NSW HEALTH SUBMISSION

To the
Australian Parliament
House Standing Committee
on Health and Ageing

INQUIRY INTO THE HEALTH BENEFITS OF BREASTFEEDING

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INQUIRY INTO BREASTFEEDING

NSW HEALTH SUBMISSION:

SUMMARY

NSW Health has made a strong commitment to the promotion, protection and support of breastfeeding. This commitment is expressed through the NSW Health Policy *Breastfeeding in NSW: Promotion, Protection and Support,* available at http://www.health.nsw.gov.au/policies/pd/2006/PD2006_012.html. The policy draws on a range of evidence pertinent to the current Inquiry.

Three reports were commissioned to inform the development of the policy: *The Report on breastfeeding in NSW 2004*, *Overview of interventions to support breastfeeding*, and *Promoting and supporting breastfeeding in NSW: case studies*. These can be downloaded from http://www.cphn.biochem.usyd.edu.au/resources/index.html.

A special edition of the NSW Public Health Bulletin discussed the public health importance of breastfeeding. The full edition can be found at http://www.health.nsw.gov.au/public-health/phb/HTML2005/marchapril05html/contentsjmarchapril05.html

The extent of the health benefits of breastfeeding

Breastfeeding has been consistently shown to be protective against a large range of immediate and longer-term health outcomes for infants and children which include SIDS, obesity, childhood leukemias, inflammatory bowel disease, asthma and allergy. For mothers, breastfeeding is protective against breast cancer, ovarian cancer and rheumatoid arthritis. All these outcomes that breastfeeding protects against are a significant burden on individuals, the health system and society. There is also emerging evidence that breastfeeding is protective against type 1 diabetes, meningitis, dental occlusion and future heart disease in infants and children; and for depression, suboptimal bonding, endometrial cancer, osteoporosis and slow/no return to pre-pregnancy weight for mothers.

Evaluate the impact of marketing of breast milk substitutes on breastfeeding rates and, in particular, in disadvantaged, Indigenous and remote communities.

While the Marketing in Australia of Infant Formula (MAIF) Agreement represents important progress for the protection of breastfeeding in Australia through promotion of ethical marketing of breastmilk substitutes, it has some fundamental limitations:

- Not all infant formula companies have signed the MAIF Agreement;
- It only covers infant formulas for use in infants up to the age of 12-months; and
- It does not cover several aspects of the WHO Code relating to, for example, the cessation of free and subsidised supplies of breast milk substitutes in the

health care system, guidelines for the marketing of bottles and teats, and a code of marketing for retailers including pharmacies and supermarkets.

Recent marketing of toddler "follow-on" formulae exploits limitations in the WHO Code and MAIF Agreement and is an obstacle to encouraging breastfeeding for 12-months or longer as advocated in national dietary guidelines.

The potential short and long term impact on the health of Australians of increasing the rate of breastfeeding

There is a substantial amount of evidence which shows that breastfeeding has significant protective effects for a number of significant health problems in Australia. They include gastrointestinal infections, otitis media, respiratory tract infections, neonatal necrotising enterocolitis, asthma and allergy, urinary tract infections, inflammatory bowel disease and SIDS in infants; and breast cancer and ovarian cancer in mothers.

While the health benefits may appear small to the individual, the effects at the population level are more important and significant.

Considering the large range of health benefits attributable to breastfeeding, the overall benefits of increasing the rate of breastfeeding are likely to be considerable.

Breastfeeding rates in Australia fall well short of NHMRC recommendations. Increasing breastfeeding rates in line with the recommendations therefore offers significant short and long-term impacts on the health of Australian infants, children and mothers.

Initiatives to encourage breastfeeding

A conceptual framework of factors that influence breastfeeding practices is included in this submission as a basis for identifying potential interventions. It proposes three levels of factors that influence breastfeeding practices: individual, group and society.

Education, professional support and peer support are the main types of intervention at the individual level.

Group level factors are attributes of the environments that influence breastfeeding. Key environments include: hospital and health services; home/family; workplaces; and the community. Within these environments, key initiatives have been identified which can encourage the initiation and maintenance of breastfeeding.

- Interventions by hospital and health services include health professional training and provision of coordinated postnatal breastfeeding support services.
- Creating a family environment conducive to breastfeeding by establishing strategies such as breastfeeding support services, and strengthening breastfeeding and parenting skills through active pre and post natal education, including education for fathers.
- Public policies and legislation that enable breastfeeding, in particular paid maternity leave and flexible work practices.

- Organisational support to enable women to combine paid work and breastfeeding including support for flexible work practices and provision of physical facilities for expressing /storing breast milk for later feeding.
- Support from community organisations to make breastfeeding easier outside the home are needed such as peer support groups and public feeding/parenting rooms.

At the society level, interventions that influence the wider social, cultural and economic environment include social marketing (eg media campaigns), high school curricula dealing with parenting skills, health insurance incentives, and implementation of the WHO Code for the Marketing of Breastmilk Substitutes. Healthy public policy is an overarching strategy to modify environments, including the broader social, cultural and economic environments, to support mothers to initiate and maintain breastfeeding.

Examine the effectiveness of current measures to promote breastfeeding

Evidence and experience indicates that health service policy and professional training are important measures for enabling the adoption of recommended practices eg the "baby friendly initiative" in hospitals and community health centres. The "Baby Friendly Hospital Initiative" was developed and launched jointly by the WHO and UNICEF in 1991. It is a global initiative to protect breastfeeding and aims to foster a health care environment that will enable women to breastfeed exclusively until about 6-months of age and continue as long as mother and baby wish.
An appraisal of systematic reviews identifies educational, support and health service interventions for which the evidence of effectiveness is abundant, strong and convincing. This provides a basis for strengthening these types of interventions in Australian health services.

Some additional evidence concerning the influence of fathers and paternity leave on breastfeeding outcomes is also provided. Integrating paternity leave and pay arrangements into reward strategies may have important organisational benefits.

Given the numerous and complex influences on breastfeeding, and the range of potential strategies that are not covered by systematic reviews, a comprehensive policy and set of programs should comprise a broad range of interventions covering individual, group (hospital and health services, home and family, work and community), and society level determinants.

The impact of breastfeeding on the sustainability of Australia's health system

Improving breastfeeding rates would have a positive impact on the sustainability of Australia's health system by providing protection against serious infant infection, obesity and chronic disease for both mother and babies. This is especially important for the health outcomes of socio-economically disadvantaged population groups in Australia, particularly in many Aboriginal and Torres Strait Islander communities.

Recommended areas of leadership for the Australian Government on breastfeeding in order of priority

The Australian Government is in a strong position to support breastfeeding interventions at the group and society levels and a range of opportunities are available. The NSW Government strongly urges the Commonwealth to take a lead role in supporting breastfeeding through a range of interventions which are listed in order of priority below (where 1 is highest priority).

1. Developing an Australian code of practice aligned with the WHO Code for:
    - the manufacturers and importers of bottles and teats;
    - retailers and advertisers of infant breast milk substitutes;
    - manufacturers, retailers and advertisers of toddler formulas.
2. Introducing a national scheme of 14 weeks paid maternity leave for all Australian mothers.
3. Funding and supporting a national Breastfeeding Help Line coordinated by the Australian Breastfeeding Association (ABA).
4. Implementing the recommendations in the report, *Towards a national system for monitoring breastfeeding in Australia (DHA, 2001)* through the Australian Government Department of Health and Ageing, in collaboration with relevant state and territory agencies.
5. Reviewing the desirability of human milk banks (in cooperation with existing services such the PREM Milk Bank operated by the King Edward Memorial Hospital in WA) and, if they should be recommended, establishing a licensing protocol for recognised Authorities.
6. Establishing a national peak body with broad representation to co-ordinate a strategic approach to promoting, protecting and supporting breastfeeding in Australia.
7. Introducing policies and incentives, such as a grant based fund, for businesses to encourage workplaces to support employees to continue to breastfeed on returning to paid work. Such a fund could support initiatives such as providing flexible work practices, lactation breaks, and suitable facilities for breastfeeding or expressing and storing breastmilk;
8. Providing or funding a not-for-profit breast pump rental scheme to enable mothers with babies in neonatal units to hire equipment to enable them to continue to supply breast milk to their premature infants after they go home from hospital, until their babies are discharged.

9. INQUIRY INTO THE HEALTH BENEFITS OF BREASTFEEDING

NSW HEALTH SUBMISSION

1. INTRODUCTION

NSW Health welcomes the opportunity to provide the following submission in response to the Australian Parliament House Standing Committee on Health and Ageing Inquiry into the health benefits of breastfeeding on the following terms of reference.

