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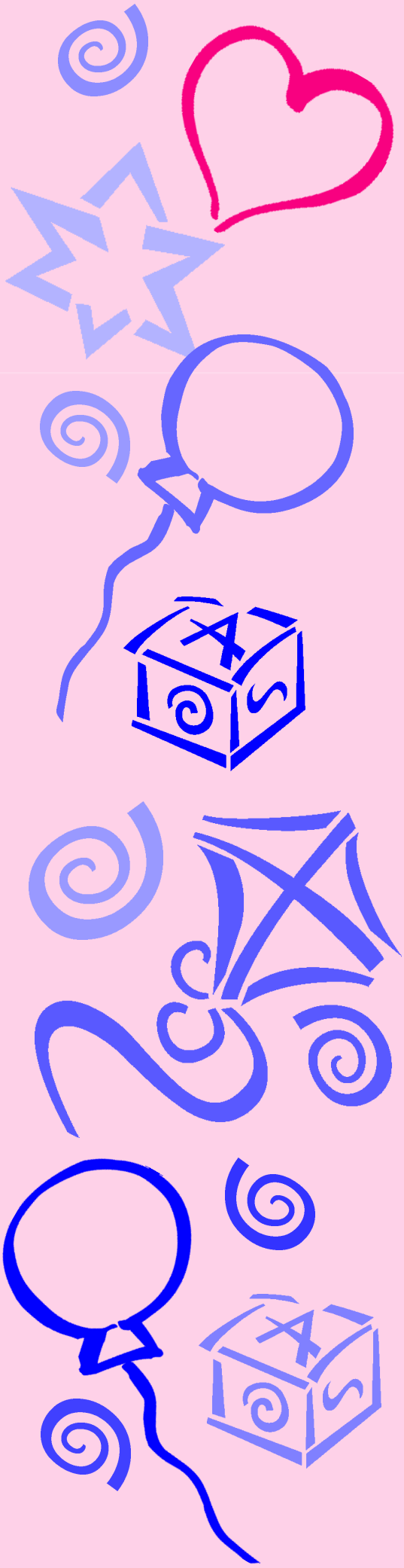

Queensland
Health

optimal infant nutrition:

evidence-based guidelines

2003 - 2008

NOW EXTENDED TO 2010

Queensland Government
Queensland Health

Note

The infant feeding recommendations and scientific evidence contained in the *Queensland Health Optimal Infant Nutrition: Evidence-Based Guidelines* are based on the National Health and Medical Research Council (NHMRC) Infant Feeding Guidelines. The Australian Dietary Guidelines, including the Infant Feeding Guidelines, are currently under review by the NHMRC. The outcomes of this evidence based review are expected in 2010. Therefore the timeline for the Optimal Infant Nutrition: Evidence-Based Guidelines will be extended until 2010.

ISBN 0 7345 2951 1

The document is available on the Queensland Health website at: www.health.qld.gov.au/publications/childhealth

To make comments on this document or for further information please email: infoweb@health.qld.gov.au

Queensland Health (2003) Optimal Infant Nutrtion: Evidence-Based Guidelines 2003-2008.

Brisbane

Queensland
Health

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evidence-based guidelines

2003 - 2008

NOW EXTENDED TO 2010

Foreword

The *Strategic Policy Framework for Children's and Young People's Health 2003-2008* recognises optimal infant nutrition as a key outcome area for improving the health of children. *The Optimal Infant Nutrition: Evidence-Based Guidelines* contribute to the implementation of this policy framework and underpin Queensland Health's commitment to enhancing infant and child health through the promotion and support of optimal infant nutrition.

Optimal infant nutrition to promote healthy growth and development is defined as:

- exclusive breastfeeding to six months of age
- introduction of appropriate solid food at six months of age with continued breastfeeding to at least 12 months of age.

Promoting and supporting optimal infant nutrition is an important public health initiative as there is evidence that it reduces the risk of developing a range of illnesses and chronic diseases throughout the lifecycle, including asthma, diabetes, cancer, cardiovascular disease and injury – Australia's National Health Priority Areas.

These guidelines aim to ensure that pregnant women, mothers, families, carers, health care workers and the wider community are aware of the health benefits of optimal infant nutrition.

Queensland Health recognises that a variety of factors can influence the provision of optimal infant nutrition and addressing many of these factors rests outside the ambit of the health sector. Therefore, these guidelines encourage effective partnerships between Queensland Health, other government departments, non-government organisations and the private sector.

I recommend these guidelines to all health workers to support and promote optimal infant nutrition.

(Dr) Robert Stable

Director-General

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Section 1

Introduction

Purpose

Context

Aims

Targets for optimal infant nutrition

Introduction

The first 12 months of a child's life is a time of rapid growth and development. Optimal infant nutrition provided through exclusive breastfeeding for the first six months*, and the introduction of appropriate solid food at this age in addition to continued breastfeeding to at least 12 months, is ideal for normal physical growth and development and the enhancement of health throughout the lifecycle.

