parenthood) classes prior to birthing at the hospital, not even for women attending the hospital's own classes. Where hospital staff did not provide the classes (e.g. where a non-hospital provider such as Parent's Centre was funded by the HFA), the hospital was unable to answer the researcher's questions about the content of the class. One possible solution would be for the hospital to collaborate with the provider, for example, for the hospital lactation consultant to provide the breastfeeding components of the classes. Another is for the HFA to include minimum criteria to be discussed, for example, topics on both breastfeeding benefits and breastfeeding management as detailed in the WHO/UNICEF Global Criteria for Step 2 (Appendix C). Hospitals should also be able to demonstrate how compliance with the WHO Code is maintained within these classes. This might also form part of any future HFA audit of Preparation for Parenthood programmes.

In New Zealand, all women should receive antenatal education from their LMC (HFA, 1998), and therefore may elect not to attend formal education classes. Although accurate statistics are not available for the entire country the HFA estimates that only about 25-30% of women attend publicly funded antenatal classes (Browne, [HFA], personal communication, 10 February 2000). Therefore the NZBA should consider adapting the external assessment to include interviews of women who have had one to one antenatal education by their LMC rather than just those who have attended antenatal classes.

Reported Hospital Practices in Relation to each of the Ten Steps.

Hospital Policy

The word 'policy' was used to describe the written documentation provided by the hospital. Some contained descriptive advice for helping a woman to ensure her baby was breastfeeding 'correctly' rather than clear goals, directives, or standards for practice, and some only applied to the maternity unit rather than the whole facility. For the purpose of this study, whatever documentation the organisation called their breastfeeding policy was used as the basis for the questions asked at interview.

Displaying a copy of the Ten Steps on hospital walls or attaching them to the policy without any written commitment to them within the policy was not deemed to be 'included in the policy.' The content of policies varied considerably, and whilst some included all of the Ten Steps, none fully covered the hospital's and health workers' responsibilities in relation to the NZ interpretation of the WHO Code of Marketing of Breastmilk Substitutes (MOH, 1997). No policy specifically excluded group instruction for mothers on the use of formula etc, however one had a stated commitment that the hospital would adhere to the WHO Code. The difficulty with making reference to the WHO Code within a policy without specifically stating the recommended practice is that health care professionals and mothers may not be aware of the contents of the WHO Code, therefore it is recommended that practices which are to be avoided are specifically stated (WHO, 1998).

One of the practices to be avoided is the use of specific brands of formula on the ward. Some hospitals provided ready-to-use bottles of formula or cans of formula in its powdered form with labelling and brand name clearly visible. Others consistently purchased the same brand. This increases the possibility of this practice being perceived as promoting a particular brand. (Reiff and Essock-Vitale, 1985). Hospitals should consider a requirement that mothers who plan to artificially feed bring their own formula and feeding equipment to the hospital. In this way they can be assisted to make an informed choice prior to the birth, and then to be given the advice appropriate to the specific instructions of the formula manufacturer and the feeding equipment manufacturer, plus the cleaning, sterilizing, and storage instructions. Where infants are given formula for a medical reason, the formula should be locked in a storage system as if it were a medication. It can be made up out of sight

of mothers, or supplied to the ward in an appropriately labelled container with no advertising of a brand name.

In this study a verbal report from respondents that the hospital was purchasing formulae at the recommended wholesale price was accepted by the researcher. It is recommended that hospitals include a written commitment in the hospital policy that it will refrain from accepting free or low-cost formulae, and also that they develop a mechanism for monitoring this.

A breastfeeding feeding policy which references its rationale and scientific basis has the potential to reduce conflicting advice given by health care professionals (Ellis, 1992a; Pinelli, McGovern, Edwards, & Milligan, 1993; Powers, Naylor, & Wester, 1994; Wright, Rice, & Wells, 1996). The facility should make a commitment to the standard of care women can expect from all health professionals within that facility whether hospital employed or self-employed. It should also detail the outcomes to be evaluated. This will require considerable consultation, as the priorities of the women using the service may not be the same as the facility's priorities. New Zealand midwives in particular who are expected to work in partnership with a woman to meet her personal objectives for breastfeeding, will need to consider the flexibility of any policy and recommended best practices.

Staff Training

Wide-ranging policy discussion and change is not sufficient on its own (Garforth & Garcia, 1989). New or revised policy must be accompanied by staff education which gives a clear explanation of the reasons for changing inappropriate practices (Freeman & Lowe, 1993; Karra et al., 1993; Renfrew-Houston, 1988). However apart from an initial orientation of staff to their policy, only three hospitals were providing in-service education sessions for staff on breastfeeding, and in the main, these sessions were only attended by midwives and nurses.

Whilst there has been no formal study of the average or minimum number of hours required to reach a specific level of knowledge on BFHI related practices, there have been a number of related studies which led Vallenas and Savage (WHO, 1998) to conclude that eighteen hours theory and three hours practical is probably a realistic minimum level. All hospitals in this survey were asked to estimate the hours of breastfeeding education that

health professionals working with breastfeeding mothers were likely to have received. This could have included training prior to appointment. No hospital kept an accurate record of the numbers of staff attending education sessions or the number of hours spent on breastfeeding education. In addition, the reported estimates were made by hospital midwives and nurses in relation to other professional groups and could not be verified, however they reflect a perception of inadequate training in all staff categories.

Health care professionals' lack of knowledge of breastfeeding has been reported in a number of overseas studies (Ellis, 1992b; Freed et al., 1995; Howard, Schaffer, & Lawrence, 1997; Lawrence, 1982; Lazzaro, Anderson, & Auld, 1995; Lowe, 1990; Pantazi, Jaeger, & Lawson, 1998; Schanler, O'Connor, & Lawrence, 1999). These studies highlight two major concerns. First, that health care professionals who do not understand or acknowledge the benefits of breastfeeding, will not convey a positive message to pregnant women/mothers. Second, that uninformed or misinformed health care professionals will provide incorrect advice. Whilst the health care professionals in the above studies were predominantly medical staff we cannot conclude that it is only medical staff who lack training. Anderson and Geden (1991) for example, found that only one third of the maternity nurses in their study received their knowledge through inservice education programmes, while over half attributed their knowledge to personal experience. Further research of midwives' and nurses' knowledge and attitudes on breastfeeding is required. Moreover the need for research of New Zealand health care professionals' knowledge and attitudes on breastfeeding is strongly indicated.

Lennan (1997) provided a summary of the breastfeeding education available for health care professionals in the NZ North Health area and concluded that the extent of breastfeeding education for medical practitioners and other health care professional excluding midwives was a matter of serious concern. Education sessions for medical students including paediatricians appeared to be based on didactic lectures on anatomy and physiology with little practical experience. Concern was also raised about insufficient acknowledgment in most tertiary courses of the significance of breastfeeding as a preventative strategy.

Benn (1998) summarized a greater range of breastfeeding education programmes which are available in tertiary institutions and hospitals, and

from service organisations within New Zealand. Issues of concern were also raised, in particular the lack of any associated increase in breastfeeding despite the increase in prevalence of education programmes and resources. One possible reason suggested for this is that theory may not be well integrated into the practice of the professional, that is the professional has not assimilated the knowledge in a way that enables her to give practical assistance to women with breastfeeding problems.

A lack of practical skill may be one explanation of why the obstetric staff were reported by the midwives/nurses in the current study to lack breastfeeding knowledge and to "leave it up to us" (Table 4.23). This was a recurring theme in every one of the ten hospitals surveyed. Some respondents claimed that breastfeeding was women's knowledge and therefore it was appropriate that male obstetric staff 'left it up to' female midwives to assist women, however WHO/UNICEF recommend that all professionals who work with pregnant women and mothers should have inservice education on the hospital breastfeeding policy, and on-going education on recommended best practices. Education sessions can help to identify and to change unhelpful attitudes as well as unhelpful practices (Armstrong, 1990). There is a wide range of practices which doctors cannot or do not, leave up to the midwives or nursing staff. This includes prescription of medication antenatally, intrapartum, and postnatally to women who wish to breastfeed; expressing opinions about breastfeeding; and demonstrating awareness of factors influencing breastfeeding. Demonstrating awareness might include encouraging skin to skin contact following the births they attend, not interrupting breastfeeding to carry out an examination of infant or mother which can be delayed until after the feed, and not giving incorrect advice about cessation of breastfeeding for medical or surgical conditions of mother or infant.

Even if midwives provide the greatest amount of educating and assisting mothers with breastfeeding it is important that all staff understand the dynamics of the breastfeeding relationship, and that they are openly seen to support the policy and not undermine it, for example, with suggestions that 'formula is almost as good as breastmilk anyway'. It is important for doctors to know about the practical aspects of breastfeeding, or else inappropriate interventions including the use of formula may be recommended when the problem would be better solved by identifying underlying factors such as 'incorrect latch'.

Both support/information and appropriate practices have the potential to increase breastfeeding rates (Winikoff & Baer, 1980), but it is not known how much of each must be provided for maximum efficacy and efficiency of a breastfeeding programme. Attitudes will inevitably be conveyed to women during verbal and non-verbal communication (Welford, 1995). It appears that information provided to mothers (verbal) is less well received if it is not perceived to be practiced (non-verbal) i.e. what one actually does may influence mothers more than what one says (Reiff & Essock-Vitale, 1985).

Hospital inservice education needs to be team related, in other words there needs to be consistency of information across the professions, in order that women do not receive conflicting advice. As well as training others a core team has the potential to motivate others during the transition period of regaining a breastfeeding culture (Winikoff, Myers, Laukaran, & Stone, 1987). In addition, by learning together there is greater potential for all categories of professionals to become aware of the concerns and constraints affecting their colleagues' practices, and any other underlying issues. One way of working toward this would be to utilize an internationally recognized programme such as the WHO/Wellstart breastfeeding training course (WHO/Wellstart, 1996).

The WHO/Wellstart course takes into account moves by a range of professions toward evidence-based practice, and would also address the reported lack of knowledge of NZ health workers responsibilities in relation to the WHO Code (MOH, 1997), and of WHO's medical criteria for supplementation (Appendix F) - both of which were identified as not being well understood in this study. In addition, undertaking similar programmes of study would facilitate discussion of practices where conflict currently exists between medical and midwifery staff, for example, the giving of formula for the prevention and management of hypoglycaemia of the newborn (WHO, 1997).

The WHO course or other staff education programme could also be utilised to dispel some of the misunderstanding and lack of knowledge expressed by respondents in response to closed and open-ended questions during the interview and identified by the responses summarized in Table 4.12. The BFHI may be viewed as a conceptual framework for practice, in which the health care professional can integrate individual clinical expertise, with the best available clinical evidence from systematic research. In addition, the BFHI allows for flexibility within countries and the individuality of women.

Countries are encouraged to consider differences when implementing the BFHI. Above all, the BFHI is designed to provide each woman with the information she requires to make an informed choice, rather than deny choice. Although some questions in the BFHI external assessment require evidence of compliance (particularly those relating to the WHO Code), many only require that a practice occurs 50% or 80% of the time (WHO/UNICEF, 1992c).

Where hospitals employed dietitians and/or speech therapists, the survey respondents thought it 'not applicable' that they attend inservice sessions related to breastfeeding. Whilst neither may be involved in the practical management of breastfeeding with mothers and infants, (and therefore not required to meet the same educational criteria as those who are directly involved) the researcher suggests that it is important that they attend training sessions.

For similar reasons as those stated for doctors, dietitians and speech therapists need to be aware of the hospital breastfeeding policy and how their own attitudes may influence the decisions of mothers with whom they come into contact. Apart from meeting their own needs to update knowledge, speech therapists could make a contribution to updating others' evidence-based practice with information of studies such as otitis media, dentition, use of pacifiers, and equipment which facilitates breastmilk feeding in infants with physical problems. Dietitians could contribute a knowledge of the nutritional benefits of breastfeeding and help to ensure that correct advice about weaning is given by other professionals. Dietitians may also be involved in the purchasing of formulae in some hospitals and therefore need to have a clear understanding of the infant formula marketers' self-regulatory Code of Practice (NZIFMA, 1997) and responsibilities in relation to the NZ Infant Feeding Guidelines (MOH, 1997).

Another group, hospital social workers could be made aware of the hospital's policies and recommended best practices, and in turn could assist staff to understand the miriad of psycho-social, economic, political, and cultural factors which influence women's decisions to initiate breastfeeding and to wean. Efforts to improve communication with women could also be explored. In addition to the groups mentioned, orientation to the hospital's policy and inservice education needs to be extended to other professionals within the facility. Groups to consider include pharmacists,

physiotherapists, and medical and nursing staff in paediatric, gynaecology, mental health, outpatient clinics, and all departments throughout the facility who may work with pregnant women, mothers, and breastfed children (of any age). In New Zealand there needs to be improved and consistent breastfeeding education included in the undergraduate education programmes of health care professionals. Communication is recommended between professional bodies, hospital administrators, and the HFA as to how levels of competencies related to breastfeeding education can be improved and audited.

A related issue requiring consideration is the role of the hospital lactation consultant. It was reported during the survey interviews that some hospitals had disestablished a dedicated lactation consultant position or were reviewing the service with a view to reducing the hours of availability. Hospitals applying for BFH status will need to be able to demonstrate that there are staff members or breastfeeding counsellors who have specialized training in breastfeeding and lactation management, available full-time, to advise mothers during their stay in hospital and in preparation for discharge (WHO/UNICEF, 1992b). Whilst this does not necessarily mean that there must be staff employed in dedicated lactation consultant positions, hospitals are advised to consider how they will ensure that breastfeeding policies are written, that they include community consultation, are revised and evaluated/audited; that staff training is co-ordinated, attendance monitored, the curriculum is updated based on latest evidence-based practice, and includes a component of clinical supervision; that whomever teaches the antenatal breastfeeding education programme is experienced and qualified to do so, and that it is both up to date and reflects the needs of breastfeeding women. In addition, women and children with special breastfeeding needs should be offered the services of a lactation consultant or other health care professional with the expertise and time to assist.

