Consolidation and updating the evidence base for the promotion of breastfeeding

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# CONTENTS

**Introduction** .................................................................................................................. 5

**1.0 Systematic reviews of evidence using traditional methodologies** ...................... 7

1.1 Settings: ....................................................................................................................... 8

1.1.1 Health care setting ................................................................................................. 8

1.2 Population groups: ..................................................................................................... 10

1.3 Approaches: ............................................................................................................... 11

1.3.1 Information giving .................................................................................................. 11

1.3.2 Use of the media ..................................................................................................... 11

1.3.3 Professional development ....................................................................................... 11

1.3.4 Peer support .......................................................................................................... 11

1.3.5 Schools ................................................................................................................ 12

1.4 Summary of main conclusions and implications of the systematic reviews of evidence using traditional methodologies ............................................................... 13

**2.0 Non Systematic Literature Reviews** ................................................................... 14

2.1 Settings ...................................................................................................................... 15

2.1.1 Health Care .......................................................................................................... 15

2.1.2 Home .................................................................................................................... 15

2.1.3 Public places ......................................................................................................... 16

2.1.4 Workplace ............................................................................................................ 16

2.2 Population groups ..................................................................................................... 16

2.2.1 Low Income .......................................................................................................... 16

2.2.2 Adolescents .......................................................................................................... 16

2.3 Factors affecting uptake and continuation of breastfeeding .................................... 17

2.4 Summary ................................................................................................................... 18

**3.0 Randomised Controlled Trials reported since the most recent high quality systematic reviews** ..................................................................................................................... 19

3.1 Settings ...................................................................................................................... 19

3.1.1 Health Care .......................................................................................................... 19

3.1.2 Home .................................................................................................................... 19

3.2 Population groups ..................................................................................................... 20

3.2.1 Low Income .......................................................................................................... 20

3.3 Approaches ............................................................................................................... 20

3.3.1 Information giving .................................................................................................. 20

3.3.2 Peer support .......................................................................................................... 20

3.4 Summary ................................................................................................................... 20

**4.0 Studies using traditional methodologies, excluding randomised controlled trials, reported since the most recent high quality systematic reviews**

Bookmark not defined.

- **4.1 Settings** ................................................................................................................ Error! Bookmark not defined.

- **4.1.1 Health Care** .................................................................................................... Error! Bookmark not defined.

- **4.2 Population groups** ............................................................................................. Error! Bookmark not defined.

- **4.3 Approaches** ....................................................................................................... Error! Bookmark not defined.
4.3.1 Peer support

4.4 Factors affecting uptake and continuation of breastfeeding

4.5 Summary

5.0 Systematic reviews of descriptive and qualitative studies

5.1 Settings

5.1.1 Health Care

5.1.2 Public places

5.1.3 Workplace

5.2 Population groups

5.2.1 Low Income

5.2.2 Adolescents

5.3 Factors affecting uptake and continuation of breastfeeding

5.4 Summary

5.5 Settings

5.6 Population groups

5.7 Approaches

5.8 Factors affecting uptake and continuation of breastfeeding

5.9 Summary

6.0 Descriptive and qualitative studies reported since the most recent high quality systematic review

6.1 Settings

6.2 Population groups

6.3 Factors affecting uptake and continuation of breastfeeding

6.4 Summary

7.0 Research in progress

7.1 Settings

7.2 Population groups

7.3 Approaches

7.4 Factors affecting uptake and continuation of breastfeeding

7.5 Summary

8.0 International Experiences, Strategies, and Good Practice Guidelines

8.1 Settings

8.2 Population groups
8.2.1 Low Income..............................................
8.3 Examples of Integrated National Strategies to Promote Breastfeeding

9.0 Overall summary ...........................................
9.1 Factors which influence the initiation and the duration of breastfeeding

9.1.1 Initiation.................................................
9.1.2 Duration............................................... 
9.2 Effective interventions, and opportunities and barriers to promote breastfeeding

9.2.1 Settings ..............................................
Schools ................................................................
Health Care ....................................................
Home ............................................................
Public places ...................................................
Workplace ......................................................
9.2.3 Population groups ......................................
Low Income ....................................................
Adolescents .....................................................
9.2.4 Approaches ............................................
Information giving ...........................................
Media ............................................................
Professional development ................................
Peer support ...................................................
Research ........................................................

Annex I: Updating and consolidating the evidence base for the promotion of breastfeeding: Search strategy

KEY TO TABLES ...................................................
Table 1: Systematic reviews of evidence using traditional methodologies
Table 2: Non systematic literature reviews
Table 3: Randomised controlled trials carried out since the most recent systematic reviews
Table 4: Studies using traditional methodologies, excluding randomised controlled trials, reported since the most recent high quality systematic reviews
Table 5: Systematic reviews of descriptive and qualitative studies
Table 6: Descriptive and qualitative studies reported since the most recent high quality reviews
Introduction

Breastfeeding rates in the United Kingdom are amongst the lowest in Europe. In England and Wales in 1995 about 68% of mothers began to breastfeed, and this figure dropped to 44% when the baby was six weeks old, and 28 per cent at four months of age. Although Wales currently has no coordinated approach to monitoring breastfeeding rates, figures from the All Wales Midwifery Network indicate that these figures are probably much lower for Wales, with only about 46 per cent of women starting to breastfeed.

There are considerable variations in breastfeeding rates, with older, better educated, and higher social class women being more likely to breastfeed. Analysing the data using demographic variables is a useful indicator to begin to try to understand some of the differences. However factors which influence breastfeeding are complex. They include social, cultural, and attitudinal determinants, as well as practical issues including the quality of support provided in the health care service, and whether a woman is returning to employment or not.

Because of this complexity, a sound evidence base is an essential prerequisite for developing a strategy to promote breastfeeding. In the time available it has not been possible to carry out a full systematic review. Fortunately several high quality systematic reviews have been carried out relatively recently. Thus, the approach used here is to consolidate and update the evidence base.

Over recent years there has been increasing recognition of the importance of a good evidence base to inform the development and implementation of cost effective interventions. The Cochrane Centre was a leader in this area, and built up evidence in many areas of health, using the randomised controlled trial as a ‘gold standard’. The limitations of this have been increasingly recognised, and the York NHS Centre for Research and Dissemination broadened the ‘hierarchy of evidence’ to include observational studies, and opinions of well-respected authorities. However, it has been argued that public health interventions do not lend themselves to hierarchies of evidence that rely on traditional research methods, but often gain important and relevant information from qualitative research. There had been a move to develop hierarchies, which reflect this, and the Health Evidence Bulletins commissioned by the Wales Office for Research and Development uses an approach that encompasses both traditional and non-traditional methodologies.
This approach was used to develop the Welsh Health Evidence Bulletin on Infant Feeding, which was published in 1997. This included breastfeeding, although the section on encouraging breastfeeding focuses on support within hospitals, and does not address the broader aspects in any detail. In England the problem of encompassing both traditional and non-traditional methodologies was tackled by commissioning two parallel series of reports. This resulted in a publication on the ‘Effectiveness of interventions to promote healthy eating in infants under one year of age’ (Tedstone et al. 1998), and a corresponding publication calling upon non traditional research studies called ‘Opportunities for and barriers to good nutritional health in women of childbearing age, pregnant women, infants under 1, and children aged 1-5’ (Reid et al. 1998).

More recently the NHS Health Technology Assessment Programme commissioned the University of Leeds to undertake a systematic review of interventions to promote the initiation of breastfeeding (Fairbank et al. 2000).

The approach used here, in order to consolidate and update the evidence base for promoting breastfeeding, was to scan the literature to check whether there are other recent reviews of this type that are highly relevant to the UK, and to assess and summarise these. The details of the searches are given in Appendix 1. At the same time other reviews of the literature were identified, and the main relevant points drawn from them. A search was also done for studies carried out since the publication of key systematic reviews. The quality of any randomised controlled trials was assessed, using the guidelines developed for the Welsh Health Evidence Bulletins (published at: http://hebw.uwcm.ac.uk/method/). The other studies using traditional and non traditional approaches were described, any methodological problems identified and the main findings in which there could be reasonable confidence were reported.

In addition a short search was carried out for research which is currently in progress, so that the strategy could be developed in the context of ongoing findings. Relevant international experiences, strategies and good practice guidelines were also identified and summarised.

The main findings for each type of evidence are presented under settings (e.g. schools, health care, workplace); population groups (low income, adolescents); and approaches (e.g. information giving, professional development, peer support). Research which is relevant to low income groups and to adolescents was specifically drawn out of the evidence base, because Wales has a relatively high proportion of people living on low incomes, and the highest rate of teenage pregnancies in Europe.
1.0 Systematic reviews of evidence using traditional methodologies

This section describes systematic reviews which have been carried out on the evidence for promoting breastfeeding. When reading it, it is important to remember that the advantage of systematic reviews is that they highlight good quality evidence from studies carried out using rigorous methodologies. The disadvantage is that they over emphasise the types of intervention that can be assessed using these methodologies.

There have been several systematic reviews of the evidence for promoting breastfeeding, some of which have concentrated on specific themes, for example, interventions for improving breastfeeding techniques, and feeding schedules in hospitals. There are only two high quality, comprehensive, systematic reviews which are described in some detail in this section. The other reviews that have been carried out are referred to when it is relevant to do so.

In 1998, Tedstone et al. published a review on the effectiveness of interventions to promote healthy feeding in infants less than one year of age. Over a ten year period, 20 studies were identified on the promotion of breastfeeding which met the inclusion criteria for the review. This review covered interventions to increase the initiation and the duration of breastfeeding.

The overall conclusions were that the most successful programmes were:

- long-term
- spanned both the ante natal and post natal periods
- were intensive
- involved multiple contacts with a professional breastfeeding promoter or peer counsellor

There was also some evidence that including partners; using incentives; and changing the contents of commercial hospital discharge packs may facilitate breastfeeding. The most successful programmes were based in the USA.

Programmes that were not successful were:

- often carried out in the post natal period only;
- involved multiple issues of which breastfeeding was only one;
- involved special visits to the hospital clinic in addition to routine visits;
- postnatal support was provided by telephone only.

In addition, the less successful interventions were often carried out in countries other than the USA with low breastfeeding rates.

