



## Complete Summary

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### GUIDELINE TITLE

Management of breastfeeding for healthy full-term infants.

### BIBLIOGRAPHIC SOURCE(S)

Singapore Ministry of Health. Management of breastfeeding for healthy full-term infants. Singapore: Singapore Ministry of Health; 2002 Dec 1. 89 p. [76 references]

## COMPLETE SUMMARY CONTENT

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## SCOPE

### DISEASE/CONDITION(S)

Newborn nutrition (breastfeeding)

### GUIDELINE CATEGORY

Counseling  
Evaluation  
Management  
Prevention

### CLINICAL SPECIALTY

Family Practice  
Nursing  
Nutrition  
Obstetrics and Gynecology  
Pediatrics

## INTENDED USERS

Advanced Practice Nurses  
Health Care Providers  
Hospitals  
Nurses  
Physician Assistants  
Physicians

## GUIDELINE OBJECTIVE(S)

- To serve as a guide for practitioners who are involved in caring for breastfeeding mothers and their healthy full-term infants
- To promote and support breastfeeding

## TARGET POPULATION

Healthy, full-term infants

## INTERVENTIONS AND PRACTICES CONSIDERED

1. Evaluation of maternal and infant suitability for breastfeeding
2. Antenatal breastfeeding education including: antenatal classes, breastfeeding talks, breastfeeding booklets, and individual counseling
3. Breast care including: washing, avoidance of soap and alcohol, avoiding breast shells or Hoffman's exercises, avoiding antenatal expression of colostrums or nipple rolling, using a "Nipplette" to correct inverted nipples
4. Breastfeeding techniques including: initiation, skin-to-skin contact, promotion of mother-infant contact, correct positioning, rooming-in
5. Supplementation including: delivery methods such as cup, spoon, and syringe feeding; use of mother's milk as a supplement
6. Expression and storage of breastmilk including: sterilisation of equipment; methods of expression such as hand, hand pump, and electric pump; storage containers such as hard plastic or glass bottles; storage temperature and duration
7. Observation of breastfeeding
8. Evaluation of breastfeeding
9. Correction of common problems of breastfeeding by: proper latch, breastmilk as a treatment for sore nipples, modified lanolin for cracked nipples, cold cabbage leaves or cold gel packs for engorged breasts
10. Diet
11. Support for breastfeeding while working
12. Weaning

## MAJOR OUTCOMES CONSIDERED

- Risk of transmission of infection or drugs to infant through breast milk
- Incidence, frequency, and duration of breastfeeding
- Infant feeding behavior
- Need for formula supplements
- Effectiveness and complications of breastfeeding

- Incidence of diarrhoeal disease and infection in breastfed infants
- Cognitive development in breastfed infants
- Incidence of breast and ovarian cancer in women who breastfeed

## METHODOLOGY

### METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Three highly regarded evidence-based guidelines were reviewed:

- Evidence for the ten steps to successful breastfeeding by World Health Organisation, 1998.
- Evidence-based guidelines for breastfeeding management during the first fourteen days by the International Lactation Consultant Association, USA, 1999.
- Infant feeding guidelines for health workers by National Health and Medical Research Council, Australia, 1998.

The workgroup felt that an updated literature search for the specific topics addressed on MEDLINE, EMBASE, Cochrane Library, and CINAHL would be sufficient. Literature from the year 1998 to August 2002 was reviewed.

### NUMBER OF SOURCE DOCUMENTS

Not stated

### METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Committee)  
Weighting According to a Rating Scheme (Scheme Given)

### RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

The guideline developers adopted the Scottish Intercollegiate Guidelines Network (SIGN) system, which gives clear guidance on how to evaluate the design of individual studies and grade each study's level of evidence:

#### Individual Validity Grading

All primary studies and reviews addressing a particular topic were appraised using a SIGN checklist appropriate to the study's design. These were individually rated for internal validity using the system below:

++ All or most of the criteria have been fulfilled. Where they have not been fulfilled the conclusions of the study or review are thought very unlikely to alter.

