

University of Dublin

Trinity College Dublin

School of Nursing and Midwifery

The National Infant Feeding Survey 2008

Prepared for the Health Service Executive by:

Professor Cecily
Begley,
Chair of Nursing
and Midwifery

Louise Gallagher,
Doctoral
Student/Midwifery
Research Assistant

Dr. Mike Clarke
Adjunct Professor
TCD and Director of
UK Cochrane
Centre

Margaret Carroll,
Director of
Midwifery

Sally Millar,
Lecturer in
Midwifery



Table of Contents

<i>Table of Contents</i>	<i>ii</i>
<i>List of Tables</i>	<i>vii</i>
<i>List of Figures</i>	<i>xii</i>
<i>List of abbreviations</i>	<i>xiii</i>
<i>Acknowledgements</i>	<i>xiv</i>
1 Executive Summary	15
1.1 Background and context for the study	15
1.1.1 Introduction	15
1.1.2 Literature review	16
1.2 Methodology	17
1.3 Quantitative results	18
1.3.1 Phase 1 – birth to 48 hours	18
1.3.2 Phase 2 – 3-4 months	19
1.3.3 Phase 3 – 6-7 months	21
1.4 Qualitative findings	22
1.5 Conclusion	22
1.6 Recommendations	23
2 Background and context of the study	25
2.1 Introduction	25
2.2 Aim	26
2.3 Objectives	27
2.4 Background to the National Infant Feeding Survey	27
2.4.1 Definitions of breastfeeding	28
2.5 Literature review	29
2.5.1 Introduction	29
2.5.2 Breastfeeding initiation and duration rates in Ireland	30
2.5.3 Advantages of breastfeeding	37
2.5.4 Factors affecting the decision to breastfeed	38
3 Methodology	43

3.1	Overview of study.....	43
3.2	Ethical issues and access to study sites.....	43
3.3	Survey design.....	44
3.4	Questionnaire design.....	44
3.5	Validity and reliability	45
3.5.1	Validity	45
3.5.2	Reliability.....	46
3.6	Sample.....	47
3.7	Data collection	47
3.7.1	Data collection methods: Phase 1	47
3.7.2	Data collection methods: Phase 2	48
3.7.3	Data collection methods: Phase 3	48
3.7.4	Maximising response rate	48
3.8	Sample size achieved and response rates.....	49
3.8.1	Phase 1	49
3.8.2	Phase 2	52
3.8.3	Phase 3	52
3.9	Data analysis	53
3.10	Focus groups	54
3.10.1	Sample selection	54
3.10.2	Instrument	55
3.10.3	Conduct of focus group interviews	55
3.10.4	Conduct of telephone interviews	56
3.10.5	Data analysis	56
4	<i>Results of Phase 1</i>	58
4.1	Introduction.....	58
4.2	Demographic results	58
4.3	Intention to breast-feed	60
4.4	The rate of exclusive and partial breastfeeding from birth to 48 hours	60
4.5	Feeding method at 48 hours or on discharge	61
5	<i>Results of Phase 2 – Demographics</i>	64
5.1	Introduction.....	64
5.2	Sample profile.....	64

5.3	Profile of the non-respondents	67
5.4	Age of the babies at Phase 2 of the Survey.....	68
5.5	Length of stay in hospital.....	68
6	<i>Results of Phase 2 – Main findings.....</i>	69
6.1	Prevalence of breastfeeding	69
6.1.1	Breastfeeding at three differing time points.....	69
6.1.2	Effect of nationality on breastfeeding.....	70
6.1.3	Prevalence of breastfeeding by hospital of birth.....	73
6.1.4	Prevalence of breastfeeding by Local Health Office of residence.....	76
6.1.5	Effect of ethnic origin of the mother on breastfeeding	82
6.1.6	Effect of birth order on breastfeeding.....	83
6.1.7	Effect of previous breastfeeding experience on breastfeeding	85
6.2	Socio economic status and infant feeding.....	86
6.3	Duration of breastfeeding	89
6.4	Choice of feeding method.....	90
6.4.1	Intended method of feeding	90
6.4.2	Effect of age and education level on choice of feeding method	92
6.4.3	Reasons for choice of feeding method.....	96
6.5	Knowledge of the benefits of breastfeeding	102
6.5.1	Knowledge of the benefits of breastfeeding to mothers	102
6.5.2	Knowledge of the benefits of breastfeeding to infants	104
6.6	Advice and information about infant feeding during pregnancy	107
6.6.1	Information sources during pregnancy	107
6.6.2	Attendance at ante-natal classes.....	108
6.7	Factors related to planned feeding method	109
6.7.1	Knowledge of breastfeeding among family and friends	109
6.7.2	How mothers were fed themselves	111
6.7.3	Ante-natal care	112
6.8	Factors relating to birth, postnatal care and support.....	112
6.8.1	Type of birth	112
6.8.2	Type of pain relief.....	114
6.8.3	Birth weight	114
6.8.4	Skin to skin contact.....	115

6.8.5	Length of stay	115
6.8.6	Advertising.....	116
6.8.7	Support and assistance with infant feeding.....	116
6.8.8	Support services for breastfeeding mothers.....	119
6.9	Use of pacifiers, food other than breast milk, and weaning practices	122
6.9.1	Use of pacifiers	122
6.9.2	Timing of introduction of formula.....	122
6.9.3	Introduction of food other than breast milk or formula.....	124
6.10	Challenges with infant feeding and infant health	127
6.10.1	Admission to special or intensive care baby unit.....	127
6.10.2	Problems encountered by infants	128
6.10.3	Challenges related to breastfeeding	132
6.10.4	Problems related to breastfeeding in the early days.....	134
6.10.5	Feeding outside the home	139
6.10.6	Barriers to mothers breastfeeding their infants in public.....	142
6.10.7	Medications and breastfeeding	143
6.11	Preferred length of breastfeeding.....	144
6.11.1	Mothers' views of breastfeeding duration	144
6.11.2	Factors assisting mothers to continue or stop breastfeeding.....	145
6.12	Mothers who were formula feeding from birth.....	147
6.12.1	Sub group analysis - formula feeding women's views	148
6.13	Future intentions	161
7	<i>Results of Phase 3 – Main findings.....</i>	162
7.1	Prevalence of breastfeeding at six months.....	163
7.1.1	Prevalence of exclusive and partial breastfeeding.....	163
7.1.2	Prevalence of breastfeeding by Local Health Office of residence.....	165
7.2	Use of supplementation and weaning	173
7.2.1	Supplementation with formula milk	173
7.2.2	Reasons for the introduction of formula while breastfeeding.....	176
7.3	Challenges with infant feeding and infant health	179
7.3.1	Infant health or feeding problems	179
7.3.2	Challenges with breastfeeding	180
7.3.3	Specific problems associated with breastfeeding since Phase 2.....	182

7.3.4	Assistance with breastfeeding related problems	183
7.4	Infant feeding and employment	184
7.5	Preferred length of breastfeeding.....	191
7.6	Support and assistance with infant feeding.....	192
7.6.1	Support services used.....	192
7.6.2	Support to continue breastfeeding	194
7.7	Discontinuation of breastfeeding	195
7.7.1	Reasons for discontinuing breastfeeding	195
7.7.2	Age of infants when Phase 3 mothers discontinued breastfeeding....	198
7.7.3	Factors influencing discontinuation.....	199
8	<i>Discussion.....</i>	203
8.1	Introduction.....	203
8.2	Limitations and success of the survey	203
8.3	Breastfeeding rates	204
8.3.1	Regional variations in breastfeeding rate.....	205
8.3.2	Factors affecting initiation	206
8.4	Duration of breastfeeding	208
8.4.1	Impact of care	209
8.4.2	Women's reasons for discontinuing.....	211
8.5	Conclusion	211
8.6	Recommendations.....	212
9	<i>References</i>	214
9.1	Appendix 1 – Phase 1 Questionnaire	225
9.2	Appendix 2 – Phase 2 Questionnaire	226
9.3	Appendix 3 - Phase 3 Questionnaire.....	247
9.4	Appendix 4 – Antenatal information leaflet	257
9.5	Appendix 5 – Reminder letter for Phase 2	258
9.6	Appendix 6 – Participant information leaflet.....	259
9.7	Appendix 7 – Consent form	262
9.8	Appendix 8 – Interview guide for focus groups	264
9.9	Appendix 9 – Consent form for telephone interviews	265

List of Tables

Table 1.1: A summary of the published Irish studies on initiation and duration from 1974 - 2008	31
Table 2.1: Unit Codes and response rates for April.....	51
Table 3.1: Mother's current age.....	58
Table 3.2: Nationality of Phase 1 mothers.....	59
Table 3.3: Age of Phase 1 mothers on completion of full-time education	59
Table 3.4: Phase 1 babies in the special care baby unit or at another hospital	59
Table 4.1: Planned type of feeding before the baby was born (Phase 1).....	60
Table 4.2: Type of food baby received for his/her first feed after birth (Phase 1)	60
Table 4.3: Age of the baby at the first feed (Phase 1).....	61
Table 4.4: Proportion of women breastfeeding at first feed by Irish and Non-Irish (Phase 1).....	61
Table 4.5: Type of feeding on completion of Phase 1	62
Table 4.6: How the mother was feeding at 48hrs (Phase 1)	62
Table 4.7: Proportion of women breastfeeding "today" (i.e. question 5) at different ages (Phase 1)	63
Table 5.1: Number of mothers having first or subsequent baby.....	65
Table 5.2: Number of women having multiple births.....	66
Table 5.3: Marital status of mothers	66
Table 5.4: Employment status of mothers	66
Table 5.5: (CSO) social classifications of mothers.....	67
Table 6.1: Overall rate of breastfeeding at first feed, discharge from hospital and completion of phase 2	70
Table 6.2: Nationalities of women.....	70
Table 6.3: Prevalence of feeding type at birth, by nationality	71
Table 6.4: Prevalence of feeding type at discharge by nationality	72
Table 6.5: Type of feeding in last 7 days (Phase 2) by nationality.....	72
Table 6.6: Breastfeeding numbers per hospital for first feed, at discharge and at 3 – 4.5 months.....	74
Tables 6.7: Exclusive and partial breastfeeding for first feed, discharge and phase 2 by Health Service Executive Administrative Areas.....	77

Tables 6.8 – 6.11: Exclusive and partial breastfeeding for first feed, at discharge and Phase 2 by Local Health Office	78
Table 6.8: Health Service Executive: Dublin Mid-Leinster	78
Table 6.9: Health Service Executive: Dublin North East	79
Table 6.10: Health Service Executive: South	80
Table 6.11: Health Service Executive: West	81
Table 6.12: Ethnic origins of mothers in the overall sample	82
Table 6.13: Type of first feed by ethnic origins of mothers in the overall sample	83
Table 6.14: Feeding at birth by birth order	84
Table 6.15: Feeding ‘in the last week’ (Phase 2) for mothers who breastfed initially by first or subsequent baby	84
Table 6.16: Feeding of previous infants for mothers with at least four other children	85
Table 6.17: Feeding of previous infants for mothers with three other children	85
Table 6.18: Feeding of previous infants for mothers with two other children	86
Table 6.19: Feeding of firstborn infants for mothers with one other child	86
Table 6.20: Feeding at birth by Social Class of mother	87
Table 6.21: Feeding at 3-4 months for those who breastfed initially by social class of mother	88
Table 7.1: Time at which breastfeeding mothers changed to full formula feeding	89
Table 8.1: Mothers’ intention to feed before their infant was born	90
Table 8.2: Mothers’ intention to feed before baby was born and type of first feed	91
Table 8.3: Duration of any breastfeeding among mothers who breastfed at birth and how they planned to feed prior to birth	92
Table 8.4: Age profile of the sample	92
Table 8.5: Type of first feed after birth by age at which mother ceased full time education	95
Table 8.6: Mothers’ highest level of education completed to date by type of first feed after birth	96
Table 8.7: Breastfeeding mothers’ reasons for planning to breast-feed	97
Table 8.8: Bottle-feeding mothers’ reasons for planning to bottle-feed	98
Table 9.1: The benefits of breastfeeding for the respondent as a mother	103
Table 9.2: The benefits of breastfeeding for the baby	106
Table 10.1: Where mothers received advice on health benefits of breastfeeding	108

