

Effect of Peer Support on Breastfeeding Initiation, Duration and Exclusivity: Evidence for Public Health Decision Making

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Key Take Home Messages

- Face-to-face support, predominantly through home visits, by peers and professionals has demonstrated effectiveness in promoting exclusive breastfeeding for up to six months.
- Provision of support by telephone, by peers or professionals, has not been effective in promoting breastfeeding.
- Peel Public Health has offered peer support, by telephone, to breastfeeding mothers for the past decade through a small, well developed program called “Breastfeeding Companions”.
- Given lack of proven effectiveness of peer support via telephone, and the cultural diversity of Peel’s population, the Breastfeeding Companions Program will be included in a review of Peel Health’s services to support breastfeeding.

Executive Summary

Peel Public Health has offered peer support to breastfeeding mothers since 2001. This program promotes breastfeeding as a cultural norm to Peel Region's ethno-culturally diverse population. Telephone support is offered by 100 volunteer Breastfeeding Companions who speak a total of 23 languages. In 2011, Companions provided service to 425 new mothers. Given the number of live births to Peel mothers (15,832 in 2010)¹ the reach was 3% of Peel's new mothers, or an estimated 7% of first time mothers. Peel Health spent \$160,000 in 2011 to provide this program.

The most recent survey of Breastfeeding Practices in the Region of Peel (2009/2010) reports that 97% of mothers surveyed initiated breastfeeding; 58% of those who initiated were continuing to breastfeed at six months; and 23% of those breastfeeding at six months were exclusively breastfeeding.

Peer support was cited in the Mandatory Health Programs and Service Guidelines (1997) as a strategy to promote and support breastfeeding (1). The current Ontario Public Health Standards (2008) do not require peer support for breastfeeding (2). Providing peer support is one criterion for Baby Friendly Designation by the Breastfeeding Committee for Canada (3), which was achieved by Peel Public Health in 2009.

As options for modifying the service provided by Breastfeeding Companions are being considered, a rapid review was undertaken to address the question:

¹ from the Better Outcomes Registry and Network (BORN) dataset

Does peer support for breastfeeding mothers have an effect on initiation, duration or exclusivity of breastfeeding as compared to professional support or usual care?

Three high quality systematic reviews were retrieved. In total, the reviews used 23 unique studies in analyses which address the question.

Outcomes are reported by any breastfeeding (which includes use of other liquids) and exclusive breastfeeding (no other liquids fed to the infant). Findings include:

1. Peer support improved breastfeeding *initiation* only when provided to women already considering breastfeeding.
2. Peer support had a significant positive effect on the short term duration (1-3 months) of exclusive breastfeeding.
3. Peer support had a significant positive effect on intermediate term duration (4-5 months) of exclusive breastfeeding in one review, a finding not supported in a second review.
4. Combined peer and professional support, for the same clients, positively impacted *duration* of exclusive breastfeeding but had no effect on *duration* of mixed breastfeeding over the long term (up to 6 months).
5. Neither the use of telephone, nor the combination of telephone and face-to face support, by either peers or professionals, affected the duration of mixed breastfeeding over the long term (up to 6 months).

The findings of this rapid review will inform program planning for Peel Public Health regarding breastfeeding priorities and feasible interventions at the population health level.

1 Issue

Peel Public Health achieved the internationally recognized “Baby Friendly”² (BFI) designation in 2009. The Breastfeeding Committee for Canada, the national authority for the Baby Friendly Initiative, requires provision of “a seamless transition between the services provided by the hospital, community health services and peer support programs” (3). The Breastfeeding Companions program, through which trained volunteers provide mother-to-mother support for breastfeeding via telephone, has been a popular program in Peel. However the reach is low (425 mothers in 2011) and the cost is high (\$160,000 in 2011). Since the effect of the Companions program on breastfeeding among Peel mothers is unclear, the following question was posed –

Does peer support for breastfeeding mothers have an effect on initiation, duration or exclusivity of breastfeeding as compared to professional support or usual care?

² The Baby Friendly Initiative (BFI) is a WHO/UNICEF global strategy designed to increase maternal and infant health by improving breastfeeding outcomes for mothers and their babies. This initiative promotes evidence-informed practice and supports and empowers parents to make informed decisions about infant feeding.

2 Context

In 1997, the Ontario Ministry of Health, in its Mandatory Health Programs and Service Guidelines for Public Health, set an objective to increase to 50% the percentage of infants breast fed up to six months of age by the year 2010 (1). While the Ontario Public Health Standards identify “an increased rate of exclusive breastfeeding until six months, with continued breastfeeding until 24 months and beyond” as a societal outcome supporting child health, peer support is not a specific requirement (2).

Table 1 below indicates that, in Peel and surrounding areas, initiation of breastfeeding is high, with more than 90% of mothers surveyed commencing breastfeeding. While nearly 60% of mothers who begin breastfeeding continue for six months or longer, a much smaller proportion exclusively breastfeed, that is, give their infants only breast milk. Progress is being made; over a five year interval, the proportion breastfeeding exclusively has more than doubled from 10% to 23% among Peel mothers.

Table 1: Breastfeeding Initiation, Duration and Exclusivity

Survey Locations Year	Peel Public Health 2004/2005	Halton Region Health Dept. 2007/2008	Toronto Public Health 2007/2008	Peel Public Health 2009/2010
Mothers surveyed	n=882	n=483	n=1518	n=1314
Mothers Initiating Breastfeeding	94%	93%	96%	97%
Mothers Continuing to Breastfeed to six months	58%	Not reported	Not reported	58%
Mothers Continuing to Exclusively Breastfeed to six months	10%	12%	18%	23%

The Mandatory Health Programs and Service Guidelines (1997) identified peer support as a strategy to promote and support breastfeeding (1). In response to the guidelines, Peel Public Health launched the Breastfeeding Companions program in 2001. A Breastfeeding Companion supports a mother by telephone, for up to six months, providing emotional support and increasing the mother's knowledge, skill and confidence in her breastfeeding experience. The Companion also shares information about community resources as needed. Pregnant women learn about the Breastfeeding Companions Program through prenatal classes in the community, in hospitals, via www.parentinginpeel.ca and from contacts with Public Health Nurses. Women can self-refer to the program during pregnancy or the early postpartum weeks.