+ Some of the criteria have been fulfilled. Those criteria that have not been fulfilled or not adequately described are thought unlikely to alter the conclusions.

- Few or no criteria fulfilled. The conclusions of the study are thought likely or very likely to alter.

#### Levels of Evidence

Each study is assigned a level of evidence by combining the design designation and its validity rating using the system below:

1++ High quality meta-analyses, systematic reviews of randomised controlled trials (RCTs), or RCTs with a very low risk of bias.

1+ Well conducted meta-analyses, systematic reviews, or RCTs with a low risk of bias.

1- Meta-analyses, systematic reviews, or RCTs with a high risk of bias.

2++ High quality systematic reviews of case-control or cohort or studies. High quality case-control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal.

2+ Well conducted case-control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal.

2- Case-control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal.

3 Non-analytic studies e.g. case reports, case series.

4 Expert opinion.

#### METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses  
Systematic Review

#### DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

The guideline developers have adopted the revised Scottish Intercollegiate Guidelines Network (SIGN) system which gives clear guidance on how to evaluate the design of individual studies and grade each study's level of evidence; and how to assign a grade to the recommendation after taking into account external validity, result consistency, local constraints and expert opinion.

The extensive reliance on the International Lactation Consultant Association (ILCA) and World Health Association (WHO) guidelines was acknowledged and treated as a very special case of published expert opinion. For areas where available evidence was inconsistent or inconclusive, recommendations were made

based on the clinical experience and judgement of the workgroups of expert committee.

## METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

## RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

### Grades of Recommendations

- A. At least one meta-analysis, systematic review, or randomised controlled trial (RCT) rated as 1++, and directly applicable to the target population; or a body of evidence, consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results.
- B. A body of evidence, including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results; or extrapolated evidence from studies rated as 1++ or 1+.
- C. A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results; or extrapolated evidence from studies rated as 2++.
- D. Evidence level 3 or 4; or extrapolated evidence from studies rated as 2+.

The grading system emphasises the quality of the experimental support underpinning each recommendation. The grading D/4 was assigned in cases where

- It would be unreasonable to conduct a RCT because the correct practice is logically obvious;
- Recommendations derived from existing high quality evidence-based guidelines. The guideline developers alert the user to this special status by appending the initials of their source e.g. (D/4 - ILCA, WHO).

## COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

## METHOD OF GUIDELINE VALIDATION

Peer Review

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Drafts of the guidelines were circulated to healthcare institutions for peer review on validity, reliability and practicality of the recommendations. These guidelines will be reviewed and revised periodically to incorporate the latest relevant evidence and expert clinical opinion.

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

Definitions for the grades of recommendations (A, B, C, D) and the levels of evidence (1++ to 4) are provided at the end of the Major Recommendations field.

#### Contraindications to Breastfeeding

D/4 Identify maternal and infant contraindications to breastfeeding so as to appropriately advise mother not to breastfeed under the following conditions (International Lactation Consultant Association, 1999; World Health Organisation, 1998; World Health Organisation, 2000):

##### Maternal:

- HIV and certain infectious diseases;
- substance abuse;
- certain medications;
- certain surgeries.

##### Infant:

- galactosaemia;
- phenylketonuria.

#### Antenatal Breastfeeding Education

B/2<sup>++</sup> Provide parents with complete, current information on the benefits and techniques of breastfeeding through antenatal classes, breastfeeding talks, breastfeeding booklets and/or individual counselling. Information should include the following (Kistin et al., 1990; Pugin et al., 1996):

- benefits for mother and infant;
- anatomy and physiology of the breast;
- breast care;
- breastfeeding technique;
- prevention of breastfeeding problems and
- rooming-in and immediate contact between mother and infant.

D/4 Provide educational materials that are consistent, accurate, at appropriate reading levels and culturally sensitive. The information should include (International Lactation Consultant Association, 1999):

- lactation consultants;
- breastfeeding support groups and
- breast pump rental and sales outlets.