More recently the NHS Health Technology Assessment Programme has funded a systematic review of interventions to promote the uptake of breastfeeding (Fairbank et al 2000). Studies were not limited by country of origin, language or date. 62 studies were identified which met the inclusion criteria for the review, of which fifteen were randomised controlled trials.
This review focused on the initiation of breastfeeding. The overall conclusions were that:

- Breastfeeding interventions do not have any adverse effects, and that about half of the studies resulted in an increase in the number of women who started to breastfeed.
- Providing information either through literature or group sessions is the least effective intervention, particularly if literature is used by itself.
- Types of intervention that are most effective in increasing breastfeeding initiation also increase duration.
- Programmes which were effective included peer support, different types of health education, including informal antenatal sessions and media campaigns.
- Different approaches may be needed for women who have expressed a wish to breastfeed, compared to those who originally planned to bottle feed. For example peer support is more effective in increasing initiation rate among low income women who wish to breastfeed, whereas one to one sessions are more effective in initiating breastfeeding amongst women on low income who originally expressed an intention to bottle feed.

A third systematic review that draws general conclusions of relevance to this paper was carried out as part of the Welsh Health Evidence Bulletin on Maternal and Early Child Health (Weightman 1997). This review identified the following features for the promotion of successful breastfeeding:

- Consistency in advice and support
- Personal support from a knowledgeable individual
- Unrestricted breastfeeding
- Encouragement of early feeding
- Skilled help with the first feed
- Correct positioning of the baby
- Flexibility in feeding practices in both duration and frequency
- Well designed information about breastfeeding

1.1 Settings:

1.1.1 Health care setting

In the review by Tedstone et. al. (1998) five high-quality studies were identified, all focussing on low income groups in the antenatal period. All were successful at increasing breastfeeding initiation, except in one study where there was low compliance, probably because attendance was required at a series of lectures. For women who had originally decided to bottle feed, one-to-one education sessions were more successful than group sessions in changing their minds. Group sessions were effective in increasing breastfeeding duration. Using peer counsellors increased initiation most successfully.

Four studies described interventions that covered both the pre and postnatal periods, and of these three focussed on low income mothers. The more effective interventions that resulted in increased initiation and duration of breastfeeding were the use of lactation consultants who were sensitive to the needs of individuals. Lactation
consultants were likely to focus on concerns and benefits with women who were undecided about how to feed, whereas for those who knew they already wanted to breastfeed, consultants might focus on techniques.

The review by Tedstone et al (1998) included four studies where the intervention covered both antenatal and postnatal period, and spanned both the health care and home setting. Three of these studies were directed at low-income women. Two studies were judged to be of moderate quality (the other two were poor). The study that was most effective in increasing initiation (but not duration) included training of health centre staff, individual antenatal sessions, and support with breastfeeding from lactation specialists both at lactation clinics and at home.

Only one study was set purely in the home. This was not of particularly high quality, but suggested that seeing peer counsellors before the birth, followed by phone contacts in the postnatal period helps to increase both initiation and duration of breastfeeding.

Four studies covered postnatal interventions that encompassed both the health care and home setting, and all of them evaluated the effectiveness of seeing a breastfeeding specialist (including nurses and voluntary advisers). Generally there was no increase in breastfeeding duration, except in one good quality study where the contents of hospital discharge packs were changed to include items such as breast pads and unbiased breastfeeding educational leaflets, instead of formula or bottle feeding equipment.

Two studies evaluated the effects of breastfeeding interventions in just the home. Both were of good or moderate quality. One was based on home visits by lactation consultants, and the other consisted of a breastfeeding booklet. Neither showed any effect on the duration of breastfeeding.

The review by Fairbank et. al. (2000) identified eight studies in the health sector. The only randomised controlled trial was carried out in Nicaragua, and so is not considered here. Of three non-randomised controlled studies, one was carried out in a westernised country, the USA. This intervention consisted of staff training, employment of a breastfeeding counsellor, introduction of written information for patients and staff, and the provision of rooming in facilities. This study reported increased rates of breastfeeding in both treatment and control hospitals.

The remainder of the studies all used measurements before and after the intervention. Two of these studies were carried out in westernised countries, namely Northern Ireland and Canada. The Irish study involved participation from a wide range of health professionals including midwives, health visitors, dieticians, medical officers, general practitioners, and community pharmacists. Guidelines were disseminated using a cascade approach. Study resources were produced and seminars held. Changes in staff knowledge were reported, although this was not accompanied by attitudinal change.

The Canadian study provided training for nurses. One of the outcomes was that there was disagreement among staff concerning optimal management of breastfeeding, and this may explain the lack of attitudinal change reported in both this and the Irish study.
Another approach covered by Fairbank et.al.’s (2000) review was the provision of social support by health professionals to pregnant women and mothers who had recently delivered. One randomised controlled trial was reported which used this approach. It was UK based, and carried out in the Midlands and south of England. Three visits were made at fourteen, 20, and 28 weeks gestation, two more brief visits or two telephone contacts were made in between these times. Midwives were also on call 24 hours a day. 46% of the intervention group began breastfeeding compared to 39% of control group, but this did not reach statistical significance.

Fairbank et.al.’s (2000) systematic review also identified studies that evaluated the effectiveness of interventions based on the Baby Friendly Hospital Initiative. Only two studies were found, and neither was in a westernised country. Both showed positive outcomes.

A systematic review carried out for the Cochrane library (Sikorski & Renfrew 1999) assessed the effect of extra support from professionals with special skills in breastfeeding compared with usual maternity care. It was concluded that the number needed to treat, to gain a positive outcome, was as follows; one more mother would breastfeed for two months if support were provided for nine women. Similarly, one or more women would breastfeed exclusively if support were given to nine women. Another way of putting this is that with extra support more mothers breastfeed their babies until two months of age, and more mothers breastfeed their babies exclusively to two months of age.

Another Cochrane review (Renfrew & Lang, 1999a) addressed the issue of women stopping breastfeeding because they believed they did not have enough milk or because breastfeeding was painful. Studies were reviewed where there was assistance with infant attachment and positioning, compared with this not being provided. Support in breastfeeding techniques appeared to reduce problems of perceived lack of milk and breast pain and reduced the likelihood that women who were experiencing problems stopped breastfeeding. The same authors (Renfrew & Lang 1999b) carried out further reviews on feeding schedules and early versus delayed initiation of breastfeeding. Breastfeeding at four hourly schedules on the first days after birth led to a number of disadvantages, compared with more frequent or on demand breastfeeding, which was associated with fewer complications and longer duration of breastfeeding. No differences were found between early and delayed contact in regard to breastfeeding duration.

1.2 Population groups:
Neither of the two main systematic reviews (Tedstone et. al.1998 Fairbank et. al. 2000) specifically analysed their reviews by low-income groups or adolescents, the two groups of particular concern in this paper. The needs of those on low incomes is a thread which runs throughout both systematic reviews, and in this paper relevant points are drawn out as appropriate in other sections. The needs of adolescent mothers are not mentioned at all in either review.
1.3 Approaches:

1.3.1 Information giving

In the review by Fairbank et. al. (2000) one component of the analysis was the use of health education interventions. The term health education was used in the sense of interventions that provided information about breastfeeding to a specific target group. Types of interventions that were included were distribution of breastfeeding literature or group education classes.

The authors concluded that these were the least effective types of intervention to increase breastfeeding initiation rates, and called particular attention to the lack of effectiveness of educational materials when they were used alone. Other types of information giving intervention had more variable results on initiation. Findings in relation to duration of breastfeeding were equally variable, with some studies showing an initial effect that decreased over time, and others showing non significant or no effects. The ineffectiveness of information provision in isolation has also been amply demonstrated elsewhere. A Cochrane review of the effectiveness of printed educational materials on professional practice and health care outcomes concluded that printed educational materials are of small and uncertain clinical significance (Freemantle et. al. 1997). Gepkens et. al. (1996) showed that not only are leaflets ineffective, they may in fact exacerbate inequalities in health.

1.3.2 Use of the media

Fairbank et. al. (2000) concluded that national media campaigns are only effective among women in higher income groups, whereas locally developed media campaigns have been shown to increase initiation rates amongst women of all incomes.

Numerous studies have shown that the mass media is an important source of information for many people, although it does not have particularly high credibility. A systematic review of mass media interventions (Grillie et. al. 1997) showed that it could be effective, at least in the short term. It seems that it is most useful as a way of introducing people to new ideas, supporting and reinforce those ideas, supplementing broader based public health initiatives and promoting existing programmes.

1.3.3 Professional development

The review by Fairbank et. al. (2000) identified two interventions which focussed on training health professionals. One was in the UK, and consisted of midwives and health visitors working in Exeter who attended a seminar. No significant changes in breastfeeding rates were reported. The other was an Australian training programme consisting of two workshops, which resulted in a significant improvement in knowledge of the topics covered in the workshops.

1.3.4 Peer support

Fairbank et. al. (2000) defined peer support interventions as those studies where support with breastfeeding was provided by trained and knowledgeable experts
outside of a professional capacity, for example by peers within the community on a voluntary basis.

Two controlled studies were identified which targeted socially disadvantaged groups, one in Chicago and one in Glasgow. In the Glasgow study, counsellors were trained, then the counsellors approached women twice antenatally, and at least twice after the birth. Although the increased initiation of breastfeeding did not reach significance, there was a significant increase if the intervention group was compared to controls that had initially stated an intention to breastfeed. This also applied to duration of breastfeeding.

The Chicago study compared rates of breastfeeding between women who had asked for peer counsellor’s support and received it and those that were denied this support due to lack of availability. There was a significant increase in initiation and duration of breastfeeding in the intervention group.

The Glasgow and the Chicago studies both indicate that women who have already decided to feed artificially are not swayed by peer counselling and the main impact of this approach is in supporting women who have already decided to breastfeed.

Fairbank et.al.(2000) concluded that peer support has been shown to be effective among women of all income levels, although there is more evidence for it among women from lower income groups. This is the basis for one of their main recommendations, which is the development of a nation wide peer support programme targeting women in low income groups.

1.3.5 Schools

The school setting provides a valuable opportunity to influence health through policy measures, education, and food provision. Schools provide an efficient way of reaching a large proportion of the population, including young people, school staff, families and community members. Young people in particular, can be reached at an influential stage in their lives and over a long period of time.