During the first seven years of operation (2001-2007), the Breastfeeding Companions program grew to over 100 peer support volunteers, a level which has been maintained through ongoing recruitment and training. Peel Health Volunteer Resources recruits and manages volunteers while Public Health Nurses coordinate the program, train volunteers and match them with clients. Peel Public Health Nurses also support mothers who are breastfeeding through clinics, a telephone support line and home visits.

In 2011, 486 women in Peel sought the support of a Breastfeeding Companion; nearly all of these were first time mothers. After removing those who were unable to be contacted (n=61) 425 mothers were matched with Companions. Given the number of live births to Peel mothers (15,832 in 2010)³ the reach was 3% of Peel's mothers. Assuming that 44% of live births were to first-time mothers⁴, the program reached about 7% of first-time mothers.

³ from the Better Outcomes Registry and Network (BORN) dataset

⁴ Live births by parity, Table 6.4 in Region of Peel Public Health, Born in Peel, 2010

Of the mothers participating in the peer support program, 47% (n=198) were known to be breastfeeding at six months. An additional 28% (n=117) were still breastfeeding at the time of last contact with a Companion, prior to the six month mark. No data are available to indicate breastfeeding continuance beyond six months. Twenty-two per cent of mothers (n=94) receiving peer support stopped breastfeeding before six months. No data about breastfeeding exclusivity are collected from mothers receiving peer support.

Satisfaction remains high among clients served by Breastfeeding Companions. Following discharge from the program, when clients were asked whether the Breastfeeding Companion was helpful in supporting their confidence, knowledge and ability to breastfeed, at least 85% responded positively. Comments included “She was an indispensable resource; great feedback and tips to help me and my baby cope”. When asked whether the Companion provided them with information on breastfeeding resources, 76% of clients had been informed about the Breastfeeding Clinics and 78% became aware of the Breastfeeding Call Centre.

Companions reflect the diverse population of Peel, speaking a total of 23 languages, allowing many mothers to receive support in their preferred language. Of the clients served in 2011 for whom language was known, 24% (n=116) received service in languages other than English. Half of these (n=66) received service in Punjabi, Hindi or Urdu. Companions from a similar cultural background are able to address breastfeeding myths with an understanding of cultural and family practices.

Anecdote:

A number of clients have developed enough confidence through their own breastfeeding experience to subsequently volunteer as a Companion. One new mother, a Spanish-speaking immigrant from South America, heard about the program at a Healthy Start site⁵. After receiving service in her first language, she was so enthusiastic about giving back that she became a Companion herself. From the experience of peer to peer support, a small, informal network of Spanish-speaking immigrant mothers has developed. The positive attitude of the volunteers helps to promote breastfeeding as the cultural norm within the community.

Conceptual framework:

A conceptual model outlining factors influencing parent decisions about infant feeding was developed in March 2011 for an earlier rapid review. Support by peers was identified as a factor which influences client decisions about type of infant feeding, initiation, duration and exclusivity (See Appendix A).

⁵ Healthy Start is a program funded through the Canadian Prenatal Nutrition Program which provides free comprehensive services including health education, nutrition and social support to low income pregnant women and their families.

3 Literature Search

3.1 The question

A rapid review was undertaken to answer the question:

Does peer support for breastfeeding mothers have an effect on initiation, duration or exclusivity of breastfeeding as compared to professional support or usual care?

3.2 Search strategy

Inclusion criteria were established prior to conducting the literature search. Studies were included if they were published in English and satisfied all of the following criteria:

1. evaluated peer/lay support for breastfeeding
2. included healthy, term infants
3. reported effect on breastfeeding duration, initiation, and/or exclusivity
4. were systematic reviews or guidelines.

Health-evidence.ca was searched (2011.02.22) from its inception, for strong or moderate quality reviews using the terms “breastfeeding”, “breast feeding”, “breast milk”, and “support”. The initial search yielded 30 titles which were reviewed, together with their abstracts. Of these, two systematic reviews met all relevance criteria (4, 5). Subsequently, a third strong systematic review (6) was received via Health-evidence.ca updates. Since this study met all eligibility criteria, it was included.

The National Guideline Clearing House (AHRQ) was searched, without date restriction, and one relevant guideline, by the Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN) was identified (7). This guideline updates the original published in 2001. In

addition, the March 2007 supplement to the RNAO Breastfeeding Best Practice Guideline for Nurses was retrieved from the RNAO website (8). The original RNAO guideline, published in 2003, was also reviewed since it is the comprehensive document (9).

In summary, full text of three systematic reviews and two guidelines were retrieved from the literature search.

3.3 Critical Appraisal

One author (EW) independently appraised the three systematic reviews using the Health Evidence Quality Assessment Tool for Review Articles. All were rated strong, scoring 8 or 9 out of 10, which corresponds to the ratings assigned by reviewers at Health-Evidence.ca.

Both guidelines predate the systematic reviews and were excluded as they provide no additional or more recent evidence.

3.4 Description of Included Studies

The three systematic reviews report on 23 unique studies of peer or peer and professional support for breastfeeding. There is some duplication in reporting: four studies appear in two reviews and a fifth was included in all three. See Appendix D: Data Extraction Table p. 1-5 for details of the three reviews, and p. 6 for a comparison of included studies.

