

1. BREASTFEEDING AND HEALTH

Breastfeeding is widely perceived as the “ideal” rather than the standard food for infants. There is almost no awareness in the community that there are health consequences associated with a decision not to breastfeed (6). Breastfeeding is commonly viewed in terms of providing additional vitamins to the standard diet of infant formula.

Published peer reviewed research over recent decades has clearly demonstrated the importance of breastfeeding for both maternal and infant health in both the short and long term.

Early nutrition and care has a profound impact on the health and development of children. Human milk provides infants with nutrients that are essential for normal growth and with immune factors that support infants’ underdeveloped ability to fight illness. Babies are born with an immature immune system, and are extremely vulnerable to infection. However, breastmilk acts as an external immune support system. When babies are prematurely weaned their external immune support is removed from them and they are more likely to become ill and they have more difficulty in recovering from illness.

Impact of Breastfeeding on Infant and Child Health

Obesity

Research has consistently found that children who are not breastfed are more likely to be overweight in childhood and adolescence. The relationship appears to be dose dependent. A recent meta-analysis of research found that children breastfed for less than 1 month have a 32% increased risk of being overweight as compared to children breastfed for 4-6 months and have a 47% increased risk of being overweight as compared to children breastfed for more than 9 months (7).

There are several possible reasons for this relationship. Firstly, babies who are breastfed are able to regulate their own intake (self regulate) based on internal satiety cues (8) and maternal milk production is driven by infant demand (9). Overfeeding is therefore unlikely in exclusively breastfed babies, if not impossible. In contrast, babies who are bottle-fed may be encouraged to finish bottles so as not to waste milk or to meet parental expectations of consumption. It has been speculated that this may impede the later ability to self regulate energy intake (8). In addition, mothers who continue to breastfeed their child for 12 months or more are less controlling of their toddler’s eating habits and, perhaps as a result of this, their children eat a greater variety of foods and are leaner (10).

There may also be physiological differences between breastfed and non-breastfed infants that leads to a greater likelihood of overweight in those not breastfed. It is known that bottle-fed babies consume more milk and gain weight more rapidly than breastfed babies (11). Over-feeding in infancy may result in increase in the number and fat content of adipocytes (cells that store fat) potentially making such children more vulnerable to obesity (12).

There may be differences in insulin metabolism in formula-fed infants that contribute to increased risk of overweight (8). Levels of, and the body’s response to, the appetite regulatory hormone leptin may also be affected by early nutrition increasing the risk of overweight in non-breastfed individuals (13).

It may also be that familial factors may modify the relationship between infant feeding and obesity so that “unhealthy” families may be less likely to breastfeed (14). Nonetheless, when studies have adjusted for factors associated with infant feeding choice the relationship between formula feeding and overweight is still apparent (15). While the impact of infant feeding on obesity is relatively

small compared to other factors such as parental overweight, dietary practices and physical activity, infant feeding is still a significant factor and worthy of consideration in obesity prevention programs.

Weaning from breastfeeding earlier than is recommended by national and international health authorities also appears to contribute to the development of hypertension (16-18) and hypercholesterolemia (18, 19) into adulthood.

In April of 2006, the World Health Organization released the results of its Multi-center Growth Reference Study. This study found that infants who are fed commercial breastmilk substitutes (infant formula) grow more slowly in the early weeks of life and tend to be heavier at a year old. (WHO (2006). *Child growth and development*. 2006: WHO Website.)

Type 1 Diabetes

There is some evidence that the likelihood of developing Type 1 diabetes may be related to early nutrition. It is thought that sensitisation and development of antibodies to a cows' milk protein may be the initial step in the aetiology of Type 1 diabetes (20). A relationship between diarrhoeal disease due to rotavirus infection and Type 1 diabetes has also been identified (21) and as will be discussed, children who are not breastfed are more vulnerable to diarrhoeal illness. Thus, a meta analysis of high quality studies that looked at infant feeding and the development of Type 1 diabetes found that children exposed to cows' milk in the first 3 months of life or not breastfed for at least 3 months have a 63% increased risk of developing Type 1 diabetes. It appears that the relationship between infant feeding and development of Type 1 diabetes is strongest where children develop the condition young, thus, children not breastfed for at least 3 months have a 280% increased risk of developing Type 1 diabetes before the age of 4 years as compared to breastfed children.

It is worth noting that research in this area is conflicting (certainly some studies do not indicate that early nutrition has a role in the development of Type 1 diabetes) and it has been recognised for some time that a large-scale prospective study is required to elucidate the impact of early nutrition in this condition. Unfortunately human milk is not a product that can be sold for profit and this poses an obstacle to the consideration of the role of non-exclusive breastfeeding or premature weaning from breastfeeding in the development of a disease. There is currently an extremely large trial operating in 70 centres, including 3 in Australia, testing whether infant formula that does not contain complete cows' milk protein is less likely to result in children developing Type 1 diabetes than children fed a standard infant formula (TRIGR). The study design includes supporting women to breastfeed. However, women are provided with free infant formula, which, it has been argued is an inducement to wean. Indeed, results published so far indicate that a large proportion of women in the study breastfeed for a short time only (22). Any study examining the impact of early diet on the development of Type 1 diabetes should include an exclusively breastmilk control as recommended by the WHO (23) but this study is funded at least partially by an infant formula manufacturer that was involved in developing the study design <http://trigr.epi.usf.edu/about.html>. Currently, the environment is such that in Australia it is difficult to gain research funding for a projects that do not have potential for commercialisation. However, the situation with the TRIGR study highlights the need for government to be involved in funding research that is in the public good, regardless of commercial opportunities. The results from the TRIGR study are already promising that the "special" infant formula may have an impact and there is little doubt that pressure will be placed on the Australian government to subsidise the cost of this formula for the purposes of reducing the incidence of Type 1 diabetes. It is however, deplorable that the impact of exclusive breastfeeding on the development of Type 1 diabetes is not being considered because if effective this would be a far more cost effective intervention.

It is worth noting that women who suffer from diabetes themselves may have a delay in lactogenesis 2 post-birth (24), which often necessitates supplementing their babies with other milks. Given the suspected link between early nutrition and Type 1 diabetes, and the possibility of a genetic susceptibility it would be advisable that these babies be provided with donor human milk from a milk bank until their mothers' milk is sufficient.

The primary cause of Type 2 diabetes is obesity and the involvement of infant feeding in the development of obesity has already been discussed.

Asthma

Research has generally found that premature weaning from breastfeeding results in increased risk of development of asthma in children. A meta-analysis of well-designed studies from around the world found that children weaned before 3 months of age had a 25% increased risk of developing asthma as compared to children who were breastfed beyond 3 months. In a specifically Australian context, research has found that introduction of milks other than human milk before 4 months of age resulted in a 25% increased risk of asthma, an earlier diagnosis of asthma, a 31% increase in wheeze and earlier onset of wheeze (25). Encouraging exclusivity of breastfeeding, avoidance of breastmilk substitutes and increasing total duration of breastfeeding should be an important part of any strategy aimed at decreasing asthma incidence.

The increased incidence of asthma in children who are not breastfed may be due to increased vulnerability in children not breastfed to respiratory infections and allergy. Children who are not breastfed are at an increased risk of suffering from multiple episodes of upper respiratory tract illness and this may make children more vulnerable to developing asthma. An Australian study found that lower respiratory illness with associated wheeze, in the first year of life, particularly where there are multiple episodes, increases the risk of asthma in children from between 300% (where no family history of allergy) and 800% (where a family history of allergy) (26). A dose dependent association between antibiotic exposure in infancy and the development of asthma has been identified and children who are not breastfed have been found to spend twice as much time on antibiotics as children who are breastfed (27, 28). Children who are prematurely weaned from breastfeeding are also more likely to develop allergic symptoms and this is also associated with increased asthma risk. There are other defence mechanisms against asthma associated with breastfeeding that are yet to be elucidated (26).

Allergy

Infants fed infant formula (cows' milk based or soy) have a higher incidence of allergy than babies who are breastfed (29, 30). Eczema is a type of allergic manifestation that has been studied in relation to early nutrition. Kull et al (31) examined the development of eczema in children whose families had a history of allergy and those who did not. It was found that where there was no family history of eczema the risk of developing eczema was increased by 20% in children exclusively breastfed for less than 4 months and by 35% in children with a family history of eczema (31). Children not exclusively breastfed for at least 4 months were also found to be 43% more likely to develop allergic rhinitis than children exclusively breastfed for 4 months or more (32). Finally, children who were not exclusively breastfed for 4 months or more were 43% more to suffer from multiple allergic diseases (32). Oddy et al (33) found that children who were not exclusively breastfed were 30% more likely to show a positive skin prick test to at least one common aeroallergen. Exclusive early breastfeeding (for around six months) is particularly important in preventing allergy. Australia's exclusive breastfeeding rates are very poor (34).

It is thought that children who are not breastfed are more likely to develop allergy because:

Breastfed children are less exposed to foreign dietary antigens

Human milk contains factors that promote gastrointestinal mucosa maturation thereby allowing early "closure" of macromolecular absorption

Children not breastfed have increased incidence of infection and breastmilk substitutes alter the gut microflora in such a way that can act as to act as an adjuvant for ingested food proteins, increasing the risk of sensitisation

Human milk has functional immunomodulatory and anti-inflammatory factors that reduce macromolecular intake (35).

Bottle-feeding provides regular exposure to many microbial agents and foreign proteins that may cause sensitisation and other problems in infants, especially in those who are at high risk for development of allergic symptoms (36). Babies can be exposed to antigens via their mothers' milk however, the incidence of allergy as a result of this exposure is very low and it is possible that this low level exposure may induce tolerance rather than sensitisation (37). Nevertheless, in cases where there is a strong family history of allergy it may be advisable for mothers to avoid consuming common dietary allergens.

It is not uncommon for babies to be exposed to cows' milk protein via infant formula in the first few days of life in hospital (38). It is possible that this may initiate sensitisation to this protein in susceptible individuals so that subsequent exposures may then result in allergic responses (35). The use of banked human milk where a mother's own milk is unavailable would entirely remove this risk factor.

Otitis media

Research has consistently found that babies who are not breastfed are at increased risk of suffering from otitis media, otherwise known as middle ear infection (39). Children not breastfed have between 60 and 100% increased risk of developing otitis media (40-42) and at about double the risk of suffering from recurrent otitis media (42, 43). Shorter breastfeeding duration increases the likelihood of otitis media (44). Recurrent otitis media is particularly problematic because of the impact that it can have on hearing. Recurrent otitis media is associated with mild, fluctuating hearing loss (45). Since the first few years of life are critical for language development recurrent otitis media in infancy and toddlerhood can negatively affect children's language acquisition. Research has found that up to 70% of children with a history of recurrent otitis media exhibit a language delay resulting in an increased need for speech therapy services (46). Hearing loss and language delay early in life have a flow on effect on academic learning in the early years of school. Children with a history of recurrent otitis media are also at an increased risk of having difficulties with learning to read in middle childhood necessitating an increase in the need for remedial education programs (47). This is another example of the impact of early nutrition on later health and wellbeing.