Table 10.2: Type of first feed by whether the mother attended antenatal classes during pregnancy.....	109
Table 11.1: How friends and family fed their children as infants	110
Table 11.2: How mothers' friends and family fed their children when they were babies by the kind of food babies received for their first feed after birth.....	110
Table 11.3: How mothers were fed themselves as infants.....	111
Table 12.1: Type of birth among sample	113
Table 12.2: Type of birth and breastfeeding at discharge by among mothers who breastfed at birth	113
Table 12.3: Weight of infants at birth.....	114
Table 12.4: Type of first feed by the weight of infants at birth.....	115
Table 12.5: Source of the most helpful information all mothers received about feeding since their baby was born.....	117
Table 12.6: Support during the early postnatal period.....	118
Table 12.7: Provision of information on breastfeeding support services	119
Table 12.8: Ease of finding breastfeeding support services	120
Table 12.9: Support services utilised.....	121
Table 12.10: Satisfaction with support services	121
Table 13.1 Time when breastfeeding mothers first introduced formula.....	123
Table 13.2 Frequency of giving formula milk by breastfeeding mothers since birth	124
Table 13.3: Use of food other than breast milk or formula among all mothers.....	124
Table 13.4: Proportion of mothers who give their baby something other than breast or formula milk by social classification of the mother.....	126
Table 13.5: Proportion of mothers who give their baby something other than breast or formula milk by educational attainment of the mother.....	127
Table 14.1: The most common reasons for admission to special or intensive care baby unit	128
Table 14.2: Showing problems encountered by infants in the total sample by 3-4 months.....	129
Table 14.3: Problems encountered by infants by feeding method at discharge from hospital.....	130
Table 14.4: Problems encountered by infants based on feeding at 3-4 months for those who were breastfeeding at birth.....	131

Table 14.5: Where breastfeeding mothers received help with feeding challenges in the early days following birth	132
Table 14.6: Problems encountered as a result of breastfeeding.....	133
Table 14.7: Problems encountered, if any, and type of feeding at 3-4 months	134
Table 14.8: Problems reported related to early breastfeeding difficulties	135
Table 15.1: Prevalence of feeding in public among mothers breastfeeding initially.	139
Table 15.1: Mothers breastfeeding in public by highest education level achieved ...	141
Table 15.2: Percentage of mothers breastfeeding in public by age of mother.....	142
Table 15.3 Problems finding somewhere to breastfeed in a public place.....	143
Table 16.1: Whether or not mothers would like to have breastfed for longer.	144
Table 16.2: Breastfeeding mothers' views on who or what helped them most to continue breastfeeding	146
Table 16.3: Breastfeeding mothers' views on who or what helped them least to continue breastfeeding	146
16.4: Who or what influenced the mother to stop breastfeeding	147
Table 17.1: Baby age in categories	162
Table 18.1: Type of feeding at six months old	163
Table 18.2: Milk and other fluids given to baby in the past 24 hours	164
Table 18.3: Milk and other fluids given to baby in the past 7 days.....	164
Table 18.4: Milk feeding at 6 months by nationality of the mother	165
Table 18.5: Exclusive and partial breastfeeding at phase 3 (6 months) by Health Service Executive Administrative Areas	166
Table 18.6: Health Service Executive: Dublin Mid-Leinster	167
Table 18.6: Health Service Executive: Dublin Mid-Leinster Contd.....	168
Table 18.7: Health Service Executive: Dublin North East	169
Table 18.8: Health Service Executive: South	170
Table 18.9: Health Service Executive: South Contd	171
Table 19.1: How often mothers have given formula milks since they completed Phase 2.....	173
Table 19.2: Age when baby was given any fluid other than breastmilk.....	174
Table 19.3: Drinks given other than milk	175
Table 19.4: Mother's reasons for giving infant formula.....	176
Table 19.5: Problems encountered by babies	180

Table 19.6: Number of women experiencing problems with breastfeeding since the last questionnaire	181
Table 19.7: Problems encountered with breastfeeding since Phase 2	181
Table 19.8: Problems experienced since Phase 2	183
Table 19.9: People who helped mothers with problems	184
Table 20.1: Employment status in main job	185
Table 20.2: In paid work at Phase 3	185
Table 20.3: Type of feeding at 6 months and mother's current employment status..	186
Table 20.4: Number of hours worked per week	186
Table 20.5: Age of infants when mothers returned to work	187
Table 20.6: Type of feeding at Phase 3 by number of hours the mother is working.	187
Table 20.7: Type of feeding by age of baby when mother returned to work	188
Table 20.8: Provision of facilities by employers to express or breastfeed	188
Table 20.9: Type of feeding by availability of facilities to express or breastfeed at work	189
Table 20.10: How baby is cared for while mother is at work.....	190
Table 20.11: Mother's plans to start work again within the next year	190
Table 20.12: Type of feeding by mother's plans to work in the next year	191
Table 21.1: Duration of breastfeeding in relation to previous intention.....	192
Table 21.2: Breastfeeding support services used	192
Table 21.3: Ease of finding breastfeeding support services	193
Table 21.4: Information on how to get help with feeding since the last questionnaire	193
Table 21.5: Source of the most helpful information mothers received about feeding since the baby was born	194
Table 21.6: Factors or people that helped mothers most to continue breastfeeding..	195
Table 21.6: Breastfeeding mothers' reasons for stopping breastfeeding	196
Table 21.7: Age of infants when they were last given breastmilk or breastfed.....	199
Table 21.8: Factors or people that influenced mothers who have discontinued to stop breastfeeding	200
Table 21.9: Factors that would have assisted mothers to continue breastfeeding	200

List of Figures

Figure 1:	53
Figure 2: Feeding at birth by Social Class of mother	87
Figure 3: Type of first feed by age of the mother	93
Figure 4: Type of feeding at 3-4 months for those who started breastfeeding by age of the mother	94
Figure 5: Feeding at birth by how friends and family feed their infants.	111
Figure 6: How the mother was fed herself by feeding method at birth	112
Figure 7: Rates of combination feeding by day of discharge from hospital.....	116
Figure 8: Type of feeding at discharge and whether the mother has introduced solids or fluids other than breast milk or formula at Phase 2.	125
Figure 9: Percentage of mother's breastfeeding in public by ethnic group	139
Figure 10: Percentage of mothers breastfeeding in public by highest education level achieved	140
Figure 11: Percentage of mothers breastfeeding in public by age of mother	142
Figure 12: Age of the baby at which the mother stopped breastfeeding and whether she would have liked to continue for longer	145

List of abbreviations

CSO: Central Statistics Office

DOH&C: Department of Health and Children

EBM: Expressed breast milk

ESRI: Economic and Social Research Institute

EU: European Union

GP: General Practitioner

HSE: Health Service Executive

PHN: Public Health Nurse

FSAI: Food Safety Authority of Ireland

WHO: World Health Organisation

UNICEF: United Nations Children's Fund

Acknowledgements

We are grateful to the women who consented to join this study and who gave so generously of their time in completing questionnaires and joining in focus groups. We thank all the Directors of Midwifery who assisted us with access for the study and the midwives across the country who gave their support through providing information to women. Advice and guidance was also received from Maureen Fallon in the Health Service Executive, which was much appreciated. Finally, our thanks go to the Health Service Executive, who commissioned the study.

1 Executive Summary

1.1 Background and context for the study

1.1.1 Introduction

The Department of Health and Children published 'Breastfeeding in Ireland: A Five Year Strategic Action Plan for Breastfeeding' in October 2005 (Department of Health and Children (DOH&C) 2005). This action plan aims to improve the nation's health and wellbeing by ensuring that breastfeeding becomes the norm for infants and young children. Two key targets for Ireland are to raise the breastfeeding initiation and duration rates by two percentage points per year overall and to increase the breastfeeding rate by 4% per year for families from socio economic groups 5 and 6 (DOH&C 2005).

In Ireland, there is no national source of infant feeding data following discharge from hospital or maternity care, which makes it difficult to measure progress against the targets for the duration of breastfeeding. To address this deficit, the Health Service Executive (HSE) commissioned a three-phase study to examine infant feeding in Ireland to determine the rate and duration of breastfeeding, the factors influencing women to breastfeed and the reasons given by women for stopping breastfeeding. Phase 1 elicited baseline data on the rate of exclusive and partial breastfeeding from birth to 48 hours, Phase 2 provided data at 3-4 months following birth, and Phase 3 obtained information on the rate of breastfeeding when the infant was 6-7 months old. Sub-group analyses were conducted at the level of individual maternity hospital/unit/independent midwife, socio-economic group, nationality and Health Service Executive, Local Health Office (LHO). In addition, qualitative focus group research was conducted with groups of mothers who were least likely to breastfeed in Ireland.

1.1.2 Literature review

A comprehensive review of the literature was undertaken, which showed that by 1975 there was evidence of a steep decline in Irish breastfeeding rates from 64% in the 1950s to 16% (Kevany et al 1975). In the 1980s and 1990s, a series of studies commissioned by the Health Education Bureau (O'Herlihy 1978, McSweeney & Kevany 1982, McSweeney 1986), followed by the commencement of national gathering of perinatal statistics by the Department of Health (ESRI 1991-2007) demonstrated that, from 1981 to 1990, the national incidence of breastfeeding on leaving hospital was 30-35%. In 1992, the 'Euro-Growth' study confirmed that Irish breastfeeding initiation rates were the lowest in Europe (Freeman 1996). Perinatal statistics show a recent increasing trend in the breastfeeding rate from 36% in 1999 to 44% in 2005 (ESRI 2008); however, this trend may be more influenced by the collection methods than the reality of breastfeeding in Ireland. To date there has been no uniform or comprehensive system of collating data relating to breastfeeding at birth, on discharge from hospital or in the longer postnatal period.

Breastfeeding is associated with many advantages (Kramer and Kakuma 2002) such as fewer gastrointestinal, respiratory, aural and urinary tract infections and fewer atopic illnesses. It has been consistently shown to reduce mortality among preterm infants (Lucas and Cole 1990, Lucas et al 1998, Vohr et al 2006) and may offer some protection against the development of early onset insulin dependant diabetes mellitus (Virtanen et al 1991), type 2 diabetes (Owen et al 2006), raised adult blood pressure (Singhal et al 2001) and obesity (Fewtrell 2004, Harder et al 2005). For mothers, breastfeeding leads to a lower incidence of premenopausal breast cancer, (Enger et al 1997, Beral et al 2002), ovarian cancer (Rosenblatt & Thomas 1993) and osteoporosis (Cummings & Klineberg 1993), and a faster return to pre-pregnancy weight (Dewey et al 1995).

Factors positively associated with breastfeeding initiation in developed countries include higher socio-economic group, increased age and greater education (Dyson et al 2005, Gudnadottir et al 2006). Women from non-white ethnic groups are also more likely to breastfeed (Tarrant 2008). The employment status of women and whether or

not they themselves were breastfed (Fitzpatrick et al 1994, Ward et al 2004) may also affect initiation rates.