Chung et al (2008) conducted a systematic review of the effectiveness of interventions to promote breastfeeding, updating one completed for the US Preventative Services Task Force in

2003. They sought to answer five questions including: What are the effects of breastfeeding interventions on initiation, duration and exclusivity of breastfeeding?

Definitions of breastfeeding used by Chung et al are as follows:

- Initiation includes any breastfeeding at discharge or up to two weeks after delivery.
- Breastfeeding duration is classified as: short-term, 1-3 months; intermediate term, 4-5 months; long-term, 6-8 months; and prolonged, >9 months.
- Exclusive breastfeeding definitions varied among individual studies and all definitions were adopted.
- Partial, mixed or nonspecified breastfeeding was reported as “any” breastfeeding (5).

Four randomized controlled trials (RCT) of lay support, which were rated as fair quality, were included in the review. These four studies were heterogeneous in:

- timing of the intervention i.e. prenatal, peripartum, and postnatal
- target population including low-income, and Latina women, and women giving birth in “Baby Friendly” accredited hospitals (in Brazil and Belarus)
- inclusion of some premature as well as full-term infants and
- types of interventions e.g. telephone support, lay counselling, home visits, plus provision of breast pumps, in one study (5).

Britton et al (2009) published an update of an earlier Cochrane review. The purpose of this review was to assess the effectiveness of support for breastfeeding mothers on breastfeeding duration. They analyzed the effect of the timing of the intervention (antenatal and/or postnatal),

settings (home or hospital), mothers' income level, mode of support (face-to-face or by telephone), effect of baseline prevalence of breastfeeding and effectiveness of different care providers and their training on duration of breastfeeding (4).

Nine randomized or quasi-randomized controlled trials of lay support for breastfeeding and six with combined lay and professional support, which passed quality appraisal, were included. An additional 79 articles identified were awaiting classification at the time the Cochrane review was published. Authors noted that inclusion of some of these articles could alter the findings (4).

Ingram et al (2010) published a systematic review of studies of peer support for breastfeeding and its effect on initiation, exclusivity and duration of breastfeeding. Eleven primary studies were included; seven RCTs and four observational studies. Six of the RCTs were rated as high quality; one RCT and all four observational studies were rated as medium to low quality (6).

Of the 11 included studies, 7 offered peer support to all pregnant women (universal) and 4 only to women considering breastfeeding (targeted). The universal approaches included antenatal alone, or antenatal and postnatal sessions with peer counsellors, in clinic or home settings and via telephone. The targeted approach was both ante and postnatal, in home, in hospital or by telephone. Intensity of interventions varied from one to three contacts between peer supporters and participants. (6)

3.5 Synthesis of Findings

Relative Risk (RR) is a statistic which indicates whether an event of interest is either more or less likely to occur in an exposed group versus a control group. An $RR < 1$ shows that an event is

less likely to occur in the exposed group compared to a control group. Conversely, an $RR > 1$ indicates an event is more likely to occur in the exposed group compared to a control group.

Confidence intervals (CI) at the 95% level are reported for each RR. When the CI includes 1.0, the differences between groups are not statistically significant; there is no effect.

In the following discussion, the event of interest is breastfeeding, and the groups vary by whether the women were, or were not, “exposed to” support, either peer, or combined peer and professional.

Rate Ratio is a statistic which compares the incidence rate in one group to the incidence rate in another group. One systematic review (5) uses rate ratio to compare rates of breastfeeding in groups who received different forms of support for breastfeeding.

Number needed to treat (NNT) indicates the number of patients who need to receive the intervention (breastfeeding support) in order to have one additional good outcome (continuation of breastfeeding). The NNT were calculated by the authors of this review for all statistically significant outcomes.

Tables 2 and 3 below provide a summary of the impacts of peer support and combined peer and professional support on breastfeeding. Results are reported separately for the outcomes “any breastfeeding” (which includes use of other liquids, and is commonly referred to as “mixed feeding”) and “exclusive breastfeeding” (no other liquids fed to the infant). For detailed results, see Data Extraction Table - Appendix C.

Table 2: Effect of Support for Breastfeeding – Peer support only

	Any Breastfeeding				Exclusive Breastfeeding			
	Initiation	Duration in months			Initiation	Duration in months		
Author		1-3	4-5	≤6		1-3	4-5	≤6
Britton	-	NSD	NSD	NSD	-	SD	SD	NSD
Chung	NSD	SD	NSD	NSD	SD	SD	NSD	NSD
Ingram (universal)	NSD	-	-	-	-	-	-	-
Ingram (targeted)	SD	-	-	-	-	-	-	-

Note: NSD = not significantly different and SD = significantly different, at the 95% confidence level. – indicates no data.

Initiation of **Any** Breastfeeding (or Mixed Feeding):

Two systematic reviews (5, 6) looked at the effect of peer support on *initiation* of breastfeeding. Both reviews included the same three studies in which peer support was provided via telephone, in one study, by home visits in a second, and by telephone with home visits if requested, in the third. There was no significant effect of peer support on breastfeeding initiation, overall. However, one review found an effect of peer support provided in the antenatal and early postpartum period to women already considering breastfeeding (targeted approach) (RR of not initiating breastfeeding 0.64, 95% CI 0.41 to 0.99) (6). Thirty-four women would need to receive peer support in order for one additional mother to *initiate* any breastfeeding (NNT=34).

Duration of **Any** Breastfeeding (or Mixed Feeding):

The effect of peer or lay support on *duration* of any breastfeeding was reported in two systematic reviews. Chung et al (2008) found the rate of breastfeeding by mothers receiving lay support was increased by 22% in the short term (1-3 months) compared to usual care (Rate Ratio 1.22, 95% CI 1.08 to 1.37). This finding was based on five studies (5). Britton et al, combining four studies, found no significant difference (4). The same two systematic reviews calculated effects

of support for breastfeeding on *duration* for the medium (4-5 months) and longer term (up to 6 months). There was no effect of peer support on *duration* of any breastfeeding in the medium or longer term.