There are no systematic reviews that address promoting positive attitudes to breastfeeding among young people. However the NHS Health Technology Assessment Unit recently published the results of two systematic reviews of health promotion in schools, focusing on the whole school approach which is advocated in the health promoting schools initiative (Lister Sharp et.al.1999). The health promoting schools initiative is fairly new and complex, and ongoing evaluation will be necessary to provide evidence about its effectiveness. School health promotion initiatives can have a positive impact on children's health and behaviour but do not do so consistently. Most interventions are able to increase children's knowledge, but it is far harder to influence attitudes. Overall, an approach which combines class room teaching with changes to school environment, and includes family and community involvement is likely to be the most effective.
1.4 Summary of main conclusions and implications of the systematic reviews of evidence using traditional methodologies

- Interventions should be long term, intensive, span both the antenatal and postnatal periods, and involve multiple contacts.
- Information provision alone is not effective, and may exacerbate inequalities.
- Peer support programmes are particularly promising.
- Flexible and individualised approaches are more likely to be effective. In particular, there need to be different approaches for women whose original intention is to breastfeed and those who originally intended to bottle feed.
- Professionals need to be consistent in the advice and support they provide.
- Hospital practices should reflect current knowledge.
- Professional development needs to encourage changes in attitude as well as knowledge.
2.0 Non Systematic Literature Reviews

Non systematic literature reviews have the advantage that they embrace studies that would have been excluded from systematic reviews, although they have rigorous criteria applied for inclusion. The disadvantages are that it can be difficult to know what weighting to give to individual studies mentioned in the review and that very often these literature reviews are not comprehensive. Also they often call upon a range of studies using different methodologies, traditional and non traditional, quantitative and qualitative. These reviews are often most useful in that the author has assembled a collection of literature and reflected upon their interpretation of it. These interpretations, from a variety of people, sometimes give useful insights into areas that are lacking from systematic reviews. For this reason this section does not describe individual studies within the reviews but concentrates on the general interpretation of particular areas made by the authors of the reviews.

Scott & Binns (1998) recently carried out probably one of the most comprehensive and insightful reviews. The conclusions they drew in relation to specific settings, population groups, approaches and factors affecting breastfeeding, are described in the relevant sections below. Three important general points that they made were:

- Until recently many studies were carried out using univariate data analysis, for example relating breastfeeding with socio demographic factors. This approach does not allow for covariation or confounding factors. More recently multivariate analyses have been carried out, and many of the strong associations previously reported in univariate studies were not evident. For example, whilst multivariate analyses showed a strong and consistent association with factors such as maternal age and level of education, there was a less consistent association with factors such as socio economic status (where the confounding factors were maternal age and level of education).
- It is important to distinguish between initiation and duration of breastfeeding, and where possible to identify and differentiate between factors which predict initiation, and those that predict duration of breastfeeding.
- The authors presented a summary of large studies (more than 500 subjects) of western women published in the 1990's, which used multivariate techniques. The striking finding was that no two studies were comparable making it difficult, if not impossible, to evaluate the relative importance of individual factors which affect breastfeeding. This lack of consistency also explains why there are no meta analyses reported in the literature.

Another review, written by Wagner & Wagner (1999) presents a very useful overview of the historical perspective, the role of individual personality, social forces, and psychological and physiological influences. This reinforces findings from many of the other reviews, and so is not described in detail here, but is useful for anyone who wishes to focus on the social and psychological aspects of breastfeeding.
2.1 Settings

2.1.1 Health Care
Scott & Binns (1998) state that since most women decide how they will feed their infants either before or during pregnancy, the main effect of the health care setting, at least around delivery, is on the establishment and maintenance of breastfeeding. They reviewed hospital practices that are associated with this, including ‘rooming in’, early mother infant contact, demand feeding, and the availability of supplementary and complementary feeds. All of these appear to contribute to the establishment of breastfeeding, although the contribution of each individually is not particularly significant. The review also points out that the studies covering these issues on the whole have used univariate analysis.

Scott & Binns (1998) also refer to several studies that report that health professional advice does not necessarily have a particularly large impact. In fact, the findings of some studies suggest that health-care providers are rarely perceived as sources of influence, and this is in marked contrast with the perceptions of healthcare providers who tend to see themselves as the most important source of influence. However, Dykes & Griffiths (1998) point out that approximately 12% of women who commence breastfeeding discontinue by the time they leave hospital, so although some studies may play down the role of health professionals, it is difficult to deny that hospital practice and attitudes are important at this vulnerable time.

2.1.2 Home
Scott & Binns (1998) highlight the strong agreement in the literature, which is borne out in multivariate analyses, that support from a partner, family and friends is an important factor influencing choice and duration of breastfeeding. The potential of the father to have either a marked positive or negative effect on breastfeeding is highlighted in the review by Dykes & Griffiths (1998). Men whose wives intend to breastfeed are more encouraging and respectful of breastfeeding women, and when their baby is born recognise they need to be prepared to postpone development of some aspects of their relationship with their baby. This contrasts with situations where the father's influence is negative, largely because of jealousy and a feeling of exclusion from the mother child relationship.

Bar Yam & Darby (1997) wrote a literature review on fathers and breastfeeding. The main conclusions were:
• Fathers play an important role in the decision about infant feeding, which is usually made before or early in pregnancy.
• Expectant mothers’ expectation of the father's attitude is a powerful predictor of her intention to breastfeed, but she is not very good at assessing his attitude.
• Fathers are among the most important source of assistance at the first feeds.
• Many fathers are not informed about the risks of using artificial substitutes.
• Fathers want to establish their own relationships with their infants and sometimes see breastfeeding as a barrier to doing so.
Scott & Binns (1998) call attention to women's mothers as major role models. Unfortunately, many of these will have been breast fed babies in the regimented and non-physiological manner advocated by health professionals in earlier decades.

Women are also strongly influenced by the way their friends fed their babies, and this is why peer counselling is such a promising approach. The converse is that the influence of friends can be detrimental if their views are negative.

2.1.3 Public places
Dykes & Griffiths (1998) referred to the 1995 infant feeding survey in which 28 per cent of women with babies aged 4-5 months reported difficulty in finding a place to feed their baby, and 22% never fed in public.

2.1.4 Workplace
The review by Scott & Binns (1998) pointed out that many studies on the relationship between employment and breastfeeding gave inconsistent findings, largely because of inconsistent methodologies. However it seems that there is fairly wide agreement that intention to return to work does not affect the decision to initiate breastfeeding. However, it is associated with early cessation of breastfeeding.

Hall (1997) discusses the difficulties that many women encounter when attempting to maintain breastfeeding after returning to work. Not only is there the embarrassment and hostility that can arise with breastfeeding, in an often male dominated environment, but also issues like lack of facilities to express milk. She mentions some initiatives that attempt to tackle this. For example, the Amoco Oil Corporation and Chrysler in America have provided rooms and breast pumps, to encourage continuation of feeding.

2.2 Population groups

2.2.1 Low Income
None of the reviews had very much information relevant to this target group.

2.2.2 Adolescents
A review by Dykes & Griffiths (1998) focussed mostly on the societal influences to breastfeeding. This included commentary on teenage girls’ attitudes. Reportedly most teenagers think it is best to breastfeed babies, but relatively few plan to do so (40 per cent in one study). The most positive factor for adolescents is having previous experience of seeing women breastfeeding successfully. The authors comment on the sporadic and uncoordinated nature of education about breastfeeding in schools, and urge action to address this.

A review by Kelleher & Duggan (1999) focussed on the themes that have become apparent in the recent literature, including the determinants of breastfeeding among adolescents. In fact, in the section of their paper covering this it is rather difficult to disentangle the effects of ethnicity and adolescence. They do describe studies though,
which compared adolescent mothers who had considered breastfeeding but chose to bottle feed, with those who had never considered breastfeeding. The former were more likely to be impoverished, to be encouraged by two or more people to breastfeed, to have friends who breast fed, to have low family support, and have delayed the feeding decision until later in pregnancy.

2.3 Factors affecting uptake and continuation of breastfeeding

Scott & Binns (1998) report that multivariate analyses show a consistent negative association between maternal smoking and breastfeeding initiation and duration. Some researchers have suggested that this is a spurious relationship, reflecting social status or level of education. However, even when these are controlled for, there is a negative association, with a dose response pattern. Another suggestion is that smoking exerts a physiological effect that has a detrimental effect on both the establishment and duration of breastfeeding. Mechanisms have been proposed for this and involve, among other things, changes to prolactin levels.

Another factor which Scott & Binns (1998) mentioned is the relationship between the timing of the decision to breastfeed and the duration. In general the earlier a decision is made to breastfeed, the longer the duration. Similarly, there is a strong and consistent relationship between intended duration of breastfeeding and actual duration.

As mentioned earlier, most women have decided whether to breastfeed either before or early in pregnancy. The figures given in the review by Wagner & Wagner (1999) suggest that 50-75 per cent of women had decided by this time and by the time of delivery, 90% had made their decision.

The review by Dykes & Griffiths (1998) focused on societal influences. They point out the contemporary perception of breasts as having a primarily sexual function, with the most desirable being firm and conical. They claim that this is a relatively recent development, and one that is exacerbated by the mass media and advertising as well as the increasing availability of pornography.

They point out that many children and young adults are never exposed to breastfeeding. Many of the practices associated with breastfeeding such as continuous crying and frequent night feeding are not the cultural norm in the UK. Instead, there seems to be a sense of urgency to reach milestones such as the introduction of weaning foods. In fact, the authors claim there is a social coercion to wean, with mothers who are late in doing so, courting social stigma.

Hall (1997) wrote a review that focussed on breastfeeding and sexuality, in which she explores in-depth, the conflicts that arise between the nurturing and sexual aspects of the breast. The review looked in-depth at some of the issues raised by Dykes & Griffiths (1998), including the role of the media, the cultural intolerance of breastfeeding, and the effects on both men and women of a sexual object being changed into a nurturing one.
2.4 Summary

- Many older studies did not take account of confounding factors. Many of these will have been included in the systematic reviews described in the earlier section.
- Lack of consistency in research studies makes it difficult to draw conclusions about the relative importance of factors. In future research, increased consistency would be desirable.
- Fathers have an important role in the initiation and establishment of breastfeeding. This is more likely to be positive if they are included in breastfeeding education as early as possible during pregnancy. Antenatal sessions should include opportunities and exercises to help couples communicate with one another about their feelings and attitudes toward breastfeeding. Fathers could be better informed about the benefits of breastfeeding. Analysing what enables some fathers to be supportive could provide approaches that could be more generally used by fathers.
- Women's mothers could either be involved directly, or women themselves should attempt to understand why their mothers think in the way they do.
- Workplace initiatives can address the barriers that currently exist, including negative attitudes and lack of facilities.
- More co-ordinated and consistent education about breastfeeding is needed in schools for both girls and boys.
- Health professionals should be aware of the research on the negative impacts of smoking on breastfeeding.
- Encouragement to consider breastfeeding is needed as early in pregnancy as possible (if not before pregnancy).
3.0 Randomised Controlled Trials reported since the most recent high quality systematic reviews

In this section randomised controlled trials are reported which have been carried out subsequently to the systematic reviews described in the earlier section (Tedstone et al. 1998 Fairbank et al. 2000). Initially studies were identified which had been carried out since 1997 and then any papers were removed which had been considered in the systematic reviews.