D/4 Educational materials should be free of commercial advertisements related to breast milk substitutes in accordance with SIFECs (Sale of Infant Formula Ethics Committee, Singapore) Code (Sale of Infant Formula Ethics Committee, 2002).

D/4 Provide women with information on options for feeding to facilitate parents to make an informed choice (National Health and Medical Research Council, 1998).

D/4 Include family members or significant others during breastfeeding education sessions (International Lactation Consultant Association, 1999).

#### Breast care

D/4 Wash areola and nipple with water. Avoid using soap and alcohol (Lawrence & Lawrence, 1999).

B/2 Avoid antenatal treatment of inverted or non-protractile nipples with breast shells or Hoffman's exercises (Alexander, Grant & Cambell, 1992).

D/4 Avoid antenatal expression of colostrum, nipple rolling or application of breast cream (Lawrence & Lawrence, 1999).

D/3 Use "Nipplette" antenatally to correct inverted nipples (McGeorge, 1994).

#### Initiation of Breastfeeding

D/4 Initiate breastfeeding within 1 hour of birth (International Lactation Consultant Association, 1999; World Health Organisation, 1998).

D/4 Provide skin-to-skin contact for at least the first hour after birth or until after the first breastfeeding (International Lactation Consultant Association, 1999; World Health Organisation, 1998).

D/4 Promote maximum mother-infant contact unless there is an unavoidable medical reason (International Lactation Consultant Association, 1999; World Health Organisation, 1998).

#### Techniques on Breastfeeding

D/4 Show and teach the mother how to adopt a comfortable position and ensure that infant is positioned correctly. The infant is held at the level of the breast and body facing the breast with head and body aligned (Escott, 1989).

D/4 Guide mother to attach infant onto the breast and observe infant for signs of correct latch-on such as (Escott, 1989):

- wide opened mouth;
- flanged lips and
- chin touching the breast and nose is free.

D/4 Observe infant for the following signs of milk transfer (Escott, 1989; International Lactation Consultant Association, 1999):

- sustained rhythmic suck/swallow pattern with occasional pauses;
- audible swallowing;
- relaxed arms and hands;
- moist mouth and
- satisfaction after feedings.

D/4 Observe mother for some of the following signs of milk transfer (International Lactation Consultant Association, 1999):

- strong tugging which is not painful;
- thirst;
- uterine contractions or increased lochia flow during or after feeding for the first 3-5 days;
- milk leaking from the opposite breast while feeding;
- relaxation or sleepiness;
- breast softening while feeding and
- nipple elongated after feeding.

#### Frequency and Duration of Breastfeeding

D/4 Facilitate unrestricted breastfeeding 8-12 times per 24 hours (World Health Organisation, 1998; International Lactation Consultant Association, 1999).

C/2<sup>+</sup> Nurse infant on demand and/or every 2-3 hourly whenever infant shows signs of hunger, such as increased alertness, activity, mouthing, rooting or crying (American Academy of Pediatrics, 1997; Renfrew et al., 2001).

D/4 Allow infant to nurse until satisfied, usually 10-15 minutes on each breast (American Academy of Pediatrics, 1997).

D/4 Arouse non-demanding infants in early weeks after birth, to nurse if 4 hours have elapsed since the last nursing (Klaus, 1987; Mohrbacher & Stock, 1997).

#### Rooming-in

D/4 Facilitate rooming-in 24 hours a day. This means the infant is with the mother from birth (International Lactation Consultant Association, 1999; World Health Organisation, 1998).

D/4 Conduct examinations and routine tests of the infant in the mother's room (International Lactation Consultant Association, 1999; World Health Organisation, 1998).

D/4 Transfer the infant with mother to the postnatal ward together after delivery (International Lactation Consultant Association, 1999; World Health Organisation, 1998).