Research increasingly demonstrates the link between optimal infant nutrition and a reduced risk of developing a range of illnesses and chronic diseases throughout infancy, childhood and adult life, including gastrointestinal illness[1], asthma[2], eczema[3], obesity[4] and diabetes[5]. There are also health advantages for mothers who breastfeed, including a reduced risk of developing breast cancer[6] and ovarian cancer[7].

The association between optimal infant nutrition and improved health outcomes for both infant and mother makes the promotion and support of breastfeeding and the appropriate introduction of solid food one of the most cost effective primary prevention measures available[8,9] .

Queensland Health acknowledges that some women will not be able to breastfeed, while some women will make an informed decision not to breastfeed. In the absence of breastfeeding, Queensland Health recommends the use of a breastmilk substitute that conforms to the recommendations of *Food Standards Australia New Zealand.*

Purpose

The *Optimal Infant Nutrition: Evidence-Based Guidelines* strengthens Queensland Health's commitment to improve infant and child health by promoting and supporting optimal infant nutrition across the continuum of care over the next five years. The *Guidelines* include an overview of the contemporary evidence linking infant nutrition and health outcomes for both infant and mother. They summarise evidence-based strategies known to enhance optimal infant nutrition. The *Guidelines* identify priority population groups, key action areas and measurable outcome areas to assist in the promotion and support of optimal infant nutrition.

The *Guidelines* are for people at the intersectoral, interdepartmental, corporate, zonal, health service district, service provider and practitioner level who provide care or services for pregnant women, mothers, infants and their families. The *Guidelines* encourage State and local government, educators, child care providers, the media, planners and developers of public and community facilities, as well as employers within the public and private sector and infant food manufacturers, to work together to promote and support optimal infant nutrition.

Context

At a State level the *Guidelines* contribute to the implementation of the *Strategic Policy Framework for Children's and Young People's Health 2002-2007*. The *Framework* summarises priority strategies, health outcome areas and key indicators relevant to optimal infant nutrition.

The *Guidelines* also support the implementation of the following key strategies:

- *The Smart State: Health 2020 Directions Statement,* which provides a strategic vision and implementation plan for Queensland Health and identifies child health as a target health improvement area.
- The Queensland Public Health Forum *Eat Well Queensland: Smart Eating for a Healthy State* (2002-2012), a public health food and nutrition strategy developed for all Queenslanders.
- The *Work and Breastfeeding Policy* (2001), which supports Queensland Health employees to continue breastfeeding upon returning to work after the birth of a baby.

**Current evidence suggests that the health value of exclusive breastfeeding to six months of age is more significant than the health value associated with the traditional recommendation of exclusive breastfeeding to four to six months. Research also shows that the introduction of solid foods before six months can be detrimental to the health of infants.*

At a national level the *Guidelines* complement the National Health and Medical Research Council (NHMRC) *Infant Feeding Guidelines for Health Workers* and the *Dietary Guidelines for Children and Adolescents.* These documents provide evidence-based infant nutrition information and recommendations concerning common breastfeeding problems and their management, the expression of breastmilk, contraindications to breastfeeding, the use of infant formula and suitable food choices for infants aged six months and over. The information contained in the NHMRC documents is designed for use by health workers involved in the care of pregnant women, mothers, infants, children, adolescents and families.

The *Guidelines* also support the Commonwealth Government's commitment to promoting and supporting breastfeeding through the *National Breastfeeding Strategy*.

Aims

Queensland Health aims to improve the healthy growth and development of infants and children by:

- Promoting and supporting the World Health Organisation (WHO) and the NHMRC recommendations of exclusive breastfeeding for the first six months of life, followed by the introduction of appropriate solid food at this age in addition to continued breastfeeding to at least 12 months of age and thereafter as long as mutually desired[10,11].
- Ensuring pregnant women, mothers, families, carers, health workers and the community are aware of the health value of optimal maternal and infant nutrition.
- Ensuring pregnant women, mothers and families receive appropriate and consistent information, advice and education, which will enable them to make informed decisions about the provision of infant nutrition.
- Ensuring all health workers who work with pregnant women, mothers and their infants, families and carers are equipped to support and promote optimal infant nutrition, including the appropriate management of breastfeeding problems.
- Ensuring health care practices, health service infrastructure, workplaces and public places create environments that promote and support optimal infant nutrition.
- Addressing factors that can influence the provision of optimal infant nutrition by developing and/or strengthening effective partnerships with other government and non-government organisations, as well as the private sector.
- Respecting and supporting the infant feeding method chosen by mothers and families.

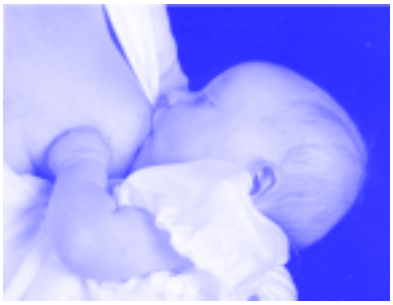
Targets for optimal infant nutrition

At present in Queensland, 83 per cent of infants are breastfed at discharge from hospital[12]. It is estimated that by three months of age 56 per cent of infants are exclusively breastfed and by six months of age 19 per cent are exclusively breastfed[13]. Although these figures are consistent with national breastfeeding rates[14] they fall short of national targets[11,15]. It is also estimated that infants are most commonly introduced to solid food between four and seven months of age[16,17,18].