Breastfeeding may provide protection against otitis media because babies are often held in a more upright position when breastfed, or because of anti-infective and anti-inflammatory agents present in breastmilk (41).

Gastroenteritis

Gastroenteritis is common disease in young children. In 1993-1996 there were approximately 20 000 hospital admissions in children under 5 years in Australia (48). Rotavirus infection is thought to account for half of all hospital admissions for severe diarrhoea and in Australia the cost of hospitalisation for each case is estimated at \$1700 per episode per child and cost of care in the community is estimated at \$440 per child (49). Children who are not breastfed have been found to be 3 times more likely to contract rotavirus infection and children who are not breastfed will also be sicker than breastfed children who contract rotavirus (50, 51). One study found that babies who were not breastfed had an 800% increased risk of being sick enough with rotavirus to require a doctor's visit (52). Other research has found that babies who are not breastfed have a 200-500% risk of developing gastroenteritis caused by non-viral pathogens (53). Breastfeeding provides protection against infections such as gastroenteritis because human milk contains several specific and non-specific anti-infective factors and because it may prevent the mucosal attachment of potential pathogens (54). The Federal Government is currently considering adding a rotavirus vaccine to the Pharmaceutical Benefits Scheme. However, serious illness due to rotavirus is largely preventable by breastfeeding. Since breastfeeding is also protective against many other illnesses it makes economic sense to place resources into breastfeeding promotion to reduce the need for expensive medical intervention.

Respiratory infections

Early feeding affects the incidence and severity of respiratory illness. Australian research has identified that in the first year of life babies not exclusively breastfed for 2 months or at least partially breastfed for 6 months are 1.4 times more likely to have 4 or more hospital or doctors visits because of upper respiratory tract infections. Babies not exclusively breastfed for 6 months are 2 times more likely to have two or more hospital or doctors visits and 2.6 times more likely to be hospitalised for wheezing lower respiratory illness (bronchiolitis or asthma). Cessation of breastfeeding before 12 months is associated with a 60% increased risk of 2 or more hospital visits for wheezing lower respiratory illness (55).

Breastfeeding is protective against respiratory illness because breastmilk contains antibodies that neutralise some pathogens associated with respiratory infection (56).

Urinary tract infection

Babies who are not breastfed are 5 times more likely to suffer from urinary tract infection in infancy than children who are breastfed (57). They are also more likely to suffer from urinary tract infections up until at least 6 years of age. It is thought that breastfeeding is protective because the urine of breastfed infants contains substances that inhibit the adhesion of pathogens such as *E. coli* to uroepithelial cells and also because breastfed infants may have more stable and less pathogenic intestinal flora (58).

Sudden Infant Death Syndrome (SIDS)

While it is not possible to identify which babies will fall victim to SIDS, this tragic event is not completely unpredictable. SIDS is much more prevalent in socio-economically deprived populations and these populations are those least likely to breastfeed their babies (59, 60). Background epidemiological characteristics of SIDS victims and their families include low birth weight, short gestation, young maternal age, high parity, sole parent caregiver, parental smoking, parental alcohol

consumption and bottle-feeding. Every study investigating causes of SIDS has found that babies that are not breastfed are on average twice as likely to die and this relationship often remains after statistical adjustment (61-63). However, since not breastfeeding is also associated with socio-economic deprivation the impact of breastfeeding on SIDS sometimes disappears in statistical adjustment for socio-economic background (60, 61).

Nevertheless, there are some reasons why babies not breastfed might be more vulnerable to SIDS. Children who are not breastfed sleep more deeply and may have higher arousal thresholds than breastfed infants, impairing their ability to respond to the life-threatening situation that results in SIDS (64). Breastfeeding also provides protection against some pathogens implicated in SIDS such as *S. aureus* and *C. perfringens*. (65). Infants who die of SIDS are also more likely to have recently suffered from illnesses (the most common being respiratory infection) to which non-breastfed babies are more vulnerable (66).

Childhood cancers

The reasons why some children develop cancer are not well understood. Nevertheless a number of factors have been implicated in increasing the risk of development of cancers in childhood including early nutrition. Research indicates that children who are not breastfed are at between a 75% to a 600% increased risk of developing any cancer (67, 68). Research has found that artificial feeding increases the risk of developing Hodgkin's disease, non-Hodgkin's lymphoma, acute lymphoblastic leukaemia and acute myeloblastic leukaemia (68-70). However, there is a lot of variation in research results. Nonetheless, studies have generally found that breastfeeding duration is important. Cancer risk is greatest in babies not breastfed at all compared to those breastfed for the longest duration. Childhood cancer has been associated with immunodeficiency and infection (71). Since human milk is protective against infection and stimulates the early, normal development of the immune system this may explain why babies who are not breastfed are at greater risk of developing cancer (72).

Children born with a disability

In instances where a child's disability involves a cognitive impairment early nutrition can be particularly important because premature weaning causes a 3-8 point IQ deficit (73-75). A deficit of this magnitude at the lower end of function increases the need for resources in special education at a population level and at, an individual level, may make the difference between living independently or being in need of intensive support. Lester et al (76) provides a detailed description of the additional health and educational costs flowing from the average 3 point IQ deficit caused by cocaine exposure in utero.

When a child is born with special needs of any kind the development of the mother-child relationship is impacted (77). However, breastfeeding can assist in the development of the mother-child relationship because hormonal and mechanical aspects of breastfeeding promote maternal responsiveness (78).

Mothers of babies born with a disability need additional support to breastfeed. Some disabilities prevent direct breastfeeding and mothers need additional support to express milk for their babies. Some disabilities may make children more vulnerable to the impact of premature weaning. For example, children born with a cleft palate have a eustachian tube dysfunction that makes them extremely vulnerable to otitis media (at a 300% greater risk)(79). Children with cleft palates fed infant formula rather than breast milk are much more likely to suffer from otitis media and the shorter duration of breastfeeding, the greater the incidence (79). However, children with clefts are often difficult to feed, most cannot be breastfed directly, prior to cleft repair (79). Some babies are unwilling to breastfeed after repair. Thus, babies with clefts often receive breast milk for a shorter

length of time than non-cleft affected babies despite their increased health needs due to their disability and surgical intervention (79, 80). Cleft affected babies provide just one example of the impact infant feeding has on the health of children with disabilities and demonstrate the need for increased assistance to maintain breastfeeding for children with disabilities.

Oral and Dental Health

Breastfeeding is important for the normal development of the oral cavity. In infants the palate is soft and malleable. Breasts are also soft and malleable and during breastfeeding the breast applies an even and dispersed pressure to the palate via the normal peristaltic movement of the tongue as it massages rather than sucks milks out of the breast (81). This results in individuals who were breastfed being more likely to have a healthy, broad palate, without malocclusions or improper alignment of teeth (81, 82).

In contrast, bottle teats are hard and a piston-like suckling with negative pressure is used to obtain milk from a bottle. The relatively strong and concentrated pressure associated with bottle-feeding can deform the infant's palate leading to a greater risk for poor alignment of the teeth and malocclusions (83). Dummy and finger sucking are associated with restricted breastfeeding and with premature weaning from breastfeeding (82). They are also associated with malocclusions such as cross bite, reduced arch width, open bite and tongue thrust. In addition, when the palate is narrowed and heightened by bottle-feeding it may infringe on the upper airway (81). It has been found that a high and narrow palate is a good predictor of snoring and obstructive sleep apnoea, both of which contribute to significant health problems in adulthood (84).

Research has found that babies fed formula, reconstituted using tap water containing fluoride, may consume amounts of fluoride far in excess of the recommended intake of fluoride (85, 86). These excessive levels of fluoride may cause dental fluorosis in the permanent teeth of children (85). Antibiotic use in the first 6 months of life (more common in babies who have been weaned from breastfeeding) can also cause enamel defects in the permanent teeth of children (87).

Preventable accidents, injury and child abuse

Epidemiological research in the US has looked at the impact of infant feeding on post-neonatal mortality. It has been identified that babies who are never breastfed are 27% more likely to die in their first year than babies who are ever breastfed (88). Some of the reasons for the increased death rate in never breastfed infants are related to increased rates of illnesses in non-breastfed babies. However, an examination of cause of death found that babies who had never been breastfed were at 69% increased risk of death from accidents (88). The relationship between not breastfeeding and increased mortality from accidents has been found before (89) and may be related to the absence of physiological and physical factors associated with breastfeeding that help prevent accidents. Breastfeeding women are physiologically different from women who are not breastfeeding and hormones that are released in response to breastfeeding act on the central nervous system of mothers to promote maternal behaviour (90-92) and reduce their response to physical and emotional stress (93). This enables breastfeeding women to be more responsive to their babies and to want to be closer to them (94-96). Thus, breastfeeding encourages maternal care giving and closer maternal-child proximity and this may directly decrease the risk of accident through increased adult supervision and increased maternal-child attachment (97, 98).

Because of the potential for breastfeeding to promote maternal-child attachment (78) there is also the potential for breastfeeding to reduce child abuse amongst vulnerable populations such as where children are born prematurely (99, 100) or where there is a history of intergenerational relational trauma (78).

It is worth noting that there is a dose dependent relationship between post-neonatal death and breastfeeding and babies who were never breastfed are at a 61% increased risk of death as compared to babies who were breastfed for 3 months (97). Since research has only examined whether death due to accident is affected by infant feeding, it is not possible to state with certainty whether non-fatal accidents are also more likely in babies who are not breastfed, however, it seems reasonable to surmise that this would be the case.

The link between breastfeeding, premature weaning and later mental health is one that has received little attention from scientists (although there has been a small amount of work in this area (101)) and more research is needed in this area.

Other conditions

Some research has found an increased risk of developing ulcerative colitis, Crohn's disease and coeliac disease in individuals who were formula-fed as infants (102).

Long term impacts of breastfeeding

The impact of breastfeeding continues beyond weaning. Children weaned earlier continue, for 2 or more years after weaning, to suffer more ill health than children who were breastfed for longer (20, 103). This finding supports the idea that breastfeeding enhances the normal development of the immune system and conversely that premature weaning from breastfeeding retards the development of the immune system.