D/4 Provide extra support for mothers after caesarean section to room-in with their infants (National Health and Medical Research Council, 1998).

D/4 Bring infant to mother to breastfeed if the mother is temporarily unable to room-in with her infant (National Health and Medical Research Council, 1998).

#### Pacifiers and Artificial Teats

D/4 Avoid the use of pacifiers and artificial teats until breastfeeding is well established (World Health Organisation, 1998).

D/4 Avoid using bottles with artificial teats (nipples) or pacifiers (World Health Organisation, 1998).

#### Supplementation

D/4 Identify possible indications for early supplementation (Powers & Slusser, 1997; World Health Organisation, 1992).

D/4 Provide supplementation when medically indicated using cup, spoon or syringe (International Lactation Consultant Association, 1999; World Health Organisation, 1998).

D/4 Use mother's own colostrum or milk as a first choice for supplementation (International Lactation Consultant Association, 1999).

#### Expression and Storage of Breastmilk

D/4 Teach mother expression, collection and storage of breastmilk (International Lactation Consultant Association, 1999; National Health and Medical Research Council, 1998).

D/4 Sterilise all equipment such as hand pumps, funnels and collecting bottles before expressing. Instruct mother to wash her hands and breasts before handling the equipment and expressing (Lawrence & Lawrence, 1999).

D/4 Massage the entire breast gently, both top and underside, starting from the top and stroking towards the nipple. Do this several times so that the whole breast is massaged (National Health and Medical Research Council, 1998).

D/4 Use any of the three methods of expressing milk--hand expressing, hand pump expressing or electric pump expressing (National Health and Medical Research Council, 1998).

D/4 Follow the steps for the different methods of expressing milk (National Health and Medical Research Council, 1998):

#### Hand expressing

- Place the thumb and finger diagonally opposite on the edge of the areola.

- Gently press inward towards the centre of the breast and squeeze the finger and thumb together.
- Repeat with a rhythmic movement.
- Move fingers around areola and express to empty all sectors of the breast.

#### Hand pump expressing

- Place the flat rim of the breast cup on the breast, centering the nipple.
- Gently pull the piston and release the suction rhythmically.

#### Electric pump expressing

- Place the breast cup on the areola, centering the nipple.
- Start the suction strength on low, gradually increase the suction strength as long as there is no discomfort.

D/4 Express for 15 minutes for simultaneous double pumping. Express 30 minutes for single pumping and hand expressing, alternating between breast every five minutes (Slusser & Frantz, 2001).

D/4 Express eight or more times in 24 hours (Slusser & Frantz, 2001).

D/4 Store milk in hard plastic or glass bottles. Label bottles of expressed milk with name, date and time of expression (Tully, 2000).

D/4 Transport breastmilk in an insulated container with ice packs (National Health and Medical Research Council, 1998).

D/4 Store breastmilk following the recommended guidelines (Slusser & Franz, 2001):

#### Location and temperature -- Time

- Milk stored at 25 degrees C -- 4 hr
- Milk in a cooler with ice pack (15 degrees C) -- 24 hr
- Fresh milk in refrigerator (4 degrees C) -- 48 hr
- Previously thawed milk in refrigerator (4 degrees C)-- 24 hr
- Frozen milk:
  - Freezer with separate door from refrigerator -- 3 to 6 months
  - Deep freezer (-20 degrees C) -- 6 to 12 months

D/4 Thaw breastmilk in the refrigerator or by placing it in warm water. Do not thaw or warm breastmilk in the microwave oven (National Health and Medical Research Council, 1998).

D/4 Give warmed milk straight away and discard any left over. Do not re-freeze or rewarm breastmilk (National Health and Medical Research Council, 1998).

#### Observation of Breastfeeding

D/4 Observe and document the following for at least one breastfeeding session in each 8-hour period during the hospital stay (International Lactation Consultant Association, 1999):

- condition of breasts and nipples;
- position of mother and infant;
- correct latch-on;
- frequency of feedings;
- infant's behaviour;
- number of wet diapers and
- number and character of bowel movements.