The advantages and disadvantages of randomised controlled trials are much the same as those for systematic reviews. There is also the likelihood that, despite the use of guidelines, some studies may have been classified differently here from the way they would have been classified in individual systematic reviews. There are also inevitably some between researcher differences in assessment of the quality of studies - again despite the use of guidelines to try and avoid this.

Seven randomised controlled trials were identified. It was not possible to obtain a full copy of the study by Hodnett et al. (1999). Of the remaining six, two were classified as being of good quality.

3.1 Settings

3.1.1 Health Care
Two studies described interventions carried out in the health care setting but both had some methodological problems and could not be classified as good quality.

The first study by Schubiger et al. (1997) examined whether the use of bottles and dummies prevented successful breastfeeding. It is difficult to know whether to attach any weight to the conclusions since nearly half of those in the treatment group (no bottles or dummies) violated the protocol. The authors concluded that fluid supplements offered by bottle, (with or without the use of dummies) during the first five days of life are not associated with a lower frequency or duration of breastfeeding. The other point to bear in mind is that dummies may be used because of breastfeeding problems, rather than causing them.

The second study was by Dungy et al. (1997). In this intervention mothers were given a hospital discharge pack containing either a) a manual breast pump b) infant formula and a manual breast pump or c) infant formula only. The contents of the discharge pack did not seem to affect the duration of exclusive or partial breastfeeding during the first four months of the baby's life.

3.1.2 Home
A study by Pugh & Milligan (1997), which did not qualify as being of good quality, attempted to tackle the problems of breast discomfort and maternal fatigue by providing support at home from a professional community health nurse, and telephone
support from a lactation consultant. The mothers in the intervention group breast fed for longer than those in the control group, and reported less fatigue.

3.2 Population groups

3.2.1 Low Income
Coombs et.al.(1998) reported a study which evaluated a self-help manual designed to motivate low income mothers to breastfeed. This study could not be classed as good quality, because there was an ethical requirement to inform the study group of its status, which may have biased the results. 66% of women in the treatment group initiated breastfeeding compared to 44% of the controls. There was no effect on the duration. It was concluded that this was a promising approach, and the manual will be revised to try and improve its effectiveness, particularly on the duration of breastfeeding.

3.3 Approaches

3.3.1 Information giving
A good quality study by Curro et al (1997) assessed the effectiveness of a booklet on the duration of breastfeeding. The use of this booklet by itself was not effective in increasing either the duration or prevalence of breastfeeding at six months.

3.3.2 Peer support
The first reported community based randomised trial of breastfeeding promotion was carried out by Morrow et al (1999). This was a good quality study of the effectiveness of home based peer counselling, in which two intervention groups with different counselling frequencies were compared with a control group that had no intervention. It was carried out in Mexico, and so strictly speaking should not be included in this evidence base, but its uniqueness merits its inclusion. At three months after birth exclusive breastfeeding was practised by only 12% of control mothers, compared with 67 per cent of mothers who had been visited six times and 50 per cent of mothers who were visited three times by a peer counsellor.

Hodnett (1999) reported another study of the efficacy of home based peer counselling, but it has not been possible to obtain a full copy of this.

3.4 Summary
The results of these recent randomised controlled trials are in line with the main findings of the systematic reviews reported earlier. In particular:

- Providing information in isolation is not effective
- Peer support programmes provide promising results, and it is encouraging that there was such positive findings from a community based peer support programme
- Self-help manuals for low income mothers is an approach which may merit further investigation.
4.0 *Studies using traditional methodologies, excluding randomised controlled trials, reported since the most recent high quality systematic reviews*

Fourteen studies were reviewed in this section. In most cases there was insufficient information to assess the quality of the studies, and the time available did not permit more in-depth probing. However, comments are made as far as possible on the study design and methodology along with a discussion of each study. The *advantage* of this type of study is that they can evaluate interventions that would be difficult to evaluate using a randomised controlled approach. The *disadvantage* is that the findings will not be as robust as they would be using more rigorous methodology.

4.1 **Settings**

4.1.1 **Health Care**

Cox & Turnbull (1998) assessed the effectiveness of antenatal breastfeeding workshops, using a pre-test/post-test design. However, the design was weakened by the use of a self-selected intervention group. Workshops included both midwives and expectant mothers. The results reported that midwives perceived an increase in their confidence level in supporting mothers, changed their perception of the factors most important in successful breastfeeding and acknowledged that updating of breastfeeding knowledge is necessary on an annual basis. The mothers reported a significant increase in confidence levels and intention to breastfeeding.

A study reported by Reifsnider & Echart (1997), as part of the Women Infant and Children (WIC) initiative in the USA tested the effect of antenatal breastfeeding education. The number of subjects was very low and it is not possible to attach great confidence to the results. However, the conclusion was that there was a significant increase in the duration of breastfeeding in the experimental group.

Kuan et.al.(1999) reported a prospective cohort study of 522 women at five hospitals in the USA. The full paper was not available, but from the abstract the study appeared to be of good quality. This study assessed health system factors contributing to breastfeeding success. Success was measured against the mother’s initial estimate of the planned duration of breastfeeding. Only 56% rated hospital breastfeeding support as good or very good, and only 44% spoke with a lactation consultant. Of those who spoke with a lactation consultant, 85% felt more confident. Successful mothers were significantly more likely to report that the visiting nurse watched them breastfeed and asked how it was going. Mothers were more likely to call family or friends with breastfeeding concerns than health professionals.

A study by Bliss et.al.(1997) was similar in many ways to the study by Dungy et.al. (1997) reported in Section Three. This too tested the impact of discharge packs on infant feeding and came to the same conclusion as the previous study, that contents of discharge packs have little effect.
Janson and Rydberg (1998) looked at the effect of early hospital discharge on subsequent breastfeeding. There was insufficient information to comment on the quality of the study. It was carried out in Sweden, where in the 1980's early discharge was advocated in order that mothers did not stay in an ‘unnatural’ setting. In the 1990's early discharge was mandated as a way of saving money. The authors compared data from 1990 and 1993, and concluded that factors other than the time of discharge, most likely a positive change in attitude and introduction of the Baby Friendly Hospital Initiative are important for successful breastfeeding.

Like Sweden, Finland has high rates of breastfeeding. Tarkka et al (1998) looked at what contributes to breastfeeding success in a maternity ward in Finland. There was insufficient information to comment on the quality of the study. Women were more likely to be successful if their experience on the ward was positive, if they began lactating two to three days postpartum and received emotional and practical support from friends and family.

4.2 Population groups

The studies described in 4.3.1 are relevant to low-income groups. There were no studies that focused on adolescents.

4.3 Approaches

4.3.1 Peer support
Chafer et al.(1998) reported a controlled trial to assess the effectiveness of volunteer peer counsellors on increasing breastfeeding duration among low-income women in the USA. Only an abstract was available but the drop out rate was high and therefore it is unlikely that the study would be classed as good quality. The intervention used trained volunteers who had had previous successful experience with breastfeeding. There were a series of one-to-one sessions in the home both before and after the baby was born, and informal contact was also maintained. 82 per cent of the intervention group started breastfeeding, compared with 31% of the control group. Mean duration of breastfeeding was 5.7 weeks in the intervention group, and 2.5 weeks for the control group. These results are supported by a similar study carried out by Shaw and Kaczorowski (1999), again in the USA. Unfortunately, only an abstract of this was available.

A further study was reported by Arlotti et al.(1998). This was also carried out in the USA. A similar approach was used to that described above. One of the concerns about this study is that the intervention group was self-selected, and this should be borne in mind when considering the results. Women who had been supported by a peer counsellor exclusively breast fed for longer. However, returning to work had the greatest impact on duration of breastfeeding.
4.4 Factors affecting uptake and continuation of breastfeeding

A good quality cohorts study from New Zealand (Vogel et al. 1999), where breastfeeding rates are already high assessed the factors associated with the duration of breastfeeding in 350 mothers. A multivariate analysis was carried out. Factors associated with shorter duration of breastfeeding were:

- younger maternal age;
- return to full-time work in the first year;
- intention to cease breastfeeding by six months or no plans at delivery;
- inverted nipples and perceived insufficient milk supply;
- infant formula used at any time in the first month meant that women were three times as likely to cease breastfeeding early;
- use of a bottle, whether it contained formula, water, or breast milk, was associated with more than double the risk of early cessation;
- use of a dummy;
- not sleeping in the same room.

Chapman et al. (1999) reported a longitudinal study that evaluated the impact of the mothers’ perception of time of onset of lactation on breastfeeding duration. It was not possible to evaluate the quality of this study. The conclusion was that delayed onset of lactation was likely to be associated with shorter breastfeeding duration, however this was modified by intended breastfeeding duration.

4.5 Summary

The results of the studies in this section, although many of them suffered from design methodology problems, reinforced the findings reported in earlier sections. In particular:

- Peer counselling appears to give consistently positive results.
- That there is a negative impact of returning to full-time work on duration of breastfeeding.
5.0 Systematic reviews of descriptive and qualitative studies

There was only one publication in this category, a report on ‘Opportunities for and Barriers to Good Nutritional Health in Women of Child Bearing Age, Pregnant Women, Infants Under One, and Children Aged One to Five’ (Reid & Adamson 1998). This is a companion volume to the systematic review written by Tedstone et.al. (1998) which is described in Section One. These two reviews were commissioned and published by the Health Education Authority and the Department of Health.

This review does include a few controlled studies, but the great majority are descriptive. The purpose of the publication was to identify opportunities and barriers to change, including those that are cultural, behavioural, and societal.

The advantage of a review of this type is that it systematically scans the literature for studies that can shed light on the reasons for people's behaviour and can investigate structural, cultural, social and environmental factors. The disadvantages are, the methods used in the studies are often very different from traditional approaches and can be regarded as ‘soft’ or lacking in robustness. By pairing systematic reviews of studies which used traditional methodology with descriptive methods, as done by the Department of Health and the Health Education Authority, it was hoped that an ‘all round’ picture would be obtained. This would not have been possible using either traditional or non traditional methodology alone.

5.1 Settings

5.1.1 Health Care

One study in London was described in this review in which hospital staff were asked if they thought there should be policies on infant feeding. 73 per cent said that there should be no policy or that it should be neutral. In a follow-up study, the same questions were asked after the introduction of a breastfeeding advisor. After this appointment there was an increase in staff supporting the idea of the introduction of a policy, although the majority still agreed it should be neutral.

In a series of studies from Newcastle in the early 1990s, 65% of staff in maternity services agreed that ‘breast fed babies are healthier babies’. 28 % disagreed with this. 47 % disagreed that ‘ milk company advertising should be banned in ante natal clinics’.