Finally with regard to breastfeeding education, the curriculum of those hospitals providing training was not observed, nor were any of the educational resources. It is recommended that in addition to a consideration of the education requirements of staff, and the provision of regular inservice sessions, hospital administrators and staff educators consider the resources available. Giving accurate information to mothers is essential, but staff must be provided with accurate information in the first place (Courant, cited by UNICEF, 1999d). In order to complement the information in textbooks, and

to take more recent research into account, health care professionals need access to the Internet, electronic databases for breastfeeding publications, and the Cochrane Library. Inservice education should be available for those who require computer training, and professionals must learn how to discern reputable sources of information (Bauchner, 1999). In addition, leaders of the evidence-based care movement need to ensure that sources of information such as systematic reviews are quickly and easily accessed, and that they alert professionals to studies where the methodology has considerable limitations.

Antenatal Breastfeeding Education

Despite claims by Vallenas and Savage (WHO, 1998) that research to support Step 3 is strong, it can be difficult to draw a precise conclusion about the effectiveness of antenatal education programmes alone, as other activities are often implemented simultaneously (Perez-Escamilla, Pollitt, Lonnerdal, & Dewey, 1994; Wilmoth & Elder, 1995). Hospitals should consider the proportion of women attending antenatal classes and examine the purpose of the class. More evidence is required to find out what kind of breastfeeding information women find helpful (Sheehan, 1999).

For example, the opportunity to practice handling of infants or 'breastfeeding dolls' antenatally has been associated with a significant increase in breastfeeding duration in comparison to control groups who have not had the opportunity to practice and ask questions antenatally (Cox & Turnbull, 1998; Hoddinott & Pill, 1999a, 1999b; Jamieson, 1999; Pugin, Valdes, Labbok, Perez, & Aravena, 1996). In addition, Jamieson (1999), and Cox and Turnbull (1998) include midwives and pregnant women as group participants so that they learn from each other. Midwife confidence level in supporting breastfeeding mothers postnatally is reported to improve significantly.

Additional research on the effect of antenatal breastfeeding education in New Zealand is indicated, including reasons why so many women do not attend classes; whether information needs to be different for multiparae; what kind of information or practice women want; the effect of including family/support persons; comparison of programmes by different providers (e.g. professionals versus peers; or whether individualized, one-to-one education by her LMC during antenatal visits is a more appropriate way of providing the information that a woman seeks). In addition, New Zealand

research is indicated to ascertain whether there is any association between breastfeeding education and increased rates of exclusive breastfeeding, duration of breastfeeding, and/or maternal satisfaction. The appropriateness of current programmes within New Zealand's multi-cultural society should also be assessed. At present there is no adequate assessment/audit of the content of antenatal classes for non-hospital providers funded by the HFA, nor of the antenatal module requirements set out in the provider specifications by the HFA.

The two hospitals which did not have antenatal classes provided by hospital staff were rated as not implementing the recommended practices asked in questions D1a, D1b, and D2, (Appendix F) as they were unable to demonstrate any way that women were given antenatal education. In the case of a WHO/UNICEF external assessment for the Baby Friendly Hospital award, the examiner would survey women from antenatal clinic or antenatal women who had been admitted to the ward, however this was not part of this study's design. As some hospitals have not contracted to be the LMC for antenatal services either, the number of women available for interview may be reduced to women attending secondary care clinics or who have been admitted to an antenatal ward. This should be taken into account by the NZBA when designing the external assessment process for New Zealand hospitals.

Initiating Breastfeeding

Hospitals wishing to be awarded Baby Friendly Hospital status will need to be able to demonstrate that the majority of women who choose it, have skin-to-skin contact with their infant, within 30 minutes following birth, provided without interruption by hospital staff so that the infant has the opportunity to locate the breast spontaneously, attach, and suckle. Babies of mothers who were heavily medicated during labour, or those born by caesarian section may need some assistance to the breast (WHO/UNICEF, 1998), and there should be evidence that staff have offered help to the mother. As discussed in the section on maternity services delivery, hospitals will need to consider the best way to audit this practice when they are not the LMC and a hospital midwife is not present at the birth; and how they will provide any feedback in order to facilitate any changes in practice.

A limitation in this study was that the questions relating to this step asked respondents about close contact rather than skin-to-skin contact. Whilst all

hospitals reported that the majority of close contact occurs within 30 minutes, some indicated that this contact was not always skin-to-skin. Therefore the responses would need to be verified in terms of skin-to-skin contact. Responses to the researcher's questions on Step 4 indicate that some staff do not understand the underlying rationale and supporting evidence for skin-to-skin contact without rushing, delaying, or interrupting the experience (Klaus, 1995; WHO, 1998). Instead some appeared to believe that compliance with Step 4 would be met by handing the mother her baby which had been removed to another part of the room for examination, Vitamin K injection, weighing, measurement taking, and dressing and wrapping him/her well - as long as all this occurred and the infant was returned to the mother, and breastfeeding had been attempted, within 30 minutes of the birth.

It is difficult to separate out the effects of early contact from early suckling (Enkin, Keirse, Renfrew, & Neilson, 1995) and more recent meta-analysis indicates that the impact of early mother-infant contact on lactation success is unclear (Perez-Escamilla et al., 1994). No research has demonstrated a 'critical period' for the first feed in terms of breastfeeding success, and there are no research-based grounds for encouraging a mother to breastfeed before she and her baby are ready (Renfrew & Lang, 1999a). However hospital staff should be aware of recent findings related to four key features of early contact. These include the findings related to the warming ability through skin-to-skin contact of the infant with the mother's chest (Christensson, Siles, et al., 1992; Fardig, 1980); decreased crying when the infant has this close skin-to-skin contact (Christensson, Cabrera, Christensson, Uvanas-Moberg, & Winberg, 1995; Michelsson, Christensson, Rothganger, & Winberg, 1996); the crawling ability of the infant that ends with latching, on average after 50 minutes of being placed upon the unmedicated mother's chest (Righard, 1995; Righard and Alade, 1990); and, the effects on the mother of early suckling and touch of the nipple by the infant (Widstrom et al., 1990). Where mothers desire early contact with their infants, it is important that midwives/doctors realize that contact should not be interrupted for unnecessary interventions which can quite safely be delayed until after the first feed (Jansson, Mustafa, Khan, Lindblad, & Widstrom, 1995; Righard & Alade, 1990).

In addition to the questions on initiation, respondents were asked about separation of mothers and infants following birth. Two hospitals reported

that mothers undergoing caesarian section operation were separated from their infants after birth. In seventy percent of the hospitals, infants and mothers remained together in recovery demonstrating that caesarian section operation is not an indication for separating infants. Nor is it an acceptable reason for giving formula in the mother's absence. Possible solutions include: midwifery staff remaining in Recovery to assist with breastfeeding; women spending a shorter time in Recovery; or, Recovery staff being trained to assist women with breastfeeding.

Breastfeeding Instruction and Maintaining Lactation

Caesarian section operation has been identified as a risk factor for not intiating or continuing breastfeeding (Perez-Escamilla, Maulen-Radovan, & Dewey, 1996) however reasons put forward to explain this are varied, including altered endocrine responses (Nissen et al., 1996) amount of staff commitment and support (Janke, 1988; Kearney, Cronenwett, & Reinhardt, 1990), delayed perception of the onset of lactation (Chapman & Perez-Escamilla, 1999a), and whether the operation was an elective or an emergency procedure (Chapman & Perez-Escamilla, 1999b; Victora, Huttly, Barros, & Vaughan, 1990). Further research is required particularly within New Zealand and should include factors such as type of anaesthesia used during surgery and analgesia used postnatally.

Overall, assistance given to breastfeeding mothers in the majority of hospitals surveyed was reported as high. This would need to be verified by observation and/or interview of postnatal mothers. None of the hospitals, however met the Global Criteria (Appendix C) for showing mothers how to express their milk. Several participants commented that in the short time most mothers were in hospital, it was more important to ensure that mother and baby had learned to breastfeed, rather than to teach the mother about expressing. The Global Criteria allow for hospitals to instead give women information on expressing and/or where they can get further assistance. In the hospitals surveyed, many were not doing this either. Participants explained that they would expect the community midwife or Plunket Nurse to show mothers on an individual, as required basis.

Information on how to express breastmilk is provided in a Baby Care Guide (Bounty, 1999) contained in some hospital discharge packs, however participants appeared to be unaware of this. Hospitals could encourage staff to discuss possible reasons why a woman might want to express (e.g.

comfort, separation from baby, return to paid employment), and advise her where she can seek assistance at the time when the information is required. A care plan could indicate that advice on expressing has been tailored to meet each individual woman's needs. Care plans or clinical notes should also indicate that as required, advice and assistance with expressing has been given to all mothers who have babies in special care. The New Zealand interpretation of the Global Criteria for Step 5 will need to be considered by the NZBA prior to BFHI assessments in New Zealand hospitals, and hospitals will need to demonstrate that post-discharge advice/information is readily available, if it is not given during hospitalisation.

As well as the questions on assisting mothers to establish breastfeeding and to express breastmilk, participants were asked about support for mothers by staff with special skills in breastfeeding. Where women have been offered this additional specialized support, more mothers have been found to breastfeed, and to breastfeed exclusively for at least two months (Sikorski & Renfrew, 1999), particularly where the support was face to face, rather than by telephone. Women receiving additional support from a lactation consultant reported greater satisfaction and enjoyment of the breastfeeding experience (Jones & West, 1986). In the three hospitals in this survey which employed lactation consultants in dedicated positions, there was a wider range of service available, for example, women were seen prior to conception; antenatally; before and after breast surgery; in gynaecology and paediatric wards/clinics; and for specific issues such as establishing breastfeeding in the premature baby, multiple births, babies with cleft palate, tongue tie, or other problems. In addition, two had a co-ordinating role suitable for facilitating BFHI implementation, which included staff education and audit of practices. An association with improved breastfeeding initiation rates and the appointment of a designated lactation co-ordinator has previously been demonstrated (Rosenberg, McMurtrie, Kerker, Na, & Graham, 1998). Further research is indicated within the New Zealand context to determine the effect that lactation consultants or others such as midwives with special skills in breastfeeding, may have on the breastfeeding success of mothers.

Restricting Breastmilk Substitutes

Overall, the surveyed hospitals reported higher levels of implementation of Steps 6-10, however responses in all of the hospitals indicate the existence of non-evidence-based practices including practices no longer recommended.

For example, complements and supplements were given without medical indication, despite being associated with earlier cessation of breastfeeding (Blomquist, Jonsbo, Serenius, & Persson, 1994; de Chateau, Holmberg, Jakobsson, & Winberg, 1977; Nylander, Lindemann, Helsing, & Bendvold, 1991; Perez-Escamilla, Segura-Millan, Canahuati, & Allen, 1996). No hospital had an adequate system of demonstrating that formula was given with informed consent.

Although only estimated by respondents, and also as reported in Table 4.10, this study gives an indication of what some nurses and midwives believe about their colleagues' lack of knowledge of the medical indicators for giving formula. Also of relevance were their comments indicating the power of the paediatricians and obstetric staff to influence practice which may not be evidence-based. Education is indicated for all categories of health care professionals working with breastfeeding women. This includes raising staff awareness of recommendations regarding routine testing for hypoglycaemia of the newborn (WHO, 1997) and routine 3 hourly feeding of well, term infants based solely on lower than average birthweight. The reasons for giving complementary and supplementary fluids in New Zealand hospitals should be further investigated.

Finally in relation to Step Six, all the surveyed hospitals reported that no free or low cost formula was obtained by the hospital, however most of the respondents were unable to demonstrate how they had substantiated that claim. Examples have occurred in NZ of hospitals being supplied without staff being aware (Moore, 1997), and vigilance, plus a tracking system is required.

Rooming-In

All hospitals provided rooming-in, but it was unclear whether this was as a result of a change to evidence-based practice, structural design of the hospitals, demand from women to have their infants with them, or for other reasons. The problem associated with this is that the underlying reasoning may become lost to tradition rather than based on evidence of the negative influences on breastfeeding associated with separation of mother and baby (Perez-Escamilla, Segura-Millan, Pollitt, & Dewey, 1992; Procianoy, Fernandes-Filho, Lazaro, Sartori, & Drebes, 1983; Yamauchi & Yamanouchi, 1990). Respondents in all ten hospitals spoke of instances where staff had offered to remove infants from the mother's room at night in order that the

mother could sleep. This is not a recommended practice in a Baby Friendly Hospital. If separation is requested by the mother after a full discussion of the benefits of rooming-in, then it is more likely to be an informed decision, but the practice should not be routinely initiated by the staff.

Further research on the effects of full rooming-in versus not rooming-in may be difficult to conduct in New Zealand hospitals due to both ethical and practical limitations. It would be more appropriate to focus on other possible related factors including staff attitudes toward and knowledge of the scientific rationale for rooming-in; mother's preferences and knowledge of the perceived benefits; comparisons between rooming-in in single rooms versus multiple-bedded rooms, comparisons between 24 hour and partial rooming-in; cultural preferences; factors affecting the mother's ability to get adequate rest during the infant's sleep periods; beliefs about co-sleeping; rooming-in for mothers with babies in special care; the effects of hospital rules which permit or prohibit family from staying the night to support the breastfeeding mother; differing types of support from staff which rooming-in mothers report as beneficial in establishing breastfeeding; differences in practice between night and day staff; and whether expectations of women are different in private versus public postnatal facilities.