Our review highlighted that the rate of breastfeeding at birth in Ireland has fallen short of the World Health Organisation (WHO) and UNICEF recommendations that newborn infants should be exclusively breastfed for six months, and the suggestion that 98% of women are capable of doing so (WHO 1999). The national and regional studies also showed that very few Irish women who initiate breastfeeding continue to breastfeed exclusively for the recommended six months, or continue to breastfeed thereafter in combination with complementary foods up to the recommended two years of age or beyond. The review of the literature clearly highlighted the need to obtain up-to-date, accurate breastfeeding initiation and duration rates in a nationally representative sample of mothers in Ireland.

1.2 Methodology

Ethical approval for this study was granted by the Research Ethics Committee of the Faculty of Health Sciences in Trinity College Dublin. Local ethical approval and access was also granted from all hospitals involved.

Phase 1 of data collection involved a survey of infant feeding practices at discharge from hospital/unit/independent midwife, or at 48 hours if the woman had not been discharged by that time. The survey instrument for Phase 1 was kept short to maximise the response rate and minimise the amount of time it would take to fill out the questionnaire. Women who gave birth to live babies at 24 weeks gestation or greater in the 20 maternity hospitals/units (or under the care of the 19 independent midwives) in the Republic of Ireland during the month of April 2008 were asked to take part. Women who gave birth to a stillborn baby or whose baby died within the first 48 hours during the study period were excluded. In Phase 1, 2,527 women took part, which represents a 33% response rate for all births in the month of April 2009.

Phase 2 (at 2-3 months postnatal), consisted of a postal survey of all women who completed Phase 1 of this study, of whom 72% (1,826) responded. A postal survey

was also employed during Phase 3 (6-7 months postnatal), for those mothers (n=621) who indicated that they were breastfeeding when they completed Phase 2. Of these, 461 women responded, representing a 74% response rate.

The questionnaires for all three phases of the study were derived from a well-tested survey instrument used in the United Kingdom over several decades (Bolling et al 2006). The final questionnaires were pre-tested for face and content validity and reliability, and translated into Polish, Latvian, Lithuanian, Irish, French and Portuguese as necessary.

Two small focus groups, with 2 women in each, and 6 telephone interviews were conducted with women in lower socio-economic groups, to ascertain factors that may encourage these women to breastfeed in the future.

The quantitative data from all phases were analysed using The Statistical Package for the Social Sciences (SPSS) Version 15 (SPSS 2006, Chicago, IL). Sample characteristics are described using percentages, means or medians and standard deviations and comparative analyses were carried out using chi-square analysis. The level of statistical significance was accepted at ≤ 0.05 . Thematic analysis of qualitative data took place through reading and rereading of the transcriptions, coding, categorisation and development of themes. The themes were then grouped into dimensions and perspectives. Constant comparative analysis was performed to construct the categories and concepts, and theoretical sampling of women was undertaken in the telephone interviews as the core categories emerged.

1.3 Quantitative results

1.3.1 Phase 1 – birth to 48 hours

The mean age of the women was 31.3 years (S.D = 5.6 years), and almost equal numbers (45% in each group) had completed their education by 19 years or between that age and 24 years. Fifty-five percent (n=1,375) of women put the baby to the breast initially after birth. For 68% (n=935) of babies, this first feed took place within one hour of birth. Only 50% of Irish women (n=1,010), compared with 76% (n=365)

of non-Irish women, initiated breastfeeding. The highest breastfeeding initiation rate was in Dublin South East (78%) and the lowest rate was in Waterford and Louth (38%). Mothers who were having their first baby were more likely to breast than bottle feed (60%, n=433) and the majority of mothers having their second or subsequent baby also breastfed at birth (54%, n=567).

Professional, managerial and technical workers were more likely to initiate breastfeeding (70% and 69% respectively) than those in non-manual, semi-skilled, skilled or non-manual employment (37-51%). The most frequent problems encountered by women in the early days of breastfeeding were difficulty in getting their baby latched on to the breast (n=230, 38% of those reporting a problem) and problems with their nipples (n=177, 29%).

By 48 hours (or on discharge, if that was earlier), 42% (n=1,064) of women were exclusively breastfeeding their babies, with a further 13% (n=307) breast and bottle feeding or using expressed breast milk. Waterford had the lowest rate of exclusive breastfeeding at discharge, at 29%, while Dublin areas had above average rates (47-65%).

1.3.2 Phase 2 – 3-4 months

At Phase 2, 19% (n=347) of women were exclusively breastfeeding their babies, with a further 15% (n=274) partially breastfeeding. Sligo/Leitrim had the lowest level of exclusive breastfeeding at 3-4 months (12%).

Mothers were asked why they thought they might feed their infant by the chosen method and 978 women who breastfed at birth gave 2,063 responses (average of 2.11 responses each). The main reasons were that it was 'best for baby' (86% of women who answered this question), they had breastfed before (27%), it was more convenient (25%), it increased mother-baby bonding (21%) and had benefits for the mother (20%). Of the women who bottle-fed at birth, 720 replied and gave 723 responses (average of 1 response each). Their main reasons for choosing bottle-feeding were that they had bottle-fed before (29% of women who answered this question), they

were 'not comfortable' with breastfeeding (19%), their husband could help (11%), they had other children (9%) or they were unsuccessful at breastfeeding before (9%). Participants were also asked to list the benefits of breastfeeding. Those responders who breastfed (n=836) provided 1,697 benefits of breastfeeding (average of 2.03 per person), while the 449 women who bottle-fed listed 740 benefits (average of 1.65 benefits per mother).

Infant feeding was not discussed with 31% (n=550) of women during pregnancy. Those who were given information received it mainly from a midwife (66% n=824) and general practitioner (31% n=378). Breastfeeding was initiated by 62% (n=449) of mothers who attended antenatal classes compared to 52% (n=546) initiation among those who did not attend classes. Those mothers who said that most of their friends breastfed their babies were more likely to breastfeed at birth (n=252, 79%) than those whose friends and family used formula feeding (n=384, 47%). Mothers who were breastfed as infants were more likely to initiate breastfeeding at birth (n=441, 76%) than those who were formula fed (n=1,293, 50%) or did not know how they were fed (n=73, 45%). Women who had a Caesarean section were more likely to have discontinued breastfeeding at discharge (13%) than those who had a normal birth (8%).

Information on how to get help with infant feeding was provided on discharge to 88% of breastfeeding mothers but only 58% of formula feeding mothers. Among mothers who were breastfeeding from birth, 81% (n=754) were shown how to put the baby to the breast during the first few days. Only 3% (n=25) of mothers reported that someone stayed with them for a whole feed, while 58% (n=431) reported that someone returned to check on them during the feed and 35% (n=262) of mothers reported that they had assistance for the beginning of a feed only.

Regarding the use of a dummy or soother, 64% (n=1176) of infants were using one at 3-4 months and, of these, 70% had been given a soother by 3 weeks (n=833). Soother use was associated with discontinuation of breastfeeding before 3-4 months, with 74% (n=342) of those switching to fully formula feeding using a soother compared to 37% (n=130) of those still exclusively breastfeeding. Only 219 women (26%) reported that they had never given their baby infant formula by 3-4 months old and a further 9%

(n=76) had given formula milk only once or twice since birth. Women who formula fed at birth (n=437, 58%) were more likely to give additional foods to their babies at 3-4 months than those who exclusively breastfed (n=285, 32 %). Women from lower socio-economic categories and those with lower educational attainments were more likely to have given additional foods to their babies.

Of the babies breastfeeding at discharge, 33% had never been ill by 3-4 months, compared with 27% of formula-fed babies and 25% of those who combined breast and formula feeding. Of those babies who were still exclusively breastfeeding at 3-4 months, 39% had never been ill.

By 3-4 months just over half of the mothers who were breastfeeding initially had breastfed in public (n=487, 53%). Of the mothers who breastfed initially, 44% said that they breastfed for as long as they intended (n=396) and 45% said that they would like to have breastfed for longer (n=404). Among those mothers who had switched to fully formula feeding at 3-4 months, 81% (n=359) said that would like to have breastfed for longer.

Only 38% (n=251) of mothers who were formula feeding from birth had been shown how to make up a formula feed, 54% (n=133) by a midwife, 29% (n=72) by a family member and 17% (n=43) by a public health nurse.

1.3.3 Phase 3 – 6-7 months

At Phase 3, exclusive breastfeeding was reported by 18% (n=61) of the 461 mothers who were breastfeeding at Phase 2, which is 10% of the 621 who were either exclusively or partially breastfeeding their babies at Phase 2, 6% of the 1002 mothers who had breastfed their infants at birth and responded to Phase 2, and only 2.4% of the 2,527 mothers who took part in Phase 1. A further 230 mothers were partially breastfeeding at six months, which is 37% of the 621 who were either exclusively or partially breastfeeding their babies at Phase 2, 23% of the 1002 mothers who had breastfed their infants at birth and responded to Phase 2, and only 9% of the 2,527

mothers who took part in Phase 1. The highest rate was in Wicklow, with 13% (n=7) of the 92 mothers from this area reporting exclusive breastfeeding at 6-7 months.

Of the women who responded to Phase 3 and had been breastfeeding at Phase 2, 108 mothers (24%) would have liked to have breastfed for longer. The majority discontinued due to their busy lifestyle (n=48, 25%), perceived insufficient milk supply (n=39, 20%) or lack of facilities/uncomfortable with feeding in public (n=33, 17%).

1.4 Qualitative findings

The findings from the qualitative aspect of the study suggest that bottle feeding women base their infant feeding decisions on many social and experiential factors. Dominant themes indicated that the major influences on infant feeding for these women were: Personal attitudes toward feeding methods, external influences on infant feeding methods and future attitudes toward infant feeding.

It is apparent that a non-breast-feeding culture and the lack of positive breastfeeding role models, contributed to a strong commitment to bottle feeding.

1.5 Conclusion

The results clearly highlight that the overall rate of breastfeeding is increasing in Ireland but remains low in comparison with other countries. The low rate of breastfeeding at six months indicates that very few women and infants in Ireland are receiving the benefits of breastfeeding for the duration recommended by the World Health Organisation (2001).

The findings from the interviews with women in lower socio-economic groups demonstrated that bottle feeding women require positive breastfeeding role models in order to counter the apparent negative influences and discourses surrounding breastfeeding. Health professionals also need to target all mothers for promotion of

breastfeeding and not make assumptions about women based on their previous infant feeding methods.

1.6 Recommendations

It is recommended that:

- Breastfeeding promotion should be targeted at those women and in those areas shown to have lowest rates of breastfeeding initiation and continuation.
- In particular, women from lower socio-economic groups should continue to receive specific advice, support and assistance in order to increase breastfeeding initiation among this group.
- The promotion of breastfeeding at societal level should be further developed so that teenage, pregnant and postnatal women (and men) are exposed to positive images of breastfeeding, through school and antenatal education programmes, thus assisting them to make informed decisions about infant feeding choices.
- Policies on the use of in-hospital supplementation of breastfed babies with formula should be reviewed and its use decreased.
- Health professionals should be made aware of the effect of caesarean and instrumental birth on breastfeeding and additional support should be offered to these women.
- Health professionals in those areas shown to have lowest rates of breastfeeding initiation and continuation should receive specific education on how to advise and support women who wish to breastfeed.
- Hospital discharge advice should provide information on the existence of services to support breastfeeding, tailored to the woman's area of residence.
- National campaigns should continue to highlight the presence and support offered by breastfeeding support groups.
- Women who are formula feeding should receive advice prior to discharge on how to make up bottle feeds correctly.
- To counter the sharp decline in breastfeeding in the first two weeks, support and assistance should be provided for breastfeeding mothers at home during this time.

- Facilities for breastfeeding outside the home need to be enhanced and made more visible so that women can feel more confident about breastfeeding in public.
- Phase 1 of this survey should be repeated bi-annually, with funded local data collectors to ensure a more complete sample, to monitor breastfeeding rates at birth and discharge.
- Phases 2 and 3 of this survey should be repeated every four years to monitor breastfeeding rates at 2-3 months and 6-7 months.