It has been found that children who were not breastfed are more likely to require antibiotic treatment at 18 and 30 months at least 3 times in the preceding 6 months as compared to babies breastfed (not exclusively) for at least 4 months. Antibiotic medication is commonly used to treat respiratory illness and otitis media. The duration of exclusive breastfeeding is significant in determining the likelihood of a child developing these conditions. One recent study found that children who were fully breastfed (meaning breastfed without supplementation with other milks) for between four and six months were 4 times more likely to suffer from pneumonia and 2 times more likely to suffer from recurrent otitis media up until the age of 2 years than those breastfed for 6 months or more (104).

There is compelling evidence to suggest that premature weaning is associated with increased risk factors for later cardiovascular disease (105). There is evidence to show an association between adolescents who were prematurely weaned and a higher systolic blood pressure. It appears that this effect is dose related; blood pressure increased as the proportion of human milk received in the neonatal period decreased. It has been estimated that as a non-pharmacological intervention, in the adult population this has the potential to reduce hypertension by 17%, the risk of cardiovascular disease by 6% and the risk of strokes and transient ischaemic attacks by 15%. Data collected from the same sample group also showed evidence for the beneficial effect of breastmilk on later blood lipid profiles and again there is dose-dependant relationship. Estimates on an adult population suggest that the observed effect on lipid profiles by using human milk could reduce the incidence of cardiovascular disease by 25% and mortality by 13-14%. Furthermore, the 10% lowering of LDL-cholesterol is greater than that seen in dietary interventions in adults. These estimates suggest that the promotion of breastfeeding is an important public health strategy to reduce population levels of blood pressure (106).

Impact of Breastfeeding on the Health of Mothers

Breastfeeding also has an impact on the health of mothers and has been found to reduce the incidence of hip fracture, breast cancer, rheumatoid arthritis, ovarian cancer and diabetes.

Hip fracture

Hip fractures are common in elderly women and have a high mortality and morbidity. However, women who breastfeed their children have a reduced risk of hip fracture. The reduction of risk is dependent on duration of breastfeeding. One study of Australian women who had breastfed each of their children for 9 months or more reduced their risk of hip fracture by 72% as compared to women who had not breastfed their children (107). There is evidence that the risk of hip fracture continues to decrease with breastfeeding beyond 9 months per child (108).

Breast Cancer

Breast cancer is the most common type of cancer and cause of cancer death in women in Australia. Breastfeeding reduces the risk of a woman developing breast cancer in a very strong dose dependent relationship. It has been estimated that each 12 months of breastfeeding reduces the risk of breast cancer development by 4.3% (109) and that the impact of breastfeeding on breast cancer reduction increases with long-term breastfeeding such that women who breastfeed each of their children for 2 years or more up to halve their risk of developing breast cancer (110). A recent meta-analysis concluded "*the lack of or short lifetime duration of breastfeeding typical of women in developed countries makes a major contribution to the high incidence of breast cancer in these countries*" (Collaborative Group on Hormonal Factors in Breast Cancer, 2002). It is thought that breastfeeding may reduce the risk of breast cancer because it reduces the exposure to the cyclic hormones of reproductive life; it induces physical changes in the breast associated with breastfeeding that may be protective. Breastfeeding also reduces concentration of toxic organochlorins in the breast and breastfeeding may activate factors that suppress the growth of breast cancer cells.

Rheumatoid arthritis

Hormonal factors are involved in the development of rheumatoid arthritis and since breastfeeding can impact the hormonal milieu of women in the long term it is not surprising that lactation history can affect the likelihood of women developing rheumatoid arthritis (111). A very large prospective study found that women who had a lifetime breastfeeding duration of 12 months had a 20% decreased risk of developing the condition and women who had a lifetime breastfeeding duration of 2 years or more had a 50% decreased (ie halved) risk of developing rheumatoid arthritis as compared to women who had breastfed for 3 months or less (112).

Ovarian Cancer

Breastfeeding also impacts the likelihood of women developing ovarian cancer. Research has found that breastfeeding for 2-7 months results in an average 20% reduction in incidence of ovarian cancer (studies have found up to a 50% reduction with the relationship being dose dependent) (113).

Diabetes

A recent study found that each year of breastfeeding reduces the risk of developing Type 2 diabetes by 15% in young and middle aged women even when BMI and other risk factors are controlled for (114). It is thought that this may be because breastfeeding improves the stability of glucose levels in women.

Indigenous Health

Breastfeeding may be more important to the health of indigenous children because of the overall poorer health of Aboriginal children. As stated by James Grant, the former Director of UNICEF

"Breastfeeding is a natural "safety net" against the worst effects of poverty. If the child survives the first month of life (the most dangerous period of childhood) then for the next four months or so, exclusive breastfeeding goes a long way toward cancelling out the health difference between being born into poverty and being born into affluence.... It is almost as if breastfeeding takes the infant out of poverty for those first few months in order to give the child a fairer start in life and compensate for the injustice of the world into which it was born."

Traditionally Aboriginal people breastfed their children for several years and in remote areas of Australia this continues (115). However, in urban and non-remote rural areas of Australia breastfeeding rates amongst Aboriginal mothers are as low as those of non-indigenous mothers (115) (116). However, that Aboriginal mothers breastfeed for as long as or longer than mothers in the general population and that there is a strong cultural history of long-term breastfeeding provides a positive basis from which to build health promotion programs in Aboriginal communities.

2. BREASTFEEDING RATES IN AUSTRALIA

The Australian National Health and Medical Research Council's (NHMRC) Dietary Guidelines for Infant Feeding reflect the World Health Organization (WHO) recommendation that infants be exclusively breastfed for the first six months of life, with ongoing breastfeeding until two years and beyond with appropriate complementary foods (117). Despite this policy support, Australia has a poor record when it comes to exclusive breastfeeding and breastfeeding duration.

The NHMRC has set breastfeeding targets for Australia. It recommends a 90% initiation rate and 80% of infants to be breastfed for at least six months of age (118). With approximately 87% of women initiating breastfeeding this target is close to the NHMRC goal (119). This also suggests that the overwhelming majority of women want to breastfeed their babies. However, less than half of babies continue to be breastfed at 6 months of age, 23% are breastfed at a year and only 1% of children breastfed at 2 years of age (120).

Figures from the latest National Health Survey (NHS) in 2001 (120) showed that sustained fully breastfeeding rates remain very low, with fewer than one in three of all babies aged less than six months being exclusively breastfed. In particular, there has been little if any improvement in the number of mothers and babies breastfeeding exclusively for the minimum recommended six months. That is, less than half of Australian babies reach the normal standard for human nutrition.

Australia still has no reliable national data collection system in place to effectively monitor infant feeding practices. The last nationally reliable data was sourced by the Australian Bureau of Statistics in 2001 but there are no recent figures to monitor trends in infant feeding practices. A recent NSW Health survey seemed to indicate that exclusive breastfeeding rates had increased in NSW but the methodology of the data collected is flawed in the definition (i.e. babies could receive infant formula or other foods 6 days out of seven and still be classified as "exclusively breastfed") (121). The recommendations outlined in the preliminary report 'Towards a national system for monitoring breastfeeding in Australia: recommendations for population indicators, definitions and next steps' (122) have not been implemented since the report was released in 2001. National monitoring of breastfeeding practices is inadequate.

3. ECONOMIC COSTS OF PREMATURE WEANING

The cost attributed to the hospitalisation of prematurely weaned babies alone is around \$60-120 million annually in Australia for just five common childhood illnesses (123). Conversely, any decline in breastfeeding from current levels has substantial and adverse cost implications for the public health system.

Premature weaning from breastfeeding results in an unnecessary disease burden on our health care system. There is a limited amount of research that has quantified this burden. One study (US) looked at just three illnesses (lower respiratory tract illness, middle ear infection and gastrointestinal illness) and found that for every 1000 babies never breastfed as compared to 1000 babies exclusively breastfed for 3 months there were 2033 extra visits to the doctor, 212 extra days of hospitalisation and 609 extra prescriptions in the first year of life (124). It is therefore not surprising that increasing breastfeeding rates have been shown to decrease the frequency of illness at a community level (125).

A recent study from a developed country population found that hospitalisation rates for children under 12 months could be more than halved if all babies were fully breastfed for 4 months or more (126).

Breastfeeding is something that belongs to women. There is no commercial interest in fostering increased breastfeeding rates. Therefore breastfeeding has been largely ignored in terms of its economic contributions and is not currently included in the national product statistics whilst formula and its products are. Breastfeeding currently has a negative impact on the economy. *If more mothers breastfeed, the national accounts measure this as a fall in national food output and GDP, because more breastfeeding lowers commercial infant food sales and reduces spending on health care.* (127). By including breastmilk production and consumption in the national food output and GDP there are substantial economic gains from a resource that costs so little to produce and the follow-on effects of good health which reduces public expenditure on health. It had been earlier suggested that if the WHO targets for breastfeeding were achieved in Australia the economic contribution of breastfeeding would amount to more than \$3.4 billion per annum (128).

A farmer can currently milk a cow and feed that milk to his baby. That milk will be included in the gross domestic product and food statistics. So while a farmer can claim exemption for the GST for expenses related to milking machinery, a mother with a baby who has a cleft palate and needs to use a breast pump cannot. This inconsistency does not value the contribution made by women and breastmilk.

4. MARKETING OF BREASTMILK SUBSTITUTES

History

In 1981 the WHO recognised the promotion of infant feeding products as a factor in the global decline in breastfeeding. In response, member states (including Australia) and non-government organisations developed the International Code of Marketing of Breastmilk Substitutes, which was subsequently adopted as a resolution by the World Health Assembly (WHA 34.22 1981). It is generally accepted that adherence to the International Code ensures that infant feeding products are marketed ethically, in ways that do not undermine breastfeeding or women's confidence in

breastfeeding. In response to a call for research to determine whether advertising affects infant feeding behaviour, the World Health Assembly stated in 1994 that the advertising of infant feeding products is 'singularly inappropriate' and that the onus should be placed on advertisers to establish that their promotional activities *do not* affect infant feeding behaviours or undermine women's confidence (WHA47/1994/REC/1/ 1994). The Australian Breastfeeding Association urges the Committee to heed the recommendation of the World Health Assembly and place the burden of proof in the matter of the effects of advertising on industry and to require that any evidence offered comes from a reputable peer-reviewed journal.

The WHA updates the International Code regularly and there have been a number of subsequent clarifying resolutions. In one of those subsequent resolutions (WHA 39.28 1986), the World Health Assembly denounced the use and promotion of 'follow up milks'. This is a product category that includes toddler formula and is packaged to closely resemble infant formula. It is usually marketed as suitable for children from six months old. It is sometimes called 'follow-on formula', 'progress formula', 'growing up milk' or simply 'forward'.