Breastfeeding on Demand

The beneficial effects of rooming-in may in part be, because rooming-in facilitates demand breastfeeding, as close access enables the mother to look for cues of the infant's readiness to feed (Mirasco & Barger, 1999; WHO, 1998). Restriction of either the length or frequency of the breastfeed can interfere with the establishment of lactation, and may lead to engorgement, and later perceived insufficient milk supply (Renfrew & Lang, 1999b; Wilde, Prentice, & Peaker, 1995; Woolridge, Phil, & Baum, 1993). The reported practices in the majority of surveyed hospitals indicate that staff are well aware that unrestricted breastfeeding is associated with fewer breastfeeding complications. This knowledge would need to be verified through staff interview as would occur in the BFHI external assessment process (WHO/UNICEF, 1992c).

Three hospitals used the term 'baby-led feeding' in their breastfeeding policy rather than 'demand feeding'. Although respondents in all the surveyed hospitals reported that the majority of staff advised the majority of mothers to breastfeed without restriction, it was unclear what cues staff

advised mothers to look for i.e. cues of wanting to suckle rather than waiting for the infant to cry. These cues include restlessness, wriggling, rooting toward its own hand, or anything else near its mouth, and occur well before crying (Mirasco & Barger, 1999).

Restricting Teats and Pacifiers

It was also unclear whether the use of pacifiers (dummies) was low because they were restricted or discouraged, or whether they just were not readily available for staff to offer to mothers. One hospital reported they had experienced problems with a small number of staff members bringing pacifiers to work, and offering them to mothers of 'unsettled' infants. Hospitals will need to decide how to deal with such practices e.g. through education of staff.

Victora, Behague, Barros, Olinto, & Weiderpass, (1997) point out that when the ten steps were first published by WHO/UNICEF there was no epidemiological evidence of an association between pacifier use and reduced duration of breastfeeding. Evidence was subsequently reported in a study by Victora, Tomasi, Olinto, Barros, (1993) and supported in further studies by Aarts, Hornell, Kylberg, Hofvander, & Gebre-Medhin, (1999), Barros et al., (1995), Ford, Mitchell, Scragg, Stewart, & Taylor, (1994), Howard et al., (1999), Riva et al., (1999), and Vogel et al., (1999).

The NZ Ministry of Health publication 'Infant Feeding Guidelines for New Zealand Workers' concluded that "dummies may not interfere with breastfeeding and may be protective for SIDS" (MOH, 1997, p. 20), and went on to suggest that "until further evidence emerges, step nine is debatable and should be excluded." This recommendation was apparently based on information in the Public Health Commission guidelines on Sudden Infant Death Syndrome (PHC, 1995). Despite the findings of some researchers (Arnestad, Anderson, & Rognum, 1997; Esmail, Lambert, Jones, & Mitchell, 1995; Fleming et al., 1999; L'Hoir et al., 1998; Mitchell, Taylor, et al., 1993) of a possible protective effect of pacifier use against SIDS, further research is indicated (Righard, 1998a; Vogel & Mitchell, 1997). Pacifier sucking appears less likely to promote infant arousal to the same degree as (the infant's own) digit sucking or bed sharing (Pollard, Fleming, Young, Sawczenko, & Blair, 1999). In addition, pacifier use has been associated with a significantly higher incidence of wheezing, earache, vomiting, fever, diarrhoea, and colic (North, Fleming, & Golding, 1999).

In hospital, it is possible that mothers using pacifiers for their infants are having difficulty in establishing breastfeeding, rather then trying to wean, and that pacifiers themselves are not a problem. Mothers may use pacifiers to try to settle a hungry infant if they are unable to correct, or unaware of, incorrect suckling technique (Clements et al., 1997). However, an incorrect superficial nipple-sucking technique from initiation of breastfeeding, combined with pacifier use is associated with early weaning (Righard, 1998b; Righard & Alade, 1997). These authors strongly advise correcting incorrect technique as soon as possible, and discouraging pacifier use. Despite suggestions of any protective effect in older infants, Vogel et al., (1999) in a recent New Zealand study, recommended that the practice of using pacifiers in the first months be discouraged.

The NZBA will need to address this issue with the Ministry of Health. The Ministry should be prepared to demonstrate research findings which support New Zealand taking a different stance from any other known country in the world practicing BFHI, and from the World Health Organisation recommendations (WHO/UNICEF, 1989). Apart from inconclusive evidence related to pacifiers, Step 9 is also related to the use of artificial teats, and the researcher suggests that this is a further reason why it is inappropriate to advise New Zealand health workers to exclude the Step.

In contrast to the small percentage of pacifier use reported, the frequent, although not exclusive, use of bottle and teat to provide complementary or supplementary feeds to infants was reported in all ten surveyed hospitals. Artificial teats are not recommended because they may carry infection, reduce the time spent suckling at the breast, and possibly alter oral dynamics (WHO, 1998). Hospitals should determine where and why practice differs from policy, and re-examine their staff training programmes to ensure that staff are aware that the use of teats may be neither harmless nor beneficial.

Cup feeding has been recommended as a suitable alternative to bottle feeding in pre-term infants, when complementary or supplementary feeding is required for medical reasons (Lang, Lawrence, & Orme, 1994; Musoke, 1990; Newman, 1990). Whilst respondents in all ten surveyed hospitals reported that some cup feeding took place, it was not the method of choice (in the absence of breastfeeding), and one hospital reported that it had been "banned" by a pediatrician. Concerns voiced about aspiration indicate the possibility that staff education is required in the correct technique for cup

feeding as described by Lang, (1997) and UNICEF (1999e), and/or that a more supportive environment is required if staff are to apply evidence-based knowledge to their practice (Gokcay, Uzel, Kayaturk, Neyzi, 1997; Westphal, Taddei, Venancio, & Bogus, 1995). Although cup feeding has also been advocated and used for term infants (Christmas, 1995; Moody, 1993; Newman, 1990; Samuel 1998; Wickham, 1995) there is currently a lack of available research to demonstrate any effectiveness of this practice (Brown, Alexander, & Thomas, 1999). Cup feeding should not replace breastfeeding without a good reason, and for term babies should be viewed as a short-term option where breastfeeding is being established (Lang, 1997).

Only one hospital stated that they intended to investigate the possibility of donor breast milk banking. WHO and UNICEF issued a joint resolution which states that in the absence of the biological mother's milk, the first alternative should be the use of human milk from other sources. Human milk banks should be made available in appropriate situations (WHO, 1979). Donor milk is seen as a logical extension to Step 6 rather than giving formula when mother's milk is not available (Arnold, 1996), provided any breastfeeding difficulties are addressed concurrently. There is considerable information available with regard to setting up banks (Arnold & Tully, 1992; British Paediatric Association, 1994; Johnston 1994), however there are currently no donor milk banks in New Zealand, despite attempts for these to be re-established (Barber, 1996; Corbett, 1992).

Fostering postnatal support.

Postnatal services were provided by health care professionals in all of the ten surveyed areas, although the hospital was not always the LMC. All groups were scored as high on this step, because postnatal support was available to all women under Section 51 of the Health and Disabilities Services Act (1993). The WHO/UNICEF Global Criteria (Appendix C) allow this Step to be scored as an 'either or' question and taken literally it was met by the provision of this postnatal service alone, however since developing the global criteria WHO and UNICEF have called for greater fostering of breastfeeding support groups (WHO/UNICEF, 1998), and recommend additional non-medical support which is community based; run by mothers themselves; easily accessible and available every day; free or inexpensive; and a source of confidence building and trained advice on breastfeeding. Prior to developing any NZ BFHI assessment documents, the NZBA will

need to consider if a hospital must also demonstrate how peer support for breastfeeding is encouraged.

The majority of hospitals reported that they did not routinely provide women with information about breastfeeding support groups. In some instances this was reportedly due to an assumption that the woman's hospital community midwife or other LMC would do this. Some respondents reported it was hard to keep up with the changes in available breastfeeding support groups, and several respondents stated confusion over the changes in availability of the Plunket Telephone Helpline. No hospital mentioned the section on breastfeeding support in the Well Child-Tamariki Ora Health Book, given free to all mothers prior to discharge (MOH, 1999, p. 13) however in one area La Leche mothers added their contact details to this book prior to it being issued.

It has been suggested that early discharge may have a negative effect on breastfeeding initiation and duration in New Zealand (Turner, Hounsell, Robinson, Tai, and Whittle, 1999) however there is little New Zealand research available. A study by Mitchell, Counsell, Geddis, & Alison, (1993) focused primarily on the characteristics of those choosing early discharge, and reported no difference in the proportion of those still breastfeeding at 8 weeks postpartum. Several overseas studies found no negative effects of early discharge on breastfeeding duration (Britton, Britton, & Gronwaldt, 1999; Brown & Lumley, 1997; Janson & Rydberg, 1998; Kvist, Persson, & Lingman, 1996; O'Leary Quinn, Koepsell, & Haller, 1997; Svedulf, Engberg, Berthold, & Hoglund, 1998).

Time of discharge may have an important role to play in affecting women's breastfeeding experience (Renfrew & Lang, 1999c; Waldenstrom, Sundelin, & Lindemark, 1987). Carty and Bradley (1990) reported that mothers in the early discharge groups were significantly more satisfied with their hospital care. In both Carty and Bradley's (1990) and Brown and Lumley's (1997) studies, women in the early discharge groups scored lower on measures of depression, and were less anxious about caring for their baby following discharge, however in both studies there was greater availability of visits from domiciliary midwives/nurses, in the early discharge groups. Waldenstrom (1989) found that women who were discharged 'involuntarily' were more dissatisfied with early discharge and had more problems such as fatigue, than women discharged 'voluntarily.' It is important that prior to discharge, women in New Zealand hospitals are made aware of their right

to remain in hospital when there are clinical reasons. These reasons include breastfeeding problems (HFA, 1999a, pp. 3-4). The best way of providing domiciliary support for breastfeeding mothers discharged early requires further investigation.

Concerns about BFHI

Open-ended questions gave respondents the opportunity to discuss identified problems surrounding BFHI implementation. These responses were summarized in Table 4.12. Four main issues were identified. The first was a stated lack of knowledge about BFHI. This will need to be addressed by hospitals (e.g. through staff education programmes) and by the NZBA (e.g. through awareness-raising forums prior to the formal introduction of the Initiative to New Zealand). The NZBA is expected to undertake wide consultation prior to any introduction (HFA, 1999b).

Several respondents indicated a concern that their hospital would not 'pass' a BFHI external assessment as they could not meet the global criteria 100% of the time. Again this misperception should be clarified during awareness-raising forums. Although some questions in the BFHI external assessment require evidence of compliance (particularly those relating to the WHO Code), many only require that a practice occurs 50% or 80% of the time (WHO/UNICEF, 1992c). BFHI assessment looks for a 'breastfeeding culture' within the organisation where breastfeeding is encouraged and supported. The Initiative is designed to reduce practices which have a negative effect on breastfeeding, but this does not have to be through a prescriptive, one best way of practice, to which all staff and mothers must conform.

By expressing concern that the BFHI might take away women's choice, and/or not take different ethnic or cultural practices into account, respondents highlighted a further issue which should be discussed widely in order to provide clarification. Care can still be women-centered, flexible, individually planned, and provide consistent and accurate advice so that decisions are made in partnership between the women and her LMC/caregiver, not imposed by a 'strong-arm of breastfeeding' without discussion or explanation. To try to enforce total compliance would likely repeat the mistakes made through the previous 'medicalisation' of breastfeeding (Beasley, 1998; Palmer, 1991) which BFHI attempts to address.

Fourthly, respondents were concerned about the negative effect of community and socio-political influences on breastfeeding. Whilst the BFHI was designed to address hospital practices having a negative effect on breastfeeding, other countries have also indicated a need to extend the programme to other areas of the community (Breastfeeding Committee for Canada, 1998; Radford, Rickitt, & Williams, 1998; Scottish National Health Service, 2000). Further research regarding women's needs once discharged from hospital is required in New Zealand however the researcher suggests that until health care professionals working in hospitals improve their practices within the hospital it will be more difficult for community services to make measurable changes. There is little point in trying to focus on community practices which have a negative effect on the duration of breastfeeding if practices which affect the initiation and establishment of breastfeeding are not first addressed. Therefore the focus of this Initiative should be at the hospital or health care facility level. Later it might be extended or combined with other initiatives in order to focus on community factors negatively affecting breastfeeding.

Limitations of the Study

The main limitations of the study centre around the use of the survey method and were detailed in Chapter 3. The study relied on self-report of hospital practices, which may not reflect actual practices. Participants may have been aware of the Ten Steps, the WHO Code, or Kovach's (1996, 1997) research. Reliability of the questionnaire was not established.

In addition, where there was difficulty in obtaining accurate statistics or there had been no audited practice, some responses were estimates. An extensive review of records, interviews of staff, plus interviews of pregnant women and postnatal mothers may have elicited more accurate information but time and financial constraints prevented this.

Participants were asked about close contact rather than skin-to-skin contact (Step 4); and the researcher had not anticipated the degree of self-employed LMC involvement in the provision of care, or more specifically the inability of hospitals to report on the practices of these self-employed LMCs.

The results provide a synopsis of a varied group of hospitals but are not predictive of other New Zealand hospitals.