Further research

- Further research is required to understand why the small number of women who gave birth at home are those most likely to exclusively breastfeed.
- Future surveys should also take consideration of the need to collect data on the effect of duration of residency in Ireland on breastfeeding rates among non-Irish women.
- The introduction of education programmes for health professionals and women, and new initiatives to support women breastfeeding in the community, need to be introduced and evaluated within the context of research studies.

2 Background and context of the study

2.1 Introduction

The established health benefits of breastfeeding have resulted in global and national support for encouraging the commencement and continuation of breastfeeding. In 2003, the World Health Organisation recommended that, wherever possible, infants should be fed exclusively on breast milk until six months of age and continue being breastfed thereafter in combination with suitably nutritious complementary foods to receive the maximum health benefits (World Health Organisation (WHO) 2003). However, initiation rates for breastfeeding in Ireland continue to be among the lowest in Europe (Department of Health and Children (DOH&C) 2005). Hospital discharge data from the 2005 National Perinatal Reporting System (NPRS) reveal an initiation rate of 47.5% (Economic and Social Research Institute (ESRI) 2008). Although this had risen from 31% in 1991, it compares poorly with other European countries. Rates of up to 99% have been reported in Norway (Lande et al 2003), 97% in Switzerland (Merten and Ackermann-Lieblich 2004), 83% in Italy (Banderali et al 2003) and 78% in England (Bolling et al 2006). In Ireland, initiation rates were found to be even lower in some groups: about one third for mothers in lower socio-economic groups (ESRI 2008). Furthermore, the protective benefits of breastfeeding have been shown to be most effective with six months of exclusive breastfeeding, but very few Irish infants appear to receive the full positive effects of breastfeeding (Tarrant 2008). Prior to the study reported here, the NPRS breastfeeding figures were the only national data currently available on infant feeding in Ireland, but there is a 2-3 year time lag between collection and availability (DOH&C 2005).

The Department of Health and Children published 'Breastfeeding in Ireland: A Five Year Strategic Action Plan for Breastfeeding' in October 2005 (DOH&C 2005). This action plan aims to improve the nation's health by ensuring that breastfeeding becomes the norm for infants and young children (DOH&C 2005). The plan contains two key targets for Ireland: to raise the breastfeeding initiation and duration rates by two percentage points per year and to increase the breastfeeding rate by 4% per year

for families from socio economic groups 5 and 6 (DOH&C 2005). These are national targets, but they are also applicable at the level of individual maternity hospitals and units, as well as at local health office level.

Although a consistent strategy of recording breastfeeding rates over time has been shown to measure the prevalence and duration of breastfeeding effectively (Sheehan et al 2001), there has been no national source of infant feeding data following discharge from hospital or maternity care. This makes it difficult to measure progress against the targets for the duration of breastfeeding, because existing sources of data are either not collected on a sufficiently widespread basis (eg. the personal health record (PHR) child health recording system) or do not provide sufficiently comprehensive, accurate or timely data for national evaluation (DOH&C 2005). National breastfeeding surveys have been conducted elsewhere and these have helped to shape national policies and strategies to improve breastfeeding rates in those countries (Hofvander 2003, Bolling et al 2006).

To address this deficit, the Health Service Executive (HSE) commissioned a three-phase study to examine infant feeding in Ireland to determine the rate of breastfeeding and the factors influencing women to breastfeed in Ireland. Phase 1 elicited data at birth, Phase 2 provides baseline data on the rate of exclusive and partial breastfeeding at 3-4 months following birth, to ascertain what factors influence a decision to breastfeed or not and to determine the reasons given by women for stopping breastfeeding prior to this stage. Phase 3 obtained information on the rate of breastfeeding at 6-7 months old.

2.2 Aim

To examine infant feeding in Ireland to determine the rate and duration of breastfeeding and the factors influencing women to breastfeed

2.3 Objectives

To provide baseline data on the rate of exclusive and partial breastfeeding from birth to 48 hours, 3-4 months and 6-7 months following birth.

To ascertain what factors influence a woman's decision to breastfeed or not.

To ascertain the reasons given by women for stopping breastfeeding at all stages.

To conduct sub-group analyses at the level of individual maternity hospital/unit/independent midwife, socio-economic group, nationality and Health Service Executive, Local Health Office (LHO).

To provide data that will be internationally comparable by, *inter alia*, using best evidence based definitions and research methodologies.

To establish a valid and reliable survey tool and protocol to enable replication in the future.

To conduct sub-group qualitative focus group research with mothers who are least likely to breastfeed in Ireland (eg. mothers from low socio-economic groups) and mothers from ethnic minorities.

To make recommendations based on the evidence, to guide the Health Service Executive and individual healthcare providers to increase the rate of breastfeeding in Ireland.

2.4 Background to the National Infant Feeding Survey

In 1994, the Department of Health (DOH 1994) published the first national breastfeeding policy for Ireland. This was followed by the establishment of a National Committee on Breastfeeding in 2002. In 2005, following an extensive consultation process, this committee published a Five Year Strategic Action Plan, which identifies

goals, objectives and actions to improve breastfeeding rates and practices in Ireland. The national survey reported here is the first step of this Action Plan, providing valuable data on the prevalence and duration of exclusive breastfeeding, which are among the key targets of the strategic plan. In addition, the survey establishes the factors influencing the infant feeding decisions of women in Ireland, the reasons they start and the reasons they stop breastfeeding. This knowledge will support the continuing development of national and, more importantly, local strategies to address the rates of breastfeeding initiation and duration in Ireland at both national and local level. It will help target effective interventions where they are found to be most required.

High quality data relating to breastfeeding in Ireland is imperative in order to understand the unique breastfeeding culture of this country, so that the needs of women and infants may be met. Therefore, this infant feeding survey aimed to establish accurate baseline data for the purposes of setting achievable targets as part of the Strategic Action Plan (DOH&C 2005), and evaluate progress against these targets in the future, using the validated survey tool.

2.4.1 Definitions of breastfeeding

The agreed definitions of the WHO (2003) relevant to breastfeeding are:

Breastfeeding: The child has received breast milk (direct from the breast or expressed)

Exclusive breastfeeding: The infant has received only breast milk from his/her mother or a wet nurse, or expressed breast milk, and no other liquids or solids with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines

Predominant breastfeeding: The infant's predominant source of nourishment has been breast milk. However, the infant may also have received water and water-based drinks (sweetened and flavoured water, teas, infusions etc.); fruit juice; oral rehydration salts; drops and syrup forms of vitamins, minerals and medicines; and

ritual fluids (in limited quantities). With the exception of fruit juice and sugar-water, no food-based fluid is allowed under this definition.

Predominant breastfeeding and exclusive breastfeeding constitute full breastfeeding.

Complementary feeding: The child has received both breast milk and solid (or semi-solid) food.

Bottle-feeding: The child has received liquid or semi-solid food from a bottle with a nipple/teat.

One further definition has been added, documented by the WHO in 2001 as follows:

Partial breastfeeding: The infant receives some breastfeeds, and some artificial feeds, either milk or cereal or other foods (WHO/EURO 2001).

The Five Year Strategic Action Plan (DOH&C 2005) endorsed the WHO definitions of exclusive (WHO 2003) and partial (WHO 2001) breastfeeding as those to be applied in assigning targets related to breastfeeding duration in Ireland and these are applied in this report.

2.5 Literature review

2.5.1 Introduction

The project includes a literature review, reported in this section, data for which were sourced through Trinity College Dublin library, Health Service Executive libraries and searches of the following electronic databases: PUBMED, MIDIRS, CINAHL and The Cochrane Library. Additionally, hand searches were performed on the Irish Medical Journal and Irish Journal of Medical Science to try to ensure that all relevant historical Irish studies were identified. All sourced articles from 1974 - 2008 have been included in the section pertinent to breastfeeding initiation and duration in Ireland (Table 1.1). Otherwise, the search strategy sought to select reports from indexed journals published after 1990, which are relevant to the project's objectives. Due to the extensive body of work published on the advantages of breastfeeding and

factors affecting initiation and duration, preference was given to the inclusion of studies with the largest and most representative samples, meta-analyses of other studies or those that involved randomised trials.

2.5.2 Breastfeeding initiation and duration rates in Ireland

Comprehensive national information regarding infant feeding practices in Ireland has been limited, with the earliest published reports dating from the late 1970s. Many of the studies presented in this review provide limited information regarding their methods and the validity and reliability of the research tools, making it difficult to assess the quality of the studies. In addition, many of the studies had relatively small sample sizes and, more problematically, did not specify the definition of breastfeeding (O’Herlihy 1978, Joyce et al 1978, Hurley & Fogarty 1992, Lowry & Lillis 1993, Sayers et al 1995, Howell et al 1996, Ward 1996, Loh et al 1997 and Twomey et al 2000). Therefore, the reported breastfeeding rates may include anything from exclusive breastfeeding to varied amounts of supplementation with formula milk. According to Cattaneo et al (2000), this may artificially inflate rates and lead to unjustified optimism and inaction by governments. However, these studies have been included in the review as they provide valuable data on the context and history of breastfeeding in Ireland.

Difficulties in collecting reliable statistics relating to breastfeeding are not unique to Ireland. In 2004, the European Union (EU) conference on the promotion of breastfeeding in Europe acknowledged that data presented from 29 countries was frequently inconsistent, sometimes inaccurate and often incomplete (European Union 2004).

Table 1.1: A summary of the published Irish studies on initiation and duration from 1974 - 2008

Authors	Study details	N	Initiation rates (%)	Comments
Kalapesi & Kevany (1974)	Rotunda Hospital, Dublin (1969 -1970)	551	11	Data collected from hospital records, used social class of father to determine SE status. Educational level not recorded
Kevany et al (1975)	4 Dublin maternity hospitals	198	16	Postnatal survey undertaken in hospital during a three week period. 64% of mothers reported that their mother had breastfed.
O'Herlihy (1978)	Child clinics in 3 Dublin areas	675	42	13% rate at 6 months (no specific breastfeeding definitions). Majority of women were from higher socio-economic groups.
Joyce et al (1978)	Rotunda Hospital, Dublin	1193	19	Data taken from hospital records and at the 6 week check up over a two month period. Initiation rates lower for those occupying public rather than private beds (11% versus 46%). 11% of sample breastfeeding at 6 weeks.
Gilmore, O'Driscoll & Murphy (1979)	Wexford Maternity Hospital	111	24	A pilot survey of an intervention to promote breastfeeding using an antenatal leaflet. No change in feeding patterns post intervention.
Connolly, Cullen & MacDonald (1981)	National Maternity Hospital	143	45	Included 50% of mothers who gave birth over a two week period. No information offered on the make-up of the sample group and no definition of breastfeeding. Bottle-feeding group expressed a dislike of the idea of breastfeeding.
McSweeney & Kevany (1982)	National sample (31 maternity units)	1,195	32	Data gathered during one week on all mothers leaving hospital. Overall breastfeeding rate 32%, 29% exclusively breastfeeding.
Joyce, Henry & Kelly (1984)	Rotunda Hospital	12,530	35	Utilised hospital records of all infants born over a 1 year period and followed up at the 6-week check up. 19% Breastfeeding at 6 weeks. No definition of breastfeeding offered.
Sweeney (1984)	31 maternity units	1,195	32	Unpublished MSc Mothers surveyed on discharge from hospital. (Breastfeeding not defined).