In a Swedish study potential barriers to promoting breastfeeding by maternity unit staff were investigated. Staff considered their knowledge to be insufficient, considered that breastfeeding was a ‘difficult’ area, and were concerned about fitting breastfeeding promotion into their already heavy workloads.

The review concludes that hospital practices can constitute strong barriers or opportunities. There is plenty of evidence of variation in practice between hospitals and among staff.
5.1.2 Public places
In a study of adolescents described in more detail in section 5.2, pupils felt that breastfeeding in public was not acceptable. In a study in Liverpool less than five per cent of young people reported that they thought it acceptable to breastfeed in the park, shopping mall or on the bus.

Another study in the UK reported that less than a quarter of people responded positively to the idea of women breastfeeding in public places.

The review also points out a statement in the British Tourist Authority's leaflet ‘Days Out in 1996’, which reads ‘Please note that breastfeeding in public is not considered generally acceptable’. Despite the attitudes demonstrated in these leaflets a survey by The Royal College of Midwives in 1993 showed 75 per cent of high street restaurants surveyed provided satisfactory or good facilities for breastfeeding.

5.1.3 Workplace
The most recent OPCS survey showed that 31 per cent of mothers who returned to work when their baby was aged between six weeks and four months were still breastfeeding at four months. This compares to 48 per cent of similar mothers who did not go back to work until after the baby was four months old.

In a study from the USA, which suffered from a number of methodological weaknesses, mothers who returned to work listed problems as: fatigue; finding time at work to express milk; and worry about milk supply. Nearly half of employers were unaware of the fact that the women were breastfeeding.

The authors of the review point out the difficulty of trying to study the relationship between breastfeeding and returning to work. For example, in the UK, studies may be confounded by the fact that women in professional occupations are more likely to have tolerant management, flexible working hours, and better support for breastfeeding, and more favourable maternity leave.

5.2 Population groups

5.2.1 Low Income
The review did not describe any studies that focussed specifically on this group.

5.2.2 Adolescents
The finding that most mothers decide how to feed their infants before they become pregnant has been confirmed in several studies. However, teenage mothers are less likely to make the decision about feeding method before pregnancy, than adult women. This suggests that health professionals may be in a position to influence adolescents’ decision during the antenatal period.
When a group of pregnant adolescents were asked about breastfeeding, 89 per cent agreed that they had ‘heard that breastfeeding hurts’, 54 per cent agreed that ‘breastfeeding means I have to eat differently’ and 41 per cent agreed that ‘breastfeeding makes your breasts sag’.

In a survey of fourth year pupils at a UK comprehensive school, initially 100% of both gender thought their own infant could be breastfed at home. This number dropped to 81% for girls when they were asked if they would breastfeed with the baby's father present and dropped further to 50% when asked if they would breastfeed with a family member present.

5.3 Factors affecting uptake and continuation of breastfeeding

The authors of the review point out that although there is an extensive literature on factors affecting breastfeeding, many of the studies are weak, for example they tend to sample middle-class women. Very few studies have used a qualitative approach, and many have depended upon using a questionnaire with a fixed choice of answers, giving a series of very repetitive findings.

The factors which emerge as reasons to breastfeed are:

- establishing a bond with the baby;
- good for the mother’s figure;
- the best nourishment and protection against infection for the baby;
- convenience.

Embarrassment is the most frequently mentioned negative factor in most studies, although only 7% of mothers in the OPCS survey reported this as a reason for not breastfeeding. Lack of social acceptance is another reason and seems to be tied up with the idea that breasts are essentially sexual objects and that breastfeeding is distasteful. Lack of privacy to breastfeed, particularly if living in the family home, can also be a barrier.

Reasons for giving up breastfeeding include:
- The perception that there is insufficient milk.
- Not knowing how much the baby was getting.
- Engorgement and sore nipples.

Women who bottle feed do so because:
- It is seen as convenient.
- It allows the baby's father to be involved.
- The ability for other people to help is often given as a prime reason.

5.4 Summary

The main relevant points that arise from this review are:
• Significant numbers of maternity staff are ambivalent about supporting breastfeeding. Initiatives, such as the appointment of breastfeeding advisers, can help to address this. It is also important to tackle practical issues such as lack of time and knowledge.
• Whereas most adult women make the decision about how to feed before or early in pregnancy, teenage mothers make the decision later. This suggests antenatal approaches may be particularly useful in this group.
• Pregnant teenagers need practical support, for example in identifying how they can breastfeed in the parental home without feeling embarrassed.
• There are consistently negative attitudes to the idea of women breastfeeding in public places. This attitude is expressed by children as well as by adults. It may be appropriate to tackle these attitudes at school.
6.0 Descriptive and qualitative studies reported since the most recent high quality systematic review

In this section descriptive and qualitative studies are reported which have been carried out subsequently to the systematic reviews described in the earlier section (Reid & Adamson, 1998). First of all over 35 studies were identified which had been carried out since 1997 and then any papers were removed which had been considered in the systematic review.

The remaining papers were scanned in order to identify whether any of them could offer fresh insights into the main conclusions reached from the other types of studies that have been covered. No attempt was made to assess their quality, although comments are made if there were obvious flaws in the methods used.

The advantages and disadvantages are the same as those described in section Five.

6.1 Settings

6.1.1 Health Care

Battersby (1999) reported an in-depth qualitative study of the attitudes of midwives in the UK to breastfeeding. The sample size was very small, but the findings are of interest. The midwife’s own personal experience of breastfeeding appeared to have a significant influence on the advice that she in turn gave to mothers. One suggestion was that midwives should be de-briefed after their own maternity experiences; so that they can become more aware of their own personal needs and emotions related to breastfeeding.

Although midwives who did not have children had mixed feelings about whether it made any difference to their care for women, differences did emerge, with these midwives having fewer reservations about the use of infant formula.

Midwives who had been trained six years or more previously could recall very little about their training in infant feeding. They believed that their training had not prepared them properly for practice. Negative attitudes emerged in relation to post basic training, with statements like “things like breastfeeding don't alter much”. Lack of time was identified as a problem and was given as a reason for not raising infant feeding at the booking visit early in pregnancy.

Although it seemed to be generally agreed that top-up feeds should not be given, it emerged that this was not uncommon practice.

Wilson & Colquhon (1998) surveyed 50 women in Dundee. The factors that influenced their feeding intentions were similar to those described in other studies. The study also included informal interviews with midwives. When asked why the opportunity to discuss feeding was not taken at the booking interview, early in pregnancy, midwives said they thought the women would generally not be interested in feeding at that time, and that breastfeeding was best left to parent education classes
later in pregnancy. Midwives also felt that they had to strike a balance between encouraging breastfeeding and not stigmatising those who chose to bottle feed.

Two studies, one in the USA and one in Canada, assessed practices and beliefs of paediatricians and physicians (Schanler et.al.1999 Burglehaus et.al.1997). In the American study only 65 per cent of paediatricians recommended exclusive breastfeeding. A majority agreed with or had a neutral opinion about the statement that breastfeeding and formula feeding are equally acceptable methods. 72% were unfamiliar with the contents of the Baby Friendly Hospital Initiative. The Canadian study showed that physicians are more likely to support breastfeeding if they themselves believed in the immune properties of breast milk and they were confident in their own breastfeeding counselling skills.

6.1.2 Community
A publication by Pastore & Nelson (1997) describes the evaluation of a community based breastfeeding drop-in centre. The full paper was not available, and the evaluation appears methodologically questionable. However, this is an interesting approach that merits further exploration.

6.1.3 Public places
Two publications by McIntyre et.al.(1997 1999) described surveys of breastfeeding opportunities in public places in Australia. 40 per cent of shopping centres surveyed had baby care rooms, of which only 43% met the criteria set by the Nursing Mothers’ Association of Australia. All were either located in or next to toilets. In a separate survey, managers from 66 restaurants and 27 shopping centres were interviewed by telephone. One third of the restaurant managers and 48 per cent of the shopping centre managers stated that a mother could breastfeeding anywhere. The remaining managers would discourage breastfeeding in their facility.

Akinlade (1996) conducted semi-structured discussions with two groups of breastfeeding mothers, and sent questionnaires to managers of large stores, with the aim of finding out what breastfeeding mothers in Newcastle would like to see, and to what extent their needs were being met. Broadly speaking mothers fell into two categories. Those in the first category were fairly confident about breastfeeding and wanted the freedom to breastfeed whenever they chose. Others preferred privacy, and wanted clearly signed, easily accessible, clean, attractive, and comfortable facilities, with access to a toilet and drinking water. 50% of sites surveyed had a facility that could be used by breastfeeding mothers. 20% of managers would discourage breastfeeding outside of this facility. Only one of the 25 places visited had a written policy on breastfeeding, and none of the managers reported giving any relevant staff training.

6.1.4 Workplace
Two studies confirm the points that have been made previously, that returning to work does not influence the initiation of breastfeeding, but does decrease duration (Earland et.al.1997 Visness & Kennedy 1997).

Fein & Roe (1998) looked at this in more detail and using results from a postal questionnaire of over 2,500 women completed during late pregnancy and ten times
after birth assessed the effect of part-time versus full-time work on duration of breastfeeding. They concluded that part-time work of four or fewer hours per day did not affect duration, and part-time work of more than four hours per day decreased duration less than full-time work.

A descriptive study of 69 employers was carried out in a rural community in the USA (Bridges et.al.1997). They were more likely to support breastfeeding women returning to work if they had had previous experience of this, or knowledge of other businesses that had experience. The authors suggest that focussing on the positive effects for the business, and providing them with successful examples best persuades employers.

6.2 Population groups

6.2.1 Low Income
Whelan & Lupton (1997) reported qualitative research using in-depth interviews amongst low-income women in the South West of England. Women were identified from the records of the general hospital who had breast fed their baby at least once and who were either in receipt of state benefits, or aged sixteen to seventeen and unemployed. The final sample was small, consisting of only fifteen women. Women who had managed to continue to breastfeed were

- More likely to have positive attitudes.
- Realistic expectations.
- Greater self-esteem.
- A supportive mother or friend.
- A partner who was not against breastfeeding.
- The ability to cope with the perceived temporary social isolation.

Hoddinott (1999) carried out qualitative interviews early in pregnancy and six to ten weeks after birth with 21 low-income women, in the East End of London. Women who had regularly seen a relative or friend successfully breastfeeding were more confident about and committed to breastfeeding. All women in this study knew that breastfeeding had health benefits, but the decision to initiate breastfeeding was influenced primarily by seeing breastfeeding skills in practice.