Initiation of **Exclusive** Breastfeeding:

One systematic review reported on the *initiation* of exclusive breastfeeding, based on a single study of fair quality. The *initiation* rate among mothers receiving lay support was increased by 39% compared to usual care (Rate Ratio 1.39, 95% CI 1.01 to 1.92) (6). Six women would need to receive peer support in order for one woman to *initiate* exclusive breastfeeding (NNT=6).

Duration of **Exclusive** Breastfeeding

The rate of exclusive breastfeeding by mothers receiving lay support was increased by 65% in the short term (1-3 months) (RR 1.65, 95% CI 1.03 to 2.63) in one review based on four studies. Seven women would need to receive peer support for an additional one woman to exclusively breastfeed over the short term (NNT=7). The support was provided through home visits in two studies, by telephone in one, and by both telephone and home visits in the fourth (5). This finding was confirmed in a second systematic review which found that mothers were 58% less likely to stop exclusive breastfeeding in the short term (RR 0.42, 95% CI 0.31 to 0.57) based on three studies, two of which provided support through home visits, the third through home visits plus telephone support (4). For these three studies, two women would need to receive peer support for an additional one woman to exclusively breastfeed over the short term (NNT=2)

The same two reviews found mixed effects of lay support on *duration* of exclusive breastfeeding over the medium term (4-5 months); each analysing a different single study. Neither review found an effect of lay support on *duration* of exclusive breastfeeding over the longer term, (up to 6 months) (4, 5).

Table 3: Effect of Support for Breastfeeding – Combined Peer and Professional Support

Author	Any Breastfeeding			Exclusive Breastfeeding				
	Initiation	Duration in months			Initiation	Duration in months		
		1-3	4-5	≤6		1-3	4-5	≤6
Britton	-	NSD	NSD	NSD	-	SD	SD	SD

Note: NSD = not significantly different and SD = significantly different, at the 95% confidence level. – indicates no data.

Duration of **Any** Breastfeeding (or Mixed Feeding):

Britton (2009) found an effect of professional plus peer support on *duration* of any breastfeeding prior to two months, but no effect at three months and for up to six months; analyses were based on one to three studies (4).

Duration of **Exclusive** Breastfeeding

The same review (Britton, 2009) reported that combined lay and professional support was effective in prolonging exclusive breastfeeding in each time interval, for up to six months, based on two studies. Mothers receiving combined support were 29% less likely to stop exclusive breastfeeding before six months (RR 0.71, 95% CI 0.59 to 0.86) (4). For every four women receiving combined support by peers and professionals, an additional one woman would exclusively breastfeed for up to six months (NNT=4).

Method of Support for Breastfeeding

One systematic review compared the effect of differing modes of support on continuation of any breastfeeding for up to six months (4). No significant effect was found for breastfeeding support delivered by telephone, based on five studies, including two studies of telephone support by peers. Face-to-face support, predominantly through home visits by peers or professionals, was effective in supporting the continuation of any breastfeeding for up to six months based on 14 studies. Mothers who received face-to-face support were 15% less likely to stop breastfeeding prior to six months (RR of stopping any breastfeeding 0.85, 95% CI 0.79 to 0.92). Nine studies balanced both telephone and face-to-face support, an approach which was not effective in promoting the continuation of any breastfeeding for up to six months.

3.6 Key Findings

This rapid review, using data from three strong systematic reviews, concludes that:

1. Peer support improved breastfeeding *initiation* only when provided to women already considering breastfeeding.
2. Peer support had a significant positive effect on the short term duration (1-3 months) of exclusive breastfeeding.
3. Peer support had a significant positive effect on intermediate term duration (4-5 months) of exclusive breastfeeding in one review, a finding not supported in a second review.
4. Combined peer and professional support, for the same clients, positively impacted *duration* of exclusive breastfeeding but had no effect on *duration* of mixed breastfeeding over the long term (up to 6 months).

5. Neither the use of telephone, nor the combination of telephone and face-to face support, by either peers or professionals, affected the duration of mixed breastfeeding over the long term (up to 6 months).

4 Applicability and Transferability

The following is a summary of points raised during a meeting to discuss applicability (feasibility) and transferability (generalizability) of the findings to Peel Public Health and to the Region of Peel.

Social Acceptability:

The peer support program is well accepted by clients. In addition to program data, a citizen satisfaction survey undertaken by Peel Region in 2011 included 51 clients who received Breastfeeding Companion service. Client satisfaction was high, rated 8.3/10. Eighty-six per cent of respondents agreed that they received the service they needed. The Breastfeeding Companions program exceeded the expectations of 82% of respondents. The availability of companions who speak other languages was seen to increase the accessibility of the program (10).

Political Acceptability

Breastfeeding Companions are good ambassadors for Peel Public Health. They contribute to a positive image for the breastfeeding program among the clients they serve. However, the confidential nature of the service, and the exclusive use of telephone support result in low public visibility for the program.

Offering breastfeeding clients the support of peers is one of the criteria for Baby Friendly designation. Peel Health has maintained its Baby Friendly designation since June, 2009. The report of the assessors suggested expanding the Companions program. Two area hospitals are

seeking the same designation; Peel Health staff and management are providing assistance with this initiative.

The limited population effect and the cost of the program reduce its political acceptability.

Resources

Staffing for this program, through the Breastfeeding teams of the Family Health Division, includes Public Health Nurse hours plus some administrative support, for a total annual contribution of \$110,000. Peel's Volunteer Resources staff manages the 100 Breastfeeding Companions and recruit additional volunteers as required. The cost of their service is \$50,000 for a combined total cost of \$160,000 annually.