Authors	Study details	N	Initiation rates (%)	Comments
McSweeney (1986)	National sample (32 maternity units)	1,067	34	31% exclusively breastfeeding, 14% at 12 weeks. Both 1983 and 1986 figures reported in this publication.
Hurley & Fogarty (1992)	Regional research Eastern Health Board	218	49	Data collected in an urban community care area at the nine month developmental clinic. Majority of mothers from social classes 1 & 2.
Lowry & Lillis (1993)	University College Hospital, Galway	877	36	Mothers interviewed on postnatal day 1 and day 5. Breastfeeding rate of 30% on day 5. Follow-up of 103 breastfeeding mothers – 28% breastfeeding at 24 weeks. No definition of breastfeeding offered.
Fitzpatrick et al (1994)	Rotunda Hospital, Dublin	200	39.5	Discharge questionnaire administered to 100 consecutive breastfeeding and bottle-feeding mothers. Study aimed to investigate the factors associated with the decision to breastfeed.
Sayers et al (1995)	Co. Kildare	145	38	All babies born during one month in Kildare. Mothers more likely to breastfeed if maternal grandmother was reported as having done so. 13% breastfeeding at three months.
Freeman (1996)	Coombe Women's Hospital	121	53	30% breastfeeding at 1 month. Longitudinal, prospective study part of the pan-European initiative.
Ward (1996)	Rotunda Hospital survey	76	34	Sample represents all babies born in April 1996 in community care area 7. 5% breastfeeding at 16 weeks.
Howell et al (1997)	North Eastern Health Board	287	35	Survey administered by Public Health Nurses to all women who gave birth in the area over a four week period. 10% breastfeeding at 16 weeks. No definition of breastfeeding offered.
Loh et al (1997)	University College Hospital Galway	193	44 Test group 32 control group	Prospective Randomised Controlled Trial of an intervention in late pregnancy to provide a short consultation with a medical student on the advantages of breastfeeding. Intervention not found to be statistically significant in increasing breastfeeding rate at discharge.

Authors	Study details	N	Initiation rates (%)	Comments
Greally (1997)	Mid-Western Health Board Survey Limerick.	339	34	Survey administered by Public Health Nurses to all women who gave birth in the area over a four week period. 12.7% breastfeeding at 4 months.
Twomey et al (2000)	Eastern Health Board, random selection from birth register	197	51	Random selection from the birth register of the EHB. Part of larger study on SIDS. 8% prevalence of any breastfeeding at 6 months of age.
Mc Dermott & O'Neill (2000)	North-Western Health Board	300	49	Longitudinal study which recruited women from booking clinics in the region. 23% breastfeeding at 6 weeks and 6% at 4 months.
Gavin (2002)	Community Care Area 1	320	57	A pilot project to promote breastfeeding in community care area 1. Initiation rates were established from birth notification forms. 34.7% breastfeeding at 3 months – (described as maintenance but exclusivity not defined). Biased toward higher SE groups (87.2% social classes 1-3).
SLAN National Survey (2003)	Cross section of the Irish Population	5,992	37	Mothers who had breastfed any of their children. Part of the National Survey of Lifestyle, Attitudes and Nutrition.
Ward et al (2004)	North-Eastern Health Board study	247	50	Survey administered by Public Health Nurses to all women who gave birth in the area over a four week period. 19% fully breastfeeding at 6 weeks and 13% fully breastfeeding at 14 weeks. Biased toward higher SE groups.
SLAN National Survey (2007)	Cross section of the Irish Population		42	Employed different recruitment methods to 2003 survey.
Cuidiú (2007)	22 hospital units and 2 MLUs		30-65	Questionnaire emailed to all units seeking details of practices and policies.
Tarrant (2008)	Coombe Women and Infants Hospital	450	47.1 national mothers	Cross-sectional prospective study. 79.6% initiation rate among non-national mothers. <1% of Irish mothers exclusively breastfeeding at 6 months

It would appear from a comprehensive review of the available data that by 1975 there was evidence of a steep decline in Irish breastfeeding rates in a single generation from 64% to 16% (Kevany et al 1975). Women in that survey were asked to indicate how their mothers and mothers-in-law had fed their infants and, among these women, 64% and 67% respectively, were reported to have initiated breastfeeding. This small quantitative survey, administered in a postnatal ward was also among the first to provide evidence that breastfeeding in Ireland was associated with higher socio-economic status and formal education (Kevany et al 1975). These figures, while not representing a national sample, appear to be applicable to the Dublin area as a whole. Similar findings were reported by Joyce et al (1978), who found an initiation rate of 19% from data collected from computerised hospital records. This figure had fallen to 11% by the time of the routine six week postnatal check up (Joyce et al 1978). Of women who were breastfeeding, the majority were found to be occupying private beds, thus reinforcing the findings previously reported associating breastfeeding with higher socio-economic status.

A prospective survey in three Dublin areas at child welfare and developmental clinics over seven months in 1976 - 1977 was one of the first to show an increase in breastfeeding rates anywhere in Ireland (O'Herlihy 1978). This survey of 675 mothers showed an initiation rate of 49% among first time mothers, which was higher than the previous reported studies from the 1970s. However, it is acknowledged that the majority of women in the study were from middle and upper income groups and therefore not reflective of the general population.

In the 1980s, the Health Education Bureau commissioned a series of surveys to examine the national incidence of breastfeeding in order to gain figures from a cross section of Irish women (O'Herlihy 1978, McSweeney & Kevany 1982, McSweeney 1986 (includes surveys from 1983 and 1986)). The 1982 and 1983 surveys established the incidence of specific feeding methods of 90% of women who were discharged from maternity units in Ireland over a one week period. The 1986 survey also included a follow-up study of breastfeeding mothers at 3 months postpartum. In 1981, the national incidence of breastfeeding on leaving hospital was 32% (McSweeney and Kevany 1982). In 1983, it was 34.6% and it was 33.9% in 1986.

Interestingly, these studies also highlighted that the level of health education received by the women during pregnancy had a positive effect on their wish to breastfeed (McSweeney and Kevany 1982, McSweeney 1983 & 1986). McSweeney (1986) also noted that the highest breastfeeding rates were found in the Dublin hospitals (43%) and reported that no women in Carlow or Dundalk had initiated breastfeeding.

In 1984, the Perinatal Statistics Report of the Department of Health began to publish annual national statistics on breastfeeding at discharge, collected through the birth notification form. National figures from 1984 to 1990 reveal that the incidence of breastfeeding at discharge remained around 30 - 35% throughout the period (31.8% in 1984, 33.9% in 1986, 31.7% in 1990) (ESRI 1991 - 2007).

A 1992 pan-European study was one of the first to compare Irish breastfeeding rates with those in Europe (Freeman 1996). Twenty two European countries participated in this 'Euro-Growth' study, which examined infant feeding practices. Findings confirmed that Irish breastfeeding initiation rates were the lowest in Europe and reported that 26% of mothers in Dublin were breastfeeding at 4 weeks compared to the highest rate, 99%, for mothers in Athens (Greece) (Freeman 1996).

Studies that have investigated infant feeding outside Dublin have frequently demonstrated that there is a geographical variation in breastfeeding initiation rates. Most studies have found that women who give birth in Dublin are more likely to breastfeed than those who give birth in other centres (Lowry & Lillis 1993, Sayers et al 1995, Howell et al 1997, Loh et al 1997, Greally 1997, Mc Dermott & O'Neill 2000, SLAN 2003). These studies have all recorded initiation rates of less than 40% with the exception of the study undertaken in the North Western Health Board (NWHB) in 2000, where the breastfeeding initiation rate was 49% (Mc Dermott & O'Neill 2000).

Findings from Lowry and Lillis (1993) also highlighted that 6% of those women who planned to and initiated breastfeeding had changed to formula feeding on discharge from hospital. The findings are consistent with other Irish studies and confirm that there is an alarming drop in breastfeeding in the early postnatal weeks following discharge, with few women offering breast milk beyond six weeks. Rates quoted in

different areas include 20% (Howell et al 1996), 21% (Greally 1997) and 16% at 12 weeks postnatal (Twomey et al 2000). In the North Western Health Board, the proportion initiating breastfeeding was 49% but fell to 23% by six weeks and 6% at four months (McDermott & O'Neill 2000). These studies highlight that rates would seem to be low in the Irish context in both rural and urban units and fall sharply in the early postnatal period.

Perinatal statistics show that there was a continuing increasing trend in the breastfeeding rate at 44% of mothers in 2005 compared to 39% in 2001 and only 36% in 1999 (ESRI 2008). However, these figures may have been collected at varying time intervals in different maternity units and by independent midwives and the apparent trend might be more influenced by the collection methods than the reality of breastfeeding in Ireland. To date there has been no uniform or comprehensive system of collating data relating to breastfeeding at birth, on discharge from hospital or in the longer postnatal period. The HSE-commissioned survey reported here provides valuable data on the factors influencing Irish women's decisions about how they feed their babies and the reasons they start, and the reasons they stop, breastfeeding. This knowledge will support the continuing development of national and, more importantly, local strategies to address the low rates of breastfeeding in Ireland. It will help target effective interventions at those places in most need.

A recently published national survey undertaken by Cuidiú (The Irish Childbirth Trust) provides information on breastfeeding initiation and discharge rates for 17 of the 20 Irish maternity units (Cuidiú 2007). This showed wide variations in initiation rates from 65% to 30% in some units. Breastfeeding rates at discharge show equally wide variability, with one hospital reporting a decline of 19% between birth and discharge (Cuidiú 2007). Breastfeeding rates were compiled by the individual hospitals and methods used to validate the initiation rates have not been outlined by the authors or the individual hospitals. In addition, the process used to collect the baseline data may have varied from one hospital to another, which means that while the survey provides valuable data, the results and any comparisons, should be interpreted with due consideration to these factors. More recently, a Survey of Lifestyle, Attitudes and Nutrition (SLAN 2008) showed an increase in breastfeeding initiation rates from 32% in 2002 to 42% in 2007. Most encouraging was an increase

from 11% in 2002 to 42% in 2007 among women aged 18 - 29 years but these findings require further investigation as the authors suggest that sampling of non-Irish women in the 2007 study may be responsible for this increase (SLAN 2007). This potential influence of the nationality of the mother has also been suggested by Tarrant (2008) who investigated the diets of a sample of Irish born infants during the first six months of life. This prospective study undertaken in one Dublin maternity hospital involved 450 women, consisting of 401 national and 49 non-national women. The study found that 41% of national and 80% of non-national women initiated breastfeeding.

2.5.3 Advantages of breastfeeding

A Cochrane systematic review on the optimal duration of exclusive breastfeeding confirms that there is extensive evidence for the benefits of breastfeeding for infants and mothers (Kramer and Kakuma 2002). Our literature review also revealed several other studies reporting the relationship between breastfeeding and health and the findings of this research are described in this section. Breastfeeding is associated with less infant morbidity from gastrointestinal and respiratory infections (Howie et al 1990, Marild et al 2004 and Chantry et al 2006), less urinary tract infections (Marild et al 1990), otitis media (Duncan et al 1993, Aniansson et al 1994) and fewer atopic illnesses (Howie et al 1990, Gdalevich et al 2001). However, a recent study has suggested that the protective benefits of breastfeeding on atopic disease may not be as strong as once thought (Burgess et al 2006). Data from this large Australian prospective study indicate that breastfeeding neither increases nor decreases the prevalence of asthma in children at 14 years of age.

Breastfeeding has, however, been consistently shown to reduce mortality among preterm infants (Lucas and Cole 1990, Lucas et al 1998, Vohr et al 2006) and has also been shown to offer some protection against the development of childhood diseases such as early onset insulin dependant diabetes mellitus (Virtanen et al 1991). Other studies have reported longer term protection from breastfeeding in relation to a reduction in type 2 diabetes (Owen et al 2006), raised blood pressure (Singhal et al 2001) and obesity (Fewtrell 2004, Harder et al 2005). Breastfeeding has also been

associated with higher scores for neuro-cognitive development (Anderson et al 1999, Fewtrell 2004, Lawlor et al 2006). However, not all studies have agreed with the impact of breastfeeding on improvements in neuro-cognitive development when other potential confounders, such as the IQ of the mother, are considered. In a prospective study utilising data from a national longitudinal survey of 12,686 young people, Der et al (2006) concluded that breastfeeding has little or no effect on intelligence in children. Additional benefits of breastfeeding have been reported in relation to protection from childhood cancer. Davis (1998) did a synthesis of published studies and concluded that children who are never breastfed, or are breastfed short-term, have a higher risk of developing Hodgkin's disease. Data relating to a reduction in childhood leukaemia is less clear, however, with Guise et al (2005) suggesting that there is a lack of high quality evidence to support this claim.