In line with national targets for breastfeeding Queensland Health aims to increase by 2008:

- breastfeeding rates at discharge from hospital to at least 90 per cent
- the proportion of infants who are exclusively breastfed for the first three months to at least 60 per cent
- the proportion of infants who are exclusively breastfed for the first six months to at least 50 per cent.

In addition, Queensland Health aims to increase the proportion of infants who are introduced to appropriate solid food at six months of age.



Section 2

Health value of optimal infant nutrition

Health value of breastmilk

Health value of breastfeeding for mothers

Health value associated with the appropriate introduction of solid food

Health value of optimal infant nutrition

Breastmilk contains all the protein, carbohydrates, essential fatty acids, minerals, vitamins and other nutrients needed for healthy physical growth and development until six months of age, when an infant's nutritional and energy needs may no longer be sufficiently met solely by breastmilk[11].

At six months of age the introduction of appropriate solid food is recommended in addition to breastmilk or infant formula as an infant is also usually developmentally and physiologically ready for new foods, textures and modes of feeding[19]. However, breastmilk remains the most important part of an infant's diet until 12 months of age and continues to provide ongoing health advantages for the growing infant[20, 21].

Queensland Health acknowledges that some infants may require the introduction of solid foods before six months of age. Growth monitoring on a regular basis, using an accurate scale, a suitable methodology and a growth reference, offers the most objective way of determining whether there is a need for supplementation before six months of age[11]. However, supplementation should be considered in association with a number of factors, including examination of the infant and an assessment of the infant's history and current feeding patterns. If the infant's growth is faltering, efforts should be made to increase the milk supply in the first instance.

Health value of breastmilk

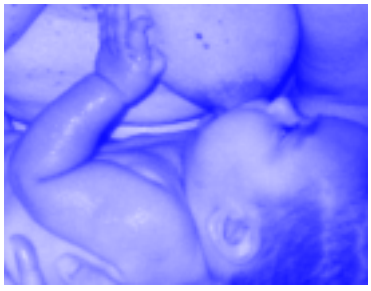
Research shows that the components of breastmilk enhance and develop an infant's immune system and reduce the risks of developing a range of preventable illnesses and chronic diseases throughout the lifecycle, including:

- gastrointestinal infections and illnesses[1]
- necrotising entercolitis in the premature infant[22]
- respiratory infections and illness such as wheeze[23] and asthma, particularly among infants with a family history of atopy[2,24]
- otitis media[25]
- atopic dermatitis (eczema) among infants with a family history of atopy[26]
- coeliac disease[27]
- urinary tract infection[28]
- haemophilus influenzae[29]
- some childhood cancers[30,31]
- the development of dental caries in infancy and childhood[32]
- obesity[4]
- type 2 diabetes during adolescence and adulthood[5]
- risk factors associated with cardiovascular disease in adulthood[23].

There is evidence to suggest that breastmilk may confer developmental advantages on the growing infant, such as an increased likelihood of earlier motor development in term infants[33] and better rates of cognitive development in infants that are born prematurely or small for gestational age[34].

Evidence that suggests breastfeeding is linked to an enhanced quality of the mother-child interaction[35] may also infer an association with secure infant emotional attachment. Breastfeeding is also associated with the promotion of jaw development[36] and a decreased risk of injury as a result of skin, palatal or throat burns and scalds sustained from heating infant formula[37, 38].

The complex beneficial composition of breastmilk can not be replicated in infant formula. Babies fed with infant formula are more prone to infections and more likely to be hospitalised than breastfed babies[39].



Health value of breastfeeding for mothers

Evidence shows that breastfeeding provides a number of health advantages for mothers, including:

- increased fertility control[1]
- an increased likelihood of postpartum weight loss[33]
- assisting involution of the uterus[40]
- reduced risk of developing breast cancer[6]
- reduced risk of developing ovarian cancer[7]
- reduction in the risk of mothers with a history of gestational diabetes developing type 2 diabetes[41].

Health value associated with the appropriate introduction of solid food

Research has shown that the introduction of solid food before six months of age can have significant health implications for an infant, including an increased likelihood of developing eczema[3] or respiratory problems[23]. In breastfed infants, under-nutrition may occur due to a decrease in maternal milk production as the infant suckles less if other foods replace or are offered before a breastfeed. With the use of infant formula often predictive of the earlier introduction of solid food[42], understanding and positively influencing factors associated with non-breastfeeding practices is essential.

The late introduction of solid food can also lead to significant health problems for an infant, including impaired physical and developmental growth owing to reduced iron and zinc stores[11,43]. The late introduction of solid foods may also delay the optimal development of motor skills such as chewing[11].