A study by Humphreys et.al.(1998) supported the view that health professionals’ attitudes were less influential on women's infant feeding decision than the attitudes and beliefs of her own social support networks.

6.2.2 Adolescents
Ineichen et.al.(1997) reported a questionnaire survey of 55 young or expectant mothers in Westminster, London. 58 per cent had breast fed, which is considerably higher than the national rate for teenagers (39%). The authors speculate this is because non breastfeeders were less likely to complete the questionnaire. As with studies described previously, it seemed that the teenagers left the decision about infant feeding method until later than older women. About half had discussed breastfeeding with a health worker who was largely in favour of breastfeeding but approximately 20-30 per cent adopted the approach of ‘do whatever you think is best for you’. Only four of the 55 teenagers had witnessed breastfeeding themselves.
A study from Ireland by Connolly et al. (1998) reported much the same influences on breastfeeding in this group as have been reported elsewhere. They also asked about sources of information on breastfeeding, and the most frequent source was the media, rather than home or school. 86 per cent of the girls and 77% of the boys were favourably disposed to breastfeeding.

6.3 Factors affecting uptake and continuation of breastfeeding

An interesting study was published by Barnes et al (1997) using data from the Avon Longitudinal Study of Pregnancy and Childhood, for which 12,000 women completed questionnaires. The focus of the study was whether attitudes to body shape, social and psychological factors influenced breastfeeding. A notable finding was that women who were preoccupied with their body shape, and those who expressed controlling, less child centred responses to caring for infants, were less likely to express intentions to breastfeed. Contrary to suggestions from some other studies, depression did not predict breastfeeding intentions, once other factors had been taken into account.

Finally a study by Haug et al (1998), prospectively analysed a questionnaire based national survey in Norway. Records were examined from a random sample of mothers who had given birth between 1970 and 1991. The proportion of mothers’ breastfeeding increased from 15% to 44% at six months among smokers and from 30% to 72% among non-smokers. In other words, the proportion of breastfeeding, non-smoking women were twice that of smoking women. The authors speculate that this may be due to either social reasons or biological mechanisms.

6.4 Summary

The sections on the needs of low-income groups and adolescents again reinforce the desirability of peer support networks. In addition the following points can be drawn:

- De briefing programmes for midwives after they themselves have had children may help them to come to terms with their own experiences.
- Basic training for midwives to address practical issues, such as time pressures, promoting breastfeeding without stigmatising bottle feeders and the evidence for introducing the subject of infant feeding as early in the pregnancy as possible.
- Encouragement for midwives to regularly attend post basic training, to update their knowledge and skills, and assess their own attitudes.
- Training for doctors to include more on the benefits of breastfeeding, awareness of initiatives such as the Baby Friendly Hospital Initiative and relevant counselling skills.
- Proper evaluation of community based breastfeeding drop-in centres.
- Initiatives are needed to encourage large stores to develop supportive breastfeeding policies.
- Work place initiatives to support breastfeeding mothers should focus on the successful experiences of other employers and on benefits to the business.
• Tackling negative attitudes to breastfeeding beginning in primary schools, and continuing into secondary schools with skills based courses, to help to overcome a culture of embarrassment.
• More information on infant feeding in teenage magazines, television and books aimed at teenagers.
7.0 Research in progress

This section describes studies that are in progress in the United Kingdom. Information was gained primarily through the National Research Register, and the MIRIAD database held at the University of Leeds (unfortunately this is no longer being maintained, because of lack of funding).

7.1 Settings

7.1.1 Health Care

A preliminary report from a study by Battersby (1999) was described in section 6.1.1. The preliminary report concentrated on the attitudes of midwives. The complete study covers knowledge and attitudes of midwives to breastfeeding, the effects of both mothers’ and midwives’ attitudes to breastfeeding success and will identify strategies to improve breastfeeding.

A study currently being carried out in south Bristol by Ingram & Johnson (1999) is testing whether a breastfeeding technique consisting of 8-10 guidelines, will improve breastfeeding if taught to women in the immediate post natal period.

Lavender et.al. (2000) based at Liverpool Women's Hospital, are carrying out a study to assess whether midwives’ and women's attendance at an antenatal breastfeeding support group will increase breastfeeding duration.

Warwick (2000) at King’s College Hospital, is looking at the impact of evidence-based strategies on the practices of health care professionals and on breastfeeding.

Finally, Graffy (1998) a general practitioner based in London is carrying out a study to test whether women who receive extra support from breastfeeding counsellors based in general practices, breastfeed for longer.

7.2 Population groups

7.2.1 Low Income

Woolridge (to end 2001) at the University of Leeds, has registered three current research studies, all of which focus on reducing inequalities in health by increasing breastfeeding uptake. The three studies include a literature review, a prospective study and quantitative and qualitative data collection. Broadly speaking, the purpose of the studies is to gain an understanding of the reasons for infant feeding practices in those women who are most deprived, in order to develop effective strategies to promote breastfeeding.
7.3 Approaches

7.3.1 Peer support
Sikorski (1999) was leading a team from King’s College, Guy’s and St. Thomas's medical school. Currently a pilot study is being carried out in preparation for a randomised controlled trial assessing the effect of peer support on duration of breastfeeding. This will be the first community based, randomised controlled trial of the effectiveness of peer support in encouraging breastfeeding in the United Kingdom.

7.4 Factors affecting uptake and continuation of breastfeeding

McInnes (to end 2001) in Glasgow, is using questionnaires and interviews to assess attitudes, beliefs and factors affecting breastfeeding, in 300 women in the Glasgow area.

Batton (1997) based at the University of Southampton, is interested in the inter-relationship between income levels, smoking and pregnancy. As well as assessing smoking status of women themselves, she will also be asking about their partner’s smoking status and their plans to breastfeed.

7.5 Summary

Much of the current research in settings seems to focus on the health care sector. It has been noticeable throughout this review that there has been very little work done on the role of schools and education in encouraging positive attitudes to breastfeeding.

It is encouraging that there is a growing recognition that different approaches will be needed for those women who live in the most deprived circumstances. However all studies in the UK, which address this, appear to emanate from one research group. Relatively little attention has been given to the needs of teenage mothers, and no current research has been identified which addresses this.

Peer support has emerged as a very promising approach throughout this review, and it is good news that a randomised controlled trial will be carried out in the UK to rigorously assess its effectiveness.

- More research is needed on the potential of school settings to positively promote breastfeeding.
- More research is needed on the factors, which influence breastfeeding in teenage mothers and on practical interventions that have the potential to encourage higher initiation rates and longer duration of breastfeeding in this group.
8.0 International Experiences, Strategies, and Good Practice Guidelines

In the introductory part of this section, some international experiences are recounted. It is important to remember in reading this, that there are great inconsistencies in the way in which breastfeeding data is collected, both over time, and between countries.

**Norway** and **Sweden** are the two European countries with the highest incidence and duration of breastfeeding. This has not always been the case. In Sweden, in 1945, 95% of women were still breastfeeding their babies at two months of age. However, between then and the 1970's, the numbers of women who were breastfeeding dropped dramatically. In 1972 only 20% of women were breastfeeding their children when they were two months old. Later in the 1970's breastfeeding rates started to rise again and now nearly 100% of women initiate breastfeeding and 81% are still breastfeeding at two months and 43% at six months (Swedish National Data 1996). The reasons most commonly put forward for the decline in breastfeeding in the time leading up to the 1970s, include the liberating effect formula milk had in permitting women to return to work and the promotion of formula by health professionals (Helsing in Positive Health No. 27; Zetterstrom 1999). The reasons for the up turn are postulated to include:
- Changes in employment practices which made it feasible to return to work and continue breastfeeding.
- Women becoming more aware of the benefits of breast milk and themselves lobbying for changes in public, professional, and employer cultures.
- Regulation of the marketing of infant formula.
- The introduction of the Baby Friendly Initiative.

Collection of breastfeeding data in **Australia** has been fraught by inconsistencies in definition, and methodologies. This problem is being actively addressed as part of the National Breastfeeding Strategy that is described more fully in a later section. Current estimates are that the rates of breastfeeding in Australia are 80 per cent at birth, 60% at three months, and 40 per cent at six months. The data that does exist suggests that feeding initiation and duration rates peaked in the mid 1980's, and since then have declined. Some studies however (Scott & Binns 1996) have raised questions about the reliability of these results and suggest that in fact at least in some parts of Australia the levels have been relatively stable.

In the **USA**, in 1998, 64 per cent of mothers were breastfeeding shortly after birth and 29% at six months. These figures are fairly close to those reported in England and Wales. Although the American data are similar to the UK, with higher rates of feeding amongst older and more educated women, there have recently been proportionally greater increases in rates reported in younger age groups, the less well educated and those living in more deprived circumstances. None of the material identified during this review suggested any reasons for this increase in those groups who traditionally have the lowest rates of breastfeeding.
8.1 Settings

8.1.1 Health Care

Probably the best-known and most influential guidelines are ‘The Ten Steps To Successful Breast Feeding’ promoted by the Baby Friendly Initiative. This was established in 1991 as a joint venture between the World Health Organisation and the United Nations Children's Fund. The initiative was intended to tackle the negative effect that many hospital practices had on establishing breastfeeding. The ‘Ten Steps’ were provided as a standard for good practice in maternity facilities and the ‘Baby Friendly Initiative Gold Award’ is given to hospitals which complete the ten steps and achieve a 75 per cent rate of breastfeeding on discharge. The UK ‘Baby Friendly Initiative Award’ is similar but with a target of 50% breastfeeding rate on discharge. Hospitals may also be awarded a Certificate of Commitment for achieving steps one, seven, and ten.

The ten steps are that every facility providing maternity services and care for newborn infants should:

- Have a written breastfeeding policy that is routinely communicated to all health care staff.
- Train all health care staff in the skills necessary to implement this policy.
- Inform all pregnant women about the benefits and management of breastfeeding.
- Help mothers’ initiate breastfeeding within thirty minutes of birth.
- Show mothers how to breastfeed and how to maintain lactation even if they are separated from their infants.
- Give newborn infants no food or drink other than breast milk, unless medically indicated.
- Practice rooming in, allowing mothers and infants to remain together for 24 hours a day.
- Give no artificial teats or pacifiers (dummies, soothers) to breastfeeding infants.
- Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

In addition to the 'Ten Steps' there is also a ‘Seven Point Plan’ for the promotion of breastfeeding in community health settings. The seven points are:

- All providers of community health care should:
  - Have a written breastfeeding policy that is routinely communicated to all health care staff.
  - Training for all staff involved in the care of mothers and babies in the skills necessary to implement the policy.
  - Inform all pregnant women about the benefits and management of breastfeeding.
  - Support mothers to initiate and maintain breastfeeding.
  - Encourage exclusive and continued breastfeeding with appropriately timed introduction of complementary foods.
  - Provide a welcoming atmosphere for breastfeeding families.
• Promote cooperation between health care staff, breastfeeding support groups and the local community.