Transferability

The effect of peer support on breastfeeding *initiation* among the population would likely be limited since Peel's initiation rate is already high. Although the rate of exclusive breastfeeding to six months in Peel has increased from 10% to 23% over a five year period, the rate is lower than desired. The effect of support by Breastfeeding Companions on breastfeeding exclusivity rates has not been captured to date in our program statistics.

Currently, our Breastfeeding Companions reflect the ethno cultural diversity of the population living in Peel. Providing service by telephone and in many languages increases the accessibility of the program, especially for women who prefer to receive service in their homes, in the early postpartum weeks, for cultural reasons. Additional research is underway to explore ethno cultural

variations in breastfeeding practices among Peel women which will further inform the recommendations listed below.

5 Recommendations

1. Obtain detailed information from the Breastfeeding Committee for Canada about peer support as a requirement for Baby-Friendly Initiative (BFI) designation.
2. Incorporate the key findings of this rapid review when undertaking program planning regarding breastfeeding priorities and interventions for Peel Public Health.
3. Incorporate the findings of this rapid review when determining the modes of support for breastfeeding women to be offered by Peel Public Health.
4. Given the cultural diversity of Peel's population, include the Breastfeeding Companions Program in a review of Peel Health's Breastfeeding services.

References

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- (10) Region of Peel Public Health. Citizen Satisfaction with Region of Peel Services: Survey Results Public Health. 2011.