Inappropriate food choices can also have a significant negative effect on the health of the growing infant. For example, the early introduction of cows milk has been linked to an increased risk of developing asthma[2] or type 1 diabetes[44]. Cows milk is a poor source of iron and the iron in cows milk is poorly absorbed by infants[11]. Therefore, cows milk is not recommended as the main source of milk for infants aged less than 12 months as it predisposes an infant to iron deficiency.

Inappropriate bottle feeding practices, such as putting an infant to bed with a bottle, and the introduction of high sugar foods such as soft drinks, fruit juice and cordials is linked to increased rates of early childhood caries[45].

The NHMRC *Infant Feeding Guidelines for Health Workers* and *Dietary Guidelines for Children and Adolescents* provide a comprehensive overview of appropriate food choices for infants at various developmental stages and the risks associated with the introduction of inappropriate foods. Health workers should refer to these documents for guidance when advising pregnant women, mothers, families and carers about infant nutrition.

By the age of 12 months infants should be enjoying family foods in addition to breastmilk[19]. Good nutrition remains an essential component of healthy growth and development and is critical to the prevention of chronic disease in later life.

Courtesy of Indigenous Child Health Service Inala

Section 3

Priority areas

Priority population groups

Partnerships and integration of services

Priority strategies, key actions and outcome areas

Information and data management, monitoring and evaluation

Priority areas

Priority population groups

While all pregnant women, mothers, infants and families are entitled to appropriate and accessible antenatal, birthing and postnatal care and support, some population groups are less likely to access health services during the antenatal period and/or to breastfeed. These include: women from low socioeconomic groups; Aboriginal and Torres Strait Islander women, particularly in urban areas; women from culturally and linguistically diverse backgrounds, particularly Asian women; young women; and obese women[14, 42, 46, 47]. The appropriate timing of the introduction of solid food is also an issue among some of these groups[48, 49]. This increases the risk of infant morbidity and mortality and may contribute to widening health inequalities among some of these population groups.

There are a variety of complex demographic, social, psychological, physical, clinical and environmental factors that can hinder the initiation and/or duration of breastfeeding, as outlined in Table 1.

Courtesy of Indigenous Child Health Service Inala

Breastfeeding is particularly important for 'high risk' infants, such as low birth weight infants or infants born to mothers with diabetes. Low birth weight infants and maternal diabetes are more prevalent among Indigenous populations[47]. Indigenous infants are also more susceptible to failure to thrive during infancy and inappropriate child growth, which have been identified as major concerns in Indigenous communities[50].

Infants born to mothers from low socioeconomic backgrounds are at increased risk of low birth weight, shorter gestation and neural tube defects due to the higher likelihood of poor maternal nutrition and/or the development of periodontal (gum) disease during pregnancy[51].

With the known link between low birth weight and/or prematurity and poor health and developmental outcomes in later life, promoting and supporting optimal maternal nutrition, oral health and infant nutrition among pregnant women, mothers and families from low socioeconomic backgrounds assumes great importance.

The needs of priority population groups are best met by targeted population based and/or tailored individual approaches which address the social determinants of health, barriers to accessing services and the particular needs of mothers and infants. Strategies that aim to improve the nutritional status of mothers and infants in priority population groups should be integrated with programs aimed at reducing inequalities.

Table 1: Factors that may hinder the initiation and/or duration of breastfeeding

Demographic	· adolescent/young mothers · limited number of years in full-time education · low income level/socioeconomic status · mothers from a culturally and linguistically diverse background · Aboriginal and Torres Strait Islander mothers, particularly in urban areas · high parity
Physical	· maternal obesity · maternal diabetes · low birthweight, infant prematurity and/or admission to special care nursery · cracked or sore nipples · various congenital malformations eg. cleft palate · multiple births · infant medical or physical influences eg. rare metabolic disorders such as galactosaemia, swallowing difficulties etc.
Psychological	· mother's lack of confidence in breastfeeding · perceived insufficient supply of breastmilk · perception of baby demanding too many feeds · maternal depression
Social	· mother's attitude towards breast or infant formula feeding · knowledge and attitudes of partner, relatives and the public towards breast or infant formula feeding · maternal smoking · returning to work · media portrayal of breastfeeding and infant formula (bottle) feeding
Clinical	· organisation and practices of the health services eg: - certain interventions during and after labour - the provision of supplemental feeds - extended separation of mother and baby for non-medical reasons - restricted feeding - free provision and/or promotion of infant formula - knowledge, attitudes, education and beliefs of health workers - unsupported or inadequately supported discharge plans - poor diagnosis and/or management of common breastfeeding problems - inappropriate diagnosis and management of low weight gain and other infant problems
Environmental	· lack of facilities to breastfeed in public places · employment and work environments that lack breastfeeding policies, paid maternity leave, lactation breaks, flexible working arrangements and appropriate places to express and store breastmilk