In response to WHA 34.22, the then Commonwealth Department of Health Housing and Community Services (now Department of Health and Ageing) developed the Marketing in Australia of Infant Formula: Manufacturers' and Importers' Agreement -1991 (MAIF) (Australian Government Department of Health and Ageing 1992). This is a voluntary agreement undertaken by members of the Infant Formula Manufacturers' Association of Australia (IFMAA) and administered by a secretariat of the Department of Health and Aging (funded in part by the signatories) that restricts the advertising of infant formula to the general public and through the health care system. Its scope is significantly more limited than that of the International Code in that it only applies to signatories, has no sanction attached to violations, is not actively monitored, does not restrict retailer activity and does not restrict the advertising of infant feeding bottles and teats. It does, however restrict the advertising of infant formulae marketed for use by children under a year old. (The Australian legal definition of 'infant' is a person under 12 months old (Minchin 1998).

Observations and Concerns

The Australian Breastfeeding Association and its members have observed a noticeable increase in the volume of advertising for infant feeding products in the community. Our members have sent us copies of advertisements and marketing materials that have appeared in parenting and women's magazines, been distributed through pharmacies, have arrived in their mailboxes and for the first time in many years our members have reported advertising on television.

Coincidentally, our helpline counsellors also report fielding a growing number of calls from mothers who are confused about the place that infant formula ought to play in their infants' diets. The Association's trained breastfeeding counsellors report that the mothers who contact them for support are generally unaware that there are health risks associated with the routine use of infant formula and wonder aloud why they should persevere with breastfeeding when they have been told that 'babies thrive on formula' or 'modern infant formula is so close to breastmilk that it doesn't really matter'. Mothers frequently call the Association's Helpline to ask which formula 'is made from breastmilk' or 'has all the same things in it as breastmilk'. In response our counsellors generally quote from the NHMRC's Infant Feeding Guidelines for Health Workers:

'The prices of different infant formulas ... are not related to quality or nutritional value. All infant formulas sold in Australia meet the relevant nutritional and quality control standards. ... Interchange between formulas within the same generic group is optional and can be decided on the basis of cost.'
(129)

or refer mothers to their health care providers.

Many mothers call our helpline believing that they are not producing enough milk to satisfy their infants. According to the ABS, this is the most common reason women give for weaning their infants onto infant formula in the first three months (120). Upon questioning, these mothers usually report that their infants want to feed very frequently in the evening, only sleeping for a few minutes and then waking and crying for another feed. This behaviour is common in newborns and is rarely an indicator of inadequate milk production (130). It is best managed by meeting the infant's feeding needs (since a full feed can be synthesised in 20-30 mins (130)). Mothers are usually rewarded with the baby's longest sleep stretch of the day. Often these mothers are considering, or have been advised to introduce a bottle of infant formula in the evening. Our counsellors have seen an increase in this sort of enquiry since the launch of the Bayer Infanurture Put feeding problems to bed campaign which includes copy that reads, *'More than half of all babies may suffer from various feeding problems. The signs of distress include constant crying, difficulty settling and sleeping only briefly before waking and crying again. [Appendix One]*

The Association's counsellors are also concerned that many mothers call the helpline, believing that their infants are suffering from diarrhoea because they have frequent, unformed or watery bowel motions. A sharp increase in this kind of query followed the launch of Bayer's Infanurture range of specialty infant formulas that includes a product claimed to be suitable for infants with diarrhoea. The advertising for this range of products included a 'disease state awareness' strategy that states *'If the stools are loose and watery, occurring more than three times in one day, then your baby may have diarrhoea'. [Appendix Two]* Even more concerning is that this campaign describes this normal newborn feeding behaviour (frequent feeding, frequent stooling and hunger) as 'feeding problems' that can be cured by using one or other of its infant formulas.

The brochure produced by Wyeth Nutritionals, entitled Bowel Habits and Constipation in Babies [Appendix Three]. It describes the motions of breastfed babies as *'soft and glue-like. The smell is slightly sour – similar to that of sour milk'* and *'there may be quite large variations in colour number and bulk, all of which are affected by the mother's diet'* and *'breastfed babies can pass up to 15 bowel motions every day'* and this is later compared to formula fed babies who *'can pass 2-4 bowel motions per day'*, *'formula fed babies will pass bowel motions that are firmer but otherwise similar to those passed by breastfed babies'*.

Lawrence and Lawrence (131) describe the stooling pattern of breastfeeding infants thus, 'after a few days, the stool becomes yellow. The stools are loose and seedy in consistency ... with a minimum of four seedy yellow stools per day. Over the next month, a breastfed baby should have a stool every day.' p310. Brodribb's (130) description is similar: 'The odour is usually slight and not unpleasant. Once a baby is about six weeks old, stool frequency ranges from every feed time to once every 7-14 days, although stools are usually easy to pass.'

Wyeth's description of breastfed babies' bowel motions as *'glue like'* is not only inaccurate but also conjures unpleasant images of a difficult to clean nappy. We are sure that the Committee would agree that the odour of sour milk is a long way from *'slight and not unpleasant'*. This description, combined with the promise of 15 such nappies to change in a day, compared to 2-4 for formula fed infants, creates the impression that artificially fed infants are easier to manage, less work and smell better than breastfed infants. There is no evidence to support such an impression. In fact, Riordan & Auerbach (132) report that *'the bottle fed infant tends to pass larger and more odorous stools more frequently [when compared to the breastfed infant]'*. Another study comparing the stools of breast and formula fed infants describe the latter as *'malodorous'* and *'noxious'* (133). Furthermore there is no evidence that breastfed infants' motions are affected by maternal diet. Given that maternal diet does not substantially change milk composition (131), we think that this is unlikely.

We note that the content of this leaflet is reproduced in another handout aimed at mothers and distributed through pharmacies. This handout is called 26 Points Regarding Bowel Habits and Constipation in Babies and is part of Wyeth's '26 Ways' marketing series. Wyeth's infant formula range is called S26. This range of leaflets is also available directly to mothers via the Wyeth Nutrition Website and may function to create and maintain brand salience in the minds of mothers. However, because these leaflets do not contain an explicit reference to a proprietary product name, they lie outside the scope of the MAIF Agreement. We also note that these leaflets and a number of other means are used to solicit contact with mothers via the 'Wyeth Careline' or the online 'Wyeth Mums' Club'. We are still waiting to hear whether the APMAIF has ruled this solicitation a breach of the agreement.

We could spend many pages appraising the marketing material that mothers known to the Association have collected. It is not our wish to consume the resources available to the Committee in this way. However, we would like to draw the Committee's attention to small sample of problematic materials.

We also note an increasing trend in the marketing materials to equate infant feeding products (or components of them) with human milk or breastfeeding. We include a number of examples for your interest. Of particular interest are the Tommee Tippee 'Closer to Nature' infant feeding bottle [Appendix Four] and the Nutricia, Choosing the right milk for your baby [Appendix Five] leaflets.

There are a number of studies that refute the claim that any infant feeding bottle or teat can help women to '*combine breast and bottle feeding for longer*'. There is good empirical evidence that '*Even with a modified bottle and teats, bottle-feeding differs from breast-feeding.*' (134) and '*The continuation of breastfeeding was poorer if the infant already had become used to bottle-feeding.*' (135) There is no reference in this promotion to the risks associated with the use of bottles that include premature weaning from breastfeeding (135) and malocclusion (83). The Association is aware that the use of infant feeding bottles is at times unavoidable; we believe that mothers have a right to disinterested, accurate information about the potential risks associated with the use of commercial infant feeding products and alternatives, such as cup or spoon feeding.

The graphics and text in Nutricia's leaflet suggest that infant formula contains the same nutrient profile as human milk. In reality, Nutricia, choose to name only a handful of the hundreds of complex nutrients in human milk – those which they also claim to have added to their product. In fact there is no evidence that isolated nutrients added to infant formulae are functionally equivalent to those found in human milk. This is because it is the combinations of nutrients, enzymes, hormones and living cells that enable nutrients in human milk to function as they do in the bodies of human infants (136). Human milk is complex and dynamic. It changes as the baby grows, it changes throughout any given feed and its composition shifts diurnally as well (131). There is no mention in this leaflet of the risks associated with routine use of non-human milks, such as increased rates of numerous acute and chronic infectious and non-infectious diseases (129, 137).

None of the materials described is captured by the scope of the MAIF Agreement (nor are any of those attached), which only applies to the advertising of infant formula (not to bottles and teats and not to branded marketing materials that do not contain proprietary product names). Our members report that their complaints to the APMAIF are rarely found to describe a violation of the agreement. This suggests that the scope of the agreement is too narrow to protect families from the persuasive marketing strategies employed by the manufacturers, importers, distributors and retailers of breastmilk substitutes.

Partial restrictions on advertising and marketing are notoriously ineffective and difficult to monitor, as has been demonstrated in the case of tobacco (138). In many countries, such as the UK, the use of

the words 'humanised' or 'maternalised' to promote infant formula is illegal. This does not prevent advertising that claims that infant formula contains ingredients 'like breastmilk' or that the formula is 'closer than ever to breastmilk'. Such circumvention of the intention of regulation makes it clear that a total restriction on the marketing of breastmilk substitutes is required. The ABA is in agreement with the WHO that infant formula is a special category of product, the advertising of which is singularly inappropriate (139).

Advertising of infant feeding products by retailers such as pharmacists and supermarkets also falls outside the scope of the MAIF. This means that Guardian, Amcal and Blooms Chemist franchises are able to advertise their own brands of infant formula with impunity and supermarkets are similarly able to market infant formulas on behalf of the manufacturers. It also means that advertising for infant formula arrives unsolicited in the mail boxes of every Australian family on a regular basis. The advice of Rob Knowles in his Independent Report on the Composition and Modus Operandi of APMAIF and the Scope of the MAIF Agreement (2001) has largely been ignored. He said, '... there is a need for pharmacies and supermarket chains to be included as part of the public Health Strategy, as there is no doubt that some practices used in the retail sector can undermine breastfeeding.'

The widespread use of the Internet and loyalty clubs for advertising was unimagined in 1992, when the MAIF Agreement was drafted. The Association is concerned that the information posted on the websites of infant feeding product manufacturers under the guise of 'education' undermines women's confidence in their ability to breastfeed. Wyeth Nutrition displays the following information under the banner 'Nutritional Needs':

Producing breast milk requires a lot of energy

In terms of nutrition, your breastfeeding baby is demanding a lot more of you now than he or she did when you were pregnant. That's because his or her growth is so much more substantial. In the first 4 months of life, a baby typically doubles the birth weight that it took 9 months of pregnancy to achieve.