Community facilities can be accredited as 'Baby Friendly' if they fully implement all seven points. A Certificate of Commitment can be awarded to facilities that adopt points one and six.

In 1990 the 'Innocenti declaration' to protect, promote, and support breastfeeding was adopted by WHO and UNICEF policy makers. The World Health Assembly welcomed the declaration in 1991, and in 1992 member states were urged to support it. The declaration outlines a number of targets, both for Governments and for international organisations.

The targets for Governments were:
- Ensure that every facility providing maternity services practices all 'Ten Steps' to successful breastfeeding.
- Take action to give effect to the principles and aims of all articles of the International Code of Marketing of Breast Milk Substitutes.
- Enact imaginative legislation protecting the breastfeeding rights of working women and established means for its enforcement.

In 1999 WHO and UNICEF produced a report that showed progress towards achieving these targets in different countries. For example in the UK, of 202 hospitals with maternity facilities, two had been designated Baby Friendly.

In 1995 the UK National Breast Feeding Working Group produced ‘Good Practice Guidance to Support Breast Feeding’ for the National Health Service. This covered:
- The benefits of breastfeeding.
- Local policies on breastfeeding.
- Education and training for NHS staff.
- Postnatal advice and support services in the community.
- Public education and breastfeeding.
- Monitoring and audit.

8.1.2 Workplace

Greiner (1999) wrote an excellent commentary on employment and the duration of breastfeeding. This contains some very useful international comparisons between countries which have maternity leave built into their legislation, those where it is paid and those where there is little provision. It is pointed out that although many studies do not seem to indicate a strong link between initiation and duration of breastfeeding and employment, this may well be an artefact, since paid leave is the norm in most westernised countries. The exceptions include countries like New Zealand, where although there are very high initiation rates (on a par with Scandinavia) there is a very rapid drop off rate.
In most westernised countries more women are entering the labour force. In the first part of 1999 the International Labour Organisation (ILO) suggested that there should no longer be any provision for breastfeeding workers to have a break to breastfeed or express milk, and that the duration of paid leave should remain at twelve weeks. This would mean regression to exactly the same conditions as those in the first ILO convention, passed in 1919. At an ILO conference in June 1999, it was eventually agreed that breastfeeding breaks should remain. It is disturbing though, that despite all of the recommendations and evidence of the benefits of breastfeeding, there are still pressures which could erode the opportunities for it. Also, in many countries, it is easier for better-educated women in professional jobs to maintain breastfeeding when they return to work. This means that any erosion of legal rights and support will affect low-income women differentially, thus contributing to inequities of access and inequalities in long term health.

Until recently, there was no mandated maternity leave in the USA, and this may explain why much of the literature and recommendations for breastfeeding friendly employment practices come from there (Bocar 1997 Galtry 1997 Corbett-Smith & Bezek 1997). Their recommendations include:

- Paid maternity leave.
- Guaranteed job protection.
- Nursing breaks during the working day.
- Availability of part-time work.
- Provision of facilities for pumping or expressing breast milk, including storage.
- On-site child care.

Bar Yam (1998) describes a ‘return to work breastfeeding assessment tool’. This is intended to help breastfeeding consultants evaluate workplace lactation support. It also includes suggestions for ways in which new mothers can negotiate the support that will enable them to return to work whilst still breastfeeding.

In the UK, the Maternity Alliance has provided some excellent materials to encourage employers to support breastfeeding. Their leaflet ‘Breast Feeding and Work: Facing The Management Challenge’ is targeted at employers. It covers the business case for supporting breastfeeding; the health benefits; legal requirements; and a guide to good practice. Specifically, good practice guidelines are given for maternity leave, facilities for breastfeeding or expressing breast milk, breastfeeding breaks, encouraging a positive staff culture, and developing a written maternity policy.

The complementary publication ‘Having It All: A Woman's Guide to Combining Breast Feeding and Work’ is intended for the mother. It gives some very useful and practical tips on maintaining breastfeeding, as well as suggestions for dealing with colleagues and managers, and a summary of a woman's legal rights.
8.2 Population groups

8.2.1 Low Income
The importance of breastfeeding in contributing to reducing inequalities in health is covered explicitly in the Independent Inquiry on Inequalities carried out under the chairmanship of Sir Donald Acheson (1998). As well as calling attention to the current inequalities in breastfeeding rates between social classes in the UK the report suggests practical steps that can be taken to address this. These include pre-natal interventions including peer counsellors and education programmes, which are tailored to the needs of women from specific cultural backgrounds. Other measures which are suggested include: increasing the acceptance of breastfeeding, especially outside the home; discussion of breastfeeding issues in personal, health and social education in schools; using media advocacy and other publicity; and encouraging the provision of facilities for breastfeeding in shops and public places.

8.3 Examples of Integrated National Strategies to Promote Breastfeeding

This section gives a snapshot of some integrated strategies that have been proposed recently in various westernised countries.

The Australian Government has committed itself to a National Breastfeeding Strategy, with a target of 80% of babies being at least partially breast-fed at six months of age. A multi-faceted approach has been adopted, which includes:

- Family education, in particular targeting the father.
- National accreditation standards for maternal and infant care services, which encourage the smooth transfer of support and encouragement from the hospital to the community.
- Employer support, targeting employers, employees and workplaces with information about how to successfully combine breastfeeding and employment.
- Health professional education, including guidelines for health workers; breastfeeding education kits that contain a best practice guide; and a continuing education module on breastfeeding. The kits have been distributed to all general practitioners, paediatricians, child health clinics, and pharmacies.
- Indigenous health work, including an audit of current training, a review of current interventions and best practice, and a book of breastfeeding stories.
- Data collection, including development of a framework for monitoring national breastfeeding rates. This will include consistent definitions and standardised questions.

In the United States, the ‘Healthy People 2010’ target for breastfeeding is 75% of women to be breastfeeding in the early postpartum period, and 50 per cent to be breastfeeding at six months. The steps taken to achieve this will include: education of new mothers and their partners; education of health providers; changes in routine
maternity ward practices; social support, including support from employers; and greater media portrayal of breastfeeding as the normal method of infant feeding.

In 1999 the Department of Health in Northern Ireland published a Breast Feeding Strategy. This includes a background section covering: the benefits of breastfeeding; financial savings; environmental considerations; the impact of the welfare food scheme; commercial promotion of infant formula; the advantages of a longer maternity leave than the most women currently receive; and changes in workplace practices.

This background is followed by a detailed action plan that includes:

- Co-ordinating activities between different parts of the health service, and local voluntary and community groups.
- Commissioning services to give priority to breastfeeding promotion, support and management.
- Collecting regional information in a standardised format to monitor differences and trends.
- Focussing research, with more research being needed on the most effective methods of encouraging breastfeeding, particularly amongst low uptake groups; reasons for variations; reasons for early cessation; effect of women's working patterns and maternity leave; and effective breastfeeding education in schools.
- Training health professionals including doctors, midwives, health visitors, paediatric nurses and dieticians. This should include basic training and refresher programmes.
- Supporting special needs infants and their mothers, including developing human milk banking.
- Raising public awareness, including public information campaigns and community development approaches.
- Limiting the promotion of artificial milk, including a recommendation that it should not be promoted at all within the health care system.
- Legislative change including maternity leave; reviewing the provision of free milk tokens; better adherence to the International Code of Marketing of Breast Milk Substitutes.
- Monitoring progress. This is a commitment to monitor the implementation of the activities described above, and report within twelve months of the launch of the strategy.

Scotland has a target that 50% of mothers should still be breastfeeding at six weeks, by 2005. Currently 36% of women are feeding at six weeks. The age and social class variations are similar to those reported in the rest of the UK. In 1991 the Scottish Joint Breast Feeding Initiative was launched. The Scottish Breast Feeding Group took over the work of this group in 1995, with support being provided by a part-time National Breast Feeding Advisor. Implementation of the Baby Friendly Initiative has been encouraged, e.g. through hosting a conference. Other activities have included the production of resources to support Breast Feeding Awareness Week, which is held in May every year. Scotland is also developing more consistent and standardised
approaches to collecting breastfeeding data. It is recognised that the target will be a difficult one to meet, and the final sentence of the breastfeeding section in the 1998 Health in Scotland report concludes by saying, ‘A deep seated change in social attitudes towards breastfeeding will be a key determinant of success’.

Finally in this section the UK Baby Friendly Initiative (1999) has provided guidance on the development of national, regional and local strategies for breastfeeding. This includes sections on:

- Protecting a mother's right to breastfeed, including breastfeeding in public and at work; adequate maternity leave provision: and the adverse effects of the welfare token scheme.
- Implementing best practice standards in the health care system, including: adopting recognised best practice standards; adequate numbers of trained health professionals; and provision of banked donated milk for special needs babies.
- Provision of accurate and impartial information and support, including: appropriate education in schools; use of positive and culturally appropriate images of breastfeeding; avoidance of materials which promote artificial feeding; and adequate provision of impartial information for parents.
- Setting targets, and auditing and supporting progress towards them including providing incentives to support the adoption of breastfeeding strategies and policies; and a nationally coordinated and adequately funded approach.
9.0 Overall summary

9.1 Factors which influence the initiation and the duration of breastfeeding

The factors that affect initiation and duration are often very closely inter-woven. Whilst it is useful to separate them out, in an attempt to bring some clarity to our understanding of when to intervene and what to do, there is a danger of over simplifying. In this section, an attempt has been made to identify which factors are particularly important in determining the initiation of breastfeeding and which stand out as affecting the duration of breastfeeding. It needs to be remembered that there is a high degree of interdependence between the two. One of the conclusions of the systematic reviews described in Section 1 was that interventions that increase initiation also increase duration.

9.1.1. Initiation

The initial choice of infant feeding method is largely due to attitudes. The actual decision about the method is made usually before pregnancy or early in pregnancy (apart from in teenage mothers when the decision is often made later in pregnancy). Attitudes in turn are determined by the cultural view of breasts and breastfeeding; exposure to the idea of breastfeeding as normal and beneficial, e.g. through schools; seeing other people breastfeed successfully; and routinely seeing positive images of breastfeeding in the media.

The views of the immediate family are also important, particularly those of a woman’s partner and her mother. Sometimes it seems that the views of fathers are not actually known, but are guessed at, and it is this perceived influence which has an effect.