D/4 Identify the following signs of ineffective breastfeeding (International Lactation Consultant Association, 1999; Powers & Slusser, 1997):

- milk "comes in", but swallowing or gulping is not audible;
- milk does not seem to have "come in" by fifth day;
- infant seems to be nursing continuously, always hungry and never satisfied.
- infant is exceptionally "good", rarely crying and consistently sleeping more than four to six hours;
- fewer than eight feedings in 24 hours (the infant does not have to take both breasts at each feeding);
- sore and painful nipples throughout most feedings;
- significant engorgement (breasts are very hard and do not soften after feeding);
- fewer than six wet diapers in 24 hours after the third day;
- dark black, green or brown stools after the third day;
- fewer than three yellow stools in 24 hours (from the fourth day to one month);
- average daily weight gain of less than 15 to 30g (once the milk "comes in") and
- infant has not regained birthweight by ten days of age.

D/4 Identify the following factors that can affect breastfeeding and provide necessary feeding assistance and monitor closely (International Lactation Consultant Association, 1999):

#### Maternal

- previous breastfeeding difficulty;
- cracked or bleeding nipples;
- severe engorgement;
- acute or chronic disease;
- medication use;
- breast surgery or trauma and
- absence of antenatal breast changes.

#### Infant

- birth trauma;
- prematurity;
- inconsistent ability to latch-on;

- sleepiness or irritability;
- hyperbilirubinaemia or hypoglycaemia;
- small (small for gestational age [SGA]) or large (large for gestational age [LGA]) for gestational age, intrauterine growth retardation (IUGR);
- tight frenulum (tongue tie);
- multiple birth;
- neuromotor problems (i.e. Down Syndrome);
- oral anomalies (i.e. cleft lip/palate) and
- acute or chronic illness.

#### Evaluation of Breastfeeding Techniques

D/4 Re-evaluate breastfeeding techniques if ineffective breastfeeding is observed within the first 24 hours. Refer to a health care professional with breastfeeding expertise such as an International Board Certified Lactation Consultant (IBCLC) or Lactation Nurse/Midwife (International Lactation Consultant Association, 1999).

D/4 Begin expressing milk within the first 24 hours to develop and maintain an adequate milk supply until infant can suckle (Powers & Slusser, 1997).

#### Common Problems of Breastfeeding

D/4 Provide anticipatory guidance for common problems that may interfere with continued breastfeeding (International Lactation Consultant Association, 1999).

D/4 Remove and re-attach infant to ensure proper latch-on if nipple pain continues after the initial attempt (Powers & Slusser, 1997).

D/4 Detach infant from the breast by inserting a finger into the corner of the infant's mouth (American College of Obstetricians and Gynecologists, 2001).

D/4 Apply breastmilk to the sore nipples after feed and air dry to aid healing. Use modified lanolin for very sore and cracked nipples (Lawrence & Lawrence, 1999).

D/4 Use different feeding positions to reduce pressure on the sore nipple (Royal College of Midwives, 2002).

D/4 Teach mother to express her milk for a day or two until her nipples have healed if she cannot tolerate the idea of feeding. Feed infant temporarily using alternative methods (Cable, Stewart & Davis, 1997; Inch & Fisher, 2000).

D/4 Advise on frequent, effective feedings to minimise swelling (International Lactation Consultant Association, 1999).

B/2<sup>++</sup> Apply cold cabbage leaves or cold gel packs on engorged breasts to reduce swelling. This measure is used with breast massage, milk expression (pumping), and analgesics (International Lactation Consultant Association, 1999; Snowden, Renfrew & Woolridge, 2002).

D/4 Avoid hot compresses unless breasts are leaking (International Lactation Consultant Association, 1999).

D/4 Observe the following possible indicators of insufficient milk supply (International Lactation Consultant Association, 1999):

- decreased infant's stool and urine output;
- infant's fussiness;
- decreased breast swelling at second week after delivery and
- increased frequency of feeding.