Appendices

Appendix A: Concept Model

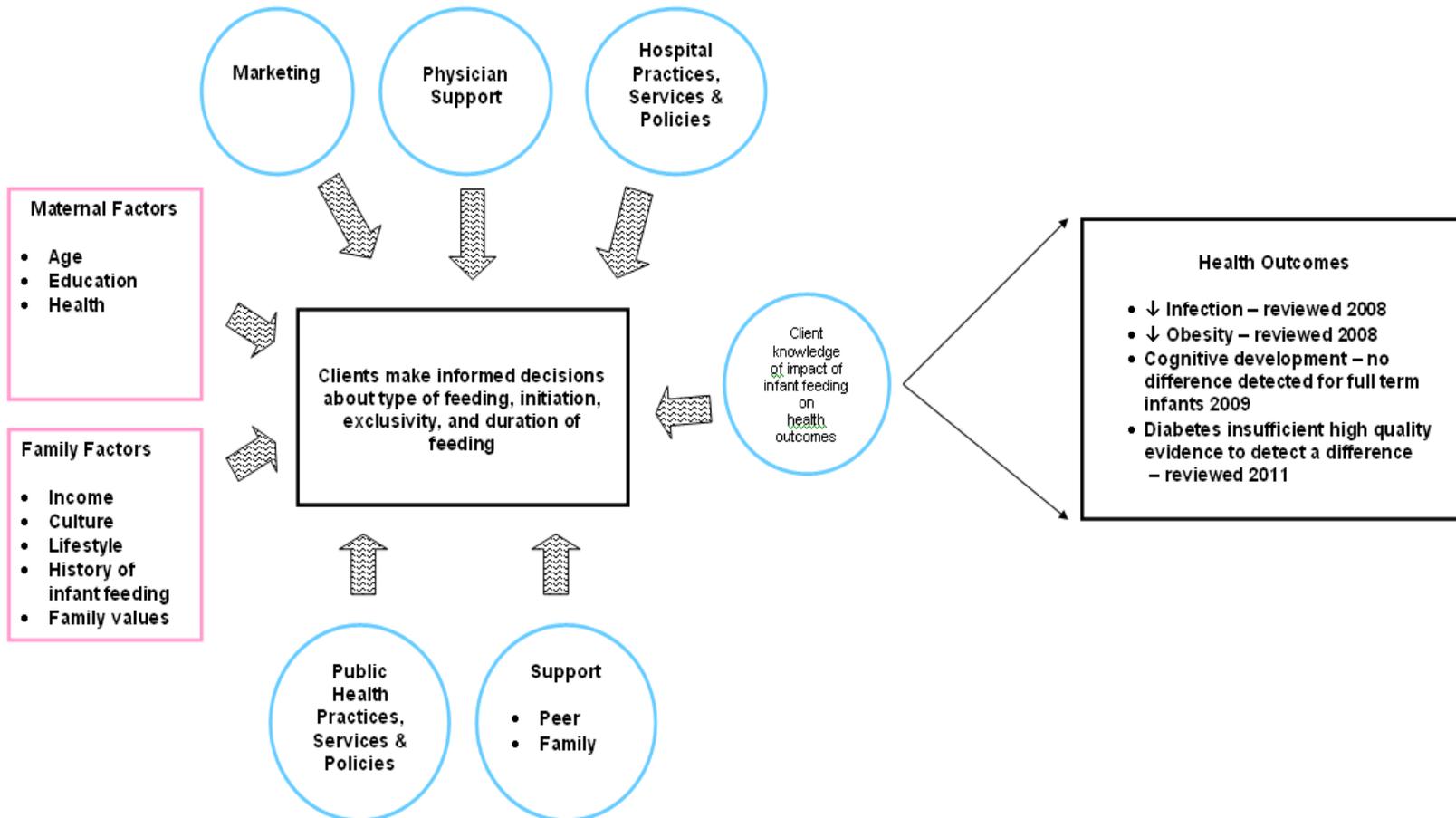
Appendix B: Search Strategy

Appendix C: Data Extraction Tables

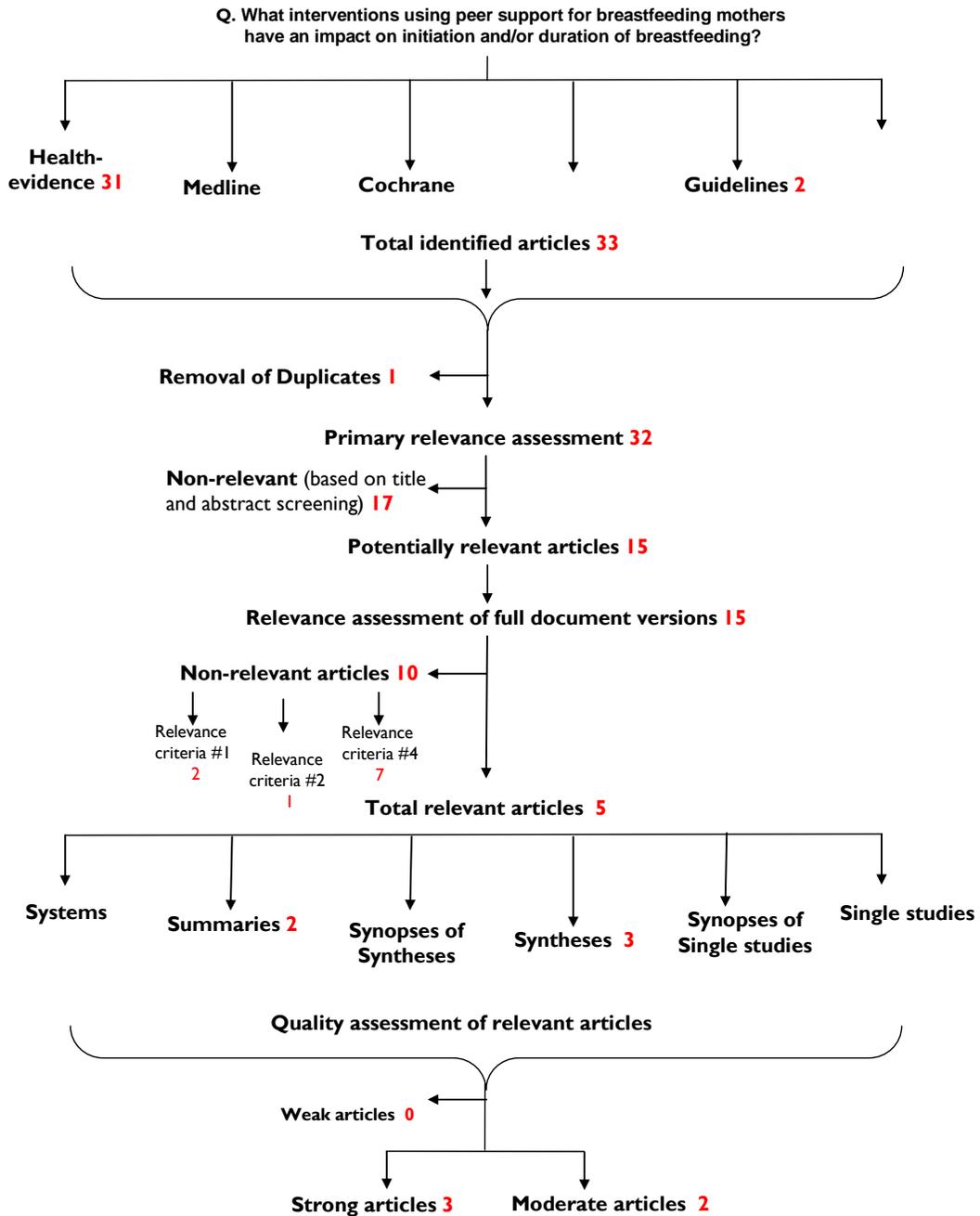
Appendix D: Applicability & Transferability Worksheet

Appendix A: Concept Model

FACTORS INFLUENCING PARENT DECISIONS ABOUT INFANT FEEDING December, 2011



Appendix B: Search Strategy



Appendix C: Data Extraction Tables

General information and Quality Rating	Details	Interventions	Outcome Measurements	Main Results
<p>Chung M, Ip S, Yu W, Raman G, et al. 2008</p> <p>USA</p> <p>Quality Rating: Strong. 9 by health-evidence.ca; 9 by EW using the same tool.</p> <p>Included 38 RCTs Quality rating of included trials – 11 good, 14 fair, 13 poor.</p> <p>4 RCTs of lay support, all rated fair quality</p> <p>Generalisability to local population: 2 RCTs from USA 1 RCT from UK 1 RCT from Canada</p>	<p>Searched: MEDLINE, Cochrane Central Register of Controlled Trials, and CINAHL only from 2001.09-2008.02 (since it updates an earlier systematic review).</p> <p>Inclusion criteria: English language; RCTs that included any counselling or behavioural intervention to improve breastfeeding (BF) initiation or duration among healthy mothers and their healthy term infants. Interventions by any provider (including peer counsellors) as long as they originated from a health care setting.</p>	<p>4 RCTs of lay support:</p> <p>In the US Anderson et al included home visits; prenatal, peri partum and postnatal support to predominantly Latina and Low-income WIC;</p> <p>Chapman et al provided breast pumps as well as lay support to Latino, low-income, BFHI accredited hospital.</p> <p>In Scotland, Muirhead et al included some prems; prenatal, peripartum and postnatal support</p> <p>In Canada, Dennis et al telephone –based postnatal support to general pop. >60% of mothers were college educated.</p>	<p>RR = Rate Ratio 95% CI</p> <p><u>Peer Support - Any BF:</u> Initiation - RR 1.09 (0.92 to 1.28) NSD 3 studies Duration: Short-term (1-3 mos) RR 1.22 (1.08 to 1.37) SD 5 studies Intermediate-term (4-5 mos) RR 1.30 (0.77 to 2.19) NSD 1 study Long-term (up to 6 mos) RR 1.37 (0.98 to 1.91) NSD 2 studies</p> <p><u>Exclusive BF:</u> Initiation RR 1.39 (1.01 to 1.92) SD 1 study Short-term RR 1.65 (1.03 to 2.63) SD 4 studies Intermediate-term RR 5.00 (0.24 to 102) NSD 1 study Long-term RR 1.90 (0.55-6.60) NSD 1 study</p>	<p>Small but significant effect of peer support on short term duration of any breastfeeding.</p> <p>Significant effect on initiation and short term duration of exclusive breastfeeding.</p>