In addition to the health benefits to infants, breastfeeding has the potential to impact on maternal health. Studies have demonstrated a lower incidence of premenopausal breast cancer (Enger et al 1997, Beral et al 2002), ovarian cancer (Rosenblatt & Thomas 1993) and osteoporosis in women who have breastfed (Cummings & Klineberg 1993). Faster return to pre-pregnancy weight among breastfeeding mothers has also been reported (Dewey et al 1995).

2.5.4 Factors affecting the decision to breastfeed

Many studies have sought to identify and explain factors that affect the choice of infant feeding method by women. Many of the relevant studies and key determinants are outlined in the following sections. It must be acknowledged, however, that there are likely to be contributing factors, which have yet to be examined within the international literature, and some factors may be variable between and within countries. Dyson et al (2005) have suggested, for example, that the level to which individual countries have adopted the World Health Organisation's International code of Marketing of Breastmilk Substitutes (WHO 1981) may be a factor that affects initiation rates. However, we did not find any studies of this in any context.

1.6.4.1. Socio-economic status

A higher socio-economic status has been positively attributed with breastfeeding initiation in developed countries including Canada (Barber et al 1997), United Kingdom (Bolling et al 2006), Australia (Yeoh et al 2007) and the United States (Singh et al 2007). This has also been reflected in numerous Irish studies (Kevany et al 1975, Joyce et al 1978, McSweeney & Kevany 1982, Hurley & Fogarty 1992, Fitzpatrick et al 1994, SLAN 2003 & 2007) as discussed above. In a study of 247 mothers in the North Eastern Health Board, Ward et al (2004) concluded that higher socio-economic status and breastfeeding by the mother's own mother were the predominant determinants of initiation of breastfeeding in an Irish population. The international evidence points to socio-economic status, age and education attainment level as being the strongest predictive variables of breastfeeding behaviour (Dyson et al 2005, Gudnadottir et al 2006).

1.6.4.2. Age

Internationally, the age at which the woman gives birth has been strongly associated with initiation and duration of breastfeeding. Women older than 25 years have been found to be more likely to initiate (Bolling et al 2006, Taylor et al 2006, Venancio et al 2008) and continue breastfeeding (Vogel et al 1999). However, in Ireland, the 2007 SLAN report showed that there was little difference between age groups for women who reported having breastfed any of their children (age 18 - 29: 42%; 30 - 44: 44%; 45 - 64: 40%; 65+: 42%) but the overall rate increased by 10% from the 2002 figures with the highest increase (11%) in women aged 19 - 29 years. This conflicts with the 2005 perinatal statistics report (ESRI 2008), which concurs with the international trends and reveals the lowest rates of breastfeeding initiation among younger women (age <20: 22%; 20 - 24: 32%; 25 - 29: 42%; 30 - 34: 47.4%; 35 - 39: 49.2%; 40 - 44: 51%). When drawing comparisons between the ESRI and SLAN reports it should be noted that while the ESRI data reports all births during 2005, the SLAN figures relate to the breastfeeding history of a cohort of mothers ranging in age from 18 to more than 65 years of age.

1.6.4.3. Ethnicity and geographical variations

In the United Kingdom, studies have shown that maternal ethnicity is an important determinant of breastfeeding initiation. White women are less likely to breast feed

than women from all other ethnic groups (Griffiths et al 2005a). This has also been reported in Ireland, in a study in a large Dublin maternity hospital (Tarrant 2008): 47% of Irish women initiated breastfeeding compared with 80% of non-national women (Tarrant 2008). In the United Kingdom, only 51% of women in Northern Ireland initiate breastfeeding compared with 71% in the rest of the United Kingdom (Griffiths et al 2005a).

Differences in the incidence of breastfeeding are apparent among different ethnic groups in North America where lower rates of breastfeeding can be found in African American women (56.2%), compared to Hispanic (81%) and white women (76%) (Li et al 2005). However, a study by Gibson-Davis and Brooks-Gunn (2006), reports that every year of US residency by a Hispanic woman lessens the odds of breastfeeding by 4% (Gibson-Davis and Brooks-Gunn 2006). Similar findings have been found in Australia among recently arrived immigrant Vietnamese women (Rossiter 1992). Reasons reported by immigrant populations for the change in breastfeeding behaviours include interest in western lifestyles, a shift from rural to urban settings and the availability of infant formula (Bonuck et al 2005). Given the changes in the social profile of Irish society in the past decade, as reported by the 2006 census enquiry (CSO 2007), these findings may be particularly relevant to current breastfeeding practices here.

In addition to the evidence that ethnicity seems to determine how a mother chooses to feed her infant, the available Irish data points to evidence of geographical variations. McSweeney (1986) demonstrated higher rates for the Dublin maternity hospitals, while the Mid Western Health Board (Greally 1997) and Howell et al (1996) found disparities between local regions. Similarly, in Dublin, Ward et al (2004) and Hurley and Fogarty (1992) found that breastfeeding initiation rates were much lower in socially disadvantaged areas of the city. In the 2003 SLAN survey, 43% of mothers in the North Eastern and Northern areas reported ever having breastfed, compared to 30% in the Southern region.

1.6.4.4. Education status

International data and national surveys have provided strong evidence that breastfeeding initiation is associated with a woman's education level (Dubois &

Girard 2003, Bolling et al 2006, Yeoh et al 2007 and Amir & Donath 2008). The results of a longitudinal survey of 2,223 infants in Canada suggests that, when other confounding variables were accounted for, a woman's education level had the strongest impact on breastfeeding initiation. Women who had a high school diploma were five times more likely to initiate breastfeeding. However, it should be noted that the age of the woman was found to be a more important determinant of breastfeeding at four months (Dubois and Girard 2003). In the United Kingdom Infant Feeding Survey, women who left full time education aged 16 or younger were among the group least likely to breastfeed (Bolling et al 2006). This finding is consistent with Irish studies since the early 1980s (McSweeney & Kevany 1982, Fitzpatrick et al 1994, Greally 1997, McDermot & O'Neill 2000, Tarrant 2008).

1.6.4.5. How the mother was fed herself

Ward et al (2004) and Fitzpatrick et al (1994) have both found evidence that maternal exposure to breastfeeding has been shown to be a significant factor influencing the initiation of breastfeeding in Ireland. In a study of 247 women in the North Eastern Health Board, Ward et al (2004) concluded that, along with higher socio-economic status, having been breastfed herself was an important determinant of a woman's decision to breastfeed. This has been noted in several other Irish and international studies (Kevany et al 1975, Joyce et al 1978, and Bolling et al 2006).

1.6.4.6. Employment status

Studies in the United States have suggested that the employment status of women is an important but not a key influential factor in the initiation of breastfeeding. However, there is a significant relationship between the return to work of the woman and early discontinuation of breastfeeding (Visness & Kennedy 1997). The United Kingdom national survey supports this finding, where only 18% of women who returned to the paid workforce when their baby was 4-6 months old were still breastfeeding at six months, compared with 31% of those who returned to paid work when their baby was older than six months, and 39% of those who were not in paid employment (Bolling et al 2006). Given the increase in women's participation in the labour market in Ireland (CSO 2007), employment status may have a significant impact on shortening the duration of breastfeeding. In 2006, realisation of this fact contributed to an increase in the maternity leave entitlements by the Irish Government

from 18 to 22 weeks (Government of Ireland 2006). Two regional studies in Ireland show that being in paid employment positively influences the decision to breastfeed, with employed mothers more likely to initiate breastfeeding than their non working counterparts. On the other hand, being in the paid workforce appeared to decrease the duration of their breastfeeding (Sayers et al 1995, Ward et al 2004). Other studies have not, however, confirmed this finding (Fitzpatrick et al 1994, Greally 1997).

1.6.4.7. Conclusion

This literature review has highlighted that the rate of breastfeeding at birth in Ireland has fallen well short of the World Health Organisation (WHO) and UNICEF recommendations that newborn infants should be exclusively breastfed for six months and the suggestion that 98% of women are capable of doing so (WHO 1999). The national and regional studies also show that very few Irish women who initiate exclusive breastfeeding continue to do so for the recommended six months, or continue to breastfeed thereafter in combination with complementary foods up until the recommended two years of age or beyond. In common with the international literature, Irish women who do initiate breastfeeding are likely to be from a higher socio-economic background, be older and well-educated and have been breastfed themselves. Less clear from an Irish perspective is the influence of employment status and ethnicity on breastfeeding initiation.

The review of the literature clearly highlights the need to obtain up-to-date, accurate breastfeeding initiation and duration rates in a nationally representative sample of mothers in Ireland. Ascertaining the factors that influence their decisions to breastfeed or not is also crucial to improving breastfeeding rates and providing the environment and services that will support and enable women to breastfeed their children optimally.

3 Methodology

3.1 Overview of study

Phase 1 of our data collection involved a survey of infant feeding practices at discharge from hospital/unit/ independent midwife, or at 48 hours if the woman had not been discharged by that time. The survey instrument for Phase 1 was kept deliberately short to maximise the response rate and minimise the amount of time it would take to fill out the questionnaire. Women who gave birth to live babies at 24 weeks gestation or greater in the 20 maternity hospitals/units (or under the care of the 19 independent midwives) in the Republic of Ireland during the month of April 2008 were asked to take part.

All mothers who participated in Phase 1 were invited to participate in Phase 2, when their babies were 3-4 months old. Phase 3 of this survey took place when babies were 6-7 months old. It included all mothers who reported that they were offering any breastfeeding at the time of Phase 2.

3.2 Ethical issues and access to study sites

Ethical approval was granted by the Research Ethics Committee of the Faculty of Health Sciences in Trinity College Dublin. All involved with the study were bound by national and international codes of good practice in research, and by professional standards within nursing and midwifery (An Bord Altranais 2001). The rights and dignity of participants were respected throughout by adherence to models of good practice related to recruitment, voluntary inclusion, informed consent, privacy, confidentiality and withdrawal without prejudice (Connolly 2003).

Access to the population was negotiated individually with each of the 20 maternity hospitals/units. All independent midwives were contacted by one of the research team and asked to participate. Local ethical approval for the study was sought where necessary. Access was granted from all 20 units and independent midwives before the commencement of the data collection phase.

Women received information on the study in the ante-natal clinics and postnatal wards. This included details of how the data they provided would be preserved in confidence. Completion of the questionnaire by each woman and provision of their contact details was deemed to be consent to take part.

3.3 Survey design

The survey instrument for Phase 1 was kept short to maximise the response rate and minimise the amount of time it would take to answer the questions. 'First contact' postal questionnaires have a notoriously low response rate (Edwards et al 2007) and so the sample for Phase 1 was obtained by direct contact methods in the hospitals, rather than going through an anonymous birth register, which would have required a postal questionnaire as the first step.

Phase 2 consisted of a postal survey of all women who completed Phase 1 of this study (n=2,527) and had agreed to be part of this follow-up survey. A postal survey was also employed during Phase 3, for those mothers (n=621) who indicated that they were breastfeeding when they completed Phase 2

3.4 Questionnaire design

The questionnaire for Phase 1 (Appendix 1) collected contact information and contained only seven questions about baby feeding. The aim was to capture women's attention and encourage them to provide their details, in order to have a database of willing volunteers for Phases 2 and 3 of this survey. The main demographic details were then obtained in Phase 2, including information on feeding methods, reasons for stopping breastfeeding and other salient details.