Chapter 6

SUMMARY

The results of this descriptive survey highlight four key points. The first, is that until hospitals collect data according to a definition of exclusive breastfeeding, they will be unable to initiate the BFHI assessment process as the first step requires that they must demonstrate an exclusive breastfeeding rate of at least 75% or a figure that exceeds the national average. In addition to a lack of national definitions, there is also no national mechanism available for regular monitoring of breastfeeding rates on discharge from hospitals. Therefore, hospitals have no official 'national average' to which to compare their own rates. Hospitals and the New Zealand Breastfeeding Authority (NZBA) should insist that the Ministry of Health undertakes a consultation process with health providers and consumers without further delay, and that there is adoption of national breastfeeding definitions and a system for national breastfeeding data collection.

Second, the way that maternity services are delivered in New Zealand poses some difficulty for the collection of data as none of the hospitals had an accurate system for obtaining information, particularly about self-employed LMC practices. In order to be able to demonstrate that they are Baby Friendly, hospitals will first need to collaborate with health care professionals to develop ways that will facilitate data collection. Some data is already provided by self-employed LMCs but has not been collated. It may be more appropriate for other data to be collected or assessed in alternative ways, for example, by the Health Funding Authority or during Peer Standard Reviews.

Other collaborative efforts may need to be made in conjunction with the relevant educational institutions and/or professional associations. This might include an agreement to stipulate a minimum number of hours of theoretical and supervised clinical breastfeeding education in the undergraduate curriculum of midwifery, medical, and other allied health related programmes. In addition LMCs could be encouraged to attend the facility's breastfeeding education sessions in order to meet on-going

education requirements. For midwives, evidence of recent breastfeeding education is included as an aspect of ongoing education relevant to Competence Based Practising Certificates (Nursing Council of New Zealand, 1999), and/or the NZCOM Midwifery Standards Review (Stewart, 1999). Some form of Competence Based Certificates or evidence of updated breastfeeding education should also be required for 'temporary' staff, who work as locums, through hospital bureaux, or private staffing agencies.

The NZBA will need to decide how to assess hospitals that do not provide the full range of pregnancy and birth modules, such as birthing centres, or facilities where women have transferred for postnatal care. Hospitals will need to consider the best way to demonstrate that women's needs for antenatal education are met. Given the small percentage of women attending classes, and the high percentage of women choosing self-employed midwife LMCs in this country (NZCOM, 1999a) it is recommended that the NZBA looks at alternative ways of obtaining data on antenatal education during the external assessment for BFHI.

Third and most important, the findings of the survey indicate that there were discrepancies between recommended BFHI practices and the reported practices of health care providers within the surveyed hospitals. In some cases there is a large gap. Variations in practices may be appropriate if they are based on the needs or circumstances of individual childbearing women and their infants, taking into account such issues as cultural aspects, informed choice, and available resources. Conflicting advice and practices based on inadequate knowledge and preparation, dogma, or which are geared to meet the needs of the institution rather than the woman and her infant, are not appropriate.

No hospital had a policy which fully met the WHO/UNICEF criteria for Step 1 (Policy), and in addition , no hospital fully met the criteria for Step 2 (Staff Training). Steps 1 and 2 are necessary in order to facilitate the implementation of all the other steps (WHO, 1998). Without clearly defined goals and standards, and the opportunity to combine clinical expertise with clinical evidence, practitioners will be unable to explain WHY they are practicing or advising mothers in a particular way. This raises the risk of incorrect and conflicting advice being given to mothers.

Practices not recommended by WHO/UNICEF but reported as occuring in some hospitals, include interrupted or delayed mother-infant contact

following birth, separation of mothers and their infants following caesarian section operation, and routinely advocating feeding schedules for small for gestational age (term) babies. Whilst all women have the right to make an informed choice, staff should not routinely offer to separate rooming-in mothers and infants at night so that the mother can sleep; nor recommend breastmilk substitutes where there is no acceptable medical reason.

All of the surveyed hospitals would meet the criteria for Step 10 (Breastfeeding support following discharge) through the provision of postnatal services in New Zealand, however responses by participating hospitals indicate that there is insufficient information given to postnatal women regarding postnatal breastfeeding support on discharge, particularly in relation to peer support.

Fourth, responses from the participants indicate that there is a lack of understanding of the requirements of the NZ guidelines for health care workers in relation to the WHO Code, and also of the reasons set out by WHO and UNICEF as acceptable medical reasons for giving breastmilk substitutes to breastfeeding infants in hospitals. In addition, concerns raised that staff did not know enough about BFHI, and beliefs that it might deny women choice, need to be addressed through education programmes or forums to promote BFHI. The BFHI may be viewed as a conceptual framework for practice, in which the health care professional can integrate individual clinical expertise, with the best available clinical evidence from systematic research. In addition, the BFHI allows for flexibility within countries and the individuality of women. Countries are encouraged to consider differences when implementing the BFHI. Above all, the BFHI is designed to provide each woman with the information she requires to make an informed choice, rather than to deny choice.

Whilst the study relied on reported rather than observed practice, the results of this research indicate that none of the surveyed hospitals were meeting the criteria for all Ten Steps and therefore for the BFHI overall. It is the researcher's conclusion that none of the surveyed hospitals would achieve Baby Friendly Hospital status unless policy, education, and health care professional practices improve.

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APPENDICES

APPENDIX A

THE WHO CODE

Summary of main points.

1. No advertising of breast-milk substitutes in the health care system or to the public.
2. No free samples to be given to mothers or pregnant women.
3. No free or subsidized supplies to hospitals.
4. No contact between company marketing personnel and mothers.
5. Materials for mothers should be non-promotional and should carry clear and full information and warnings.
6. Companies should not give gifts to health workers.
7. No free samples to health workers, except for professional evaluation or research at the institutional level.
8. Materials for health workers should contain only scientific and factual information.
9. No pictures of babies or other idealising images on infant formula labels.
10. The labels of other products must provide the information needed for appropriate use, so as not to discourage breast-feeding.

(Source: WHO/Wellstart, 1996, p. 3-18).

The aim of the International WHO 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.
>
> (WHO, 1981, Article 1).

The Scope of the WHO Code applies:

> to the marketing, and practices related thereto, of the following products: breastmilk substitutes, including infant formula; other milk products, food 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 breast-milk; feeding bottles and teats. It also applies to their quality and availability, and to information concerning their use.
>
> (WHO, 1981, Article 2).

APPENDIX B

THE TEN STEPS TO SUCCESSFUL BREASTFEEDING

Every facility providing maternity services and care for newborn infants should:

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers to initiate breastfeeding within a half-hour of birth.
5. Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.
6. Give newborn infants no food or drink other than breastmilk, unless medically indicated.
7. Practice rooming-in - allow mothers and infants to remain together - 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

(Source: WHO/UNICEF, 1989).

APPENDIX C

THE WHO/UNICEF BFHI GLOBAL CRITERIA

Step One. Have a written breastfeeding policy that is routinely communicated to all health are staff.

The health facility should have a written breastfeeding policy that addresses all 10 steps and protects breastfeeding. The senior nursing officer for the institution and/or the senior nursing officer on nursing duty should be able to locate a copy of the policy and describe how the other staff are made aware of it.

The policy should be available so that all staff who take care of mothers and babies can refer to it. The policy should be visibly posted in all areas of the health care facility which serve mothers, infants, and/or children particularly in the maternity ward, all infant care areas, including the well baby nursery (if there is one), the infant special care unit, and the antenatal care services. The policy should be displayed in the language(s) most commonly understood by patients and staff.

Step Two. Train all health care staff in skills necessary to implement this policy.

The senior responsible nursing officer should report that all health care staff who have any contact with mothers, infants, and/or children have received instruction on the implementation of the breastfeeding policy and be able to describe how this instruction is given.

A copy of the curricula or course outlines for training in breastfeeding and lactation management for various types of staff should be available for review and a training schedule for new employees should exist. The training should be at least 18 hours in total, including a minimum of three hours of supervised experience, and cover at least 8 steps.

The senior nursing officer should report that all staff caring for women and infants have participated in breastfeeding and lactation management training, or if new, have been oriented on arrival and scheduled for training within six months. Out of 10 randomly selected maternity staff members, at least 80% should confirm that they have received the described training or, if they have been on the maternity ward less than 6 months, have at least been oriented. 80% should be able to answer 4 out of 5 questions on breastfeeding management correctly.

Step Three. Inform all pregnant women about the benefits and management of breastfeeding.

If the hospital has an affiliated antenatal clinic or antenatal ward, the senior nursing officer in charge should report that breastfeeding counselling is given to most pregnant women using those services. A written description of the minimum content of the antenatal education should be available, or appropriate senior staff asked to prepare it. The antenatal discussion should cover the importance of exclusive breastfeeding for the first 4-6 months, the benefits of breastfeeding and basic breastfeeding management.

Out of 10 randomly selected pregnant women of 32 weeks or more gestation who are using the hospital antenatal service, at least 80% should confirm that the benefits of breastfeeding have been discussed with them and are able to list at least two of the following benefits:

- Nutritional
- Protective, including the role of colostrum
- Bonding
- Health benefits to the mother.

Additionally, at least 80% of these women should confirm that they have received no group education on the use of infant formula. They should be able to describe at least two of the following breastfeeding management topics:

- Importance of rooming-in
- How to assure enough milk
- Importance of demand feeding
- Positioning and attachment

Step Four. Help mothers initiate breastfeeding within a half-hour of birth.

Out of 10 randomly selected mothers in the maternity ward who have had normal vaginal deliveries, 80% should confirm that within a half-hour of birth they were given their babies to hold with skin contact, for at least 30 minutes, and offered help by a staff member to initiate breastfeeding.

When possible, observations in the delivery room of up to ten normal vaginal deliveries confirm this practice.

Out of five randomly selected mothers who have had caesarian deliveries, at least 50% should confirm that within a half-hour of being able to respond, they were given their babies to hold with skin contact, for at least 30 minutes, and offered help by a staff member to initiate breastfeeding.

Step Five. Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infants.

Out of 15 randomly selected postpartum mothers (including caesarian), at least 80% report that nursing staff offered further assistance with breastfeeding within six hours of delivery and that they were shown how to express their milk or given written information on expression and/or advised where they could get help, should they need it. Out of the same group of mothers, at least 80% of those who are breastfeeding are able to demonstrate correct positioning/attachment with their own babies.

Out of five randomly selected mothers with babies in special care, at least 80% report that they have been helped to initiate and maintain lactation by frequent expression of breastmilk.

Out of 10 randomly selected health care staff on duty in maternity wards, 80% report that they teach mothers positioning/attachment and techniques for manual expression of breastmilk. 80% of these same staff demonstrate correct teaching of positioning/attachment with one mother on the ward. In addition, 80% can describe an acceptable technique for expressing milk manually that they teach to mothers.

Step Six. Give newborn infants no food or drink other than breastmilk, unless medically indicated.

Observe mothers and infants in the maternity wards for at least two hours. If any babies are being fed food or drink other than breastmilk, ask the mothers if they are breastfeeding at all. For any breastfeeding babies being given food or drink other than breastmilk, ask the staff to indicate why. In at least 80% of the cases there should be acceptable medical reasons.

No promotion for infant foods or drinks other than breastmilk should be displayed or distributed to mothers, staff, or the facility.

Observe staff and infants in the well-baby nurseries (if there are any) for at least one hour. If any normal babies are being fed food or drink other then breastmilk, ask the staff to indicate why. In at least 80% of the cases there should be acceptable medical reasons unless the mothers specifically refuse to breastfeed for reasons outside the control of the hospital.

Ask 15 randomly selected mothers in the maternity wards (including 5 caesarian) if they have received food or drink other than breastmilk in the hospital. The senior nurse or another staff member should be able to give acceptable reasons for these cases where breastfeeding babies receive other food or drink (see Annex) *.

* See definitions attached to Survey Questionnaire - Appendix F.

Step Seven. Practice rooming-in - allow mothers and infants to remain together - 24 hours a day.

Out of 15 randomly selected mothers with normal babies (including 5 caesarian), at least 80% report that since they came to their room after delivery (or since they were able to respond to their babies in the case of caesarians) their infants have stayed with them in the same room day and night, except for periods of up to an hour for hospital procedures.

Out of 10 mothers with normal vaginal deliveries, at least 80% report that their babies were separated from them for no longer than one hour before starting rooming-in.

All normal postpartum mothers in the maternity ward should be observed to have their babies with them or in cots by their bedside, unless their babies are away for a short time for a hospital procedure or unless separation is indicated.

Step Eight. Encourage breastfeeding on demand.

Out of 15 randomly selected mothers of normal babies (including 5 caesarian), at least 80% of those who are breastfeeding report that no restrictions have been placed on the frequency or length of their babies' breastfeeds. In addition, out of the 15 mothers, at least 80% report that they have been advised to breastfeed their babies whenever they are hungry or as often as the baby wants and that they should wake their babies for breastfeeding if the babies sleep too long or the mother's breasts are overfull.

The nursing officer in charge of the maternity ward confirms that no restrictions are placed on the frequency or length of breastfeeds.

Step Nine. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.

Out of 15 randomly selected postpartum mothers (including 5 caesarian), at least 80% of those who are breastfeeding report that, to the best of their knowledge, their infants have not been fed using bottles with artificial teats (nipples) nor allowed to suck on pacifiers.

The nursing officer in charge of the maternity ward reports that breastfeeding infants are not given bottles with artificial teats (nipples) or pacifiers. No more than two breastfeeding infants are observed using them during two hours observation in the maternity ward. None are observed using them during one hour in the well-baby nursery (if there is one).