> The Committee shall inquire into and report on how the Commonwealth Government can take a lead role to improve the health of the Australian population through support for breastfeeding. The Committee shall give particular consideration to:
> - The extent of the health benefits of breastfeeding;
> - Evaluate the impact of marketing of breast milk substitutes on breastfeeding rates and, in particular, in disadvantaged, Indigenous and remote communities;
> - The potential short and long term impact on the health of Australians of increasing the rate of breastfeeding;
> - Initiatives to encourage breastfeeding;
> - Examine the effectiveness of current measures to promote breastfeeding; and
> - The impact of breastfeeding on the sustainability of Australia's health system.

Each of the above terms of reference is presented as a separate section of this submission with appropriate references.

Given that the main aim of the inquiry is to examine how the Commonwealth Government can take a lead role to improve the health of the population through support for breastfeeding, an additional concluding section has been added on "Suggested areas of leadership for the Commonwealth Government to support breastfeeding".

In recent years, promoting breastfeeding has been a priority for NSW Health. A three-year project has recently been undertaken to develop a comprehensive NSW Health Breastfeeding Policy. This policy was released in April 2006 and is mandatory for all Area Health Services which have participated in area level planning workshops to ensure adequate local compliance. A copy of this policy '*Breastfeeding in NSW: Promotion, Protection and Support*' [2] is attached for the information of Committee members.

The policy includes five strategic areas for action for the NSW Department of Health and Area Health Services:

- Organisational support for an enhanced, coordinated NSW Health effort;
- Workplace development and provision of breastfeeding-friendly workplaces;
- Provision of evidence-based health services;
- Intersectoral collaboration with organisations outside of the NSW Health system; and
- Monitoring and reporting of breastfeeding rates.

The NSW Government more broadly aims to support breastfeeding mothers though a number of other initiatives including:

- Initiatives to support NSW public sector employees to breastfeed for longer by:
    - The provision of 14 weeks paid maternity leave, which may be taken over 28 weeks at half pay, for;
    - The provision of paid parental leave for a partner or 1 week at full pay or 2 weeks at half pay;
    - Increased access to annual leave in single days to fulfil personal/carers responsibilities;
    - The right to request up to 2 years unpaid parental leave;
    - The right to request up to 8 weeks simultaneous unpaid parental leave;
    - The right to request return to part time work until the child reaches school age;
- Funding the Australian Breastfeeding Association to provide peer support services for breastfeeding mothers and advice on the provision of 'breastfeeding friendly' workplaces;
- Providing community resources to mothers and families about breastfeeding and child nutrition;
- Working with the education sector to ensure that breastfeeding information is included in relevant curricula, such as TAFE courses in childcare or welfare, at both a secondly and tertiary level;
- Working with local government to encourage the provision of facilities for breastfeeding mothers in public places and in new developments; and
- Promoting breastfeeding through the Department of Community Services' *Families First* and *Aboriginal Child, Youth and Family Strategy* (ACYFS) prevention and early intervention programs.

In association with this work, the NSW Centre for Public Health Nutrition (CPHN) (based at the University of Sydney and funded by NSW Health) has produced a series of reports to inform policy development. NSW Health acknowledges that these reports have provided the basis for much of the information in this submission and has been extracted verbatim where relevant. The full reports are accessible on the CPHN website www.cphn.bochem.usyd.edu.au and include:

- *Report on breastfeeding in NSW 2004*
- *Overviews of recent interventions to promote and support breastfeeding*
- *Promoting and supporting breastfeeding in NSW: Case Studies*
- *NSW Public Health Bulletin Volume 16, March-April 2005: Special issue on breastfeeding*

2. THE EXTENT OF THE HEALTH BENEFITS OF BREASTFEEDING

(The text for Section 2 was prepared by the NSW Centre for Public Health Nutrition which is funded by NSW Health. This information was previously published as part of a special issue on breastfeeding in the NSW Public Health Bulletin in 2005.)

2.1. Introduction

Human milk (breastmilk) is uniquely engineered for human infants, and is the biologically natural way to feed infants. Breastfeeding, in comparison to feeding breastmilk substitutes such as infant formula, has numerous health benefits. Despite this, infant formula has been actively promoted by manufacturers and suppliers as equivalent to breastmilk. Consequently, evidence describing the health advantages of breastmilk and breastfeeding needs to 'argue the case' for breastfeeding.

Evidence of a causal relationship between breastfeeding and health outcomes has been difficult to obtain, in part because it would be unethical to conduct randomised controlled trials of infant feeding methods. Nevertheless, consistent evidence from well designed cohort and case-control studies, many of which demonstrate a positive dose-response relationship, have contributed to a sound evidence base.

While the health benefits of breastfeeding infants in less developed countries, particularly in relation to infectious gastrointestinal disease, has long been recognised, the benefits in developed countries, like Australia, are only recently becoming as well known. It is also important to emphasise that the benefits of breastfeeding experienced by women and babies in less developed countries, are also experienced in less affluent Australian communities, particularly in remote Indigenous communities.

This section provides an overview of the evidence regarding the health benefits of breastfeeding in developed countries. The range of benefits and the strength of the evidence are summarised, drawing where possible on systematic reviews and meta-analyses.

There are a few circumstances in which breastfeeding may be contraindicated, for example where a mother is HIV positive or has a drug or alcohol addiction[1,2] but these are very limited and are not explored in this submission.

2.2. Search method

The published literature was searched for:

- recent systematic reviews and meta-analyses that applied stringent criteria to the inclusion of studies;
- critical reviews (non-systematic) that had been published in the past decade; and
- original papers, published primarily in the past five years, on the health advantages of breastfeeding.

The search included all OVID electronic databases, including CINAHL, EMBASE, Medline (Medline searched from 1996 to the second week in May 2005) and the Cochrane Library. The keywords used for the search were: *breastfeeding or breastmilk AND health or prevention or protection or reduced risk*; initially using the

limits of systematic review, review and meta-analysis, but subsequently extended to using particular health outcomes as key words. Findings in developed countries were prioritised.

Nine critical reviews covering a range of health outcomes, four narrative reviews of specific health outcomes, 11 meta-analyses of specific health outcomes and 24 papers were chosen to describe the current evidence base.

The strength of association between breastfeeding and a health benefit was classified as *convincing*, *probable* and *possible* (see Table 1). In general, evidence was regarded as *convincing* if the findings were based on one or more cohort studies, with at least a measure of duration of breastfeeding (preferably exclusive breastfeeding), and/or showed a clear dose-response in relation to health outcomes, and was biologically plausible. *Probable* was generally used to refer to health outcomes for which most studies have found an association, but confirmation is required in more, or better designed studies. *Possible* was used to describe evidence of an association where there were few studies.

The quality of the evidence is limited by methodological issues other than study design, including problems in defining breastfeeding practices and health outcomes, and inadequate control for confounding factors.[3,4]

2.3 The health benefits of breastfeeding

Early reviews considered that the evidence was strongest for a protective effect of breastfeeding against infectious disease,[5] even in developed countries.[6] However, as illustrated below and summarised in Table 1, there is evidence that breastfeeding protects against a wide range of immediate and longer-term adverse health outcomes in developed countries.

2.3.1 Infectious disease

Evidence shows that breastfeeding is protective against infectious diseases such as upper and lower respiratory tract infections, gastrointestinal illnesses, and otitis media, during the infant period and beyond.[5-9] The magnitude of the effects are large. For example, a recent meta-analysis of studies conducted in developed countries indicated more than tripling of severe respiratory tract illnesses requiring hospitalisation for formula fed infants compared with those exclusively breastfed for at least four months[10]. The biological plausibility of protection against infectious diseases relates to the immunological[6,7] and antibacterial[11] properties of human milk and the elimination of exposure to pathogens that may be introduced through the preparation and delivery of formula feeding.[12] This evidence is strong for both developed countries and developing countries.[6] Recent studies also indicate protection against urinary tract infection.[13,14]

The immunological properties of breastmilk have been indicated in pre-term infants and very-low-birth-weight infants,[15] with evidence of breastmilk offering protection against respiratory symptoms[16] and necrotising enterocolitis.[15]

2.3.2 Neurodevelopment and SIDS

The benefit of breastfeeding in children born pre-term or small-for-gestational-age has been shown in relation to neurodevelopment.[17] This association is also seen in term infants. A number of studies have shown a relationship between breastfeeding and cognitive development in children, although several meta-analyses[18,19] have indicated difficulty in distinguishing the effect of breastfeeding from the confounding factor of the mother's intelligence. A recent study indicated a positive effect throughout childhood, regardless of maternal intelligence.[20] The problem of confounding factors was also highlighted in the interpretation of a meta-analysis of breastfeeding and sudden infant death syndrome (SIDS); the combined analysis showed that formula-fed infants were twice as likely to die from SIDS.[21]

2.3.3 Asthma and Atopy

One area of scientific controversy is the effect of breastfeeding on the development of asthma and atopy. Some recent studies have reported no difference or an increased risk of asthma and atopic disease in childhood amongst breastfed infants[22], particularly in those children with a family history of asthma and allergy.[23] However other methodologically sound studies have found breastfeeding to be protective against asthma and allergy.[24,25] On balance, breastfeeding is still recommended for reducing asthma and atopic disease in childhood, even for high risk children.[26,27] Possible mechanisms linking breastfeeding to asthma and atopy as either a risk or protective factor have been suggested.[28,29]

2.3.4 Chronic disease risk in childhood and later life

A number of recent meta-analyses and quantitative reviews indicate a protective effect of breastfeeding, even for a short duration, against childhood obesity.[30,31] As obesity in childhood can lead to obesity as an adult, this suggests a possible role of breastfeeding in the long-term prevention of obesity.[32] Further, one review[33] and a recent single study[34] have shown that the protective effect against obesity may extend into adulthood.