Questionnaires for all three Phases were derived from a well-tested survey instrument used in the United Kingdom over several decades (Bolling et al 2006). Changes and modifications were necessary to ensure that all items were applicable to women in Ireland. The Phase 2 questionnaire (Appendix 2) contained 87 questions, which were required to collect the major demographic details sought in this phase (including

socio-economic group, number of other children and type of delivery). It was designed and implemented to maximise the response rate to postal questionnaires (Edwards et al 2007).

The Phase 3 questionnaire (Appendix 3) was designed to measure rates of any breastfeeding at 6-7 months and contained 33 questions. Given the age of the babies at Phase 3, questions relating to the mothers' work status were also included at this time.

3.5 *Validity and reliability*

3.5.1 *Validity*

It is important that a questionnaire is assessed to ensure it provides a reasonable approach to addressing the research question (Peat 2002). This can be confirmed by having items that make sense to both the researcher and the participants. Content and face validity of the Phase 1 survey tool was therefore pre-tested with the assistance of 1) a representative sample of the population (10 women) and 2) experienced lactation consultants (n=5). Some changes were made in response to the comments received. The Phase 2 survey tool was tested for face validity by asking 20 postnatal women to complete it. These women were then interviewed and asked to comment on its user-friendliness and the time taken to complete it, and to identify any issues relevant to infant feeding that were not addressed. A panel of eight clinicians and lactation consultants were asked to adjudicate on the content validity, which is the extent to which the items address the objectives of the survey (Peat 2002). Phase 2 was also checked by the National Adult Literacy Agency (NALA) to assess and improve language and ease of use. Modifications were made to the survey questions based on changes suggested by NALA.

Content and face validity of the Phase 3 survey tool were also pre-tested with the assistance of a representative sample of the population (eight women), and five experienced lactation consultants. Some changes were made in response to the comments they provided.

Phase 3 contained many similar questions to Phase 2, which, as noted above, had been checked by the National Adult Literacy Agency (NALA) to assess and improve language and ease of use. The use of the same questions in both phases allows for comparisons to be made for different time points.

3.5.2 Reliability

The Phase 2 and 3 questionnaires were tested for reliability of the instruments using the test-retest approach (Oppeinheim 1992). As the survey team did not have direct access to women whose infants were of an age appropriate to each of the tools, permission was sought and granted from a local maternity hospital to approach women attending their baby clinics. The midwife in charge acted as a gatekeeper and nominated suitable mothers from that clinic who were then directly approached by one of the team and asked to complete the survey at home and return it in the envelope provided. The purpose of the test was explained to them and they were informed that their answers would not be part of the survey results. Two weeks later the survey was re-administered by post with a stamped addressed envelope. Approximately 48 women completed the initial stage of the test-retest but only 20 returned each of the two repeat questionnaires required for reliability testing.

The data from the questionnaires were then coded and (double) entered into SPSS. The data from the second administration of the questionnaire was then compared to the original data for the same participants. Cohen's Kappa, which measures the strength of agreement between the test and re-test responses was then calculated for the cross tabulated categorical questions. As the majority of the items on the questionnaire were categorical, the Kappa statistic was utilised to test consistency (Field 2005). Items that would be subject to change over the period of the test-retest e.g. age of the infant, were not included.

For questions for which the answers should remain stable from visit to visit (e.g. relating to feeding intentions before birth), there was very good test retest agreement. This is further evidence that the questions were robust and reliable.

3.6 Sample

A representative, volunteer sample of women who gave birth in Ireland was utilised. To obtain this, all women who gave birth to a live baby at 24 weeks gestation or greater in the 20 maternity hospitals/units (or in the care of the 19 independent midwives) in the Republic of Ireland during April 2008 were invited to take part.

Inclusion criteria:

Women who gave birth to a live baby at 24 weeks gestation or greater during the study period. The 2,527 women who agreed to take part in Phase 1 and who provided their names and addresses for contact purposes formed a volunteer sample for Phase 2. Those who took part in Phase 2 and reported that they were still breastfeeding at that time formed the sample for Phase 3.

Exclusion criteria:

Women who gave birth to a stillborn baby or whose baby died within the first 48 hours during the study period.

3.7 Data collection

3.7.1 Data collection methods: Phase 1

The research team visited each unit on at least three occasions. The first visit took place after the first week in March 2008 to put up posters in the antenatal clinic in order to inform women of the study. Information posters were displayed in all antenatal clinics (and given to all independent midwives) and information leaflets (Appendix 4) were distributed to women as they waited for their ante-natal appointment (or when they attended their independent midwife). Members of the research team visited the postnatal wards on two occasions to inform the postnatal midwives about the survey and to ask them to distribute the questionnaire and encourage mothers to complete it. Posters were displayed in the postnatal wards for the duration of the survey, to inform women that the study was taking place.

The questionnaire and survey materials were translated into languages that were identified by the 2006 census enquiry as being most commonly utilised in Ireland: Polish, Latvian, Lithuanian, Irish and French (CSO 2007). In addition, hospitals were asked in the planning phase if any other languages were required. This led to the additional translation of the questionnaire into Portuguese.

3.7.2 Data collection methods: Phase 2

The Phase 2 questionnaire (Appendix 2) was posted (in what we believed to be the appropriate language for the recipient), with an addressed, freepost envelope. It was sent to everyone who had volunteered from Phase 1. One week later a reminder letter (Appendix 5) was sent to all women. This was followed ten days later by a further reminder enclosing another copy of the questionnaire and another addressed, freepost envelope, to all those who had not responded by that time. Follow-up phone calls were made to approximately 800 women who had not returned the questionnaire during the subsequent 10 days.

3.7.3 Data collection methods: Phase 3

The Phase 3 questionnaire was posted (in the appropriate language) to 621 mothers who reported that they were still breastfeeding at the time of Phase 2, with a covering letter reminding them about the survey and an addressed, freepost envelope. A reminder letter was sent to all women one week later. This was followed ten days later by a further reminder enclosing another copy of the questionnaire and another addressed, freepost envelope, to women who had not responded by then. Follow-up phone calls were made to approximately 200 women who did not return the questionnaire in the next 10 days.

3.7.4 Maximising response rate

Phase 1:

All units were telephoned every second day in the first week of April to remind midwives about the study and to encourage the distribution of questionnaires. Two

units were visited weekly after it was established that the first week had yielded a less than satisfactory response rate. In one unit, the method of administering the questionnaire was changed in an effort to increase the response rate. In another unit it was noted that two other surveys were taking place and therefore, in addition to a weekly visit from one of the research team, the clinical midwife specialists in lactation visited regularly to remind the midwives to distribute the infant feeding questionnaire.

As the study progressed, it became apparent that the response rate in some units was not going to be very high, despite strong encouragement. The duration of Phase 1 study, which had been intended to be from the 1st to 30th April, was therefore extended for one further week, to 7th May 2008, in order to maximise the number of women eligible to participate in the later phases. In some units mothers who had given birth on the 30th and 31st March completed the questionnaire and these women (n=105) have also been included in the survey. At the end of the study period, the numbers of women from each hospital/unit/independent midwife replying to the questionnaire in the month of April only were cross-referenced against the numbers of live births recorded during that period, to calculate the response rate for that month.

Phases 2 and 3:

In line with a systematic review (Edwards et al 2007) on maximising the response rate to postal questionnaires, all study materials and correspondence to the women used the same image on letterheads and envelopes. Letters and reminders were kept short and a questionnaire was included with all reminder letters.

3.8 Sample size achieved and response rates

3.8.1 Phase 1

Figures provided by the 20 maternity hospitals/units indicate that approximately 6,100 women were eligible to take part in the study during the month of April 2008. A total of 2,527 women participated in Phase 1 of the survey, 2,036 of whom gave birth in April 2008. This represented a 33% response rate for that month (Table 2.1). The

accuracy of the number for the total population eligible to participate cannot be verified for every unit because, although units were asked to provide figures for the number of *mothers* who gave birth to live infants greater than 24 weeks, some units could only provide the number of *infants* born. This means that any multiple births that took place in April may appear to have increased the numbers eligible to take part and, thereby, means that our estimated response rate is slightly lower than the actual response rate.

The response rate from women attending the independent midwives was 100%. The response rate varied from 6% to 70% among the units (Table 2.1). Three units had a response rate below 15%, which is very disappointing. Two of the units below 25% (A & C) were among those with the highest number of births during the survey period, and when research team members visited these units during the survey they noted very high activity levels in these units. In sites where a clinical midwife specialist in lactation was in post, these midwives were asked to assist by emptying the boxes weekly (so that the response rate could be monitored during the survey period) and to remind the midwives regularly to hand out the questionnaire. In unit N, with the lowest response rate (6%), no questionnaires were returned to the research team until after the end of the survey period, which meant that it was not possible to recognise the poor response rate until data collection for Phase 1 had ended.

Table 2.1: Unit Codes and response rates for April

Unit/IMW* Code	Live Births for April	Response rate for April	
	N	N	%
U	8	8	100
J	172	120	70
E	232	148	64
F	146	74	51
B	166	82	49
M	127	57	45
I	298	130	44
D	193	83	43
Q	173	74	43
K	194	82	42
T	210	86	41
G	130	50	38
H	717	254	35
P	485	168	35
L	647	206	32
O	176	45	26
A	744	183	25
R	314	57	18
C	683	94	14
S	209	30	14
N	84	5	6
Total	6,100	2,036	30

*IMW = Independent Midwife

It is impossible to determine how many women were offered the opportunity to participate but declined. All units were written to after the end of the survey and informed of their individual response rate. At this time they were also asked to ensure that any completed questionnaires had been returned to the research team. Many of the units responded that all completed questionnaires had been returned. Two units (J & D) communicated with the researchers to express disappointment with their response rate as they felt confident that the majority of mothers who were eligible had

been given the questionnaire. It is interesting to note that both these units had achieved higher than average response rates.