Step Ten. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

Out of 15 randomly selected postpartum mothers (including 5 caesarian), 80% of those breastfeeding should confirm that their plans for infant feeding after discharge were explored. They should also be able to describe one thing that has been recommended to ensure that they will be linked to a breastfeeding support group (if adequate support is not available in their own families) or report that the hospital will provide follow-up support on breastfeeding if needed.

The nursing officer in charge of the maternity ward should be aware of any breastfeeding support groups in the local area and, if there are any, describe at least one way mothers are referred to them (e.g., through written material or counselling). Alternatively she or he should be able to describe a system of follow-up support for all breastfeeding mothers after they are discharged (early postnatal or lactation clinic checkup), home visit, telephone call.

(Source: WHO/UNICEF, 1992c).

APPENDIX D

THE BASIC PRINCIPLES OF THE BFHI

1. The *Ten Steps to successful Breastfeeding* are non-negotiable. Together they are the minimum practices required to be Baby-Friendly.

2. The *Global Criteria* for the WHO/UNICEF BFHI establish a measurable standard for each of the Ten Steps.

3. Mothers are to be interviewed because they are the most reliable source of information on what is being done to support breastfeeding.

4. Elimination of free and low-cost supplies of infant formula from the hospital or maternity facility seeking designation is an essential precondition for attaining Baby Friendly status.

5. Assessment tools must cover all aspects of the *Global Criteria*. We recommend use of the *Global Hospital Assessment Questionnaire* is recommended.

6. Certain enquiries or observations must be part of the assessment.

    a). A random sample of mothers must be interviewed.

    b). A random sample of all levels of staff working in antenatal and maternity services must be interviewed.

    c). In the antenatal and maternity services, practices must be observed and recorded.

7. The *Guide for Scoring the Global Hospital Questionnaire* specifies the percentage of success required to adequately fulfill each of the Ten Steps. To be designated Baby Friendly, a facility must satisfy the requirements of each Step.

8. An internationally recognized Baby Friendly Hospital or maternity facility does not fail on any Step. It does not accept, use or distribute free or low-cost supplies of infant formula and other breastmilk substitutes.

(Source: WHO/UNICEF, 1998).

APPENDIX E

PERMISSION TO USE/ADAPT QUESTIONNAIRE

Crivelli
Associates

RESEARCH AND EDUCATION CONSULTING

November 2, 1998

Ms. Bev Pownall

Dear Bev:

Enclosed is a copy of the Delaware Valley Hospital Breastfeeding Policy Questionnaire. You have my permission to use the questionnaire as is or to make revisions to suit your research study. If you decide to use the instrument, please let me know. There is no charge to students who want to use the questionnaire. However, I'm interested in trying to keep track of where it is being used and the results obtained. If you decide to use it, all I ask is that you send me a copy of your final report and if it is possible a disk with the raw data. All data will be kept confidential. I want to run reliability tests on the instrument and would like to do some comparison studies.

Additionally, there is a scoring system to evaluate the hospitals that was not fully described in the Journal of Human Lactation article because of space. On the copy of the instrument I am sending to you, I placed an asterisk beside each question that was included in the scoring for each section. Some of the questions have optional typed above them. These were questions that we wanted to find out in Philadelphia but were not included in evaluating the hospitals and are not essential in evaluating the dimensions of each step.

Thank you for your interest. If I can be of any assistance, please let me know.

Sincerely,

Andrea Crivelli Kovach

Andrea Crivelli Kovach, Ph.D., M.A., CHES

APPENDIX F

SURVEY QUESTIONNAIRE

BREASTFEEDING POLICY SURVEY

HOSPITAL ID CODE_____

DATE _____

SECTION A: HOSPITAL DEMOGRAPHIC DATA

Please circle the appropriate response.

A1. What type of hospital is your institution?

General and Obstetric Hospital	*1*
Women's Hospital	*2*
Birthing Centre	*3*
Other (specify)	*4* _____

A2. What type of payments do women attending your hospital make? (Estimate the percentage of each)

Non NZ resident	*1* _____
Private hospital room	*2* _____
Antenatal Classes	*3* _____
Private consultant for birth	*4* _____
Other	*5* _____

A3. What is the total *maternity* bed capacity of the hospital? _____

Antenatal beds	1_____
Delivery beds	2_____
Postnatal beds	3_____

(Comment on beds available for <u>either</u> antenatal or postnatal).

_____

A4. How many births did the hospital have during the *12 month period ending 31 March 1999*? (Indicate if don't know).

Total _____

How many of these were: Caesarian _____
Birth weight <1000gm _____
Admitted to Special care/NICU _____

A5. How is the hospital classified (for maternity service)?

Level 0 (Birthing Unit)	*1*
Level I	*2*
Level II	*3*
Level III	*4*
Other	*5*

A6. What is the average length of stay in the hospital following *birth*?

a. *Uncomplicated* Vaginal *birth (mother & baby both well)*

Up to and including 6 hours	*1*
7 hours up to and including 24 hours	*2*
25 hours - 48 hours	*3*
Over 48 hours	*4*

b. Uncomplicated Caesarian birth *(mother & baby both well)*

Up to and including 6 hours	*1*
7 hours - 24 hours	*2*
25 hours - 48 hours	3
49 hours - 72 hours	4
Over 72 hours	5

A7. Does the *maternity service* record the number of mothers breastfeeding at discharge?

Yes	3	If yes, go to A7
No	1	**If no, go to A8**
Not sure	9	

A7a. Are the data tabulated?

Yes	3
No	1
Not sure	9

How is this done? Please describe, *including how categories (eg exclusive breastfeeding throughout whole hospital stay) are defined - attach definitions if possible.*

_____

_____

_____

_____

_____

_____

A7b. What percentage of women were exclusively breastfeeding at discharge *on 31 March 1998*? _____ (See WHO definition). (Please estimate if necessary).

A8. What percentage of women were exclusively breastfeeding at discharge on *31 March 1999*? _____ (See WHO definition). (Please estimate if necessary).

A8b. If possible give percentages for the following categories(See attached WHO definition).

Exclusive Breastfeeding	_____1
Breastfeeding	_____2
Artificial Feeding	_____3

A9. What percentage of women giving birth at this hospital attend it's antenatal classes?

_____% *Recorded statistic or estimated %?*

A10. What is the percentage of all births for each LMC category?

Hospital staff	_____ %	
Independent Midwife	_____ %	
Private Obstetrician	_____ %	
GP	_____ %	
Other	_____ %	*Calculated or estimated?*

A11. What additional staff do you use?

Bureau	1
Agency	2
Locum	3

SECTION B: FORMAL WRITTEN HOSPITAL POLICIES/STANDARDS OF CARE

B1. Is there now or has there ever been a member of the hospital staff actively supportive of breastfeeding?

yes	3
no	1
not sure	9

If yes, what did he/she do?

_____
_____
_____
_____

B2*. Does the hospital or maternal-child unit have an explicit formal written policy for supporting mothers who choose to breastfeed their newborns?

yes	3	If yes, may I have a copy of
no	1	your policy?
not sure	9	

If yes, please continue
If no or not sure, go to section C

Who developed the policy at the hospital?

*Title of position:*_____

When was the policy adopted?_____

B3. What proportion of hospital staff on the maternity unit follow this policy? (Estimate if necessary).

B3a. *Hospital Obstetricians:*	
all/most of the obstetricians (75-100%).	*3*
some of the obstetricians	*2*
few/if any of the obstetricians (25% or less)	*1*
not sure	*9*
B3b. Hospital Paediatricians	
all/most of the paediatricians (75-100%).	*3*
some of the paediatricians	*2*
few/if any of the paediatricians(25% or less)	*1*
not sure	*9*
B3c. Hospital Midwives/Nurses:	
all/most of the midwives/nurses (75 -100%)	*3*
some of the midwives/nurses	*2*
few/If any of the midwives/nurses (25% or less)	*1*
not sure	*9*

What proportion of non-hospital staff on the maternity unit follow this policy? (Estimate if necessary).

B3d. Independent Midwives:

all/most of the Independent Midwives (75-100%).	*3*
some of the Independent Midwives	*2*
few/if any of the Independent Midwives (25% or less)	*1*
not sure	*9*

B3e. Non-Hospital Doctors:

all/most of the doctors (75-100%).	*3*
some of the doctors	*2*
few/if any of the doctors (25% or less)	*1*
not sure	*9*

B4*. Is the policy available so all staff caring for mothers and babies can refer to it?

yes	3	If yes, where is it kept?_____
no	1	
not sure	9	

B5*. Is the breastfeeding policy posted or displayed in areas of the health facility which serve mothers, infants, and children?

yes	3
no	1
not sure	9

Where is the policy posted?_____

B6a*. Does the policy	yes	no	not sure
i. call for ongoing formal inservice programmes for hospital staff	3	1	9
ii. call for *antenatal classes* which inform *pregnant women* of the benefits of breastfeeding	3	1	9
iii. include *reference* to procedures to help a mother initiate breastfeeding within 30 minutes after *uncomplicated birth*?	3	1	9
iv. include *reference* to procedures to show mothers how to express breastmilk and maintain lactation should they be separated from their babies	3	1	9
v. place restrictions on giving breastfeeding infants any food or drink other than breastmilk unless medically indicated	3	1	9

	yes	no	not sure
vi. encourage 24-hour/day rooming-in (allowing for 1 hour separation/day)	3	1	9
vii. encourage breastfeeding on demand	3	1	9
viii. restrict the use of pacifiers for breastfeeding infants	3	1	9
ix. restrict the use of bottles and teats for breastfeeding infants	*3*	*1*	*9*
x. require referral of mothers to appropriate community breastfeeding resources at discharge	3	1	9
xi. require referral of mothers with breastfeeding problems to the appropriate resource (lactation consultant, community support group, hotline, medical provider, electric pump rental)	3	1	9

B6b*. Does the policy prohibit:	yes	no	not sure
i. ***posters and promotion for*** *breastmilk substitutes, feeding bottles, and teats?*	3	1	9
ii. ***group instruction*** *for using breastmilk substitutes, feeding bottles, and teats?*	3	1	9

B7*. Is there a mechanism in place for evaluating the effectiveness of the policy?

yes	3
no	1
not sure	9

If yes, please describe:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

HOSPITAL PRACTICES

SECTION C: HEALTH CARE STAFF TRAINING

C1*. What proportion of the **entire** staff caring for mothers and infants has *been orientated to* the breastfeeding policy?

all/most of the staff (75-100%)	3
some of the staff	2
few/if any of the staff (25% or less)	1
not sure	9

C1a. For new staff, when does this occur?*

during the first two weeks of commencing work	*3*
between 3rd and 4th weeks	*2*
between 1 and 6 months after commencing	*1*
more than 6 months after commencing.	*1*
not sure	*9*

C2*. Does the hospital provide a formal inservice programme for all staff on breastfeeding?

yes (*doctors, midwives,* and nurses)	3
yes (*midwives and* nurses only)	2
no	1
not sure	9

C2a. If yes, how frequently are the programmes given?_____

C2b. How long is it following appointment to their position, until staff attend?*

within the first 3 months of employment	*3*
4-6 months after employment	*3*
over 6 months - 12 months after employment	*2*
over 12 months after employment	*1*
not sure	*9*

C2c*. Please tick (✓) all areas that are covered in the programme

_____ advantages of breastfeeding
_____ breastfeeding techniques/principles
_____ breastfeeding physiology
_____ breast care
_____ nutritional aspects of breastmilk
_____ feeding frequency
_____ the infant's growth spurts in the first 6 weeks
_____ collection/storage of *expressed* breastmilk
_____ medications compatible with breastmilk
_____ advantages of rooming in
_____ support services for breastfeeding mothers
_____ feeding the premature infant
_____ *hospital policy*

_____ *disadvantages of teats and pacifiers*
_____ *importance of exclusive breastfeeding in first 4-6 months*
_____ *common breastfeeding problems*
_____ other (specify) _____

C2d. Please indicate (✓) all staff who participate in the programme

1. _____ *midwives/obstetric nurses*
2. _____ *neonatal nurses*
3. _____ *obstetricians*
4. _____ *paediatricians*
5. _____ nutritionists/dietitians
6. _____ social workers
7. _____ health educators
8. _____ discharge planners
9. _____ others (specify) _____

C2e. Who teaches the programme? *Position Title* _____

C2f. Does the hospital have a written course outline or curricula for staff training in breastfeeding and lactation management?

yes	3
no	1
not sure	9

C3a*. How many hours does a staff person normally spend in basic breastfeeding training (can include previous training, prior to appointment)?

i. Obstetricians*

No training	1
up to 3 hours	1
3 - 8 hours	2
9 - 17 hours	2
18 hours and over	3

ii. Paediatricans*

No training	1
up to 3 hours	1
3 - 8 hours	2
9 - 17 hours	2
18 hours and over	3

iii*. *Midwives*/Nurses

No training	1
up to 3 hours	1
3 - 8 hours	2
9 - 17 hours	2
18 hours and over	3

iv*. *Neonatal Nurses*

No training	1
up to 3 hours	1
3 - 8 hours	2
9 - 17 hours	2
18 hours and over	3
Not applicable	9

v*. Health educators/Nutritionists/Others

No training	1
up to 3 hours	1
3 - 8 hours	2
9 - 17 hours	2
18 hours and over.	3
Not applicable	9

C3b. How many hours of supervised clinical breastfeeding experience does a staff person normally have? (Estimate if necessary).*

i. Obstetricians*

No supervision	*1*
<3 hours supervision	*2*
3 hours or more	*3*

ii. Paediatricians*

No supervision	*1*
<3 hours supervision	*2*
3 hours or more	*3*

iii. Midwives/Nurses*

No supervision	*1*
<3 hours supervision	*2*
hours or more	*3*

iv. Neonatal Nurses*

No supervision	*1*	
<3 hours supervision	*2*	
3 hours or more	*3*	*Calculated or estimated?*

C4*. Does the hospital have at least one person on staff trained in breastfeeding management who is responsible for one-to-one counselling of breastfeeding mothers?

yes (7-8 hours or more/day)	3
yes (2-6 hours/day)	2
no (<2 hours/day)	1
not sure	9

If yes, C4a. How many people? _____

C4b*. What are this person's credentials? Tick (✓) all that apply. (List separately for each person).