D/4 Respond to infant's cry and identify why infant is crying (International Lactation Consultant Association, 1999).

D/4 Advise mother to eat a variety of foods from all the food groups and drink to satisfy thirst (International Lactation Consultant Association, 1999).

#### Going Out With or Without the Infant

D/4 Support the mother how to breastfeed discreetly when she is out with the infant (International Lactation Consultant Association, 1999).

D/4 Introduce a supplement (preferably expressed breast milk), if mother is unable to breastfeed directly (International Lactation Consultant Association, 1999).

#### Continued Breastfeeding

D/4 Support continued breastfeeding during any rehospitalisation of mother or infant (International Lactation Consultant Association, 1999).

D/4 Provide a list of available support resources (International Lactation Consultant Association, 1999):

- helplines;
- lactation consultants;
- breastfeeding support groups and
- breast pump rental and sales outlets.

D/4 Include family members or significant others during breastfeeding education sessions (International Lactation Consultant Association, 1999).

#### Working and Breastfeeding

D/4 Guidance and education on continuing breastfeeding during employment should be given to all nursing mothers (Mohrbacher & Stock, 1997; National Health and Medical Research Council, 1998).

D/4 Workplaces can adopt policies to enable women to breastfeed on returning to work. This includes flexible working hours, work-based childcare facilities, providing rooms for expression of breastmilk or breastfeeding and refrigerators to store expressed breastmilk (National Health and Medical Research Council, 1998).

#### Advice on Gradual Weaning

A/1+ Breastfeed exclusively for the first six months after birth (Kramer & Kakuma, 2002).

D/4 Gradually introduce iron-enriched solid foods in the second half of the first year to complement the breastmilk diet (American Academy of Pediatrics, 1997).

D/4 Breastfeed for at least 12 months, and thereafter for as long as mutually desired (American Academy of Pediatrics, 1997).

D/4 Wean infant from breastfeeding gradually by eliminating a feed every 2-3 days (American College of Obstetricians and Gynecologists, 2001).

D/4 Apply cool compress and manually express sufficient milk to relieve the engorgement (American College of Obstetricians and Gynecologists, 2001).

### Definitions:

#### Levels of Evidence

1++

High quality meta-analyses, systematic reviews of randomised controlled trials (RCTs), or RCTs with a very low risk of bias.

1+

Well conducted meta-analyses, systematic reviews, or RCTs with a low risk of bias.

1-

Meta-analyses, systematic reviews, or RCTs with a high risk of bias.

2++

High quality systematic reviews of case-control or cohort or studies.

High quality case-control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal.

2+

Well conducted case-control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal.

2-

Case-control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal.

3

Non-analytic studies e.g. case reports, case series.

4

Expert opinion.

## Grades of Recommendation

### A

At least one meta-analysis, systematic review, or RCT rated as 1++, and directly applicable to the target population; or

A body of evidence, consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results.

### B

A body of evidence, including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results; or

Extrapolated evidence from studies rated as 1++ or 1+.

### C

A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency or results; or

Extrapolated evidence from studies rated as 2++.

### D

Evidence level 3 or 4; or

Extrapolated evidence from studies rated as 2+.

## Interpretation of the D/4 Grading

The grading system emphasises the quality of the experimental support underpinning each recommendation. The grading D/4 was assigned in cases where

- it would be unreasonable to conduct a RCT because the correct practice is logically obvious;
- recommendations derived from existing high quality evidence-based guidelines. The guideline developers have altered the user to this special status by appending the initials of their source e.g. (D/4 - ILCA, WHO) in the original guideline.

## CLINICAL ALGORITHM(S)

An algorithm is provided in the original guideline document for the management of breastfeeding for healthy, full-term infants.

## EVIDENCE SUPPORTING THE RECOMMENDATIONS

## REFERENCES SUPPORTING THE RECOMMENDATIONS

[References open in a new window](#)

## TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is specifically stated for each recommendation (See "Major Recommendations").

## BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

### POTENTIAL BENEFITS

#### Benefits of Breastfeeding

Breastfeeding is a way of providing optimal nutrition for the development and healthy growth of an infant. Breast milk provides nutrition in the early critical months of life and protects the child from the common childhood infections and diseases throughout childhood and into adulthood. In addition, breast milk provides unique biological and emotional basis for the health of both mother and child.

#### Benefits for Mother

- Breastfeeding is beneficial to the mother's health. In a review, eleven of 20 studies reviewed showed that women who did not breastfeed were significantly more likely to develop premenopausal breast cancer compared with women who breastfeed. The protective effect shown in these studies generally increased with the longer duration of breastfeeding. Another review of epidemiological studies (The collaborative group on hormonal factors in breast cancer, 2002), reported that the risk of breast cancer reduced by 4.3% (confidence interval, 2.9-5.8) for each year that a woman breastfeeds, in addition to a reduction of 7.0% (confidence interval, 5.0-9.0) for each birth. The relationship reported in this review was found to be consistent for women from developed and developing countries, of different ages and ethnic origins and with various childbearing patterns and other personal characteristics. It was also reported that the initiation and physiologic completion of breastfeeding during the first two to seven months postpartum was associated with a significant decrease in the risk of developing ovarian cancer. An average protective level of 20% was reported in the studies.
- Other benefits to the breastfeeding mother include more rapid postpartum weight loss and delayed resumption of menses in the mother.

#### Benefits for Infant

- A systematic review of five studies, including some conducted in industrialised countries has shown a protective effect of breastfeeding on diarrhoeal disease. For infants who were exclusively breastfed for at least four months, there was a significant reduction of risk for gastroenteritis compared with those who were mixed-fed or formula-fed. Four studies reviewed showed that breastfeeding had a significant protective effect against lower respiratory tract illness. It was also associated with a shorter duration of respiratory illness in infants. Several prospective studies reviewed have shown that four months of exclusive breastfeeding is associated with a lower risk of otitis media.

- A review of 20 studies which evaluated developmental or cognitive outcome in breastfed infants showed an average 3.2 points higher cognitive developmental score among breastfed infants. The advantage was seen in infants between 6 and 23 months, and continued throughout childhood till 10-15 years of age. The meta-analysis also found that the duration of breastfeeding correlated with better developmental and cognitive outcome. Infants who were breastfed for 28 weeks or more had a higher cognitive development score compared to those who were breastfed for less than 28 weeks.
- Another study reported a positive significant association between duration of breastfeeding and intelligence in young adults, with results indicating that breastfeeding may have long term positive effects on cognitive and intellectual development.

#### POTENTIAL HARMS

Not stated

### CONTRAINDICATIONS

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##### Contraindications to Breastfeeding

##### Maternal

- HIV and certain infectious diseases
- substance abuse
- certain medications
- certain surgeries

##### Infant

- galactosaemia
- phenylketonuria

### QUALIFYING STATEMENTS

#### QUALIFYING STATEMENTS

- These guidelines offer recommendations that are based on current scientific evidence and professional judgement. They are not intended as the legal standard of care.
- Users of these guidelines should determine the appropriate and safe patient care practices based on assessment of the circumstances of the particular patient, their own clinical experiences and their knowledge of the most recent research findings.
- Every practitioner must exercise clinical judgement in the nursing management of mothers who breastfeed their infants. It is recommended that every practitioner utilises the suggested guidelines with regards to the

individual mother's and her infant's condition, overall treatment goal, resource availability, institutional policies and treatment options available.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

#### Quality Assurance

Hospital and institution administrators should consider these guidelines in their in-house quality assurance programmes. Nurses should critically review the implications of these guidelines for their routine care delivery, trainee teaching and patient education needs.

#### Parameters for Evaluation

In the management of breastfeeding, quality of care may be defined as an increase in the following rates.