Partnerships and integration of services

Partnerships and integration of services are key strategies for improving health outcomes. Hospital and community-based services including antenatal, birthing and postnatal services; paediatric and child health services; public health services; Aboriginal Community Controlled Health Services; general practitioners; breastfeeding support services, including lactation consultants and the Australian Breastfeeding Association; nutritionists and dietitians; speech therapists; pharmacists; and oral health providers are encouraged to enhance and improve the integration and co-ordination of their activities in line with Queensland Health service integration principles[52], to provide consistent and seamless health care for all pregnant women, mothers, infants and families. The development and/or strengthening of partnerships and the integration of services will:

- Facilitate early links between the health system and expectant parents, particularly first time mothers and/or mothers from priority population groups, through accessible, non-threatening, culturally sensitive and proactive antenatal, birthing and postnatal services.
- Promote effective communication, information sharing and case management and develop strong multidisciplinary and operational links between antenatal, birthing and postnatal services.
- Ensure effective discharge planning and collaborative, multidisciplinary case management.
- Provide ready access to appropriate and effective breastfeeding support services and information concerning the appropriate introduction of solid food.
- Establish evidence-based clinical pathways and follow-up protocols to promote the early identification and management of any maternal, infant or family problems that may hinder the establishment of breastfeeding and/or the appropriate introduction of solid foods (eg. infants with a disability or developmental delay).
- Develop clear multisectoral operational links with child care, education and family support services.
- Develop workforce strategies that ensure a planned approach to education, training, recruitment, retention and ongoing professional development of health workers who work with pregnant women, mothers, infants and families.

Priority strategies, key actions and outcome areas

The following tables outline priority evidence-based strategies across the continuum of care which link specific interventions with increased breastfeeding rates and the appropriate introduction of solid food[10, 11, 19, 49, 53-58]. Research shows that combining strategies is most effective in promoting and supporting breastfeeding[53], which may have a positive effect on the appropriate introduction of solid food. Health services and health workers are encouraged to implement, monitor and evaluate these strategies in accord with the principles set out in the *Strategic Policy Framework for Children's and Young People's Health 2002-2007.*

Information and data management, monitoring and evaluation

Queensland Health is committed to effectively managing its information to meet its strategic and operational requirements, including the monitoring and evaluation of interventions and services targeted at promoting and supporting optimal infant nutrition. A range of data are available to assist Queensland Health to monitor changes over time in breastfeeding rates and the age at which solid foods are introduced, and to monitor and evaluate service and program delivery at both the system and population level.

The *Strategic Policy Framework for Children's and Young People's Health 2002-2007* identifies basic optimal infant nutrition indicators, which will be developed further as national indicators are agreed[59]. The development of a national system for monitoring optimal infant nutrition in Australia will enable the comparison of different projects across communities and help build an evidence-base which can be used to modify interventions and services to increase their effectiveness at individual, community and population levels.

Priority strategies	Key actions	Outcome areas
Promote and support optimal maternal and infant nutrition among all pregnant women and mothers, particularly among priority population groups.	· Implement evidence-based, culturally and socially appropriate, accessible and supportive antenatal, birthing and integrated postnatal care programs to support healthy pregnancy, foetal development and infant care, eg. small-group/one-to-one antenatal care which includes fathers/ partners, and promotes maternal nutrition, oral health and optimal infant nutrition, and which includes education about basic breastfeeding management and coping with minor problems, and expressing and storing breastmilk. · Provide all pregnant women, mothers and their families with accurate infant nutrition information in a format that is culturally and linguistically appropriate eg. *Growing Strong*. · Develop collaborative partnerships/programs with general practitioners, Aboriginal Community Controlled Health Services and other health workers to target pregnant women least likely to access health services during the antenatal period. · Ensure collaborative shared-care and effective case-management by enhancing partnerships and links with other health service providers. · Ensure appropriate screening protocols for pregnant women at risk of gestational diabetes are incorporated into existing antenatal systems. · Where appropriate, ensure mothers of low birthweight and/or premature infants are aware of the advantages of breastmilk for their infant and systems are in place to support and assist mothers who are expressing milk or breastfeeding eg. *Preterm Clinical Pathways*. · Ensure mothers are permitted unrestricted visitation and are provided with appropriate support to breastfeed their infants in special care baby or neonatal intensive care units when medically appropriate. · Where appropriate, encourage and support mothers of infants with disabilities to feed their infant breastmilk and provide access to advice and support concerning the introduction of solid foods, including appropriate referral to specialist health workers (eg. speech pathologists, lactation consultants) and support services. · Ensure appropriate and timely referral of young pregnant women and mothers to support programs eg. Young Parents Support Program/Young Parents Program.	Increased number of pregnant women attending more than 2 antenatal visits. Increased number of low birthweight/ preterm infants fed breastmilk. Increased rates of exclusive breastfeeding at discharge, 3 and 6 months. Increased age-appropriate introduction of solid food. Reduced rates of non-emergency clinical interventions during labour and delivery. Increased number of hospitals/ community facilities implementing principles outlined in the Baby Friendly Hospital Initiative. Increased number of mothers using local infant nutrition support clinics/groups/ services. Increased number of mothers/families at risk visited at home by a health worker within first month of childbirth.
Promote and support optimal infant nutrition within the health service environment.	· Aim to reduce rates of non-emergency interventions in labour and delivery that impede the initiation and duration of breastfeeding, eg. use of analgesics etc. · Implement the principles outlined in the Baby Friendly Hospital Initiative '*Ten Steps to Successful Breastfeeding'* within hospital and community health settings. · Ensure written informed consent is obtained from all new mothers where supplementary feeding is considered or administered. · Support and implement the recommendations of the *Marketing in Australia of Infant Formula Agreement* and address any breaches accordingly (eg. display of posters promoting infant formula, provision of free infant formula samples to new mothers etc).	
Enhance discharge planning for continuity of care and appropriate referral and follow-up.	· Ensure hospital discharge preparation includes culturally appropriate information on common breastfeeding problems that may occur after the initiation of breastfeeding, how to deal with such problems, where to find support and expressing and storing breastmilk, in a format that is appropriate to the mother's literacy level. · Ensure discharge practices are sustained by comprehensive support programs from both hospital and community services including: - the development of models for the provision of effective and supported discharge plans that link all mothers/parents to clinically appropriate follow-up eg. lactation consultants, child health clinics etc. - implementation of a comprehensive early stage home visiting program with links to postnatal support, including community referral and follow-up for at risk mothers upon discharge from hospital, eg. *Extended Midwifery Service, Family CARE Program* · Develop, support and refer pregnant women and mothers to local peer support networks eg. *Breastfeeding Education and Support Team* (BEST), the Australian Breastfeeding Association (ABA). · Develop and implement evidence-based guidelines, collaborative service models and pathways for the treatment and management of infants with feeding problems or nutritional issues eg. *Preterm Clinical Pathways.*	