1. RM ___ 2. RGON ___ 3. RCN.___ 4. IBCLC. ___ 5. Other ___ (specify)_____
2.
3.

C4c*. How many hours/week is this service available? (Total hours per week)

35-40 hrs	3	1-9 hrs	1
10-34 hrs	2	0 hrs	1

Available weekdays?	yes	no
Available weekends?	yes	no

C4d. Who receives this counselling? (Circle all that apply)

primipara *only*	1
all mothers	2
mothers who encountered problems previously	3
mothers with current breastfeeding problems	4
mothers who request counselling	5
mothers referred by hospital staff	6
mothers referred by non-hospital LMC	7
other, please describe	8
not sure	9

C5. Does the hospital have at least one person on staff responsible for planning breastfeeding programmes?

yes	3	If yes, go to C5a.
no	1	**If no, go to D1.**
not sure	9	

C5a. Is this person the same as the breastfeeding consultant described in C4?

yes	3
no	1
not sure	9

C5b. Who is this person? *Position Title* _____

C6. In what area of the hospital is this person's primary worksite? *(Circle all that apply for each person).*

	Person 1	*Person 2*	*Person 3*
nursery	1	1	1
postnatal	2	2	2
labour and delivery	3	3	3
NICU	4	4	4
Administration	5	5	5
other (specify)	6	6	6

SECTION D: INFORM PREGNANT WOMEN OF BREASTFEEDING BENEFITS AND MANAGEMENT

D1*. Does the hospital offer *antenatal* classes?

yes	3	If yes, go to Dla.
no	1	**If no, go to D4.**
not sure	9	

D1a*. In your regular antenatal classes, are breastfeeding benefits and management covered in these classes for **all** *pregnant* women not just women choosing to breastfeed? (Regular classes are defined as covering topics for all women, not additional classes specifically on breastfeeding).

yes (at least 30 minutes)	3
yes (< 30 minutes)	2
no	1
not sure	9

How much time is devoted to breastfeeding instruction?_____

D1b*. In your regular antenatal classes, is artificial feeding covered in these classes for **all** *pregnant* women not just women choosing to bottlefeed?

yes (at least 30 minutes)	1
yes (< 30 minutes)	1
no	3
not sure	9

If yes, how much time is devoted to artificial feeding instruction?_____

D2*. *What topics are covered? (Tick (✓) all that apply).*

Nutritional	____
Bonding	____
Protective, including the role of colostrum	____
Health benefits to the mother	____
Importance of rooming in	____
Mother's milk supply	____
Importance of feeding on demand	____
Positioning and attachment	____
Importance of exclusive breastfeeding for the first 4-6 months	____

D2a. Does the hospital have a written course outline or curricula describing the minimum content of the antenatal education programme?

yes	*3*
no	*1*
not sure	*9*

D3*. Are *pregnant women* routinely asked about their infant feeding plans?

all/most of the time (75 -100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

D4*. If a *pregnant woman* indicates she wants to breastfeed, is her decision recorded on the hospital's record?

all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

D4a. Anywhere else? _____

D4b*. Is this record available at the time of birth?

all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

D5*. Do staff caring for *pregnant women* know the effects of medication(s) on breastfeeding?

all/most of the staff (75-100%)	3
some of the staff	2
few/if any of the staff (25% or less)	1
not sure	9

D6*. Do *pregnant women* receive printed and/or audio-visual breastfeeding information *from hospital staff?*

all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

D6a*. What is the source of the information provided? (Tick (✓) all that apply).

NZ Public Health Commission	3
In-house created materials	3
Childbirth education organization	3
Breastfeeding education organization	3
Formula manufacturer	1
Other, please describe	2_____
not sure	9

D7. When are mothers asked about their infant feeding plans? (Circle all that apply).

antenatally	1	
at time of admission	2	
immediately following delivery	3	
on the postnatal ward	4	
other	5	(specify) _____
not sure	9	

D8. Do breastfeeding mothers receive written breastfeeding information at the time of discharge?

all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

D8a. What is the source of the information provided? (Tick (✓) all that apply).

In-house created materials	*3*	
Childbirth education organization	*3*	
Breastfeeding education organization	*3*	
NZ Public Health Commission	*3*	
Formula manufacturer	*1*	
Other, please describe		_____
not sure	*9*	

SECTION E: INITIATING BREASTFEEDING

(Uncomplicated vaginal birth = Well mother & well baby). Give the answer that most frequently occurs.

E1*. Are mothers encouraged to hold their babies within a half hour of *uncomplicated. vaginal birth*?

all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

E1a*. How long does this contact normally last for well babies?

up to and including 15 minutes	1
16 - 30 minutes	2
over 30 minutes	3
not sure	9

E2*. Following an *uncomplicated vaginal birth* when is a well baby put to the breast for the first time?

within the first hour of birth	3
1-2 hours after birth	2
over 2 hours after birth	1
other (specify)	4 _____
not sure	9

E3*. Are mothers who initiate breastfeeding offered help by a staff member?

all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

E4*. Following an *uncomplicated vaginal birth,* how long is a baby's initial stay in the nursery?

babies and mothers not separated	3
up to 2 hours	2
2-4 hours	1
over 4 hours	1
not sure	9

E5*. Are mothers with uncomplicated caesarean births encouraged to hold their babies within a half hour following recovery (when they are able to respond to their babies)?

all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

E5a*. How long does this contact normally last?

up to & including 15 minutes	1
16 - 30 minutes	2
over 30 minutes	3
not sure	9

E6*. Following an uncomplicated caesarean birth, when is the infant first put to the breast?

less than 1 hour after recovery	3
1-2 hours after recovery	2
3-8 hours after recovery	1
not sure	9

E7*. Following an uncomplicated caesarean birth, how long is a baby's initial stay in the nursery?

babies and mothers not separated	3	
up to 2 hours	2	
3 - 4 hours	1	
5 - 8 hours	1	
other	1	(specify) _____
not sure	9	

SECTION F: BREASTFEEDING INSTRUCTION, SPECIAL CARE AND LACTATION MAINTENANCE

F1*. Do breastfeeding mothers routinely receive instruction regarding breastfeeding techniques (comfortable positioning, holding baby, assessing the effectiveness of breastfeeding)?

all/most of the time (75-100%	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

Fla*. When does this happen? (Circle all that apply).

with every feeding	3
with the first feed	3
at the mother's request	3
within the first 6 hours	3
(6 hours and up to 12 hours	2
over 12 hours after birth	1
not sure	9

F2. Who is responsible for teaching mothers breastfeeding techniques? (Circle all that apply).

delivery room *midwife*	1
post*natal* ward *midwife*/nurse	2
neonatal nurse	3
nursery nurse	4
lactation consultant	5
her LMC if non-CHE	6
other (specify)	7
not sure	9

F3a*. Are <u>all</u> breastfeeding mothers shown how to express their milk?

all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

F3i. *If yes,* which method(s) is(are) usually demonstrated?

hand expression	1
hand pump	2
electric pump	3
not sure	9

F3b. Are all breastfeeding mothers given information on expression of their milk?*

all/most of the time (75-100%)	*3*
sometimes	*2*
seldom/not at all (25% or less)	*1*
not sure	*9*

F3c. Are <u>all</u> breastfeeding mothers advised where they can get help about expression of their milk?*

all/most of the time (75-100%)	*3*
sometimes	*2*
seldom/not at all (25% or less)	*1*
not sure	*9*

F4*. Are mothers of babies in special care helped to establish and maintain lactation by frequent expression of breastmilk (at least 6-8x/day)?

all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

F5*. Do babies in NICU/special care whose mothers want to breastfeed receive their mother's expressed milk when medically able to do so?

all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

F6. Which mothers who wish to breastfeed receive extra attention and support from the hospital staff? Tick (✓) all that apply).*

___ *none*
___ primipara *only*
___ *mothers who have never previously breastfed*
___ mothers who encountered problems previously
___ mothers with current breastfeeding problems
___ mothers who request counselling
___ *mothers referred by hospital staff*
___ *mothers referred by non-hospital LMC*
___ *mothers with sick babies or babies in special care*
___ *sick mothers*
___ other, please describe
___ not sure

SECTION G: INFANT SUPPLEMENTATION

GI* What are breastfed babies given as a "first *oral* feeding"? (Circle all that apply).

Gla*. Breastmilk	all/most of the time	3
	sometimes	2
	seldom/not at all	1
Glb*. Water	all/most of the time	1
	sometimes	2
	seldom/not at all	3
Glc*. Glucose	all/most of the time	1
	sometimes	2
	seldom/not at all	3
Gld*. Formula	all/most of the time	1
	sometimes	2
	seldom/not at all	3

G1e*. Are "test feedings" of sterile water and/or glucose water routinely given to breastfed babies?

all/most of the time	1
sometimes	2
seldom/not at all	3

G2*. Are breastfed babies normally given any supplements <u>between</u> breastfeeds (unless medically indicated)?

all/most of the time (75-100%)	1
sometimes	2
seldom/not at all (25% or less)	3
not sure	9

G2a. What is used? Indicate all possibilities.

water	1	
glucose	2	
formula	3	
fortifier	4	
other	5	(please specify) _____
not sure	9	

G3*. Are breastfed babies normally given complementary feedings <u>along with</u> breastfeeds (unless medically indicated)?

all/most of the time (75-100%)	1
sometimes	2
seldom/not at all (25% or less)	3
not sure	9

G3a. What is used? Indicate all possibilities.

water	1
glucose	2
formula	3
fortifier	4
other	5
not sure	9

G4*. Does the hospital receive free or *low-cost (below 80% market retail cost)* infant formula?

yes	1	If yes, which brands are supplied? _____
no	3	
not sure	9	

G5*. Are promotional materials for <u>infant formulas</u> visibly displayed in areas servicing mothers, infants, and children?

all/most of the areas (75-100%)	1
some areas	2
few/no areas (25% or less)	3
not sure	9

G6*. Is printed information on bottle feeding and infant formulas distributed to breastfeeding mothers?

all/most of the time (75 -1 00%)	1
sometimes	2
seldom/not at all (25% or less)	3
not sure	9

G7*. Does the hospital have separate discharge packs for breastfeeding and bottle feeding mothers?

yes	3
no	1
not sure	9

G7a. If yes, please describe the contents of a breastfeeding mother's discharge pack. (Does it include powdered or liquid formula and/or formula coupons?) . How do the two packs differ?

_____
_____
_____
_____

G7b. Are these supplied by formula companies?

yes	1
no	3
not sure	9

G8*. *What percentage of practitioners have a clear understanding of the WHO's acceptable reasons (see definition of medical conditions attached) for prescribing food or drink other than breastmilk to breastfeeding infants)? Estimate if necessary.*

a. Paediatricians

all/most of the paediatricians (75-100%)	3
some of the paediatricians	2
few/if any of the paediatricians (25% or less)	1
not sure	9

b. Hospital midwives

all/most of the midwives (75-100%)	3
some of the midwives	2
few/if any of the midwives (25% or less)	1
not sure	9

c. Neonatal nurses

all/most of the neonatal nurses (75-100%)	3
some of the neonatal nurses	2
few/if any of the neonatal nurses (25% or less)	1
not sure	9

d. Independent midwives

all/most of the midwives (75-100%)	3
some of the midwives	2
few/if any of the midwives (25% or less)	1
not sure	9

e. Non-hospital doctors

all/most of the doctors (75-100%)	3
some of the doctors	2
few/if any of the doctors (25% or less)	1
not sure	9

Calculate or estimated?

SECTION H: ROOMING-IN

H1*. Is 24-hour/day (except for *periods of up to 1 hour*) rooming-in available in the hospital?

yes	3	Comments: _____
no	1	
not sure	9	

If no, go to H3

If yes, Hla*. What percentage of mothers ***have*** 24 hour rooming-in?

all/most of the mothers (75-100%)	3
some of the mothers	2
few/if any of the mothers (25% or less)	1
not sure	9

H1b*. Are all breastfeeding mothers encouraged to room-in (24-hours) with their babies?

all/most mothers (75-100%)	3
some mothers	2
few/no mothers (25% or less)	1
not sure	9

Comments:

_____
_____
_____
_____

H2*. If a mother chooses 24-hour rooming-in, are there criteria that determine when she is able to do so?

yes	1
no	3
not sure	9

If yes, please describe your policy

_____
_____

H3. Is partial rooming-in available in your hospital?

yes	2
no	1
not sure	9

Elaborate

_____
_____
_____
_____

If yes, H3a. How many hours/day do mothers and infants normally spend together?

up to and including 8 hours	1
9 - 16 hours	2
over 16 hours	3
not sure	9

H4*. Does rooming-in start within an hour after an *uncomplicated vaginal birth* (well mother and baby)?

mother and baby not separated	3
all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

H5*. Does rooming-in start within an hour after recovery from a caesarean birth (well mother and baby)?

mother and baby not separated	3
all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	9

SECTION I: FEEDING SCHEDULES

I1* Unless medically indicated, are breastfed babies fed according to a fixed schedule?

all/most of the time (75-100%)	1
sometimes	2
seldom/not at all (25% or less)	3
not sure	9

If yes, please describe the feeding schedule?