Several recent studies have shown that breastfeeding may be protective against chronic vascular disease such as ischaemic heart disease[35] and atherosclerosis[36] and also for risk markers for diabetes and heart disease.[37,38,39] However, longitudinal research, using sound measures of breastfeeding practices, are required to confirm these associations. Most recently, a meta-analysis demonstrated that exclusive breastfeeding to six months and longer-term breastfeeding and benefits blood pressure in older children. The magnitude of the effect was comparable to the published effects of reducing salt and increasing physical activity to reduce blood pressure in adult populations.[40] Breastfeeding is also likely to be protective against Type 1 diabetes.[41,42]

2.3.5 Other diseases and conditions – infants and children

A recent meta-analysis concluded that both short-term and long-term breastfeeding is protective against childhood acute lymphoblastic leukaemia and acute myeloblastic leukaemia.[43] However, earlier studies exploring a protective relationship between breastfeeding and childhood leukaemia were inconclusive.

Systematic reviews report that studies show *probable* protection against inflammatory bowel disease (Crohn's disease and ulcerative colitis)[44] and recent critical reviews indicate probable protection against coeliac disease.[45] There is limited evidence for

associations between not breastfeeding and other adverse health outcomes such as dental occlusion[46] and pyloric stenosis.[47]

2.3.6 Health benefits for the mother

There is compelling evidence that breastfeeding is protective against developing premenopausal and probably postmenopausal breast cancer. There is convincing evidence of a dose-response effect, with longer duration and more exclusive breastfeeding being more protective. A review of 47 studies carried out in 30 countries indicated that the relative risk of breast cancer decreased by 4.3 per cent for every 12 months of breastfeeding.[48]

Studies have consistently shown that hormonal changes associated with breastfeeding help recovery after childbirth and suppress maternal fertility.[49,50] The extent of these changes is again dependent on the frequency, intensity and duration of breastfeeding.

Evidence from two recent case-control studies indicates that breastfeeding is most likely protective against ovarian cancer,[51,52] and two large cohort studies showed protective effects for rheumatoid arthritis, the latter with a dose response effect.[49,53] Increased postpartum weight loss, shown in a number of studies, is likely given that lactation requires an additional 500-640 calories per day.[49] Robust evidence is accumulating that breastfeeding decreases maternal depression[54] and improves mother-infant bonding.[55] The evidence for protection against endometrial cancers and osteoporosis (and hip fracture) is mixed, although biological plausibility lends strength to the argument.[49,50]

2.4 Conclusion

Evidence suggests that there are many health benefits and advantages at all stages of life that arise from breastfeeding. Breastfeeding has been consistently shown to be protective against a large range of immediate and longer-term health outcomes that are a significant burden on individuals, the health system and society. While some of the positive effects of breastfeeding on particular health outcomes may be small, these differences are extremely important at the population level. Taken together with those numerous health outcomes where the effect is pronounced, the overall benefits of breastfeeding are likely to be considerable. Better quality research on breastfeeding with regard to the range of health outcomes is required to enhance our understanding of its health benefits, and the mechanisms by which it confers protection.

The National Health and Medical Research Council (NHMRC) recommends exclusive breastfeeding for the first 6 months of life [56] which is in line with a recent revised policy of the World Health Organisation (WHO).[57-60] WHO further recommends complimentary breastfeeding continue up until the age of two or beyond. (Previously the WHO policy recommended exclusive breastfeeding for the first 4-6 months but the benefits of extending the duration have been demonstrated.) According to the WHO definition, exclusively breastfed infants receive only breast milk, plus medications including vitamins if required, without any additional food or drink including water. The NHMRC also recommends breastfeeding, complemented by appropriate solid foods, should be continued until at least 12 months of age.

TABLE 1

EVIDENCE FOR HEALTH ADVANTAGES OF BREASTFEEDING TO INFANTS, CHILDREN, MOTHERS, AND ADULTS, IN DEVELOPED COUNTRIES

Level of evidence[1]	Health outcomes for which breastfeeding is protective		
	Infants and children	Chronic disease in childhood and/or later life	Mothers
convincing[2]	gastrointestinal illnesses otitis media respiratory tract infections neonatal necrotising enterocolitis		slow maternal recovery from childbirth reduced period of postpartum infertility premenopausal breast cancer
probable[3]	asthma and allergy cognitive ability/intelligence some childhood leukaemias urinary tract infection inflammatory bowel disease coeliac disease sudden infant death syndrome	obesity	postmenopausal breast cancer ovarian cancer rheumatoid arthritis
possible[4]	insulin dependent diabetes mellitus bacteraemia meningitis dental occlusion	ischaemic heart disease atherosclerosis risk factors for: • atherosclerosis and heart disease • Type 2 diabetes and metabolic syndrome	maternal depression reduced maternal-infant bonding endometrial cancer osteoporosis and bone fracture no or slow return to pre-pregnancy weight

Notes:

1. The classification of evidence of the relationship between breastfeeding and health benefits is based on a comprehensive overview of the evidence base (systematic reviews, meta-analyses, reviews, recent single studies)
2. Convincing: evidence of relationship was critically identified in a review and/or shown in meta-analyses to be significant
3. Probable: most studies have found an association, but confirmation is required in more, or better designed, studies
4. Possible: too few methodologically-sound studies

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3. EVALUATE THE IMPACT OF MARKETING OF BREAST MILK SUBSTITUTES ON BREASTFEEDING RATES AND, IN PARTICULAR, IN DISADVANTAGED, INDIGENOUS AND REMOTE COMMUNITIES.

NSW Health understands that:

- The aim of the WHO International Code for the Marketing of Breastmilk Substitutes[1] (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 breast milk substitutes, when these are necessary, on the basis of adequate information and through appropriate marketing and distribution."
- Australia was one of the original countries that voted to adopt the WHO Code at the World Health Assembly in 1981.
- Most aspects of the WHO Code are not legally enforceable in Australia and the Australian Government has therefore encouraged industry self-regulation in accordance with the WHO Code.
- The larger infant formula manufacturers in Australia agreed to conform to most of the articles of the WHO Code by signing a voluntary agreement in 1993 known as the MAIF (Marketing in Australia of Infant Formula: the Manufacturers and Importers) Agreement.
- The Advisory Panel on the Marketing in Australia of Infant Formula (APMAIF) was established to monitor compliance with and advise the Government on the MAIF Agreement.

NSW Health endorses the WHO Code and the MAIF Agreement.

While the MAIF Agreement represents important progress for the protection of breastfeeding in Australia through promotion of ethical marketing of breastmilk substitutes, it has some fundamental limitations:

- It is a voluntary industry code and not all infant formula companies have signed the MAIF Agreement;
- It only covers infant formulas for use in infants up to the age of 12-months; and
- It does not cover several aspects of the WHO Code relating to, for example, the cessation of free and subsidised supplies of breast milk substitutes in the health care system, guidelines for the marketing of bottles and teats, and a code of marketing for retailers including pharmacies and supermarkets.

3.1 Toddler milks

NSW Health is becoming increasingly concerned about the adverse effects from the advertising of toddler "formula". A number of letters from the general public to the NSW Minister for Health have raised complaints about the marketing of toddler follow-on formula and the possibility of taking legislative or additional measures to protect families from the influence of such advertising.

NSW Health endorses the national dietary guidelines that recommend breastfeeding should continue to 12-months or beyond. Twelve-months is not a recommended end-point for breastfeeding and commercial "formula" promoted for toddlers from 12-months may be regarded as breastmilk substitutes. These should be marketed in line with the WHO Code and MAIF Agreement.

NSW Health takes the position that there is no nutritional requirement to provide toddlers with commercial artificial milk substitutes and they are relatively expensive. However, these products are currently being strongly marketed for consumption by toddlers from the age of 12-months as a result of limitations in the MAIF Agreement.

The marketing of follow-on toddler formula is an obstacle to efforts by health authorities to encourage increased duration of breastfeeding beyond 12-months as it misleads families to believe that such products are relatively beneficial, and it may impose unnecessary financial burden on families. Measures are needed at the national level to address this problem, particularly through strengthening national codes and agreements.