Continued

Priority strategies	Key actions	Outcome areas
Ensure health workers have relevant expertise and up-to-date knowledge in breastfeeding management and the introduction of solid food, and its relationship to healthy infant growth and development, including a correct emphasis on growth interpretation and monitoring activities.	· Provide and/or support training and continuing education in maternal and optimal infant nutrition for all health workers who work with pregnant women, mothers and infants and their families. Such education should ensure that health workers: - are aware of the factors that can influence a woman's infant feeding decision - are able to relate feeding choices to healthy growth and development - are aware of correct positioning and attachment and are skilled in the identification and management of breastfeeding problems - are aware of medical situations when it is not appropriate to breastfeed - are aware of which pharmaceutical drugs are contraindicated during breastfeeding and which should be used with caution - are aware of the consequences of inappropriate timing when introducing solid food or fluids other than breastmilk (eg. cows milk). · Ensure health workers receive continuing education with regards to the needs of pregnant women and mothers from priority population groups, including cross-cultural training that is specific to the needs of Aboriginal and Torres Strait Islander women and families. · Ensure health workers are aware of the availability of breastfeeding support services for referral eg. lactation consultants, ABA. · Monitor the growth and development of 'at risk' infants as a routine nutrition intervention eg. *Growth Assessment and Action for Indigenous infants and children.* · Advocate for the inclusion of optimal infant nutrition education in the curriculum of all relevant health care undergraduate and postgraduate courses, including Indigenous health courses.	Increased number of staff certified as International Board Certified Lactation Consultants. Increased number of Aboriginal and Torres Strait Islanders employed as health workers within the maternal and child health services.
Collect accurate and timely infant nutrition data to inform and evaluate health service activities and health policy, measure health promotion outcomes and identify areas requiring further research.	· Collect accurate infant nutrition data eg. breastfeeding at discharge, three and six months, age of introduction of solid foods etc. · Provide regular feedback of data to health workers concerning optimal infant nutrition and conduct peer review of case management. · Undertake regular audit of breastfeeding rates and growth patterns. · Monitor and evaluate optimal infant nutrition and/or infant feeding interventions. · Undertake infant nutrition research that targets gaps and produces locally relevant information to build health policies and services.	Increased number of Aboriginal and Torres Strait Islanders undertaking training in child health programs, with a particular focus on nutrition.
Encourage and support mothers to continue breastfeeding upon their return to employment.	· Advocate for paid maternity leave policies and family friendly workforce policies in the public and private sector to support breastfeeding women returning to employment, including flexible working arrangements, paid lactation breaks and the provision of facilities to breastfeed and/or express breastmilk. · Implement and support the Queensland Health *Work and Breastfeeding* policy in all Queensland Health facilities. · Ensure all pregnant women and mothers are provided with advice and information concerning the expressing and storing of breastmilk. · Work with child care services to develop strategies to support women returning to work to be able to continue breastfeeding.	Increased number of women who continue feeding their infant breastmilk on their return to work.