Appendix C p.2



General information and Quality Rating	Details	Interventions	Outcome Measurements	Main Results
<p>Britton C, McCormick FM, Renfrew MJ, Wade A, King SE. 2009</p> <p>UK</p> <p>Quality Rating: Strong. 9 by health-evidence.ca; 10 by EW using the same tool.</p> <p>Generalisability to local population: 34 trials from 14 countries; 6 each from Canada, US, UK; 4 from Brazil; 2 from Bangladesh and Australia; single studies from India, Nigeria, Italy, Iran, Netherlands, Belarus, Mexico and Sweden.</p> <p>Note: 79 additional citations in the 'awaiting classification' section of the review may alter the conclusions.</p>	<p>34 randomised or quasi-randomised controlled trials (with a minimum of 78% follow up); quality rated by authors. 20/34 were previously included in Cochrane review by Sikorski 2002</p> <p>Four databases searched: Cochrane Pregnancy and Childbirth Group's Trial Register to 2006.01; MEDLINE 1966-2005.11; EMBASE 1974-2005.11; MIDIRS (Midwives Information and Resource Service) 1991-2005.09</p> <p>Inclusion: intervention occurring the postnatal period or antenatal and postnatal. English.</p> <p>Exclusion: interventions in the antenatal period alone; interventions solely educational.</p>	<p>Interventions of interest:</p> <p>Contact with individual(s) (either professional or lay) offering support, supplementary to standard care.</p> <p>Significant heterogeneity in 7 studies of lay support</p>	<p>RR = Relative Risk of stopping BF</p> <p><u>Lay Support - Any BF:</u></p> <p>Duration:</p> <p>Short-term RR 0.76 (0.54 to 1.09) NSD 4 studies</p> <p>Intermediate-term RR 0.92 (0.74 to 1.14) NSD 3 studies</p> <p>Long-term RR 0.98 (0.92 to 1.04) NSD 3 studies</p> <p><u>Combined Lay & Prof Any BF</u></p> <p>Short-term RR 0.9 (0.80 to 1.00) NSD 3 studies</p> <p>Intermediate-term RR 0.95 (0.85 to 1.06) NSD 1 study</p> <p>Long term: RR 0.95 (0.86 to 1.05) NSD</p> <p><u>Lay Support - Exclusive BF:</u></p> <p>Short-term RR 0.42 (0.31 to 0.57) SD 3 studies</p>	<p>Lay support alone and combined lay and professional support are not effective in promoting any breastfeeding in any time period up to six months.</p> <p>Lay support effective in promoting exclusive breastfeeding in the short term.</p>

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General information and Quality Rating	Details	Interventions	Outcome Measurements	Main Results
<p>Britton C, McCormick FM, Renfrew MJ, Wade A, King SE. 2009</p> <p>continued</p>			<p><u>Lay Support - Exclusive BF:</u> Intermediate-term RR 0.47 (0.40 to 0.54) SD 1 study Long-term RR 0.72 0.98 (0.93 to 1.03) NSD 1 study</p> <p><u>Combined Peer & Professional support – Exclusive BF</u> Short-term RR 0.60 (0.43 to 0.86) SD 2 studies Intermediate-term RR 0.47 (0.40 to 0.55) Long-term RR 0.71 (0.59 to 0.86) SD 2 studies</p>	<p>Lay support effective in promoting exclusive breastfeeding in the intermediate term but not in the long term.</p> <p>Combined lay and professional support effective in promoting exclusive breastfeeding at all time periods up to six months.</p>

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General information and Quality Rating	Details	Interventions	Outcome Measurements	Main Results
<p>Britton C, McCormick FM, Renfrew MJ, Wade A, King SE. 2009</p> <p>continued</p>		<p>Telephone Support – 5 studies</p> <p>Predominantly face-to-face support – 14 studies</p> <p>Balanced telephone and face-to-face support – 9 studies</p> <p>Overall 28 studies</p>	<p>Stopping any breastfeeding before last study assessment up to 6 months.</p> <p>Telephone support RR 0.92 (0.78 to 1.08) NSD</p> <p>Predominantly face-to-face support RR 0.85 (0.79 to 0.92) SD</p> <p>Balanced telephone and face-to-face support RR 1.00 (0.91 to 1.09) NSD</p> <p>Overall RR 0.91 (0.86 to 0.96) SD</p>	<p>Telephone support was not effective in promoting continuation of any breastfeeding, up to six months.</p> <p>Face-to-face support was effective in promoting continuation of any breastfeeding for up to six months.</p> <p>The combined approach, of telephone and face-to-face support was not effective in promoting any breastfeeding up to six months.</p> <p>All studies combined showed an effect of promoting any breastfeeding, up to six months, due to the weighting of the face-to-face intervention.</p>