3.2 Indigenous and remote communities

NSW Health does not have information to contribute to this section with regard to the marketing of breast milk substitutes in Indigenous communities in NSW at this stage.

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4. THE POTENTIAL SHORT AND LONG TERM IMPACT ON THE HEALTH OF AUSTRALIANS OF INCREASING THE RATE OF BREASTFEEDING

Those illnesses for which there is convincing or probable and abundant evidence of a protective effect of breastfeeding are significant health problems in Australia. These include: gastrointestinal infections, otitis media, respiratory tract infections, neonatal necrotising enterocolitis, asthma and allergy, urinary tract infections, inflammatory bowel disease and SIDS in infants; and breast cancer and ovarian cancer in mothers.

While some of the positive effects of breastfeeding on particular health outcomes may be small benefits for the individual they are significant and important at the population level. Taken together with those numerous health outcomes where the effect is pronounced (such as reduced infant infections, reduced systolic blood pressure, reduced risk of maternal breast cancer) the overall benefits of increasing the rate of breastfeeding are likely to be considerable.

Breastfeeding rates in Australia are well short of NHMRC recommendations. This is illustrated by 2003-04 data from the *NSW Population Health Survey* that showed many mothers in NSW are not breastfeeding in line with NHMRC recommendations. While initiation rates were fairly good, only slightly more than half of all the infants were exclusively breastfed at 3 months (until 6 months is recommended) and less than one third of mothers continued any breastfeeding to 12 months. Over the past decade improvement in population practices concerning duration and exclusive breastfeeding have been small and initiation rates may have slightly decreased.

Similarly, the *2001 Child Health Survey* showed that around half of infants were receiving solid foods by 4-months and just less than half were receiving breastmilk substitutes by 4-months.

These figures are comparable with other states and territories. Increasing breastfeeding rates in line with the NHMRC recommendations would represent a marked change in population practices. Given the evidence on the health effects of breastfeeding, this degree of change would be expected to lead to significant short and long-term impacts on the health of Australian infants, children and mothers.

5. INITIATIVES TO ENCOURAGE BREASTFEEDING

5.1 Framework for potential interventions to promote breastfeeding

A conceptual framework of factors that influence breastfeeding practices, described by the Centre for Public Health Nutrition[1], provides a basis for identifying potential interventions. This proposes 3 levels of factors that influence breastfeeding practices: individual, group and society and is shown in Figure 1.

FIGURE 1

A CONCEPTUAL FRAMEWORK OF FACTORS AFFECTING BREASTFEEDING PRACTICES

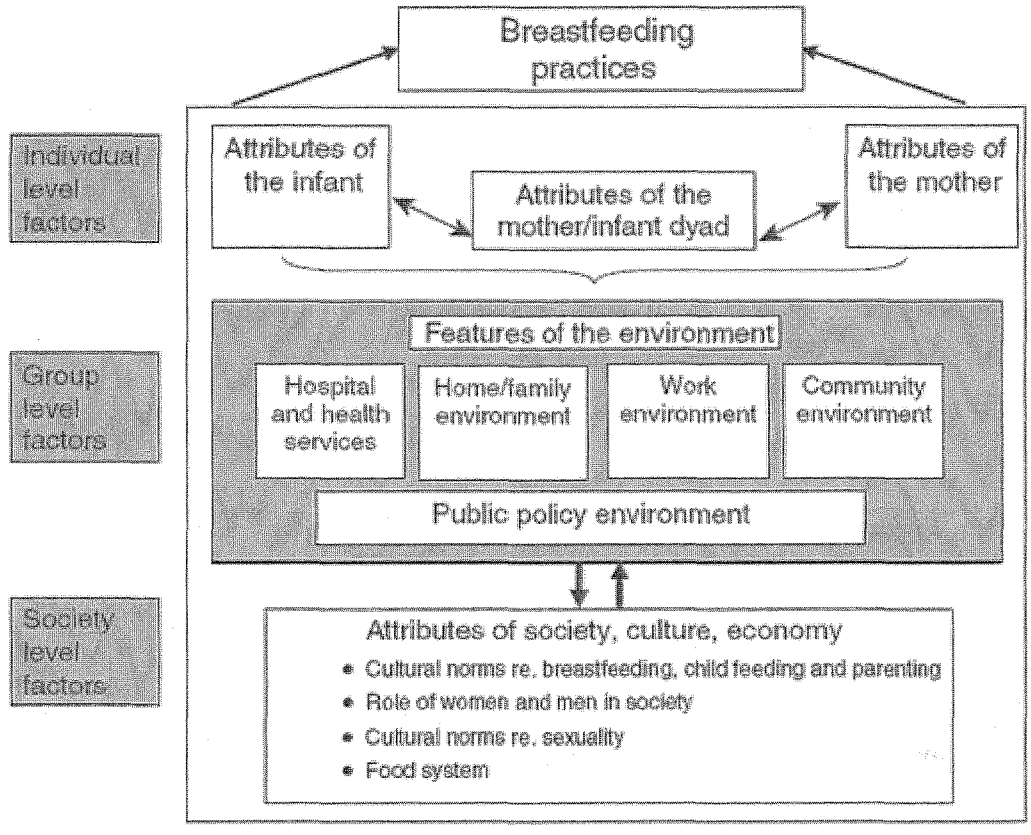

Table 1 shows the links between these factors, typical breastfeeding strategy objectives and examples of potential interventions to encourage and support breastfeeding.

TABLE 1

POINTS OF INTERVENTION, STRATEGY OBJECTIVES AND EXAMPLES OF INTERVENTIONS TO IMPROVE BREASTFEEDING PRACTICES

Factors affecting breastfeeding (from conceptual framework[1])	Individual level	Group level				Society level
		Hospital and health services environments	Home/family/ friends environments	Work environment	Community environment	
Strategy objectives*	Increase knowledge of breastfeeding in mothers Improve mothers attitudes towards breastfeeding Develop personal skills (of mothers) to breastfeed	Implement health service practices (supported by policy) supportive of breastfeeding and no practices that undermine breastfeeding Ensure all health professionals associated with infant feeding support breastfeeding	Provide physical and mental support to mother to encourage and enable breastfeeding	Implement public policies to enable women to successfully combine work and breastfeeding	Development of communities supportive of breastfeeding	Development of social and cultural norms to breastfeed Economic structures and incentives that support breastfeeding
Examples of interventions	Education – provision of factual or technical information about breastfeeding – e.g. antenatal classes, leaflets Professional support (crisis intervention for physical problems, e.g. breastfeeding clinic) Home visits by nurse or peer support (professional and/or peer support) Referral advice (professional support)	Hospital practices concerning the mother and baby (rooming-in, demand feeding, early skin-to-skin contact, no commercial discharge packs, non-use of teats or pacifiers) Training of health professionals (nurses, GPs, obstetricians, paediatricians) Home visits, breastfeeding clinics, lactation consultants (professional education and support) Education (e.g. dissemination of leaflets) Referral advice (professional support)	Peer support (one-on-one) Lay support e.g. mothers groups Social support — maternity leave benefits; paternity leave benefits	Provision of breast pump and rooms and breaks for expressing breastmilk Dissemination of information with regard to breastfeeding and maternity entitlements to all new employees	Lay support, e.g. mothers groups Social support e.g. feeding rooms in public places (shopping centres for example) Social support — maternity leave benefits 'Breastfeeding-friendly' businesses	Social marketing (e.g. media campaigns) Advocacy School curricula Social/economic support – Health insurance supportive of breastfeeding; maternity leave benefits WHO Code of Marketing Breastmilk Substitutes

* These align well with generic strategies outlined by the Ottawa Charter for Health Promotion, which include developing personal skills, reorienting health services, creating supportive environments, setting healthy public policy, and community action[4].

5.2 Individual level interventions

Prenatal interventions need to encourage mothers to breastfeed. Early postnatal interventions aim to increase breastfeeding-related knowledge and practical skills (particularly in response to physical problems arising from breastfeeding, such as perceived insufficient milk). Interventions that facilitate or maintain the good health status of mother and infant are also required. Education, professional support and peer support are the main types of intervention at the individual level.

Pre and post natal interventions and parenting education should include fathers as well as mothers. A number of studies have identified the importance of fathers' preferences and support for breastfeeding on the initiation and duration of breastfeeding in both urban and rural Australia.[2]

5.3 Group level interventions

Hospital practices can ensure that the conditions immediately after birth and during the hospital stay are conducive to and supportive of breastfeeding. These practices begin even before birth with practices and protocols around labour and birth, particularly those for mother who give birth by caesarean section, important in the establishment of breastfeeding. They are also critical in the moments following birth, with the importance of skin-to-skin contact between mother and baby immediately after birth well established.[3]

Health professional training is aimed at ensuring that mothers receive consistent, relevant, and useful advice with respect to breastfeeding practices and problems. Provision of, and referrals to, well-coordinated postnatal breastfeeding support services (for example, lactation consultants) is an objective of the hospital and health service environment that contributes to the mother's maintenance of breastfeeding.