Continued

Priority strategies	Key actions	Outcome areas
Promote the role of optimal infant nutrition on infant and child health, growth and development within the wider community.	· Develop collaborative partnerships with: - other government and non-government agencies to address the influential factors concerning a mother's/family's infant feeding decisions - education, employment and training sectors to include optimal infant nutrition, life skills and parenting education in curricula - the Australian Breastfeeding Association and other support services - child care providers to ensure infants receive optimal nutrition while in care (eg. *Better Food Better Care, Growing Strong*). Child care providers should not accept free infant formula from manufacturers - the media to promote optimal infant nutrition to the wider community - local government, public planners, developers of community facilities etc. to ensure available and accessible facilities for mothers to breastfeed in privacy. · Implement and support the recommendations of *Eat Well Queensland,* the *Queensland Aboriginal and Torres Strait Islander Food and Nutrition Strategy* and the *National Aboriginal and Torres Strait Islander Nutrition Strategy and Action Plan 2000-2010.* · Advocate for age appropriate labelling on manufactured infant formula and other infant food products and associated literature.	Increased number of child care providers/facilities ensuring infants receive optimal nutrition while in care. Increased number of hospitals requesting mothers to provide written informed consent when their infants receive formula while in hospital. Increased number of mothers who choose to feed their baby infant formula providing their own formula while in hospital.
Respect and support a mother's informed choice to feed her baby with infant formula.	· Ensure that information and one-to-one education provided to pregnant women and mothers who choose to feed their baby with infant formula is provided in a non-judgemental way in the form of advice, support and management, including individual education on safe preparation, delivery and storage. · Ensure feeding with infant formula is demonstrated only by a health worker and only to those mothers or family members who need to use infant formula. · Encourage mothers choosing to feed their baby with infant formula to provide their own infant formula while in hospital so they become familiar/ competent with all aspects involved in the purchase, preparation and delivery of infant formula to their baby. · Ensure mothers provide written informed consent if they wish their infant to receive infant formula or supplemental fluids while in hospital, and that mothers/families are informed of the risks of not breastfeeding when a change from breastfeeding is being considered. Mothers with low literacy skills should be required to provide verbal consent upon being informed of these risks. · Ensure mothers/families with low literacy skills or from a non-English speaking background receive extra assistance to ensure that bottle-feeding is administered safely. · Provide or refer for support those mothers who are unable to breastfeed their infants.	

Glossary of terminology

Cows milk is referred to as whole cows milk (eg. fresh, tinned, long life, powdered), but does not refer to infant formula.

Exclusively breastfed is when an infant has received only breastmilk with no other liquids or solids, with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines.

Health workers in the context of this document includes all medical, allied health and public health practitioners who work with pregnant women, mothers, infants, children and families, including but not limited to midwives, obstetricians, clinical and child health nurses, paediatricians, general practitioners, lactation consultants, nutritionists and dietitians, pharmacists, speech pathologists, dentists and physiotherapists.

Infant formula is any food described or sold as an alternative to human milk for the feeding of infants up to the age of 12 months and formulated in accordance with Australian Standard R7 – Infant Formula.

Introduction of solid food describes the process through which the infant, having previously been fed solely on breastmilk or infant formula, gradually becomes accustomed to a variety of other foods until it can deal with the general family diet. The term is preferred to 'weaning' because it more appropriately conveys that this process does not mean the cessation of breastfeeding.

Supplementary feeding is fluids or foods dissolved in fluids and given to an infant to completely replace a breastfeed.

Services and resources

The **Australian Breastfeeding Association (ABA)** is Australia's leading source of breastfeeding information and support to all sectors of the community. ABA is supported by health authorities and specialists in infant and child health and nutrition. ABA operates a 7-day Breastfeeding Helpline, where callers can contact breastfeeding counsellors to assist them with breastfeeding issues, provides a breast pump hire service, as well as mother-to-mother support through more than 75 Queensland groups. ABA's Melbourne-based Lactation Resource Centre specialises in providing comprehensive information and resources on all aspects of human lactation. Study modules and the latest research articles on breastfeeding are available for a fee. For more information: ABA Queensland Branch Office (07) 3844 6488, 7-day Breastfeeding Helpline Brisbane (07) 3844 8166/3844 8977, Cairns (07) 4058 0007, Townsville (07) 4723 5566, Toowomba (07) 4639 2401 or www.breastfeeding.asn.au

Baby Friendly Hospital Initiative (BFHI) was developed by WHO/UNICEF to encourage health care practices that support breastfeeding while addressing those known to interfere with breastfeeding. The *Ten Steps to Successful Breastfeeding*, which are outlined in the BFHI and which have been shown to positively influence breastfeeding outcomes, are as follows:

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

For more information: Tel. 1300 360 480 or www.acmi.org.au

Better Food, Better Care was a statewide project that took an early intervention, preventive approach to target staff, families and children in early childhood settings. Information resources were developed, including *What is better food?* which contains guidelines to assist staff with recommendations for nutritious food; articles designed to be easily inserted into newsletters; handouts on ways children can learn through food activities; and handouts for parents with food ideas for children in care. For more information: www.health.qld.gov.au/PHS/Documents/shpu/6656dmp.htm