_____

_____

_____

I2*. Are mothers encouraged to breastfeed their babies on cue?

all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

I3* Are breastfed babies *breastfed by their mothers at night*?

all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

I4*. Do you limit the length of suckling at each feeding for breastfed babies?

all/most of the time (75 -100%)	1
sometimes	2
seldom/not at all (25% or less)	3
not sure	9

If yes, what is the recommended suckling time? _____

SECTION J: PACIFIERS AND ARTIFICIAL NIPPLES

J1*. Are *breastfed* babies given pacifiers between breastfeeds?

all/most of the time (75-100%)	1
sometimes	2
seldom/not at all (25% or less)	3
not sure	9

J2*. Does the hospital receive free infant supplies (bottles, teats, pacifiers)?

yes	1
no	3
not sure	9

J3. Does the hospital provide infant supplies (bottles, teats, pacifiers) containing formula company information or logos?

yes	*1*
no	*3*
not sure	*9*

J4 Are babies who have started to breastfeed cared for without any bottle feeds (unless medically indicated)?*

all/most of the time (75 -100%)	*3*
sometimes	*2*
seldom/not at all (25% or less)	*1*
not sure	*9*

J5. Is supplemental or complementary feeding done by: (Tick (✓) all that apply).

cup	*3*	
spoon	*3*	
other	*2*	*(specify)* _____
bottle and teat	*1*	
not sure	*9*	

SECTION K: HOSPITAL DISCHARGE

Do you offer a postnatal midwifery service to all women? Home?____ Clinic ____

KI*. Apart from postnatal visits under Section 51, are breastfeeding mothers advised of breastfeeding support when they are discharged?

all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

K1a. Which groups/agencies are mothers advised of? (Tick (✓) all that apply).

____ *La Leche*
____ *Plunket Nurse*
____ *Plunket Family Support Unit*
____ *Parent Centre*
____ *Hospital Lactation Consultant*
____ *Private Lactation Consultant*
____ *Other (specify* _____

K1b. Are any actual telephone or written referrals made?).

_____
_____
_____

K2*. Are breastfeeding mothers given follow-up support after they are discharged from the hospital (home visits, telephone calls, postnatal clinic checkups)?

all/most of the time (75-100%)	3
sometimes	2
seldom/not at all (25% or less)	1
not sure	9

If yes, K2a*. Please describe what is done:

_____
_____
_____
_____

K3*. Does the hospital provide post*natal* breastfeeding classes/support groups for mothers following discharge?

yes	3
no	1
not sure	9

If yes, K3a. What percentage of mothers attend these classes/support groups?

____%

Comments:_____
_____

K4*. Does the hospital encourage participation of key family members/support people in breastfeeding classes (*ante*natal, postpartum, etc.)?

yes	3
no	1
not sure	9

K5*. Does the hospital utilize trained peer counsellors *(laywomen with breastfeeding experience)* in any of its maternity services (clinic, post*natal ward* visits)?

yes	3	If yes, where?
no	1	
not sure	9	

K6*. Does La Leche League or other breastfeeding organization conduct support groups on the hospital premises?

yes	3
no	1
not sure	9

K7. What are the hospital's current goals regarding breastfeeding policy? What changes would you like to make?

K8. Are there any differences in the way midwives and doctors implement policy? (If yes, please give examples).

DEFINITIONS:

Acceptable medical conditions for supplementation.

It is assumed that severely ill babies, babies in need of surgery, and very low birth weight infants (less than 1000 grams) will be in a special care unit. Their feeding will be individually decided, given their particular nutritional requirements and functional capabilities, though breastmilk is recommended whenever possible. These infants in special care are likely to include:

- infants with very low birth weight or who are born preterm, at less than 1000g or 32 weeks gestational age
- infants with severe dysmaturity with potentially severe hypoglycaemia, or who require therapy for hypoglycaemia, and who do not improve through increased breastfeeding or by being given breastmilk.

For babies who are well enough to be with their mothers on the ward, there are very few indications for supplements. In order to assess whether a facility is inappropriately using fluids or breastmilk substitutes, any infants receiving additional supplements must be diagnosed as:

- infants whose mothers have severe maternal illness (eg psychosis, eclampsia, or shock)
- infants with inborn errors of metabolism (eg galactosaemia, phenylketonuria, maple syrup urine disease)
- infants with acute water loss, for example, during phototherapy for jaundice, whenever increased - breastfeeding cannot provide adequate hydration)
- infants whose mothers are taking medication and which is contraindicated when breastfeeding (eg cytotoxic drugs and anti-thyroid drugs other then propylthiouracil).

Breastfeeding terms and definitions

Exclusive breastfeeding: the infant takes only breastmilk and no additional food, water or other fluids with the exception of medicines and vitamin or mineral drops.

Partial breastfeeding: the infant is given some breastfeeds, and some artificial feeds, either milk or cereal, or other food or water.

Bottle feeding: the infant is feeding from a bottle, regardless of its contents, including breastmilk.

Artificial feeding: the infant is feeding on breastmilk substitutes and not breastfeeding at all.

LMC:

The Lead Maternity Carer chosen by a woman for her pregnancy, birth, and antenatal care under Section 51 of the Health and Disability Act, 1992. Each woman may chose a different LMC for each of the three modules.

Low cost infant formula:

Formula supplied by a company through means other than the hospital's normal (bulk) purchasing system eg free or at less than 80% of the market retail cost.

Rooming In:

A hospital arrangement where a mother/baby pair stay in the same room day and night (except for periods of up to one hour for hospital procedures) allowing unlimited contact between mother and infant.

The Ten Steps to Successful Breastfeeding:

The 'Ten Steps to Successful Breastfeeding' are the foundation of the WHO/UNICEF Baby Friendly Hospital Initiative (BFHI). They summarise the maternity practices considered necessary to support breastfeeding. The Steps are:

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within a half-hour of birth.
5. Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.
6. Give newborn infants no food or drink other than breastmilk, unless medically indicated.
7. Practice rooming-in - allow mothers and infants to remain together - 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

Uncomplicated vaginal birth:

Any vaginal birth including the use of Ventouse, Forceps, or other assisted intervention for vaginal birth. Assumes both mother and baby are well enough within thirty minutes for close contact and within 60 minutes for breastfeeding to occur, if desired.

APPENDIX G

DIMENSIONS MEASURED BY QUESTIONNAIRE

STEP	DIMENSIONS	QUESTION NUMBER
Step 1	**Policy**	
	Policy and contents	B2, B6a i-xi, B6b i-ii
	Policy/availability and is it posted	B4, B5
	Mechanism to evaluate policy	B7
Step 2	**Staff Training**	
	Staff informed of policy	C1, C1a
	Formal inservice programme	C2, C2b, C2c
	Basic breastfeeding training - no of hours	C3a i-iv
	Basic breastfeeding supervised clinical	C3b i-iv
	Staff with specialized lactation training	C4
Step 3	**Inform Mothers**	
	Antenatal classes	D1, D1a, D1b, D2
	Infant feeding plans	D3, D4, D4b
	Medications-staff knowledge	D5
	Printed information distributed	D6, D6a
Step 4	**Initiating Breastfeeding**	
	Hold babies/contact time	E1, E1a, E5, E5a
	Baby first put to breast	E2, E3, E6
Step 5	**Breastfeeding Instruction**	
	Lactation Consultant on staff	C4b, C4c
	Mothers receive instruction/within 6 hrs	F1, F1a, F6
	Expression of milk	F3a, F3b, F3c
	Mothers/babies in NICU helped	F4, F5
Step 6	**Infant Supplementation**	
	First feeding/"Test feeding"	G1a, G1b, G1c, G1d, G1e
	Supplementary/complementary feedings	G2, G3
	Hospitals receive free formula	G4
	Bottle feeding info/discharge packs given	G5, G6, G7
	Reasons for breastmilk substitutes	G8a, G8b, G8c
Step 7	**Rooming-in**	
	Rooming-in full	H1, H1a, H1b, H2
	Rooming-in begins	H4, H5
	Baby's initial stay in nursery	E4, E7
Step 8	**Feeding Schedules**	
	Feeding schedule	I1, I2
	Night feeding	I3
	Suckling time	I4
Step 9	**Pacifiers**	
	Pacifiers used	J1
	Hospitals receive free supplies	J2, J4
Step10	**Hospital discharge**	
	Referral to support	K1
	Follow-up support	K2
	Postdischarge classes/support groups	K3, K4
	Use of peer counsellors/LLL on premises	K5, K6

APPENDIX H

CODING CRITERIA FOR ANALYSIS OF QUESTIONS

I. Questions dichotomized to yes and no categories.

A yes response will be coded as 3 and assigned a value of 3; a No response will be coded as 1 and assigned a value of 1.

II. Questions requiring responses such as all/most of the time/staff/mothers.

All/most of the ....(75-100%) will be coded as 3 and assigned a value of 3;

Some/Sometimes (26-74%) will be coded as 2 and assigned a value of 2;

Seldom/not/none at all (0-24%) will be coded as 1 and assigned a value of 1.

III. Questions requiring selection from a list of responses.

Responses will be coded as 3 if "correct", and 1 if "incorrect", based on the 'Ten Steps'. The researcher will then assign a value dependent on the number of "correct" responses recorded.

Question C2c

Where the number of "correct" responses is 0 - 3 the value assigned will be 1;

Where the number of "correct" responses is 4 -7 the value assigned will be 2;

Where the number of "correct" responses is 8 or more the value assigned will be 3, providing that at least 8 of the 'Ten Steps' and protection of breastfeeding is covered. If not the value assigned will be 2.

Question D2.

Where the number of "correct" responses is 0 - 1the value assigned will be 1;

Where the number of "correct" responses is 2 - 3 the value assigned will be 2;

Where the number of "correct" responses is 4 or more the value assigned will be 3, provided that at least 2 "correct" responses relate to the benefits of breastfeeding and at least 2 relate to the management of breastfeeding, if not a value of 2 will be assigned.

Question F6

Where the number of "correct" responses is 0 - 2 the value assigned will be 1;

Where the number of "correct" responses is 3 - 5 the value assigned will be 2;

Where the number of "correct" responses is 6 or more the value assigned will be 3.

APPENDIX I

INTERVIEW GUIDE

Thank you for agreeing to participate in this study about your hospital's breastfeeding policies and practices. My name is Bev Pownall, and I will be carrying out the interview today.

Have you read, signed, and given your consent form back to me?

This interview is expected to take approximately 90 minutes. It may finish sooner than that. I would appreciate it if you would remain for the full interview unless you are exercising an option to withdraw from participation as is your right, outlined in the Information Sheet.

I have asked for no phone calls to come through to this room. I would also appreciate it if you would turn off your pagers, and cell phones.

Is the room warm enough for you?
Does everyone have water?
Are there any other housekeeping issues I need to address before we start?

I'd just like to take a bit of time to explain about the interview process. The questionnaire looks long but don't worry, that's mainly because there are multi-choice answers.

Most of the answers will be either yes, no, not sure...or

most of the time (75% or more)
some of the time (26-74%)
seldom/none of the time (0-25%)

I have provided a copy of the questions and the response choices so you don't have to remember them all as I read them. Please stay with the question being asked and don't read on ahead. And please don't write on this copy. I need it back at the end of the interview. Is this clear?

I also asked.....to get some of the statistics for Section A, so we could save some time. But I will check all the responses with you to make sure you agree they sound correct. There are less questions in the sections toward the end of the interview.

All the answers I write down are based on your agreed response as a group, so take time to discuss them. If what happens in your area is different to what others think, then please say so.

Don't hesitate to say if you don't understand or didn't hear a question, or if you want to go back to a question.

Let's get started

LOOK AT WATCH Time started _____

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APPENDIX J

A STUDY OF HOSPITAL BREASTFEEDING POLICIES AND PRACTICES

INFORMATION SHEET

Your name has been has been forwarded to me by a contact person at your hospital. You have been suggested as a potential participant in a study I am undertaking. An invitation to participate is being extended to health professionals and managers working in your maternity services who have current experience of their hospital's breastfeeding policies and/or practices. You are under no obligation to participate due to your employment, or for any other reason.

My name is Bev Pownall, and I am a midwife, lactation consultant, and student in the Masters of Midwifery programme at Massey University (Auckland). Denise Dignam, Lecturer, is my research supervisor, and Gill White, Senior Lecturer, is co-supervisor.

In 1991, UNICEF and WHO launched the Baby Friendly Hospital Initiative (BFHI). This initiative is summarised by a joint statement issued by the two organisations in 1989, on the role of maternity services in protecting, promoting, and supporting breastfeeding. To become Baby Friendly, hospitals around the world are implementing the principles described in the joint WHO/UNICEF statement that have been synthesized into 'Ten Steps for Successful Breastfeeding', and to the Code of Marketing for Breastmilk substitutes.

Although some hospitals may be aware of their own progress, there is currently no published research regarding the overall status of BFHI in New Zealand hospitals. The purpose of this study therefore, is to describe the current status of hospital breastfeeding policies and practices in a sample of North Island public hospitals, and their degree of implementation on the WHO/UNICEF BFHI. The study utilizes a design and questionnaire used by Kovach (1995) in her study of Southeastern Pennsylvania Delaware Valley (USA) hospitals, but has been adapted to contextualise the research to the New Zealand scene.