The breast milk production required to support this growth is considerable. To support 1 month of breastfeeding, you will use as many calories as you did during your entire pregnancy.

Good nutrition optimises breast milk quality and quantity

Lactating mothers who are significantly undernourished produce less milk each day, and chronically low maternal intake of some vitamins and minerals may result in milk that contains low amounts of these essential nutrients. Also, important proteins that help protect your baby from infection may be secreted in reduced amounts if you are not well nourished.

This copy reinforces the impression that human milk is an unreliable source of nutrition for infants that is highly dependent on the mother's diet for its nutritional quality. It also suggests that breastfeeding mothers must ingest greatly increased quantities of food to support lactation. This is simply untrue. Lawrence & Lawrence and the NHMRC refer to overwhelming evidence that milk quality and quantity is largely unaffected by maternal diet and only the most severe malnourishment, the likes of which is rarely seen in industrialised countries such as Australia, compromises lactation (129, 131). Lawrence & Lawrence also point out that onerous dietary rules are perceived by mothers as a barrier to breastfeeding. This finding is supported by the many mothers who contact the Association reporting that they are concerned that their diet is not as healthy as it could be, and asking if infant formula might be a better choice for a mother who 'doesn't eat well'.

The Australian Breastfeeding Association has also observed an increase in advertisements for 'toddler formula' that claim similarities to human milk. We are concerned that mothers might

mistakenly equate the advertising of toddler formulas with advertising for infant formula or extrapolate the claims made about toddler formulas to infant formulas, given that they are almost identically packaged. It is known that British mothers are misled by advertising for these products. In the UK, the advertising of milks designed to replace human milk in the first six months of life has been illegal since 1995. A 2001 study of infant feeding attitudes in the United Kingdom found that 60% of respondents were unable to differentiate between advertising for infant formula and advertising for 'formula for older babies and toddlers' (In the UK this formula is marketed as suitable for infants between 6 and 18 months old.) Of those respondents who reported seeing advertising for infant formula, 31% reported that these advertisements claimed that the product 'is as good as breastmilk' and 16% reported that it claimed to 'makes babies healthy' (140). A similar survey conducted by the UK Department of Health, almost concurrently, reports very similar responses (141).

We have included examples of several other marketing leaflets and tools that undermine breastfeeding by failing to clearly explain the established health risks associated with routine artificial feeding. We would very much like to appear before the Committee to assist the members to understand the subtle ways in which this material undermines mothers' efforts at breastfeeding. In fact, we would very much like to be able to answer, in person, any of the committee's questions regarding our submission.

Advertising research

The marketing of infant formula is known to have a negative impact on breastfeeding.

Donnelly and colleagues' (142) Cochrane review concluded that receiving commercial material on discharge from maternity hospitals reduced the incidence of exclusive breastfeeding at all time points and the age at which solid foods were introduced. Studies that examine the risk factors for early termination of breastfeeding suggest that early use of breastmilk substitutes (within the first month) is negatively associated with overall breastfeeding duration (143, 144). The Association receives regular reports from mothers who have been given free samples of infant formula (often by health professionals) or who have seen this happen.

Howard & Howard (145) found that women who received commercially branded educational materials about infant feeding while pregnant were five times more likely to stop breastfeeding in the first two weeks than women who received unbranded materials. Receiving branded education materials shortened duration of exclusive breastfeeding and overall breastfeeding duration for women with uncertain breastfeeding goals or breastfeeding goals less than three months.

Drawing on the work of Ehrenberg, Hoek & Gendell (2006) argue that while advertising may not persuade people to change their behaviour in the short term, its power is in the reinforcement of accepted, unhealthy behaviours. Ehrenberg & colleague's (1997) argument is that advertising's most powerful role is to maintain brand salience in the minds of consumers and so to reinforce established buying behaviours. In this view, advertising of toddler formulas in packaging that closely resembles that of infant formula would function as a tool to maintain the salience of infant formula brands in the minds of mothers and play a part in reinforcing unhealthy infant feeding practices.

Li and colleagues' (146) analysis of data collected as part of the American HealthStyles Survey found that, between 1999 and 2004, there was a significant increase in the rate of agreement with the statement 'Infant formula is as good as breastmilk'. This is significant because there has been a simultaneous decline in the proportion of mothers in America who initiate breastfeeding. The authors noted that during the period under examination, infant formula companies had utilised an advertising strategy that described their products as 'like breast milk'. They concluded that this

attitudinal change might be expected to influence infant feeding behaviour, since 'The perception that infant formula is as good as breastmilk would be expected to soften a woman's commitment to breastfeeding should she be faced with obstacles to doing so' (146, p126). Binns and Scott (147) reported that 24% of the Australian mothers in their study who were artificially feeding their babies at hospital discharge believed that infant formula is 'as good' as breastmilk. Analysis of an earlier HealthStyles Survey (148) indicates that while many respondents agreed with the statement, 'breastfeeding is healthier for babies than formula feeding', only a small number of respondents agreed with the statement, 'feeding a baby formula instead of breastmilk increases the chances that the baby will get sick', suggesting that most Americans are unaware of the health ramifications of infant feeding. There is no Australian equivalent to the HealthStyles Survey. However, there is no compelling reason to believe that Australian attitudes about infant feeding differ markedly from those held in the USA.

Closer to home, a series of three papers, the result of a prospective study conducted in the Philippines between 1983 and 1986, has examined the effects of the marketing activities of the infant food industry on 3000 mother infant pairs in Cebu, the second largest metropolitan area in the country (149-151). These studies have applied complex econometric analysis to their questions. Stewart and colleagues (149) found that recall of advertising for infant feeding products amongst rural mothers corresponded with a small but significant reduction in intention to breastfeed. Guilkey & Stewart (151) expand on the earlier analysis of the Cebu dataset examining the effect of infant food industry marketing activity on duration and exclusivity of breastfeeding. In this analysis, they found that exposure to formula advertising increased exclusive artificial feeding rates and decreased exclusive breastfeeding rates (that is it increased incidence of mixed feeding and of infants never breastfed and decreased exclusive breastfeeding). They also found that the distribution of free samples reduced exclusive breastfeeding at two and four months, reduced any breastfeeding at four and six months and increased the use of non-human milks at all ages.

What is interesting about this series of studies is that the Filipino government is so convinced of the link between advertising and poor breastfeeding rates that it has since revised its legislation (known as 'The Milk Code') to ban all advertisement of milk products aimed at children under 2 years old (152). (The changes were due to be enacted in July of 2006 but are subject to Supreme Court challenge by the infant food industry.)

Direct-to-consumer marketing of infant formula and other infant feeding paraphernalia encourages mothers to make important decisions about infant feeding without consulting their health professionals. The messages contained in such materials tend to neutralise the public health messages mothers hear from their health care providers. Marketing materials are designed to increase sales of breastmilk substitutes. In a country with stable or declining birth rates, such as Australia, increased sales of breastmilk substitutes necessarily means declining rates of breastfeeding.

The Australian Breastfeeding Association believes that the MAIF Agreement is not protecting mothers from persuasive (and often misleading) advertising of infant feeding products. Our members report that they regularly receive 'educational materials' about infant feeding that display recognisable brand names or trademarks that are also used to market infant formula. These frequently contain misinformation or information that is strictly correct but framed to provide a positive view of artificial feeding when compared to breastfeeding.

Certainly, the advertising of infant feeding products is not the only barrier that mothers who want to breastfeed face. However, it is one barrier that can be removed by proscribing the advertising of these products altogether, in accordance with the International Code of Marketing of Breastmilk Substitutes 1981.

We exhort the Committee to urge the Federal Government to consider more comprehensive action to protect mothers from the aggressive marketing and promotion of all infant feeding products. The MAIF Agreement is not achieving its stated objective, 'the protection and promotion of breastfeeding'. In his Independent Report on the Composition and Modus Operandi of APMAIF and the Scope of the MAIF Agreement (2001), Rob Knowles advised that,

'If there is not a commitment by industry to co-operatively work with Government of issues that are outside the current MAIF Agreement, then it is recommended that serious consideration be given to legislative reform to achieve the required public health outcomes, and ensure Australia's commitment and integrity to the WHO Code remains strong.'

Fully five years have passed since that statement was made and it seems to the Australian Breastfeeding Association that nothing has changed. We believe it is time 'that serious consideration [is] given to legislative reform to achieve the required public health outcomes'.

5. INTERVENTIONS THAT PROMOTE BREASTFEEDING

Encouraging and enabling mothers to continue breastfeeding is a complex issue and will require a myriad of strategies and a multi sector partnership approach with governments, professionals and the community working together (153) (5).

Breastfeeding Friendly Hospital Initiative (BFHI)

Interventions that support breastfeeding begin with implementing the World Health's Organization Breastfeeding Friendly Hospital Initiative (BFHI) that addresses health care practices that have contributed to the decline in breastfeeding (154).

We are pleased with the support the Australian Government has provided to the BFHI. Currently around 58 hospitals across Australia are accredited including most hospitals in ACT, WA, TAS, NT, SA and many in VIC and QLD. With only 3 hospitals currently accredited in NSW, it is anticipated that in the next few years many of the public hospitals will become accredited with the implementation of the NSW Breastfeeding Policy.

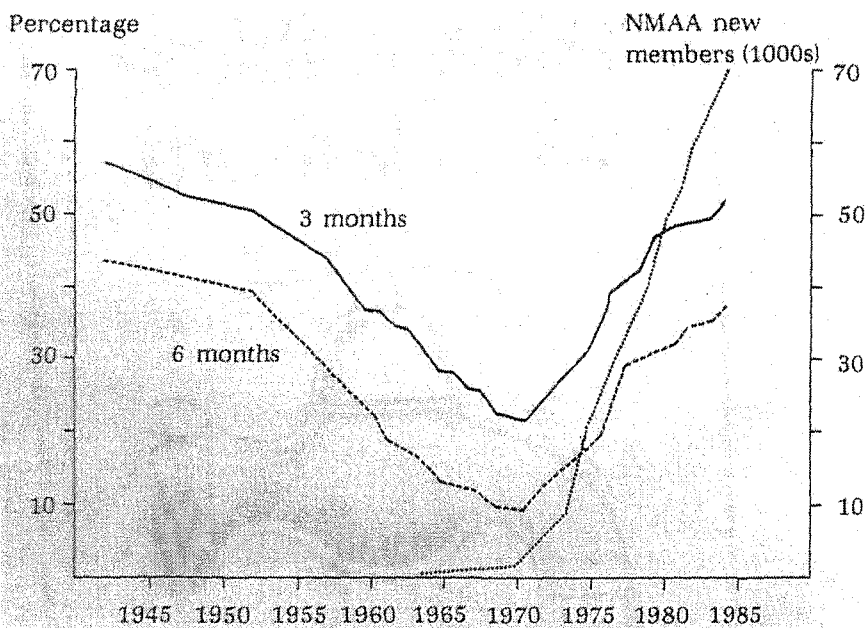
This strategy has proven effective as evidence of our high breastfeeding initiation rates across Australia. However, this initiative on its own is not enough to maintain high rates of breastfeeding.