It is suggested that the following parameters are monitored preferably on a monthly basis:

#### Attendance on antenatal breastfeeding

$$\frac{\text{[Number of mothers who attended antenatal breastfeeding classes or talks]}}{\text{Number of live births}}$$

X 100% to obtain percentage of women who attended antenatal breastfeeding classes or talks

#### Initiation of breastfeeding

$$\frac{\text{[Number of mothers who initiated breastfeeding within 1 hour of birth]}}{\text{Number of live births}}$$

X 100% to obtain percentage of women who initiated breastfeeding within 1 hour of birth at Delivery Suite

#### Exclusive breastfeeding (up to time of discharge)

$$\frac{\text{[Number of infants who breastfeed exclusively up to the time of discharge]}}{\text{Number of live births}}$$

X 100% to obtain percentage of infants who breastfeed exclusively up to the time of discharge

It is suggested that the following parameters are monitored preferably on a periodic basis:

#### Breastfeeding counselling

$$\frac{\text{[Number of mothers counselled at postnatal wards]}}{\text{Number of live births}}$$

X 100% to obtain percentage of women who attended breastfeeding counselling at postnatal wards

Exclusive breastfeeding (at six weeks)

$$\frac{\text{[Number of infants who breastfeed exclusively at six weeks]}}{\text{Number of infants sampled}}$$

X 100% to obtain percentage of infants who breastfeed exclusively up to the time of discharge

Exclusive breastfeeding (at four months)

$$\frac{\text{[Number of infants who breastfeed exclusively at four months]}}{\text{Number of infants sampled}}$$

X 100% to obtain percentage of infants who breastfeed exclusively up to the time of discharge

Management Role

Hospital and institution administrators, together with quality assurance teams, should ensure that outcome indicators are met. They may benchmark against hospitals or institutions that perform well.

Implementation of Guidelines

It is expected that these guidelines will be adopted after discussion with hospital and institution management and clinical staff. They may review how these guidelines may complement or be incorporated into their existing institution protocols. Feedback may be directed to the Singapore Ministry of Health for consideration for future review.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness

Patient-centeredness

### BIBLIOGRAPHIC SOURCE(S)

Singapore Ministry of Health. Management of breastfeeding for healthy full-term infants. Singapore: Singapore Ministry of Health; 2002 Dec 1. 89 p. [76 references]

### ADAPTATION

This guideline was partially adapted from:

- Evidence for the ten steps to successful breastfeeding by World Health Organisation, 1998.
- Evidence-based guidelines for breastfeeding management during the first fourteen days by the International Lactation Consultant Association, USA, 1999.
- Infant feeding guidelines for health workers by National Health and Medical Research Council, Australia, 1998.

### DATE RELEASED

2002 Dec

### GUIDELINE DEVELOPER(S)

Singapore Ministry of Health - National Government Agency [Non-U.S.]

### GUIDELINE DEVELOPER COMMENT

These guidelines are the culmination of efforts of a panel of experts from various restructured and private hospitals and a multidisciplinary review committee.

### SOURCE(S) OF FUNDING

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### GUIDELINE COMMITTEE

Workgroup on Management of Breastfeeding for Healthy Full-term Infants

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### FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

#### GUIDELINE STATUS

This is the current release of the guideline.

#### GUIDELINE AVAILABILITY

Electronic copies: Not available at this time.

Print copies: Available from the Singapore Ministry of Health, College of Medicine Building, 16 College Rd, Singapore 169854.

#### AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Management of breastfeeding for healthy full-term infants. Quick Reference Guide. Singapore: Singapore Ministry of Health; 2002.

Print copies: Available from the Singapore Ministry of Health, College of Medicine Building, 16 College Rd, Singapore 169854.

#### PATIENT RESOURCES

None available

#### NGC STATUS

This NGC summary was completed by ECRI on May 23, 2003. The information was verified by the guideline developer on June 3, 2003.

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