The practical implications are that major attitudinal shifts are needed if breastfeeding is to become the ‘normal’ way of feeding a baby. Two good starting places to attempt to achieve this would be to begin to talk naturally about breastfeeding in primary schools with boys and girls, continuing into secondary schools with more in depth discussions of young people’s views and why they think they might hold them.

The media is an important source of information, particularly for young people. Media advocacy work to encourage the representation of breastfeeding as normal, could contribute to a shift in attitudes in young people, and mitigate some of the embarrassment currently expressed when women are asked about breastfeeding. This means that more women will be comfortable breastfeeding in public, which in turn will encourage others to think about breastfeeding as their preferred choice.

There may be opportunities to prompt women and their families to think about which infant feeding method they would adopt when planning a pregnancy. This could be through magazines again or using more imaginative routes, for example working with the manufacturers of folic acid supplements.
Since teenagers in particular do not make their choice about infant feeding methods until later in pregnancy, opportunities should also be taken to discuss infant feeding as early in the pregnancy as possible. There would be considerable benefits in involving fathers (if possible) at this stage, and encourage communication between partners about the benefits of breastfeeding. It may also be appropriate to either include or acknowledge the possible influence of the woman's mother.

The evidence from the systematic reviews described in Section One, is that different approaches are needed in the antenatal period for women who are thinking of bottle-feeding, and those who are thinking of breastfeeding. One-to-one counselling appears to be most effective in encouraging those who are thinking of bottle feeding to change to breastfeeding, whereas peer support is more effective in enabling women who want to breastfeed to initiate this successfully.

9.1.2. Duration

The earlier the decision is made to breastfeed, the longer breastfeeding is likely to continue. This argues for encouraging discussion about which infant feeding method a girl would adopt, as early as possible, for example in secondary school.

About twelve per cent of women who start breastfeeding discontinue by the time they leave hospital. The hospital environment thus has a significant impact on whether feeding can be established or not. Practical supports, for example teaching techniques, not offering infant formulae, rooming in, and so on, are important. Just as important, if not more so, is the attitude of the health care staff. It is clear from the evidence that many health care staff are still quite ambivalent about the benefits of breastfeeding. Some of this may be based on individual’s personal experiences and some ideas for dealing with this are given later. Some may not have had adequate training, or may not be aware of initiatives like the Baby Friendly Initiative. Although it is important to ensure that the knowledge of staff is as up-to-date as possible, it is equally important to encourage them to assess their own fundamental attitudes and personal beliefs and to address these. There may also be time constraints, and other practical considerations, which need to be tackled at the same time as providing training.

Peer support is probably the most promising intervention in terms of supporting mothers to increase the duration of breastfeeding.

Finally, one of the most straightforward relationships in the literature is between returning to full-time work and early cessation of breastfeeding. Part time work, less than four hours a day, does not seem to effect breastfeeding rates. Intermediate hours have an intermediate effect. Possible ways to encourage employers to create a supportive environment for breastfeeding are described later, although no evaluated workplace interventions were identified in this review.
9.2 Effective interventions, and opportunities and barriers to promote breastfeeding

General points that emerge from the consolidation and updating of the evidence base are: -

- Interventions should be long term, intensive, span both the antenatal and postnatal periods, and involve multiple contacts.
- Flexible and individualised approaches are more likely to be effective. In particular there needs to be different approaches for women whose original intention is to breastfeed and those whose original intention is to bottle feed.
- Encouragement to consider breastfeeding is needed as early in pregnancy as possible and preferably before pregnancy.

9.2.1 Settings

**Schools**

- Initiatives that combine classroom teaching with an environment that reflects that teaching and with family and community involvement are the most promising.
- More co-ordinated and consistent education about breastfeeding is needed in schools for both girls and boys.
- Tackling negative attitudes to breastfeeding beginning in primary schools, and continuing into secondary schools with skills based courses, to help to overcome a culture of embarrassment.

**Health Care**

- Hospital practices should reflect current knowledge, for example unrestricted breastfeeding support, particularly with the first few feeds, rooming in and discharge packs which do not promote infant formula.
- Implementation of the Baby Friendly Initiative codes should be encouraged.
- Significant numbers of maternity staff are ambivalent about supporting breastfeeding. Initiatives such as the appointment of breastfeeding advisers (paid professionals with specific training in supporting breastfeeding) can help to address this. It is also important to tackle practical issues such as lack of time and knowledge.

**Home**

- Fathers have an important role in the initiation and establishment of breastfeeding. This is more likely to be positive if they are included in breastfeeding education as early as possible during pregnancy. Antenatal sessions should include opportunities and exercises to help couples communicate with one another about their feelings and attitudes toward breastfeeding. Fathers could be better informed about the benefits of
breastfeeding. Analysing what enables some fathers to be supportive could provide approaches that could be more generally used by fathers.

- Women's mothers could either be involved directly, or women supported in gaining an understanding of why their mothers think as they do.

**Public places**

- There are consistently negative attitudes to the idea of women breastfeeding in public places. This attitude is expressed by children as well as by adults. It may be appropriate to begin to tackle these attitudes at school.
- Initiatives are needed to encourage large stores and shopping centres to develop supportive breastfeeding policies.

**Workplace**

- Returning to work full time is associated with shorter duration of breastfeeding. This is ameliorated with part time working.
- Workplace initiatives can address the barriers that currently exist, including negative attitudes and lack of facilities.
- Work place initiatives to support breastfeeding mothers should focus on the successful experiences of other employers and the benefits to the business.

### 9.2.3 Population groups

**Low Income**

- Self-help manuals for low income mothers is an approach which may merit further investigation.
- Peer counselling appears to give consistently positive results.
- Community based drop in centres is a promising approach which needs proper evaluation.

**Adolescents**

- Whereas most adult women make the decision about how to feed before or early in pregnancy, teenage mothers make the decision later. This suggests antenatal approaches may be particularly useful in this group.
- Pregnant teenagers need practical support, for example in identifying how they can breastfeed in the parental home without feeling embarrassed.
- More information is needed on infant feeding in teenage magazines, television and books aimed at teenagers.

### 9.2.4 Approaches

**Information giving**

- Information provision alone is not effective, and may exacerbate inequalities.

**Media**

- The local media can play a useful role in interventions aimed at increasing initiation of breastfeeding in low income women.
The national media is important in setting agendas, and portraying images of breasts and breast/bottle feeding. More positive images and a recognition of the nurturing role of breasts could play an important role in shifting current negative attitudes to breastfeeding.

**Professional development**

- Professionals need to be consistent in the advice and support they provide.
- Professional development needs to encourage changes in attitude as well as knowledge.
- Health professionals should be aware of the research on the negative impacts of smoking on breastfeeding.
- Debriefing programmes for midwives after they themselves have had children may help them to come to terms with their own experiences.
- Basic training for midwives should address practical issues, such as time pressures, promoting breastfeeding without stigmatising bottle feeders, and the evidence for introducing the subject of infant feeding as early in the pregnancy as possible.
- Encouragement is needed for midwives to regularly attend post basic training, to update their knowledge and skills and assess their own attitudes.
- Training for doctors should include more on the benefits of breastfeeding, awareness of initiatives such as the Baby Friendly Hospital Initiative and relevant counselling skills.

**Peer support**

- Peer support programmes provide particularly promising results, and it is encouraging that there were such positive findings from a community based peer support programme. Note: ‘Peer support’ is a term used to cover voluntary support from women of a similar background. The extent of any training provided is variable.

**Research**

- Many older studies did not take account of confounding factors. Many of these will have been included in the systematic reviews of interventions to promote breastfeeding.
- Lack of consistency in research studies makes it difficult to draw conclusions about the relative importance of factors that encourage or inhibit breastfeeding. In future research, increased consistency would be desirable.
- Proper evaluations of community based breastfeeding drop-in centres are needed.
- More research is needed on the potential for schools to positively promote breastfeeding.
- More research is needed on the factors that influence breastfeeding in teenage mothers and on practical interventions that have the potential to encourage higher initiation rates and longer duration of breastfeeding in this group.
Annex I: Updating and consolidating the evidence base for the promotion of breastfeeding: Search strategy

Language:
English

Countries:
United Kingdom, USA, Canada, Australia, European countries, Scandinavia, Australia, New Zealand

Databases:
Medline, Healthstar, Cochrane Library, CINAHL, EMBASE, MIRIAD, NHS Economic Evaluation database, Health Technology Assessment database, DARE, ERIC, Healthpromis, National Research Register.

Keywords:
Nutrition, food, breastfee*; breast-fee*, breast fee*, infan* fee*, lactat*
(and in Medline- randomized controlled trials).
KEY TO TABLES

Source document (S): A=abstract *= Full paper requested F= Full paper

Type of Evidence (E)
1. Systematic reviews of research using traditional methodologies
2. Other reviews and meta-analyses
3. Randomised controlled trials since 1997
4. Other research using traditional methodology e.g. cohort and case control studies, carried out since 1997
5. Systematic reviews of qualitative research
6. Qualitative and descriptive studies since 1997
7. Research in progress
8. Expert reports/guidelines/strategies from other countries
9. Examples of relevant local projects in the UK
10. Other

Quality of evidence (Q) 1=good 2=not possible to determine 3=poor

Country (C): We=Westernised countries UK=United Kingdom W=Wales  S=Scotland E= England NI N. Ireland Ir- Ireland (Rep.) USA= United States of America C=Canada Au=Australia NZ=New Zealand Sw= Sweden N=Norway Fi=Finland Z=Switzerland It=Italy Me=Mexico

Phase of breastfeeding which forms the focus of the research (P): I= initiation C= continuance

Settings (Se): Schools=Sc Hospitals=H Community Health Care=C Workplace=W P=Public places e.g. shops Co=Community
Population groups (Po): Low income=L Adolescent mothers (less than 18 years)=A
Approaches (Ap): Informational=I Professional Development=Pd Community=C Peer support=Pe B=Bf counsellors Po-Policy
Other emphases (O): O=listing of opportunities and barriers S= Smoking E=Economic analysis F=Fathers We=Welfare food scheme
Table 1: Systematic reviews of evidence using traditional methodologies

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### Table 2: Non systematic literature reviews

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Table 3: Randomised controlled trials carried out since the most recent systematic reviews

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Table 4: Studies using traditional methodologies, excluding randomised controlled trials, reported since the most recent high quality systematic reviews

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Table 5: Systematic reviews of descriptive and qualitative studies

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Table 6: Descriptive and qualitative studies reported since the most recent high quality reviews

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### Table 7: Research in Progress

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### Table 8: International Experiences, Strategies, and Good Practice Guidelines
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