"I think that having your baby at a "baby friendly" hospital really helps with getting breast feeding established. It took 10 days for my milk to come in, due to blood loss arising from birth complications. The midwives kept an electric breast pump in my room, and encouraged me to express regularly to get my supply up. Once I was home, I then hired one from the chemist. They (the midwives) gave me the confidence to know which pump to hire, and how to use it. This was really important, as these first few weeks were tough"

BFHI has been the foundation on which other components of breastfeeding strategies can now help to maintain the initial high breastfeeding rates.

Breastfeeding Support

Mothers find it difficult to breastfeed in isolation and need the support of their health professionals and the support of other mothers who have successfully breastfed to continue breastfeeding (155). Breastfeeding support groups have been found to normalise women's experiences and are important to the success of continued breastfeeding (156). If decisions to breastfeed aren't reinforced through other role models or networks it is then considered as culturally unacceptable and outside the parameters of the perceived mainstream (157). The strength in mother-to-mother support may lie in the fact that the women providing the support are, or have been in a similar situation to the one coming to them for assistance (158) (159). This provides equality in the relationship within which both empathy and friendship can develop. It has been found that a large part of the reason why women find peer-to-peer groups helpful is due to the psychosocial support they provide, resulting in increased confidence in breastfeeding for the women and greater satisfaction with their breastfeeding experience (160-162). Conversely, lack of confidence has been identified as associated with breastfeeding discontinuation. For some mothers the support they received from mother-to-mother support groups is the only source of support or guidance outside of professional support (163). The Australian Breastfeeding Association has provided women with peer breastfeeding support for over 40 years and has successfully assisted many thousands of women, both members of the Association and the mothers who contact us through the Breastfeeding Helpline or visit our local groups. The following graph, demonstrates a clear association between increasing membership of the Nursing Mothers' Association of Australian (as ABA was then know) and rising breastfeeding rates in the two decades following its establishment (164).



Mothers' groups that are often run as part of community-based health services are not a breastfeeding support group. Mothers' groups have a different purpose; while they can provide support for breastfeeding they can also undermine breastfeeding depending on the mothers who attend them. Mothers' groups are populated by women whose first infants are of a similar age. If most women breastfeed then they offer good support but they can have a negative impact if most women are not breastfeeding. In contrast local Australian Breastfeeding Association Groups are made up of mothers who have breastfed or want to breastfeed their children. In most cases the members' children are a variety of ages and new mothers can benefit from being with more experienced mothers.

“When I started my new mothers group at 6 weeks of age; 8 of the 10 of us were breastfeeding! By the end of the course there were only 2 of us! The pressure I felt to wean was enormous – comments like ‘my baby is soooooo much more settled on the bottle’; ‘they sleep soooooo much better on the bottle’; ‘Bottle-feeding is so much more convenient - you don’t have to be there all the time to breastfeed. Finally, by 3 months, I was the only one still breastfeeding and had nothing in common with these mothers. They did not understand my issues and if I raised any problems I was having I was told “just put her on the bottle”

“I’m lucky enough to have a mums’ group that is very pro breastfeeding. In a group of 11, 9 of us breastfed till 12 months or more and 6 of us now have a second bub all of whom are breastfeeding”

“I don’t know anybody who breastfeeds....NO ONE at all! How sad is that, I feel like the minority.....big time! When my mothers’ group first met up (when the babies were 8 weeks old) I was the only one fully breastfeeding, one other was breastfeeding, but comp feeding formula as well,

A recent systematic review of breastfeeding support shows how lay and professional support impact breastfeeding women. Mother-to-mother support has been shown to increase the duration of exclusive breastfeeding and support from professionals to increase initiation of breastfeeding (155, 165). Both mother-to-mother and professional support may also increase duration of any breastfeeding, depending upon the circumstances (166). Thus, professional and lay supports are complementary.

This complementary relationship is not surprising since professionals are often the first contact with mothers providing information and support in the early days and specialist advice for medical issues. Mother-to-mother support provides non-medical support and information for an extended period. The advantages for professionals in working together with lay supporters have been described as being able to share the workload and in knowing that women have another tier of support available to them, they are not on their own (158). Lay supporters appreciate being able to refer mothers to knowledgeable professionals when medical assistance is required (167). Partnership between health care professionals and lay supporters helps to provide a service that is attuned to the needs of breastfeeding women and compensates for the lack of naturally occurring social support networks (158).

Research has now begun to show that mothers have improved breastfeeding outcomes where they learn about breastfeeding in a social context and are exposed to a wide range of visual images and experiences (168). Community-based networks that offer peer support are an essential component in providing skilled breastfeeding support to mothers in sustaining breastfeeding whilst they prevent difficulties and assist in overcoming breastfeeding problems. Peer groups normalise women’s breastfeeding experiences and women breastfeed for longer when they have a high level of exposure to newborn babies and access to another mother with recent mothering and breastfeeding experiences.

Whilst peer support and counselling is effective in providing a culture of breastfeeding and experience in dealing with common problems associated with breastfeeding, there is a limit to the services that can be provided by volunteer peer counsellors and therefore professional support services are still a necessary component of providing ongoing breastfeeding support. As mothers may not specifically seek support (169) they often find it difficult to initiate contact with a stranger

(170) but utilising existing situations where mothers make contact with professionals eg general practice settings during immunisation schedules, could provide the opportunity to discuss breastfeeding concerns, offer reassurance and approval. It has been reported that professionals trained in lactation who work in a general practice have significantly higher breastfeeding initiation and duration rates (171) (172).

As breastfeeding is a learned skill, we need to actively establish situations that enable mothers to learn about breastfeeding and be exposed to a wide range of breastfeeding experiences and role models so that they can gain the confidence to deal with problems and continue breastfeeding. It is also apparent that breastfeeding "requires maternal commitment adaptation and support from multiple sources"(173). Australia has better breastfeeding rates than countries such as the US and UK and the work of the Australian Breastfeeding Association has been identified as having played a large role in the increase in breastfeeding rates from the early 1970s. However, the Australian Breastfeeding Association recognizes that it needs the financial and policy support of government to continue and expand its work and wishes to work in collaboration with government and other agencies in order to provide women with the support they need to breastfeed according to health recommendations.

Breastfeeding Education

Most health care professionals gain the majority of their knowledge about breastfeeding from their own infant feeding experiences. Experience of successfully breastfeeding their own children for a physiologically normal length of time greatly increases the ability of health care providers to assist their patients with breastfeeding. However, where they do not successfully breastfeed this negatively impacts their ability to support their patients in breastfeeding. Unfortunately, health care professionals' breastfeeding duration rates reflect those of the surrounding population and many women are pressured to prematurely wean by health care professionals (174). In addition, while doctors usually receive only one or two hours of breastfeeding education during their training they are repeatedly provided with education about infant feeding and related issues from the manufacturers of baby foods and breastmilk substitutes (formula). As mothers commonly seek support in regard to breastfeeding from a variety of health professionals who may or may not have the necessary experience, skill and training to provide evidence-based assistance, it is essential to provide undergraduate training, as well as continuing education, in breastfeeding and lactation management.

Marketing of infant formula to health care professionals and women undermines their confidence in breastfeeding (175).

Research overseas has found that doctors' beliefs and practices surrounding breastfeeding mirror the ambient beliefs and practices in the society in which they operate (174). Infant formula manufacturers are somewhat restricted in their ability to market directly to parents however, they have no restriction on marketing to health care professionals. They actively do so by sponsoring conferences, wooing with 'freebies' and providing advertising that is targeted to health care professionals as parents rather than as medical professionals. Sponsorship: A recent child health conference held in NSW had no breastfeeding content but 5 infant formula or bottle manufacturers that were invited to sponsor the conference. They gave out misleading information about infant feeding to the health care professionals who attended this conference. This conference also had NSW Health as a major sponsor. In Victoria, the DHS runs seminars for Maternal & Child Health Nurses each year. Each year one is sponsored by Wyeth Nutrition. The DHS seems to see no conflict in this major on-going education event being sponsored by a formula manufacturer. Although the potential for conflict of interest has been brought to the attention of the DHS, they seem not to be interested in reviewing it at this time. Allowing companies with a commercial interest in encouraging mothers to

wean their babies from breastfeeding to educate health professionals about infant feeding undermines public health messages about the importance of breastfeeding. It is of concern to us that this sort of educational event is driven by a profit motive rather than by the weight of scientific evidence. We wonder if it would be seen to be equally appropriate for a tobacco company to sponsor a respiratory health conference.

Many health care professionals are completely unaware that the health and developmental impact of breastfeeding continues for years of breastfeeding rather than months or weeks.

Generally there is community support for positive parental health behaviours. So parents are commended for having a hat on their baby or child, or taking their child to sport but breastfeeding women often experience pressure to wean from family, friends and even health care providers (research has found that the attitudes of health care professionals re breastfeeding reflects the social norm). Hence there is a very real need for a public health campaign promoting the importance of breastfeeding.

Women who have successfully breastfed their children for physiologically normal durations have usually had to withstand often very significant pressure from family, friends and health care providers to wean. This is despite the fact that they are doing something good for their children and themselves (176).

Human Milk Banks

In those circumstances where mothers are unable to provide milk, human milk banks can provide the most vulnerable babies with the nutritional support they need. Prof Peter Hartmann and Dr Karen Simmer in Perth have recently set up a Human Milk Bank at King Edward Memorial Hospital with the assistance of private funding. (Prof Hartmann's research group is also developing protocols for processing of human milk so that fortification of milk for premature babies can be provided without the risks associated with fortifiers based on animal milk.) Dr Howard Chilton is seeking to set up a bank in Sydney and midwife Maera Ryan is also raising funds to provide human milk to sick babies on the Queensland Gold Coast.

Human milk banks are a cost effective intervention because low birth weight babies who are not provided with breastmilk are not only less likely to survive but will require more interventions in hospital and have longer hospital stays (177). However, governmental and departmental support is required to make human milk available to all babies who need it. Overseas experience indicates that the costs associated with banked donor milk are more than offset by the savings to the hospital system resulting from decreased costs due to illness when babies are provided with human milk (178).