Public policies such as those that limit the marketing of breastmilk substitutes in hospitals ensure that the decision to breastfeed is not undermined by, for example, mothers being given hospital discharge packs of infant formula.

After being discharged from hospital, mothers need help to maintain exclusive breastfeeding for at least six months. Creating a home and family environment that is conducive to exclusive breastfeeding may require strategies such as increasing appropriate support (for example, through funding and delivery of family support services) and strengthening breastfeeding and parenting skills.

Legislation and public policies, in particular those relating to paid maternity leave (and parental leave for partners) are crucial in assisting mothers to successfully establish and maintain breastfeeding. Currently only one third of Australian mothers who are employed prior to the birth of their baby are able to take paid maternity leave, with the average duration of all leave types taken by mothers around 40 weeks.[4] A recent study using data from the Longitudinal Study of Australian Children (LSAC) found that very few mothers – less than 10% of leave-takers – would have taken longer unpaid maternity leave if it had been available, but more than 60 per cent of families in which the mother had been employed prior to the birth and taken leave identified

access to some (or more) paid maternity leave as one of the most important provisions that would have helped them following the birth of their child.[5]

Numerous studies (including a study of national data collected for 16 European countries between 1969 and 1974) have indicated that longer periods of paid parental leave (but not unpaid leave) are associated with increased length of breastfeeding and reduced infant mortality. It has been suggested the reduction in infant mortality is likely to be due to longer periods of breastfeeding and research confirms that returning to paid work is one of the most common reasons for terminating breastfeeding and that women are more likely to stop breastfeeding during the month they return to paid work.[6]

Canadian research indicates sharp increases in the duration of breastfeeding with increases in the provision of paid maternity leave, with significant increases in the proportion of mothers attaining public health benchmarks, particularly 6 months of exclusive breastfeeding.[7]

It should also be noted that legislation which protects mothers from unlawful discrimination in public life on the grounds of breastfeeding, pregnancy and sex must be available in all jurisdictions to provide legal recourse to breastfeeding mothers.

In additional to paid leave entitlements, interventions that enable women to combine paid work and breastfeeding are also crucial. Supportive work environments require the provision of, and underlying policies for, physical facilities that enable mothers to breastfeed and/or to express and store breastmilk for later feeding (such as private rooms and access to refrigeration). Flexible employment practices (including parental leave), breaks from work, and circulars to staff about breastfeeding-friendly workplaces are necessary. Such workplace policies help create norms about the acceptability of combining breastfeeding and working.

Support from community members and organisations, together with advocacy for public facilities and policies that make breastfeeding easier outside the home, are needed. Examples of interventions include peer support groups for breastfeeding, feeding/parenting rooms in public places, and breastfeeding-friendly businesses.

As previously mentioned, an example of a comprehensive group level approach can be seen in NSW Health's recently released first statewide breastfeeding Policy Directive: '*Breastfeeding in NSW: Promotion, Protection and Support*' (PD 2006_012) [8]. This policy is currently being rolled out across all Area Health Services and will be reviewed in June 2008.

Another example of group level support for promoting breastfeeding is the brochure *Maternity at Work,* produced by the Office of Industrial Relations. The brochure for women workers and their employers explains entitlements to maternity leave and other arrangements such as safety at work during pregnancy or while breastfeeding. More than 50,000 brochures have been distributed this year to public and private hospitals throughout NSW.

5.4 Society level factors

The objectives of strategies to influence the wider social, cultural and economic environment include promoting social norms that encourage breastfeeding, and social roles for men and women that are consistent with good breastfeeding practices. Advocating for reforms in the economic and health systems to provide structures and incentives for breastfeeding are important. Examples of such interventions include social marketing (including media campaigns); high school curricula dealing with parenting skills and norms and sexuality; private health insurance incentives for breastfeeding; and implementation of the *WHO Code for marketing of breastmilk substitutes*.[9]

Healthy public policy is an overarching strategy that aims to modify environments, including the broader social, cultural and economic environments, to support mothers to initiate and maintain breastfeeding.

The report by the NSW Centre of Public Health Nutrition on *Promoting and Supporting Breastfeeding in NSW: Case Studies* [10] provides a list of 31 case studies which illustrates strategies and interventions to support and promote breastfeeding. A copy of this document is attached for the benefit of Committee members.

5.5. Specific information on Families NSW and related NSW services

Families NSW is the NSW Government's interagency prevention and early intervention strategy to help parents give their children a good start in life. This means supporting families during pregnancy and in the early years of a child's life, when development is rapid. Families NSW is a human service interagency partnership involving NSW Health and the Departments of Education and Training; Community Services; Housing; Ageing, Disability and Home Care as well as local government and community organisations. Families NSW works on a strong evidence base, utlilising service models that research indicates provide good outcomes for children. Families NSW helps to improve children's health and well-being by:

- helping parents to build their skills and confidence in their parenting
- supporting parents so they can respond to problems early
- building communities that support families, and
- improving the way agencies work together to make sure families get the services and support they need.

Families NSW universal health home visiting is the offer to every family with a new baby in NSW with a home visit by a child and family health nurse. The aim of universal health home visiting is to engage all families with newborns and to provide support to parents with young children. This is based on three principles:

1. universality of access
2. assessment and intervention in the context of the client's own environment
3. facilitating the development of a partnership model of service delivery

The objectives of universal home visiting are:

- to improve access to services by contacting and offering a home visit to all families with newborns;

- to introduce families to the concept of health home visiting in a non-stigmatising manner;
- to actively engage those families that do not traditionally access maternity and early childhood health services and that need extra support;
- to engage families with the child and family service system and to provide support early, within two weeks of birth;
- to better determine families' needs for ongoing care by adding depth and context to the assessment by conducting it in the family home;
- to better provide ongoing care to clients where value is added by providing intervention in the home when need for this is indicated; and
- to ensure an introduction to, and connection with, community-based child and family services within health and across other government and community organisations, for families that may not have readily accessed these services.

Families NSW health home visiting provides breastfeeding education and support in the home at a critical time. This is one of a number of NSW Health strategies to support breastfeeding.

NSW Health's maternity services provide support for breastfeeding for mothers with education antenatally through more intensive education and support early postnatally, usually up to 2 weeks from birth. Early childhood health services provides breastfeeding support through drop in clinics and parenting groups for new parents as well as through home visiting.

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6. EXAMINE THE EFFECTIVENESS OF CURRENT MEASURES TO PROMOTE BREASTFEEDING

In this section the effectiveness of current measures to promote breastfeeding are addressed in two main ways: through systematic reviews and from a consideration of key issues amenable to intervention at the national level which arose from recent NSW consultations during the NSW Health breastfeeding policy development process.

6.1 Systematic reviews of interventions to promote breastfeeding

Evidence-based practice relies on the findings of sound evaluation research to determine whether an intervention is likely to be effective.[1,2] Systematic reviews and meta-analyses identify, appraise and summarise the results of otherwise unmanageable quantities of research. They apply consistent criteria related to study type and aims, and select those studies that are of high quality, valid and provide evidence of effectiveness, to produce findings that can be applied in public health practice. This approach has been applied to the numerous studies evaluating interventions designed to improve breastfeeding practices.

Systematic reviews and meta-analyses of strategies for promoting and supporting breastfeeding published since 1995, when NSW Health last conducted a review of evaluation studies,[3] were identified in the literature. The range of reviews identified were appraised according to the approach recommended in the *'Schema for Evaluating Evidence on Public Health Interventions'*.[2]

Nine good quality systematic reviews of breastfeeding interventions were found. Quantitative measures of the effect of particular interventions on breastfeeding outcomes were derived by meta-analysis in four of the reviews.[4-8] The other five reviews[9-14] did not provide quantitative measures of effect as it was considered that the primary studies were too dissimilar in terms of type of intervention(s), participants, and definitions of outcomes.

6.1.1 Evidence of effectiveness

The reviews, and the primary studies to which they relate, varied in terms of the outcome measures assessed; few evaluated effects of programs on duration of breastfeeding, particularly exclusive breastfeeding, beyond three months, and none examined the duration of breastfeeding beyond six months. Most studies, and therefore the reviews, were evaluated for effectiveness in terms of the duration of any breastfeeding, usually over the first few months postpartum. Much of the available evidence from the systematic reviews relates to educational and support strategies designed to promote mothers' personal skills, and to hospital and health service environments (including particular practices, services, policies and training of health professionals) conducive to breastfeeding. The quantitative evidence from the meta-analyses is provided in Table 2. It shows that the positive effect on breastfeeding is substantial for a number of interventions.