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General information and Quality Rating	Details	Interventions	Outcome Measurements	Results
<p>Ingram L, MacArthur C, Khan K, Deeks J, Jolly K, 2010</p> <p>UK</p> <p>Quality Rating: Strong. 8 by health-evidence.ca; 9 by EW using the same tool.</p> <p>Quality rating of included studies: 6 of 7 RCTs high quality; 1 RCT medium-low quality. 4 observational studies rated medium to low quality.</p> <p>Generalisability to local population: 6 of 11 studies conducted in US, 1 in Mexico, 2 in Scotland, 2 in England. Target groups: predominantly low income women</p>	<p>11 primary studies included; 7 RCTs, 4 observational</p> <p>Six Databases searched: British Nursing Index (1981-2008); CINAHL (1982-2008); Cochrane Library, EMBASE (1980-2008), MEDLINE (1950-2008), & Current Controlled Trials. Updated MEDLINE search in January 2009.</p> <p>Inclusion criteria: pregnant women, peer-support intervention in antenatal period, any comparator, breastfeeding initiation was reported, RCT, quasi-randomized or cohort study with concurrent control.</p>	<p>Seven studies of universal peer support (offered to all women); four targeted peer support (offered only to women considering breastfeeding).</p> <p>Peer supporters: women who had themselves breastfed . . . and who had received appropriate training.</p> <p>Settings: See countries</p> <p>Universal: antenatal +/- postnatal sessions with peer counsellor in clinic, home or phone</p> <p>Targeted: antenatal + postnatal contact with peer counsellor in home, hospital or by telephone</p> <p>Intensity of interventions varied from 1-3 contacts between peer supporters and participants.</p>	<p>Breastfeeding initiation</p> <p>Universal peer support RR of not initiating BF 0.96 (0.76 to 1.22) NSD 3 studies</p> <p>Targeted peer support RR of not initiating BF 0.64 (0.41 to 0.99) SD 3 studies</p>	<p>Limitations: Data for breastfeeding initiation: mainly self-report, only one study used hospital data.</p> <p>Unable to determine a relation between intensity of antenatal peer support and initiation of breastfeeding.</p> <p>Rates of breastfeeding initiation very high in two RCTs leaving little room for improvement from intervention.</p>

Appendix C p. 6 Comparison of Studies Included in One or More Systematic Reviews

Primary Studies First author, year	Breast Feeding Initiation Rates in Cochrane Review by Britton et al	Chung et al 2008	Britton et al 2009	Ingram et al 2010
<i>Lay support</i>				
Anderson 2005		included	awaiting assess.	included
Caulfield 1998				included
Chapman 2004	Intermediate 60-80%	included	included	included
Dennis 2002	Intermediate 60-80%	included	included	
Fairbank 2002			excluded	
Graffy 2004	Intermediate 60-80%		included	included
Haider 2000			included	
Jenner 1988			included	
Kistin 1994				included
Leite 1998	High >80%		included	
MacArthur 2009				included
McInnes 2000				included
Mongeon 1995	Intermediate 60-80%		included	
Morrell 2000	Intermediate 60-80%		included	
Morrow 1999	High >80%		included	included
Muirhead 2006		included	awaiting assess.	included
Schafer 1998				included
Shaw 1999				included
<i>Lay & Professional Support</i>				
Barros 1994	High >80%		included	
Bhandari 2003	High >80%		included	
Brent 1995			included	
Haider 1996			included	
Pugh 2002	Intermediate 60-80%	included	included	
Winterburn 2003	Intermediate 60-80%		included	

Appendix C p. 7 Summary of Results of three Meta analyses

Intervention (first author, year)	Initiation	Duration 1-3 months	Duration 4-5 months	Duration up to 6 months
Any Breastfeeding				
Peer Support (Britton, 2009) Analysis 7.1		RR 0.76 (0.54 to 1.09) NSD 4 studies	RR 0.92 (0.74 to 1.14) NSD 3 studies	RR 0.98 (0.92 to 1.04) NSD 3 studies
Peer Support (Chung, 2008)	RR 1.09 (0.92 to 1.28) NSD 3 studies	RR 1.22 (1.08 to 1.37) SD 5 studies NNT*	RR 1.30 (0.77 to 2.19) NSD 1 study	RR 1.37 (0.98 to 1.91) NSD 2 studies
Peer Support – universal prenatal (Ingram, 2010)	Non-initiation RR 0.96 (0.76 to 1.22) NSD 3 studies			
Peer Support – targeted prenatal (Ingram, 2010)	Non-initiation RR 0.64 (0.41 to 0.99) SD 3 studies NNT=34			
Combined studies of Peer & Professional Support (Britton, 2009) Analysis 14.1	Before 2 months RR 0.74 (0.66 to 0.83) SD 3 studies	RR 0.90 (0.80 to 1.00) NSD 3 studies	RR 0.95 (0.85 to 1.06) NSD 1 study	RR 0.95 (0.86 to 1.05) NSD 2 studies
Exclusive Breastfeeding				
Peer Support (Chung, 2008)	RR 1.39 (1.01 to 1.92) SD 1 study NNT=6	RR 1.65 (1.03 to 2.63) SD 4 studies NNT=7	RR 5.0 (0.24 to 102) NSD 1 study	RR 1.90 (0.55 to 6.60) NSD 1 study
Peer support (Britton, 2009) Analysis 7.2		RR 0.42 (0.31 to 0.57) SD 3 studies NNT=2	RR 0.47 (0.40 to 0.54) SD 1 study NNT=2	RR 0.98 (0.93 to 1.03) NSD 1 study
Peer and Professional (Britton, 2009) Analysis 14.2		RR 0.60 (0.43 to 0.86) SD 2 studies NNT=4	RR 0.47 (0.40 to 0.55) SD 2 studies NNT=2	RR 0.71 (0.59 to 0.86) SD 2 studies NNT=4

RR = Relative Risk (95% confidence interval)

SD = significantly different at 95% confidence level

NSD = not significantly different at 95% confidence level

NNT = number needed to treat calculated using data extracted from systematic reviews

NNT* = insufficient data to calculate number needed to treat