6. BREASTFEEDING AND EMPLOYMENT

Working and breastfeeding in Australia

The Australian Breastfeeding Association supports the right of women to choose whether or not to enter the paid workforce after the birth of a baby. However, mothers must have real and supported choices in order to return to work. The issue of support for breastfeeding in the workplace and the need for lactation breaks is a particularly female issue. It is also an issue of importance to families, as increasingly families struggle to combine work commitments with family needs. It is important that governments, employers and the community recognise the needs of female employees related to pregnancy, birth and lactation. Our Association would support government workplace relation

legislation and educational initiatives that enable and encourage mothers to combine working and breastfeeding.

In 1996, 25 percent of Australian mothers with a child less than 12 months of age were in the paid labour force (179). Figures from the 2004 Longitudinal Survey of Australia's Children show a rapid increase in the rate of return to work in the intervening years, with some 44 percent of mothers now employed in the paid workforce by the time their child is twelve months old, and 25 per cent of these women returning to work before their child is six months old. Some mothers return to employment only a few weeks after childbirth (180).

The National Health Survey (NHS) showed that the trend to workforce participation by new mothers might be impacting adversely on breastfeeding. One in ten mothers reported return to work as a reason for premature weaning, and an increased proportion of children were receiving solids or breastmilk substitutes during the first six months of life compared to the previous survey in 1995 (181). A recent study in NSW also showed that exclusive breastfeeding may have entered a declining trend since the early 1990s (182). Thus, with about 250,000 babies born each year, potentially around 50,000 mothers may reduce or cease breastfeeding because of the pressures of employment.

Our Association's extensive experience in counselling mothers through our Breastfeeding Helpline indicates that some mothers either do not initiate breastfeeding or only do so for a matter of weeks if they are returning to the paid workforce in the early months after the birth. In a recent Perth study, maternal age and whether a mother returned to work were the two most important socio-demographic factors which affected the duration of breastfeeding for up to six and twelve months. Return to work was also the only socio-demographic factor that determined levels of exclusive breastfeeding to six months for mothers who returned to work before twelve months (183).

The case for supporting breastfeeding in the workplace

The Australian Breastfeeding Association would like to highlight the impact that support in the form of paid maternity leave and 'breastfeeding-friendly' working conditions could have on both Australian breastfeeding rates and workplace participation for women and their families. We would like to suggest possible government initiatives and industrial relations legislative changes that would help mothers better combine breastfeeding and work.

Women have a right to breastfeed their children and Article 24 of the UNICEF Convention on the Rights of the Child states that breastfeeding is an essential component in assuring the child's right to the highest attainable standard of health. Women do not lose this right when they return to paid employment (184). Australia is obliged to ensure an environment that empowers women to breastfeed their children if they choose. However, it could be argued that efforts to promote breastfeeding by governments, health authorities and others have achieved little more than to stem the decline in breastfeeding rates arising from commercial and labour market pressures in the last decade.

The increasing rates of return to work by women after childbirth outlined above, suggest that for Australia to improve breastfeeding rates in line with public health goals and health recommendations, there is a need for more active and innovative promotion and support of breastfeeding in the workplace. Adequate maternity leave policies and support for women to combine breastfeeding and work must become a central component in any breastfeeding promotion strategy. Indeed the Australian Breastfeeding Association includes creating breastfeeding-friendly workplaces and childcare as one of the four key strategies in its 2004 *Australian Breastfeeding Leadership Plan* (5).

Employer support for breastfeeding is a critical factor in any such strategy. Lactation breaks are the lynch pin for any supportive workplace practices to promote breastfeeding and without them, all else fails (185).

Workplace benefits from supporting breastfeeding

Breastfeeding women who return to the workforce are not only investing in their families, but in the economic growth of the nation through the contribution they make to their workplace. In the current climate of low unemployment and labour shortages, many employers are encouraging women to return to work sooner rather than later. Combining family and work can be rewarding and offer benefits and opportunities for women. However, it can also create stress as women seek to balance their responsibilities. Expressing breastmilk becomes more difficult when women are under stress. This stress can be reduced where supported is provided by an employer, supervisors, and colleagues.

Through its substantial experience in this area, the Australian Breastfeeding Association has developed an understanding of the benefits employers perceive from supporting their staff to combine work and breastfeeding; benefits that have a real impact on the bottom-line for their organisation. Employers cite benefits of improved retention of female employees after maternity leave, thus preventing loss of skilled staff and the costs associated with recruitment and retraining or replacement. Other benefits include reduced absenteeism and staff turnover because of improved health of mother and baby and increased staff loyalty because of the support they provide.

Increased illness in non-breastfed babies results in decreased productivity and increased absenteeism amongst parents in the paid workforce. A large employer in the US that instigated a lactation program that supports employees continuing to breastfeed once they have returned to work found that over a one year period ninety three percent of bottle-fed babies of employees were sick enough to require a doctor's visit compared with fifty percent of breastfed babies (186). Since bottle-fed babies were not only sicker, but also sicker for longer, the parents of bottle-bed babies had an absenteeism rate that was seven times higher than parents of breastfed babies. In addition, some research has found that women who are supported in breastfeeding their babies by their employers are more likely to return to work after their baby is born (187).

Given the known health impacts, the reduced spending on health budgets, and the benefits to families and the bottom-line benefits of employers, it is clear that everyone benefits when working mothers breastfeed their babies. Given that everyone benefits when babies are breastfed, everyone has a social responsibility to support breastfeeding workers (188).

Strategies to support breastfeeding in the workplace

Paid lactation breaks

An experienced mother can usually breastfeed her baby or express her breastmilk in fifteen to twenty minutes. Given that she will also need time to either get to her baby or get to a room to express in, then set up and clean equipment and store her expressed breastmilk before returning to her work station, a realistic length for a lactation break is about thirty minutes. However, flexibility is required as newer mothers learn how to express in the workplace or, if the baby is being breastfed, allowances are made for their unpredictability. The number of breaks will depend on individual circumstances including the age of the baby and their individual breastfeeding pattern

The International Labour Organization's (ILO) Maternity Protection Convention 183 recommends one or more daily breaks or a daily reduction of hours of work to be counted as working time and remunerated accordingly (189). Nations that implement and monitor the provisions of this

convention in their national law and practice are working to ensure that women and men have equal employment opportunities, job security, and conditions of work that enable them to continue providing appropriate care for their babies. Australia has not ratified ILO Convention 183.

Amendments to the Federal Sex Discrimination Act 1984 in 2002 included breastfeeding as an unlawful ground of discrimination. However, the right to lactation breaks in line with ILO recommendations is not included in the Federal award under work and family policies, which currently only cover part-time work, carer's leave and parental leave (190). No Australian state or territory has enshrined the ILO's recommendations in legislation either. The Australian Capital Territory (ACT) is the only state or territory that officially approves lactation breaks for its own employees in line with the ILO recommendation. However, this approval is in the form of a Chief Minister's policy directive, as opposed to legislation and is implemented by including lactation breaks in the ACT Public Service's draft certified agreement template (191). This approval could, presumably, be withdrawn or written/negotiated out of certified agreements.

Commonwealth Government responsibilities under the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) and domestic anti-discrimination law are relevant. By becoming a party to CEDAW on 17 July 1980, Australia committed to take all appropriate measures, including introducing legislation and temporary special measures, so that women can enjoy all their human rights and fundamental freedoms. CEDAW defines discrimination against women as:

"...any distinction, exclusion or restriction made on the basis of sex which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women, irrespective of their marital status, on a basis of equality of men and women, of human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field."
(Article 1)(192)

A woman may make choices whilst pregnant, about returning to work after the birth, based on workplace arrangements. Women return to work after the birth of their baby for diverse reasons including financial need and investment in a career. Many feel they must choose between breastfeeding and returning to work. Women need to see institutional support for combining breastfeeding and working, to feel that this is an option. Paid lactation breaks for employees is an internationally recognised solution and is offered in at least 92 countries (193). It is inequitable that in Australia, only women with significant influence or those who have forward-thinking employers should be able to have access to lactation breaks.

The Australian Breastfeeding Association urges the Australian government to ratify ILO Maternity Protection Convention 183 and recommends that the right to paid lactation breaks be enacted in Commonwealth legislation, thereby becoming part of standard workplace practice.

Create breastfeeding-friendly workplaces

As breastfeeding is the physiological norm, not a lifestyle choice, and women returning to work while still breastfeeding is a reality of the Australian job market, the Australian Breastfeeding Association calls on the government to implement legislation mandating breastfeeding-friendly workplaces.

Informed by the experience of many thousands of women, ABA sees the chief requirements for a woman to successfully combine breastfeeding and work to be:

- Flexible lactation breaks;

- A private place in which to breastfeed or express breastmilk;
- A fridge/freezer to store breastmilk, and storage space for related equipment; and
- Support of the employer and her colleagues

This is in line with ILO minimum recommendations for a supportive workplace environment for breastfeeding women (see also ILO Convention 191).

The specifics of such legislation would need to be considered carefully to prevent further discrimination against lactating women. However, measures such as phasing in of compliance, financial assistance to small businesses so they can meet breastfeeding-friendly guidelines (particularly with respect to new facilities), tax concessions etc, could all be considered. The Australian Breastfeeding Association's Breastfeeding-Friendly Workplace Accreditation (BFWA) program is a logical starting place for such legislation. BFWA, or a similar program, could even be included in workplace health and safety requirements, with administration fees granted tax-deductible status.

An auxiliary effect of mandating breastfeeding-friendly workplaces would be the educational opportunities this would deliver. Workplace awareness of breastfeeding as the physiological and social norm would lead to heightened breastfeeding awareness in the community, including amongst partners, whose attitude towards breastfeeding is a psychological factor in a woman's decision making about breastfeeding and or working, and directly impacts on the duration and exclusivity of breastfeeding (183). Women may also view workforce participation in a more positive light if workplaces were truly breastfeeding-friendly. Real and effective industrial relations legislation should be one of the pillars of the Government's health strategy to improve breastfeeding duration and rates in Australia.

Mechanisms that provide more choice to women about when and whether they will return to the paid workforce are likely to have a positive impact on the duration of breastfeeding and on workforce participation. Formalised and government initiated requirements and regulatory structures may be needed to ensure workplace provisions are supportive of combining breastfeeding and workforce participation. We urge the government to ensure that incompatible workforce policies and pressures do not undermine its policies of supporting and promoting breastfeeding and enable women who wish to do so, to combine employment and breastfeeding.