TABLE 2

SUMMARY OF THE MAGNITUDE OF EFFECT (DERIVED FROM META-ANALYSES) OF DIFFERENT TYPES OF INTERVENTIONS ON BREASTFEEDING PRACTICES

Review	Intervention	Breastfeeding outcome	Measure of effect	95% CI
Anderson et al (2003)[12]	Early skin-to-skin contact	Still breastfeeding (any) at 1–3 months post-birth	OR* 2.15	(1.10, 4.22)
		Duration	WMD† 41.99 days	(13.97, 70.00)
USPSTF (2003)[13,14]	Breastfeeding education	Initiation	difference‡ 0.23	(0.12, 0.34)
		Short-term duration (< 3 months)	difference 0.39	(0.27, 0.50)
	Support alone	Short-term duration (1–3 months)	difference 0.11	(0.03, 0.19)
		Long-term duration (4–6 months)	difference 0.08	(0.02, 0.16)
	Education plus Support	Initiation	difference 0.21	(0.07, 0.35)
		Short-term duration	difference 0.37	(0.17, 0.58)
Sikorski et al (2001)[15]	Support (all types)	Duration	RR (for stopping breastfeeding before last study assessment up to six months) 0.88§	(0.81, 0.95)
		Exclusive breastfeeding	RR (for stopping exclusive breastfeeding before last study assessment) 0.78	(0.69, 0.89)
	Professional support	Duration	RR (for stopping breastfeeding before last study assessment up to 6 months) 0.89	(0.81, 0.97)
		Exclusive breastfeeding	RR (for stopping exclusive breastfeeding before 4–6 wks) 0.50	(0.27, 0.90)
			RR (for stopping exclusive breastfeeding before 2 months) 0.76	(0.61, 0.94)
	Lay support	Duration	RR (for stopping breastfeeding before last study assessment) 0.84	(0.69, 1.02) non significant trend
		Exclusive breastfeeding	RR (for stopping exclusive breastfeeding before last study assessment)0.65	(0.49, 0.89)
	Face-to-face interventions	Duration	RR for giving up breastfeeding 0.86	(0.78, 0.94)
	Only Postnatal support	Duration	RR for giving up breastfeeding 0.88	(0.80, 0.96)
	WHO/UNICEF Training	Prolonged exclusive breastfeeding	RR for giving up exclusive breastfeeding 0.70	(0.53, 0.93)
Donnelly et al (2000)[10]	Commercial hospital discharge packs:	Not exclusively breastfeeding at:	Peto Odds Ratios**	
	With formula promotional material but no formula sample versus no intervention†† or non-commercial packs‡‡	0–2 weeks	1.99	(1.04, 3.79)
		3–6 weeks	1.23	(1.05, 1.43)
		8–10 weeks	1.73	(1.13, 2.64)
	With formula promotional material + formula samples versus no intervention†† or non-commercial packs‡‡	0–2 weeks	1.99	(1.04, 3.79)
		3–6 weeks	1.25	(1.06, 1.47)
	With formula promotional material but no formula sample versus no intervention††	3–6 weeks	1.27	(1.01, 1.62)

* OR = Odds Ratio. Mothers that experienced early skin-to-skin contact with their babies were over two times (2.15 times) more likely to be still breastfeeding at 1–3 months than mothers who did not experience early skin-to-skin contact with their babies.

† WMD = Weighted mean difference. A statistical measure of difference used in meta-analysis. In this instance it means that mothers experiencing early skin-to-skin contact breastfed on average 42 days longer than mothers who didn't experience early skin-to-skin contact.

‡ 'difference' refers to the difference in proportion of mothers breastfeeding in the intervention group compared to the control group, i.e. 0.23 indicates that 23% more mothers were breastfeeding as indicated as a result of the intervention

§ Sikorski et al[15] present the measure of effect (relative risk) in terms of the risk to the breastfeeding practice, hence it is less than 1. A smaller number indicates a larger, positive effect of the intervention in terms of improved breastfeeding practice.

** The Peto odds ratio is used in Cochrane meta-analyses as an approximation to the odds ratio. For example, mothers were nearly twice (1.73 times) as likely to be exclusively breastfeeding at 8–10 weeks if they did not receive a discharge pack containing formula promotional material

†† No intervention = nothing was given to mothers leaving hospital

‡‡ Non-commercial discharge packs contained an aid to breastfeeding, e.g. a breast pump or breast pads, or contained promotional literature on breastfeeding

Specific hospital practices such as skin-to-skin contact[6] and not giving commercial discharge packs[4] lead to more women beginning to breastfeed, and increase the length of time that women breastfeed in the short term. For example, early skin-to-skin contact has been shown to increase the length of time mothers breastfeed by 42 days. Other specific hospital practices, such as rooming-in, are also effective.[10]

A summary of the major findings synthesised from the nine systematic reviews is presented in Table 3.

TABLE 3:INTERVENTIONS TO PROMOTE AND SUPPORT BREASTFEEDING: CONCLUSIONS FROM A SYNTHESIS OF FINDINGS OF SYSTEMATIC REVIEWS

Education

- Education alone is effective in increasing rates of breastfeeding initiation and short-term duration
- Content should include: benefits of breastfeeding, principles of lactation, myths, common problems and solutions, and skills training
- Formats most effective are one-to-one educational programs and/or small group programmes in an informal environment together with postnatal home visits
- Sessions spanning prenatal and postnatal periods are most effective

Support

- Increases the longer-term duration and exclusivity of breastfeeding
- Particularly effective in settings where there are high rates of breastfeeding initiation
- Must include face-to-face contact
- Effectiveness is enhanced by home visits
- Peer support increases both rates of breastfeeding initiation (among women who intend to breastfeed) and the duration of exclusive breastfeeding
- Peer support is particularly effective among socioeconomically disadvantaged women
- Peer counsellors are more successful if they are culturally and socially similar to mothers, available to advise on problems and answer questions, and contact is frequent
- Postnatal support alone increases breastfeeding duration

Combination of Education and Support

- Face-to-face education and peer counselling is particularly effective

TABLE 3:INTERVENTIONS TO PROMOTE AND SUPPORT BREASTFEEDING: CONCLUSIONS FROM A SYNTHESIS OF FINDINGS OF SYSTEMATIC REVIEWS

Health Service Policy and Programs

- Explicit health service policies that outline appropriate health service practices are beneficial
- Specific in-hospital practices that support breastfeeding are: early skin-to-skin contact between the baby and mother, rooming-in, not giving commercial hospital discharge packs, not using supplemental feeds, and not using artificial teats and pacifiers
- A Cochrane review[11] indicated that WHO/UNICEF training courses for in-hospital health professionals increased the likelihood of prolonged exclusive breastfeeding by 30%
- The combination of policy, in-hospital practices and professional training is effective in improving breastfeeding practices

Multifaceted interventions

- Multifaceted interventions have been shown to be effective at increasing the initiation and, in most cases, duration of breastfeeding in developed countries
- The optimal mix of interventions will depend on the setting, however packages including two or more of the following have been shown to be effective in improving breastfeeding practices: education of mothers, peer support, changes to hospital practices such as rooming-in and early skin-to-skin contact, staff training, development and implementation of hospital policy, media campaigns/programs, paid maternity leave

Source: CPHN report *Overview of recent reviews of interventions to promote and support breastfeeding*

Evidence and experience indicates that health service policy and professional training can be important in enabling the consistent and integrated adoption and implementation of recommended specific practices. Health service policy and health professional training are integral components of the 'Ten steps to successful breastfeeding',[15] the 'baby friendly hospital' initiative,[16] and the 'Seven point plan for the protection, promotion and support of breastfeeding in community health settings'.[17]

Overall, meta-analyses and narrative systematic reviews indicate that well conducted educational and support interventions have substantial and significant effects on breastfeeding initiation and duration up to three months. Both peer and professional support strategies have been found to have a significant impact on short-term duration (up to three months) and exclusivity of breastfeeding. Combined educational and

support interventions are effective; and a mix of prenatal and postnatal contacts appears to be optimal. Postnatal home visiting appears to be particularly beneficial.

There is some evidence that multifaceted interventions are likely to be effective but the optimal mix of interventions is unknown.

6.1.2 Discussion

The appraisal of systematic reviews identifies educational, support and health service interventions for which the evidence of effectiveness is abundant, strong and convincing. This evidence therefore provides a basis for recommendations to strengthen the implementation of these types of interventions in health services.

Recent national and international health strategies, such as the National Breastfeeding Strategy,[18] the Global Strategy for Infant and Young Child Feeding,[19] and the United States Department of Health and Human Services 'Blueprint for action on breastfeeding',[20] advocate the use of a broad range of interventions to promote breastfeeding, including those for which evidence is currently limited, such as workplace initiatives.