The research process involves a single interview of a group of 2 to 6 participants in each hospital, using a questionnaire. The interview will be held on hospital premises, in a venue where interruptions can be prevented. The interview will last approximately 90 minutes. You will be invited to answer a set of questions and to elaborate on your answers if you wish. The answers to questions will be based on consensus after discussing with other participants. Your employer has agreed that this interview can take place in work time.

PTO...

Risks and Benefits:
Participating in this research has no potential risk to you. Any answers recorded will be those of the group, and no individual will be identified. The study does not involve use of audio or video tapes. I undertake that all my raw data and material relating to the study will be stored in a secure place for the duration of the research study. On completion of the study and thesis examination all raw data will be destroyed by shredding.

A summary of the survey findings will be forwarded to your organisation on completion of research, and you may also nominate to have a copy sent to you. A thesis derived from the research will be submitted for examination, and papers may be prepared for journal publication and conference presentation. Participation in this research has the potential to identify strengths and weaknesses in current breastfeeding policies and practices within hospital maternity services. This contribution and any resultant improvements may bring benefits to women wishing to breastfeed and to their infants.

Confidentiality and Anonymity:
As a group participant you will be requested not to disclose individual responses given by other participants. Every effort will be made by the researcher to maintain your anonymity and your hospital's anonymity throughout the research project. No participant will be named in the reported research, and hospitals will be referred to by a number.

Prospective participants and participants have the right:
- to decline to participate;
- to refuse to answer any particular questions;
- to withdraw from the study at any time up until the commencement of data analysis;
- to ask any questions about the study at any time during participation;
- to provide information on the understanding that your name will not be used;
- to a summary of the findings of the study when it is concluded.

Queries:
Take your time to decide whether you wish to participate. My hospital liaison/contact person will tell you the interview date and time. If you wish to ask questions about this research you should do so prior to that date, don't hesitate to contact me. You may also at any suitable time and for any appropriate reason regarding this research, contact my research supervisor, Denise Dignam or co-supervisor Gill White.

Contact Details:

Bev Pownall	Denise Dignam	Gill White
☎ [Supplied]	☎[Supplied]	☎[Supplied]
E-mail: [Supplied]	E-mail: [Supplied]	E-Mail: [Supplied]

Thank you for taking the time to read this information.

This research protocol has been approved by the Massey University Human Ethics Committee which is accredited by the NZ Health Research Council Ethics Committee.

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APPENDIX K

17 June 1999

_____
Chief Executive Officer
_____
_____
_____

Re: Breastfeeding Policies and Practices

Dear _____,

My name is Bev Pownall and I am a midwife, lactation consultant, and masterate student enrolled in the final year of a Masters programme at Massey University. I am undertaking research on hospital breastfeeding policies and practices. and am seeking your permission to carry out a survey design study with staff at your hospital. This research will be undertaken as part of the requirement to complete Masters study at Massey University (Albany). Approval has been obtained from the Massey University Human Ethics Committee. My thesis supervisor is Denise Dignam, Lecturer, School of Health Sciences, Massey University, and Gill White, Senior Lecturer is co-supervisor.

In 1991 UNICEF and WHO launched the Baby Friendly Hospital Initiative (BFHI). This initiative is summarised by a joint statement issued by the two organisations in 1989, on the role of maternity services in protecting, promoting, and supporting breastfeeding. To become Baby Friendly, hospitals around the world are giving practical effect to the principles described in the joint WHO/UNICEF statement that have been synthesized into 'Ten Steps for Successful Breastfeeding', and to the Code of Marketing for Breastmilk substitutes.

Although some hospitals may be aware of their own progress, there is currently no published research regarding the overall status of BFHI in New Zealand hospitals. Your Hospital is therefore invited to participate in a survey design study to describe the current status of hospital breastfeeding policies and practices in a sample of North Island Hospitals. This study differs from the BFHI hospital self assessment and the BFHI external assessment in two main ways:

- the research is not carried out on behalf of, or in conjunction with, any BFHI authority; and
- rather than a pass/fail audit tool, the researcher uses a questionnaire. The purpose of the questionnaire is twofold; a) to describe and analyze hospitals' breastfeeding policies and practices; and b) to classify hospitals with respect to the level of implementation of each of the Ten Steps and the implementation of the Ten Steps overall. This is considered to be

more helpful in identifying where hospitals may not yet have met all the criteria to achieve the award of BFHI status, but have made progress toward attainment.

The study utilizes a design and questionnaire used by Kovach (1995) in her study of Southeastern Pennsylvania Delaware Valley (USA) hospitals, but has been adapted to contextualise the research to the New Zealand scene. The questionnaire and methods of coding are designed to provide anonymity to all hospitals included in the study. All raw data obtained will be stored in a secure manner, and destroyed by shredding on completion of the study which includes thesis examination. A summary of the findings of the study will be forwarded to each participating hospital on completion of the project, and to each participant if requested.

By agreeing to your hospital's participation in this study the perceived advantages to your organisation include the opportunity to:

⇒ provide a forum for staff to discuss and update their knowledge of your hospital's breastfeeding policies and practices;
⇒ consider possible indicators which may be introduced by your Health Funding Authority;
⇒ consider your organisation's progress, and if desired, prepare for the BFHI self-assessment.

It is planned to carry out the study in July 1999. It is envisaged that between 2 and 6 persons with current experience of your hospital's breastfeeding policies and/or practices will attend a single group interview. Where maternity services are provided by more than one hospital within your health service, only staff from your main hospital providing maternity services will be invited to participate. No staff member will be allowed to take part in the study unless a signed Consent Form (copy attached) is obtained. All potential participants will be given an Information Sheet (copy attached), and be invited to participate, prior to completing the Consent Form. No staff member should be instructed or coerced into participating by the organisation. The participant's rights are set out in the Consent Form (copy attached).

Please complete the attached agreement form and return it to the researcher by **2 July 1999**. Along with agreement you are requested to nominate one senior staff member who has experience of your hospital's breastfeeding policies and/or practices (this person will be contacted by the researcher and invited to participate in the study) and who will assist the researcher both by arranging suitable date, time, and venue; and by providing the names of experienced staff who might be invited to participate.

Should you require any further information in order to make a decision regarding approval for this study in your hospital please contact me.

Bev Pownall
BA, BSc(Hons), RGON, RM, IBCLC
(Masterate student, Midwife, Lactation Consultant)

BEV POWNALL
<< ADDRESS 1>>
<< ADDRESS 2>>
PH
E-MAIL

Proposed Study: The current status of breastfeeding policies and reported practices in a sample of NZ North Island public hospitals, and their degree of implementation on the WHO/UNICEF Baby Friendly Hospital Initiative (BFHI).

Name of Hospital: _____

Approval to conduct the proposed research at the above hospital is given/not given (delete which applies). Included in this approval is agreement to provide a suitable interview room, where interruptions can be prevented; and approval for staff participants to attend an interview lasting approximately 90 minutes, in work time.

(Signed by person authorized by your organisation to approve)

_____

Name of person authorized to approve_____

Position Title _____

Senior staff member who will assist with arranging a suitable date, time, and venue; and with identifying potential participants.

Name: _____

Title: _____

Contact Phone No _____ Ext _____

E-Mail _____

Where approval is denied, are there any changes that could be made in order to obtain approval?

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APPENDIX L

17 July 1999

Dear _____

Your name was sent to me as the Contact Person to approach for breastfeeding research to be carried out at your hospital. Hopefully your CEO/Manager forwarded the letter I sent outlining the project. If not you are welcome to contact me if you require additional information. I would be grateful if you would :

- Confirm a suitable time and date for the interview to take place (see overpage);
- Contact suitable participants for the interview (see below);
- Give potential participants an Information Sheet well in advance of the interview date (copies attached);
- Arrange a venue where I can interview a group of 2-6 person in a quiet space, which won't have interruptions;
- Provide refreshments (in the room if possible) for those who wish to take a drink during the interview;
- Complete the attached questions (Section A) and have the answers available for me at the interview.

"Suitable" participants are staff members with either a knowledge of your hospital's breastfeeding policies, or your hospital's breastfeeding practices, or both. This may for example include a Maternity Services Manager or Charge Midwife, a Lactation Consultant, Paediatrician, or any staff member who works with new mothers and babies within the hospital service. They should be prepared to attend an interview lasting approximately 90 minutes. Everything else should be covered in the Information Sheet.

With regard to Section A questions, I have included these to try to cut down time on the day of interview. If you don't have the answers, for example if you don't collect the data, or don't collect it in the way I've asked for it, that's okay. You can either estimate (as long as you indicate that it's an estimate), or put "don't know." I will need to run through the section again at interview, but hopefully it will cut down your staff's time spent with me. If I

haven't made anything clear, you are welcome to E-mail me or just ask on the day.

If it suits you, I would like to conduct the interview on

If this date or time doesn't suit I'd be grateful for an indication of any other date or time during that week, when you can get a group of participants together.

If you have any questions don't hesitate to contact me. An E-mail reply as soon as possible would be appreciated.

BEV POWNALL
<< ADDRESS 1 >>
<< ADDRESS 2 >>
<< ADDRESS 3 >>
PH:
E-MAIL:

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APPENDIX M

A STUDY OF HOSPITAL BREASTFEEDING POLICIES AND PRACTICES

CONSENT FORM

I have read the information sheet and have been given the opportunity to have the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time during participation in this study.

I understand that the study involves a face-to-face interview of a group of participants.

I understand that I have the right to decline to answer any particular questions and to withdraw from the study at anytime up until the commencement of data analysis.

I agree to provide information to the researcher on the understanding that my name and the name of the participating hospital will not be used.

I will not disclose the individual responses of other participants outside of the interview.

I agree to participate in this study under the conditions set out in the Information Sheet.

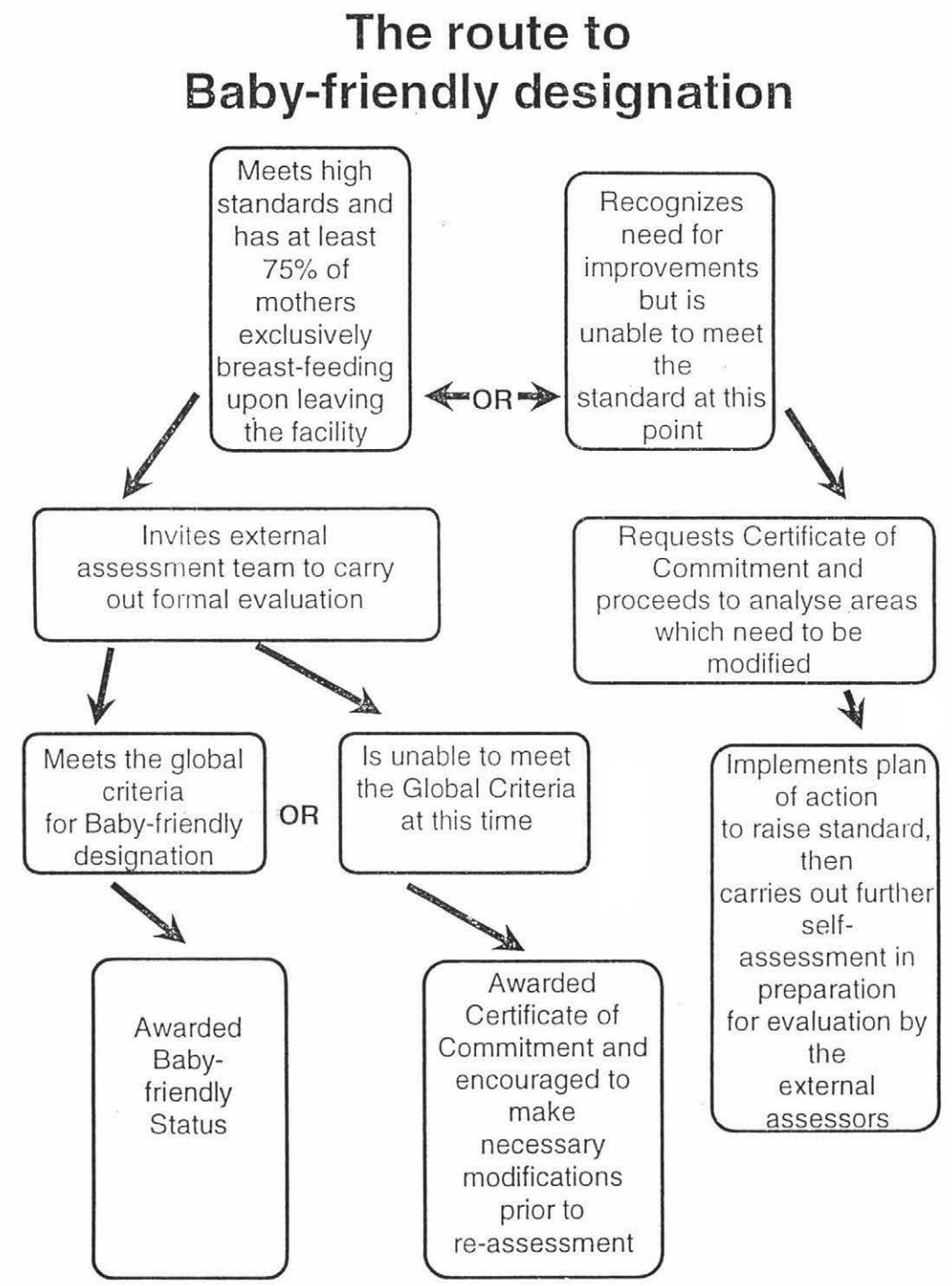
I wish to have a summary of the findings of this study sent to me Yes
No

Signed: .....

Name: .....

Date: .....

APPENDIX N



(Source: WHO/Wellstart, 1996).