Breastfeeding-Friendly Workplace Accreditation (BFWA) Program

The Association's initiatives, including those associated with combining breastfeeding and work, have contributed substantially to establishing breastfeeding as best practice in Australia and to a change in workplace culture. The BFWA program complements many other breastfeeding information resources successfully developed by the Association during the last two to three decades [Appendix Six]. Since July 2002, the Australian Breastfeeding Association has accredited more than 40 workplaces across Australia, (194) and interest continues to grow. Based on the Association's previous Mother-Friendly Workplace Awards, the accreditation program has placed breastfeeding firmly on the "work-life balance" agenda, setting best practice for healthy workplaces, with mothers, babies and employers benefiting from this family-friendly intervention.

In September 2003, the first Commonwealth department, the Department of Treasury, became BFWA accredited. At the time, Secretary of the Treasury, Dr Ken Henry, acknowledged that supporting women to breastfeed was not just altruism on his Department's part (195). Like our

Association, Dr Henry had identified that this low cost, family-friendly intervention makes economic sense with savings for the bottom line of an organisation.

Since then, BFWA accreditation has been achieved by six more major Commonwealth agencies, several hospitals, health service providers and tertiary education institutions. State and Territory Government agencies have also gained accreditation for their agencies, with others showing great interest in the model. Similarly, business is increasingly recognising the benefits of BFWA accreditation with Pfizer accredited in 2004, a rurally based manufacturing company, a multi-office law firm (Allens Arthur Robinson) and Hydro Tasmania gaining accreditation in 2005. Amongst others, AGL and Impact Communications, a Sydney communications company, were accredited in 2006. This month, Westpac's head office has been accredited and we are currently processing an application from the NSW Parliament.

BFWA has developed useful resources including the ABA Come Back Pack, which includes information relevant to women considering combining breastfeeding and work. Accredited employers have the option of purchasing these packs at a discounted rate, to give to their employees going on maternity leave. Several BFWA organisations now do this, while the Commonwealth Department of Health and Ageing has written these packs into their staff service agreement and distributes them from their Payroll section when women apply for maternity leave. Over 200 women in this organisation received Come Back Packs in 2005, resulting in informed questions from these women being noted by counsellors on our Association's Helpline.

Anecdotal information suggests that the BFWA is having a positive impact on the lives of women in accredited workplaces. For example, one employer reported on the benefits for several staff that were invited to attend an event in the workplace to celebrate BFWA accreditation. They advised of an employee who had been preparing to wean her six month old daughter in order to return to work, but saw the facilities and support being provided, realised she could now combine work and breastfeeding, and was still doing so at 19 months. The woman herself later reported to BFWA personnel that she was still breastfeeding her daughter at two years. Employer support, through BFWA accreditation, enabled this woman to breastfeed in line with WHO and NHMRC recommendations.

Although there are many benefits to be gained from increased numbers of accreditations, BFWA is confronted by some significant obstacles, mainly related to the availability of volunteers, who are often balancing work and family themselves, including:

- The need for continual review and upgrading of information kits and new publicity material that requires many volunteer hours;
- The often time-consuming processes prior to accreditation, usually involving a number of contacts with a range of individual employers, and ensuring a pool of trained volunteers to undertake accreditation visits in a timely manner

The Australian Breastfeeding Association is confident that further gains can be achieved through more 'breastfeeding-friendly workplaces' and by better-resourced and nationally coordinated promotion of the BFWA scheme. Limited funding obtained recently will allow for some part-time paid work within the program. However, we recommend that the Government allocate funding for an evaluation of BFWA, including an investigation of the anecdotal evidence of the benefits of the program, and to allow BFWA to grow to a self-sustaining level nationally

Access to part-time and flexible working options

Although 'flexible work options' is an optional criterion for accreditation by the BFWA program, the Australian Breastfeeding Association has always recognised the need for employers to accommodate breastfeeding mothers on their return from maternity leave. Extending the right to part-time work to fathers, as well as mothers, will enable more mothers to breastfeed for longer.

Flexible work options, such as permanent part-time, flexible working hours, job sharing or job splitting, and home-based work can all help women combine their work and breastfeeding commitments. Governments have a responsibility to educate employers as to the benefits of such workplace flexibility and, if necessary, legislate appropriately to help protect women who do not have the power to negotiate individually.

Maternity leave

The Australian Breastfeeding Association is concerned that breastfeeding rates have plateaued in Australia in the last decade or so, despite the increasing and clear evidence of significant health risks to both mothers and babies of early weaning. It is especially a concern that mothers in lower socio-economic groups are significantly less likely to breastfeed beyond the early weeks (196).

The vast majority of female workers work within small to medium sized workplaces and in industries without access to employer-funded maternity leave. Research indicates that only 23% of workplaces in Australia presently offer paid maternity leave to working mothers, and the average period of leave is eight weeks (197). Furthermore, the more a working mother earns, the more likely she is to receive paid maternity leave (198). Given that the first twelve to fourteen weeks after birth are critical in establishing breastfeeding supports, these figures raise the concern that some women are compelled to return to paid employment too soon after the birth of their baby out of financial necessity, with consequential impacts on breastfeeding, maternal and child health.

Our Association believes that ensuring adequate financial support for all mothers during the first months of a baby's life should be the priority for policy in this area. It should not be limited to those currently in employment. Extending the time a mother can be with her baby through the provision of adequate financial support should be seen as an investment in the physical and psychological health of families, and recognition of women's unpaid as well as paid work. We therefore support paid maternity leave in order to give women the optimal chance of establishing breastfeeding before return to work. Paid maternity leave is one of a range of initiatives required to support an increase in the duration of breastfeeding in Australia (199).

Often formalised and Government initiated requirements and regulatory structures are needed for change to happen in workplace provisions. The Association believes that it is especially important for governments to ensure that paid maternity leave is not just for relatively privileged categories of workers.

Collaboration to promote breastfeeding and work

In its 2005 report on Promoting and Supporting Breastfeeding in NSW, the NSW Centre for Public Health Nutrition noted that while workplace programs provide a promising area for intervention research and would contribute greatly to the evidence base, this has not been an area of significant research to date (200). Of the four work-related case studies the authors identified, only one was Australian. This case study involved a self-reported survey sent to employers one month after receiving the Commonwealth Department of Health's *Balancing Breastfeeding and Paid Employment* kit. The report commented on the survey's limited nature and indicated that it provided no guidance on actual responses or changes/uptake in practices.

The Australian Breastfeeding Association is very concerned at the paucity of research undertaken in Australia to understand the issues related to breastfeeding by the fast-growing number of women returning to the paid workforce, particularly given the impact on maternal and child health, the health budget and workplaces. We believe that far more research is necessary to underpin the also much needed breastfeeding education strategies and programs relating to breastfeeding and work. We therefore recommend that the Commonwealth departments of Health and Ageing and Employment and Workplace Relations allocate funding for:

- Research relating to work and breastfeeding that will assist in identifying best practice in the creation of breastfeeding-friendly workplaces;
- Wide dissemination of the forthcoming edition of *Balancing Breastfeeding and Paid Employment*, both in hard copy and via the Web, followed by a more detailed evaluation; and
- The development and implementation by state and territory health authorities, working in conjunction with community-based organisations such as the Australian Breastfeeding Association, of breastfeeding education strategies and programs relating to breastfeeding and work.

The impact of current industrial relations legislation on Breastfeeding-friendly work conditions such as lactation breaks, supportive workplace policies and practices, and facilities provided for women to express breastmilk or breastfeed their babies are vitally important in ensuring ongoing breastfeeding. Industrial relations legislation should support and protect breastfeeding as the physiologically and socially normal mode of infant feeding for all mothers and babies, irrespective of socio-economic background. Indeed it would be a matter of public health concern if mothers were to feel forced to wean their babies prematurely in order to be able to obtain employment or to return to work, considering breastfeeding is the physiological norm for infant nutrition.

It is our understanding that the number of working conditions protected under the Australian Industrial Relations Commission set awards have been reduced to five under the new industrial relations legislation. The Australian Breastfeeding Association is concerned that rather than protecting breastfeeding, these changes, including the favouring of individual Australian Workplace Agreements (AWAs), will disadvantage lactating women by stalling improvements in workplace support for breastfeeding mothers, or narrowing access to paid maternity leave and other employment conditions that enable women to combine working and breastfeeding. This could adversely affect rates of breastfeeding in Australia. Alternatively, women may feel that they have to choose between workforce participation, or breastfeeding and delaying their return to work.

Women in their childbearing years may be entering and leaving the workforce regularly, and could be adversely affected because breastfeeding-friendly conditions are more vulnerable to removal during individual negotiations with their employer under Australian Workplace Agreements

(AWAs). Women, especially those in low paid casual employment, may have particular difficulty negotiating paid maternity leave and improved breastfeeding-friendly employment conditions. It would be highly inequitable if industrial relations changes, together with labour market deregulation, resulted in paid maternity leave and breastfeeding-friendly work conditions only being made available to women with significant influence or with forward-thinking employers. We therefore strongly advocate that breastfeeding-friendly provisions such as paid and unpaid maternity leave and lactation breaks are included as protected employment conditions.

We are also concerned that the recent changes may make it difficult for many pregnant or breastfeeding women to prove discrimination on the grounds of pregnancy or parental responsibility. For lactation breaks and other breastfeeding-friendly provisions to be more widely implemented and accessible to Australian women, it is not sufficient to rely on the efficacy of the Sex Discrimination Act or the goodwill of Australian employers.

Furthermore, our Association understands that reduced collective bargaining in other countries has reduced the relative wage position of low and moderate wage earners. As the majority of low to moderate wage earners in Australia are women, the Australian Breastfeeding Association advocates for measures to ensure that greater financial pressures for maternal return to work and workforce participation do not undermine breastfeeding.

With the rise in women's paid labour-force participation in the last two decades, there is an increasing potential for conflict with health policy goals and continued breastfeeding. Retaining and expanding access to paid maternity leave and breastfeeding-friendly conditions of employment is critical to support an increase in the duration of breastfeeding. We strongly recommend that the Government give priority to protecting breastfeeding and the health of mothers and babies in its industrial relations and workforce policies and legislation.

Family-friendly workplace policies can influence the duration and exclusivity of breastfeeding. How these policies impact on mothers and their partners, and thus the choices they make as a family should be a top priority of any government. Government policy across all departments should complement the long-term goals of other departments and should not be developed in isolation. The recent industrial relations reforms have the potential to seriously undermine the Government's health strategies and targets. Pregnant and breastfeeding women have particular needs that need to be acknowledged by governments, employers and the wider community. These needs should be acknowledged and protected in the Australian workplace.