Similarly, the recent *Dietary Guidelines for Children and Adolescents in Australia* and the *Infant Feeding Guidelines for Health Workers*[21] promote a comprehensive approach to breastfeeding promotion and support. Given the numerous and complex influences on breastfeeding, and the range of potential strategies that are not covered by systematic reviews, a comprehensive policy and set of programs should comprise a broad range of interventions covering individual, group (hospital and health services, home and family, work and community), and society level determinants.

6.2 NSW Health consultations

During the development of the NSW Health Breastfeeding policy, extensive consultations were undertaken (see Appendix 1 for the list of organisations consulted). A range of substantial issues were highlighted as requiring support at a national level and are outlined below (except for issues associated with the WHO Code and MAIF Agreement which are covered in Section 2).

6.2.1 National coordination

The WHO /UNICEF Global Strategy for Infant and Young Child Feeding affirms the urgency for countries to appoint a national breastfeeding coordinator with appropriate authority, establishing a multisectoral national breastfeeding committee composed of representatives from relevant government departments, non-government organisations and health professional associations. While Australia's National Breastfeeding Strategy 1996-2001 was underway, there was a reasonable level of coordination and collaboration with some good progress made. Since this strategy was completed, there has been somewhat of a vacuum in national breastfeeding coordination and leadership.

6.2.2 A national Breastfeeding Help Line coordinated by the Australian Breastfeeding Association (ABA).

Evidence shows that peer support is an effective strategy for supporting breastfeeding in general, including for women of lower socio-economic status who are the most likely not to breastfeed. The ABA's Helpline in each state is its major strategy for offering peer support to members.

NSW Health provides funds to the ABA. This includes financial assistance to the NSW Branch of the ABA for the operation of their Helpline to overcome technical problems, improve service provision, introduce economies of scale and reduce call costs for regional callers. The Australian Government could play a valuable role in supporting a nationally-coordinated, cost-effective Helpline through the ABA. The Quitline may provide a useful model for a nationally-coordinated Helpline.

6.2.3 National approach to monitoring population breastfeeding rates

The 2001 document 'Towards a national system for monitoring breastfeeding in Australia' highlights the need for, and was a first step towards, standardising the monitoring and reporting of breastfeeding practices in Australia. No data have been collected nationally since this document was released (the national health surveys occurred in 1995 and 2001). Several states, notably NSW and Queensland, have conducted state-level Computer Assisted Telephone Interviewing (CATI) surveys. No breastfeeding questions will be included in the next national nutrition and physical activity survey in 2007. Hence, there is a current paucity of national data for monitoring purposes.

The effectiveness of current measures to promote breastfeeding requires regular information about how population breastfeeding practices align with those recommended by health authorities such as the NHMRC, and how breastfeeding practices are changing over time among various population sub-groups such as young mothers, those socioeconomically disadvantaged, those living in rural areas, etc. Such information is needed to identify which breastfeeding behaviours and population groups, in particular, need to be more effectively targeted in public health measures to promote breastfeeding.

International best practice indicates that routine monitoring and surveillance of breastfeeding is required to provide the data necessary for rational planning of health interventions. Best practice regarding monitoring includes the use of standardized definitions and indicators of breastfeeding practices, and appropriate measurement methods, including standardized survey questions in population health surveys.

In 2001, the Commonwealth Department of Health and Ageing published a report *Towards a national system for monitoring breastfeeding in Australia*, which identified the ad hoc approach to monitoring breastfeeding practices in Australia and the need for a systematic approach to provide this important information for health workers and policy makers. The report recommended use of standardized definitions and methods adapted from WHO. A series of next steps were outlined to implement the systematic approach, including the establishment of a coordinating body/process to seek commitment, consistency and rigor in monitoring breastfeeding practices in

Australia. Emphasis was placed on working with ABS regarding standardized questions and data analysis methods for the National Health Surveys to report on the nationally agreed indicators, and also working with state CATI health survey agencies to align their methods with the nationally agreed definitions and indicators to obtain maximum use and comparability of the data.

Despite the accumulating evidence of the importance of breastfeeding for health in the short and longer term, there has been no progress on taking a more systematic approach to national monitoring of breastfeeding in Australia, since the publication of the AFNMU report in 2001. The NHS has not routinely included breastfeeding questions in recent surveys. NSW and Queensland Health Departments have worked with the recommendations in the 2001 AFNMU report, and have further developed and refined the indicators and measurements in their statewide CATI surveys, and are keen to share the benefit of their experiences and improvements with other states and territories and with national agencies such as the ABS regarding methods for monitoring breastfeeding.

Given the importance of the information about population breastfeeding practices, along with detailed information about food and nutrient intakes of both children and adults, NSW Health recommends that the Australian Government take a lead role in establishing a coordinated monitoring approach for breastfeeding in Australia. This should be done in conjunction with a wider system of monitoring food and nutrition in the population, in line with the steps identified in the AFNMU report and in collaboration with state and territory health departments.

6.2.4 Human milk banks

When an infant's mother's milk is unavailable, either totally or partially, alternative sources of nutrition include a variety of artificial formulae or human milk donated from other mothers. In 1980 the WHO/UNICEF jointly declared that human milk banks should be made available in appropriate situations[22] and the Global Baby-Friendly Hospital Initiative[23] has since led to a revival of interest in milk banking.

Banked breast milk is reputed to provide very premature babies with a therapeutic benefit such as preventing babies from developing necrotizing enterocolitis (NEC).[24] NEC is a gastrointestinal disease that mostly affects extremely premature infants within the first two weeks of life. It involves infection and inflammation that causes destruction of the bowel or part of the bowel. NEC is the most common and serious gastrointestinal disorder among babies in Neonatal Intensive Care units.[24] It usually begins after milk feeding has begun as these babies have immature bowels, which are sensitive to changes in blood flow and prone to infection.

However, donor milk is not necessarily the optimal food for pre-term growth.[25] Donors have usually delivered at term or have been lactating for some time, both of which result in lower nutritional content. Composition of human milk also alters with maternal diet. For these reasons it can be difficult to achieve an adequate nutritional intake in pre-term infants through donated milk alone.

The Royal College of Paediatrics and Child Health in the United Kingdom[26] and the Human Milk Banking Association of North America (HMBANA)[27] have both published

guidelines for the establishment and operation of human milk banks. Many other countries, especially in Europe, have also established human milk banks. Other countries, such as Canada, do not support the use of donor human milk for either term or pre-term infants. The Royal Australasian College of Physicians (RACP)[28] supports the existence of human milk banks on the proviso of evidence of benefit and minimisation of risk to infants. Comprehensive evidence is not yet available in Australia. It is understood, however, that there are currently at least three human milk banks in Australia that appear to be, as yet, unregulated. In order to ensure a national regulatory and quality framework for breast milk pasteurisation, it is recommended by the RACP[28] that human milk banks in Australia conform to relevant safety standards and take into account ethical and legal considerations, whilst negotiating a formal status for donor human milk through the Therapeutic Goods Administration (TGA).

Human milk banks have arisen largely through the voluntary efforts of committed individuals, but more evidence of benefit in addition to the development of quality frameworks is required. There are also considerable financial implications to note with regard to the further expansion of milk banking; one study[25] in the UK estimated that the cost of human milk banking is approximately 30-150 British Pounds (A$72- A$360) per litre, but it is acknowledged that this is probably an underestimation of resource costs to the health service as a whole.

Given the increasing community interest in human milk banks it is important that a review of their desirability be undertaken that addresses the following points:

- The risks associated with donor human milk include transfer of diseases such as HIV, hepatitis B and cytomegalovirus;
- The benefits to pre-term infants, taking into consideration the common requirement for supplemental (non-breastmilk) feeding and the mismatch between the composition of banked breastmilk in banks and the composition required by pre-term infants;
- The costs of establishing and operating human milk banks;
- Whether the benefits are seen to outweigh the risks and costs and, if so,
    - The regulatory or quality framework within which human milk breast banks should operate;
    - Minimum standards for a breastmilk bank which would include:
        - Risk management
        - Donor recruitment
        - Donor selection
        - Screening programs for donor mothers
        - Storage and handling of milk
        - Transportation of milk
        - Microbiology, testing and pasteurisation of milk
        - Equipment needed
        - Quality management programs
        - Records management
        - Incident reporting
        - Communication.

The opening of the PREM Milk Bank service based at the King Edward Memorial Hospital in Western Australia offers an ideal opportunity for such an evaluation to be undertaken and supported at a national level.

6.2.5 Work place conditions that support breastfeeding

Given that 25% of mothers in Australia return to the workforce before their infant is 6-months old (and around 40% by 12-months), workplace policies and practices have an important role to play in establishing and maintaining breastfeeding.