There are also sample policy documents for use in early childhood settings and accredited training packages for early childhood staff to meet the food and nutrition needs of children, families and staff. For more information: www.health.qld.gov.au/phs/documents/shpu/6654dmp.htm or www.health.qld.gov.au/phs/Documents/shpu/6655dmp.htm

Breastfeeding Education and Support Team (BEST) is a peer counselling program providing antenatal education and postnatal support for breastfeeding women. The program is funded by the Commonwealth National Childhood Nutrition Initiative and was developed at a Mums and Babies clinic at the Townsville Aboriginal and Islander Health Service in collaboration with the Tropical Public Health Unit Network. The clinic provides antenatal care, plus postnatal follow-up including immunisation and growth monitoring. Training and employment of breastfeeding peer counsellors ensures that there will be at least one peer counsellor present each morning the clinic is held.

Extended Midwifery Service, also known as Home Maternity Services, provides home-based midwifery care that offers a personalised service with ongoing care and education in the early days following birth for mothers and babies who may be discharged early from hospital. Care may include routine postnatal checks for mother and baby, support and assistance with breastfeeding, baby care education (eg. feeding management, settling techniques and safety issues). Referrals to relevant community groups are made as required.

Family CARE Program provides targeted home visits by child health nurses to families identified through antenatal screening of the mother as at risk of domestic violence and experiencing mood disorder and financial or housing-related stress. It provides an acceptable, effective and timely service response that maximises protective factors for mother and baby during pregnancy and the first year of the infant's life. The program actively encourages and assists breastfeeding and the appropriate introduction of solid foods through anticipatory guidance tools. For more information: www.health.qld.gov.au/hssb/cyhu/home.htm

Growing Strong: Feeding You and Your Baby is a statewide project coordinated by Public Health Nutrition teams in each network. *Growing Strong* resources help health staff talk to Indigenous families about nutrition for mothers, babies and young children. Topics include breastfeeding, correct positioning and attachment, how to know when a baby gets enough milk, supporting breastfeeding and how to help when problems occur, the introduction of solid food, as well as nutritional information for pregnant and breastfeeding women. *Growing Strong* resources can be used as a basis for developing community-wide nutrition programs by Indigenous community organisations (eg. *BEST*), child care centres, pre-schools and kindergartens to improve nutrition.

Growth Assessment and Action (GAA) is a comprehensive Indigenous child health growth assessment and action initiative, which is linked with other resources such as *Growing Strong*. The GAA recognises that optimal infant nutrition and healthy growth in early life supports optimal development and health in childhood and helps prevent obesity and chronic disease in adult life. Growth assessment provides a systematic, timely and accurate assessment of the health and nutritional status of individual infants and children and should be undertaken at regular intervals. Appropriate action should be taken when a growth assessment indicates poor growth or 'failure to thrive'. Such action should include intervention and education. An implementation manual and new infant growth charts based on the format of the WHO Road to Health Charts have been produced and are currently being trialed in remote Northern Zone communities.

The **Marketing in Australia of Infant Formula (MAIF) Agreement** is Australia's response to the *WHO International Code of Marketing Breast Milk Substitutes* (WHO Code). The MAIF Agreement contributes to the provision of safe and adequate nutrition for infants by the protection and promotion of breastfeeding and by ensuring the proper use of infant breastmilk substitutes on the basis of adequate information and through the appropriate marketing and distribution of breastmilk substitutes. For more information: www.health.gov.au/pubhlth/strateg/brfeed

The **National Breastfeeding Strategy** is the Commonwealth Government's commitment to encourage breastfeeding awareness and aims to increase Australia's rate of breastfeeding. Resources are available for parents, health workers and employers. For more information: www.health.gov.au/pubhlth/strateg/brfeed

The **Preterm Clinical Pathway Resource Manual** is based on the NHMRC core childhood screening program of periodic health checks and immunisation strategy, and adapted to meet the needs of children born very preterm (eg. less than 32 weeks) to seven years of age. Children born very preterm may experience disabilities associated with neurological and multi-system dysfunction that interfere with growth, nutrition and the feeding process. The evidence-based resource provides recommended age-appropriate screens for early detection of growth and nutritional difficulties in the primary care setting. The resource does not suspend clinical autonomy, but aims to help standardise screening and surveillance for children born very preterm.

Young Parents Support Program/Young Parents Program offers support to young parents and young pregnant women under 25 years of age in Brisbane, Logan-Beaudesert, Cairns, Gold Coast and Sunshine Coast. Antenatal classes are provided where young women and their support people can come and learn about pregnancy, childbirth and postnatal care in a casual and friendly place. Some programs run young parents groups, which provide an opportunity for young parents to learn about parenting and baby issues, to ask questions and to chat with other young parents. A midwife and/or child health nurse may attend groups, run education sessions and provide baby clinic checks.

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