As previously noted, paid maternity leave (and parental leave for partners) are crucial in assisting mothers to successfully establish and maintain breastfeeding. The introduction of a national scheme of paid maternity leave for a minimum of 14 weeks, as provided in the International Labour Organization's *Maternity Protection Convention* 2000, is one of the most important initiatives which could be taken by the Commonwealth to support and improve the levels of breastfeeding in Australia.

Providing a supportive environment for mothers to be able to continue breastfeeding on their return to paid work is also central to preventing early weaning. Employed mothers who have convenient access to their infant during the working day breastfeed for longer than women who are separated from their infants. Similarly, women who express breastmilk at work breastfeed for longer than mothers who do not express at work. Supportive workplace policies and programs have been shown to increase breastfeeding duration among working mothers.[29-33]

Workplace strategies involve a mix of organisational policies and provisions including maternity leave, flexible employment practices, lactation breaks for breastfeeding and expressing and physical facilities such as private rooms for expressing and refrigeration for breastmilk storage. Informing employees of their workplace policies and provisions is also a key element of workplace support for breastfeeding.

Support for greater leave entitlement and flexible work practices can be developed in individual workplaces and industries, but can also be supported by the Commonwealth through initiating incentives for employers and developing more robust regulatory frameworks which require employers to legally make reasonable accommodation of the needs of breastfeeding employees.

6.2.6 Expressed breastmilk

Some mothers may need to express their breast milk for a variety of reasons such as a sick infant, separation of mother and infant, the milk supply needing to be increased or the mother returning to work. Mothers should be encouraged to express breast milk in these circumstances in order to promote the health of their infants.

However, breast milk is a body fluid and as such has the potential for the possible transmission of infectious pathogens if contaminated or given in error to the wrong infant. For this reason NSW Health has issued a Safety Advocate[34] as an online resource, and a Policy Directive *Breast Milk - Safe management*[35] to direct the practice, based on the NHMRC guidelines for hygienic collection, storage and subsequent feeding of

expressed breast milk (2-3). Information on this topic is also available for parents via the NSW Information booklet *Breastfeeding Your Baby*.[36]

It needs to be acknowledged that in some cultures it is acceptable to breastfeed a relative or friend's baby when the mother is not able to be with her baby. All mothers should be made aware of the potential for transmission of infectious pathogens by this practice, and informed that feeding another woman's baby is not appropriate in any healthcare facility in NSW.

The Australian Government could adopt an important role in providing or funding a not-for-profit breast pump rental scheme to enable mothers with babies in a neonatal unit to hire a breast pump at low cost and so maintain their supply of breastmilk until their baby is discharged from hospital.

6.2.7 Influence of fathers and paternity leave

There is a growing body of evidence that there are greater expectations on men to become involved as fathers, active in the upbringing of children. Many family-friendly working policies perceived by employers to centre on women hence difficulty in fathers exercising their statutory paternity rights.

It is recognised that the active involvement of fathers in a child's life. Both at early stages and later in development this involvement may have a positive impact in many aspects of their life, including higher educational attainment and better adult relationships. Integrating paternity leave and pay arrangements into reward strategies may have important orgnisational benefits. [37, 38, 39, 40, 41]

Pisacane, Continisio, Aldinucci, D'Amora, and Continisio[42] investigated whether more women would breastfeed for six months if the father of their baby was taught to recognize his role in the success of breastfeeding. This study supported the father's involvement in breastfeeding. The group whose partners had received training on how to prevent and manage the most common lactation difficulties had higher rates of full breastfeeding at 6 months. The personal impact of the father's support was the positive outcome it had on the mother's satisfaction and increased duration of breastfeeding. Fathers have a significant impact on attitude and success in breastfeeding, but many are lacking in knowledge of their role in the breastfeeding process. [42]

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7. THE IMPACT OF BREASTFEEDING ON THE SUSTAINABILITY OF AUSTRALIA'S HEALTH SYSTEM

Breastfeeding will have a significant impact on the sustainability of Australia's health system in direct and indirect ways.

Breastfeeding yields cost savings for the health care system.[1,2] Those illnesses for which there is convincing and abundant evidence of a protective effect of breastfeeding are among the major health problems in Australia and contribute significantly to the health burden. To date, most economic analyses of the benefits of breastfeeding to the health system have concentrated on just a few infant illnesses and on direct health care costs only. For example, Smith (2002)[3] estimated the cost of weaning to infant formula before 3-months of age was $290 million per year in Australia, for five infant illnesses.

Estimates of economic benefits that can be apportioned to improved breastfeeding practices and rates will have been considerably underestimated as they focus on the infant period only, they exclude the protective effect against a large number of infant and maternal illnesses, and they do not include the indirect and out-of-hospital health care costs of the poor health outcomes associated with not breastfeeding. Importantly, they do not account for the costs of a number of costly chronic diseases, including obesity that are associated with formula feeding. Direct expenses for families using infant formula include the costs of the infant formula and equipment, medical care for illnesses, and lost working days for parental infant care.

There are some costs associated with breastfeeding, such as breast pumps, work breaks for expressing, marginally increased maternal food costs, and maternal leave payments if leave is extended in order to continue breastfeeding. However, these are outweighed by the numerous and abundant costs associated with formula feeding. An alternative way of looking at the economics of breastfeeding has been to assess breastmilk as part of the food supply. Such an analysis in 1992 [4], including adjustment for a small increase in maternal food consumption, estimated the net benefit of breastfeeding to be at least $2.2 billion per year in Australia.

In conclusion, improving breastfeeding rates would have a positive impact on the long-term sustainability of Australia's health system by providing protection against obesity, serious infant infections and a range of chronic disease mothers and infants.

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8. RECOMMENDED AREAS OF LEADERSHIP FOR THE AUSTRALIAN GOVERNMENT ON BREASTFEEDING

In consideration of the issues raised above, especially Sections 2 and 5, NSW Health makes the following recommendations (listed in order of priority, where 1 is highest priority) is for key areas where the Australian Government could consider taking a lead role to improve the health of the population through support for breastfeeding:

8.1 WHO International Code for the Marketing of Breastmilk substitutes

That an Australian Code of Practice or agreement in alignment with the WHO Code is developed for:

- Manufacturers and importers of bottles and teats;
- Retailers and advertisers of breastmilk substitutes; and
- Manufacturers, retailers and advertisers of follow-on (toddler) formulae.

8.2 Legislative support concerning workplace conditions that support breastfeeding

That the Australian Government provides a workplace relations legislative framework that supports the establishment and maintenance of breastfeeding by:

- Introducing a national scheme of paid maternity leave of at least 14 weeks as a matter of urgency and
- Providing encouragement and incentives to employers to introduce flexible work practices, work breaks and suitable facilities (eg for expressing and storage of breastmilk) in all businesses and public facilities to enable employees to combine breastfeeding and work.

8.3 A national Breastfeeding Helpline

That funding and support is provided for a national Breastfeeding Helpline coordinated by the Australian Breastfeeding Association.

8.4 National Monitoring of Population Breastfeeding Practices

That, in the interests of a more coordinated national approach to monitoring, the Commonwealth Department of Health and Aging implements the recommended "next steps" in the report *Towards a national system for monitoring breastfeeding in Australia* in collaboration with stakeholders.

8.5 Human milk banks

That the Australian Government review the desirability of human milk banks and, if this should be recommended, establishes licensing by a recognised Authority.

8.6 National coordination

That a national peak body or committee is established to co-ordinate a strategic approach to promoting, protecting and supporting breastfeeding in Australia. A broad range of stakeholders should be approached to provide input to this body.

8.7 Workplace policies and incentives

That policies and incentives, such as a grant-based fund, are developed for businesses to encourage workplaces to support employees to continue to breastfeed on returning to paid work. A grant-based fund could support initiatives such as providing flexible work practices, lactation breaks, and suitable facilities for breastfeeding or expressing and storing breastmilk.

8.8 Breast pump rental scheme

That there is establishment of a not-for-profit breast pump rental scheme to enable mothers with babies in neonatal units to hire equipment to enable them to continue to supply breast milk to their premature infants after they go home from hospital, until their babies are discharged.

APPENDIX 1: LIST OF ORGANISATIONS CONSULTED DURING THE DEVELOPMENT OF THE NSW HEALTH BREASTFEEDING POLICY

Key stakeholders were involved and consulted throughout the policy development process.

They included:

- Key branches of the NSW Department of Health,
- Area Health Services,
- NSW Centre for Public Health Nutrition,
- NSW Maternal and Perinatal Committee,
- Australian Lactation Consultants' Association,
- Child and Family Nurses' Association,
- Dietitians' Association of Australia,
- NSW Lactation College,
- NSW Midwives' Association,
- Pharmacy Guild of Australia,
- Front-line service managers from maternity units and child and family health services,
- Aboriginal Health and Medical Research Council,
- Multicultural Health Communications Service,
- Australian Breastfeeding Association (NSW Branch),
- Selected population health experts.