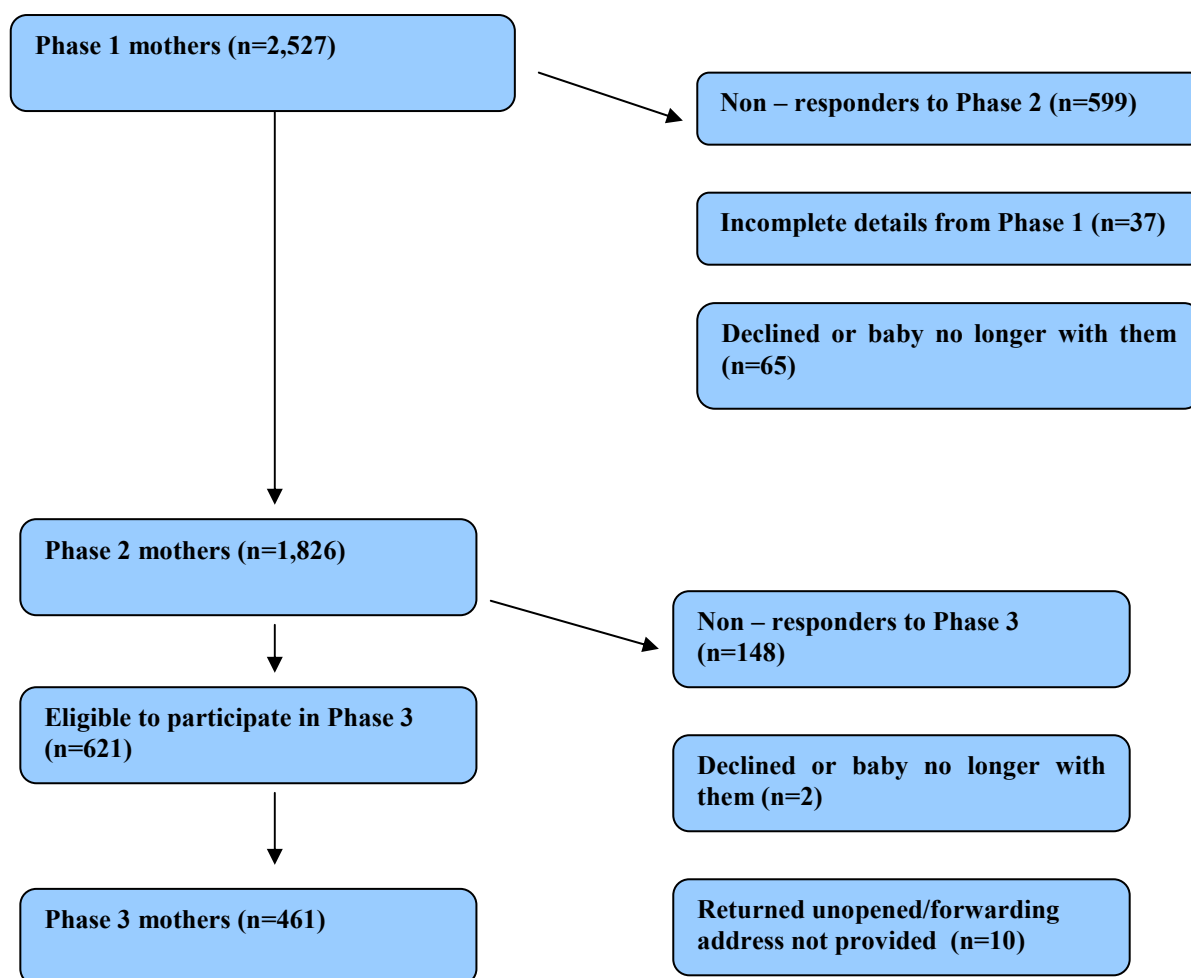
3.8.2 Phase 2

Of the 2,527 women who completed Phase 1 of the survey, 72% (1,826) responded to Phase 2. Sixty-five other women replied to say that they no longer wished to take part, or that their baby was no longer with them, 37 women had given insufficient contact details to enable the Phase 2 questionnaire to be posted to them and 599 women did not respond.

3.8.3 Phase 3

Figure 1 shows that of the 1,826 mothers who completed Phase 2, 621 mothers were either exclusively (n=347) or partially breastfeeding (n=274) at that time and were thus included in Phase 3. Of these 621 women, 461 responded to Phase 3, representing a 74% response rate.

Figure 1:



3.9 Data analysis

The data from all phases were analysed using The Statistical Package for the Social Sciences (SPSS) Version 15 (SPSS 2006, Chicago, IL). Sample characteristics are described using percentages, means or medians and standard deviations. Comparative analyses have been carried out using chi-square analysis to test the relationship between groups and proportions in different samples. The level of statistical significance was accepted at ≤ 0.05 . Some summary analyses were also prepared independently using Microsoft Excel for quality assurance. These were consistent with the main analyses from SPSS.

Analysis of socio-economic group is based on the Census Classification system utilised in the 2006 census enquiry (CSO 2007). The code to a woman's or man's occupation is based on the kind of work she or he performs. In addition to the categories described in the census enquiry two residual groups were added for those who were unemployed or students, as the CSO (2007) report used 'head of household' to derive classifications for these individuals and this was not deemed appropriate for this survey. Communication took place with the Central Statistics Office prior to coding for classification of occupations to ensure consistency of coding. The woman's education level was also categorised based on the system employed for the Irish population as a whole in the 2006 Census enquiry.

3.10 Focus groups

One of the aims of the study was to conduct sub-group qualitative focus group research with mothers who are least likely to breastfeed in Ireland and mothers from ethnic minority groups. The focus groups aimed to elicit factors that may encourage these women to breastfeed in the future. Analysis of Phase 2 however, highlighted that non-Irish women were more likely to initiate breastfeeding than Irish women and, so, they were not included in the focus groups.

3.10.1 Sample selection

Results from Phase 2 indicated that the mothers in Ireland who were least likely to breastfeed were Irish women classified as having lower socio-economic status. It was anticipated that six focus groups would be held with 5-9 participants in each.

The inclusion criteria for these focus groups were women who had never breastfed a previous child, had intended to and had bottle fed this infant and who had completed their education before they were 18 years of age or had an occupation classified as semi-skilled or unskilled. Invitations were sent to all women who met the selection criteria and had indicated in the Phase 2 questionnaire that they would be willing to participate in this part of the study. An information leaflet and consent form

(Appendix 6 - 7) were circulated prior to the planned date of the focus group and, for convenience, focus groups were organised at centres geographically close to the participants of the group. Follow up phone calls were made one week after the posting of the information leaflet.

The first focus group was held in the Midlands region and 18 women were invited to attend. The facilitators offered a selection of times convenient to the participants and travelling expenses were provided to ensure that women were not unduly burdened. However, due to the large geographical spread from the national sample, only two women were able to attend this focus group. Similar problems were encountered with a focus group in the southern region, with only 2 attendees out of the 12 invited. Therefore, in order to complete the commissioned report on time, the remainder of the qualitative data were collected via telephone interviews.

Women who had agreed to participate in focus groups were notified of this change and those interested in participating in the interviews were sent a consent form, which had to be returned before the interview.

3.10.2 Instrument

A semi-structured interview schedule was developed from the analysis of the literature and findings from Phase 2, to explore participants' views of the perceived barriers dissuading them from breastfeeding and factors that encourage breastfeeding (Appendix 8).

3.10.3 Conduct of focus group interviews

The research assistant to the project acted as facilitator (moderator) for all focus groups and conducted all telephone interviews to ensure consistency. A second member of the research team attended each focus group. The facilitator asked the questions on the interview schedule, clarified issues with the group and explored the extent to which views expressed by a group member were shared by all in the group. The other member of the research team (assistant moderator) took notes on group

dynamics, which were incorporated in the findings. Focus groups were tape recorded and transcribed verbatim. Focus groups were between 42 and 68 minutes in duration.

3.10.4 Conduct of telephone interviews

Women who had given consent to participate in a focus group were telephoned and asked if they would be willing to participate in a tape recorded telephone interview as an alternative. Twelve women were contacted and ten agreed to participate in this aspect of the study. Consent forms (Appendix 9) were posted with a stamped addressed envelope and on receipt of same, a convenient time for the interview was agreed with the women.

Interviews were recorded and transcribed verbatim and lasted between 10 and 16 minutes. During the interviews, a revised interview schedule was used as a guide. The use of open ended questions facilitated the discussion, however as had been noted by other researchers (Carr and Worth 2001), they were typically shorter in duration than the focus groups. Data from the interviews confirmed many of the themes that had emerged from the focus groups, supporting the view that the telephone interview is a valid data collection method for research (Oppenheim 1992).

3.10.5 Data analysis

Thematic analysis took place through reading and rereading of the transcribed data, coding, categorisation and development of themes. The themes were then grouped into dimensions and perspectives, providing in-depth knowledge to the area of interest. The women's own words were used to provide faithful descriptions of their experiences and feelings about infant feeding choices.

Constant comparative analysis was performed to construct the categories and concepts and theoretical sampling of women was undertaken in the telephone interviews as the core categories emerged. Prolonged engagement with the data and the subject matter and determining congruence with the quantitative data available for these women was also undertaken to improve validity and reliability across both data sources. A systematic process of maintaining an audit trail in terms of sequencing, recording,

analysing and reporting data was also maintained. As qualitative themes emerged, these were checked by another member of the research team for validation and confirmation.

4 Results of Phase 1

4.1 Introduction

Results are presented from all three phases of the survey with headings indicating which part they specifically relate to, for ease of reading. As the purpose of Phase 1 was to recruit women to the sample, only summary analyses are presented from this phase. A profile of the sample group was obtained from responses to Phase 2 rather than Phase 1 in order to make best use of the major demographic details contained in the Phase 2 questionnaire.

4.2 Demographic results

The results are based on 2,527 responses. The mean age of the women was 31.3 years (S.D = 5.6 years), with a median of 32 years and a range of 15-47 years. The majority (37%, n=877) were aged 30 to 34 years (Table 3.1). Eighty-one percent were Irish (n=2,044) and 64 other nationalities were represented (Table 3.2). Almost equal numbers (45% in each group) had completed their education by 19 years or between that age and 24 years (Table 3.3). In Phase 1, 92% of the women stated that their baby was with them in hospital (Table 3.4).

Table 3.1: Mother's current age

Age category	N	%
15-19	56	2.4
20-24	217	11.6
25-29	487	20.7
30-34	877	37.2
35-39	603	23.9
40-44	109	4.6
45-49	6	0.3
Total	2358	100
Missing	172	
Total	2527	

Ages of less than 15 or greater than 100 were treated as data errors and set as "No answer"

Table 3.2: Nationality of Phase 1 mothers

Nationality	N	%
Irish	2044	81.0
British	84	3.3
Polish	93	3.7
Lithuanian	25	1.0
Nigerian	27	1.1
Other	249	9.9
Total	2522	100
Missing	21	
Total	2527	

Table 3.3: Age of Phase 1 mothers on completion of full-time education

Age categories	N	%
12-14	24	0.01
15-19	1100	45.8
20-24	1102	45.9
25-40	204	8.5
Total	2403	100
Missing	97	
Total	2527	

Table 3.4: Phase 1 babies in the special care baby unit or at another hospital

	N	%
Baby in SCU or another hospital	208	8.3
Baby not in SCU or another hospital	2290	91.7
Total	2498	100
Missing	29	
Total	2527	

4.3 *Intention to breast-feed*

When asked how they had intended to feed their baby, 55% (n=1,374) said “breast” and 34% (n=854) replied “bottle”, with 7% (n=184) anticipating using a combination of both (Table 4.1).

Table 4.1: Planned type of feeding before the baby was born (Phase 1)

Planned type of feeding	N	%
Breast	1374	54.5
Formula	854	33.8
Combination of breast and formula	184	7.3
I had not decided	111	4.4
Total	2523	100
Missing	4	
Total	2527	

4.4 *The rate of exclusive and partial breastfeeding from birth to 48 hours*

Fifty-five percent (n=1,375) of women put the baby to the breast initially after birth (Table 4.2). For 30% (n=747) of babies, this first feed took place within 30 minutes and for 36% (n=889), it occurred from 30 minutes to one hour after birth. Twenty-eight percent of babies were not fed until between one and four hours after birth (Table 4.3). Only 50% of Irish women (n=1,010), compared with 76% (n=365) of non-Irish women, initiated breastfeeding (Table 4.4).

Table 4.2: Type of food baby received for his/her first feed after birth (Phase 1)

Type of feeding	N	%
Breast	1375	54.7
Formula	1123	44.6
Not feeding yet	18	0.7
Total	2516	100
Missing	11	
Total	2527	

Table 4.3: Age of the baby at the first feed (Phase 1)

Age categories	All Phase 1 infants		Only breastfed Infants	
	N	%	N	%
Less than 30 mins	747	30.1	477	34.9
Between 30 mins and 1 hr	889	35.8	458	33.5
1 hr to 4 hrs	692	27.9	359	26.2
More than 4 hrs	134	5.4	51	3.7
Not feeding yet	21	0.8	7	0.5
Total	2483	100	1368	100
Missing	44		7	
Total	2527		1375	

Table 4.4: Proportion of women breastfeeding at first feed by Irish and Non-Irish (Phase 1)

Type of 1st feed							
	Breast	%	Formula	%	Not feeding yet	%	Total
Irish	1010	49.6	1010	49.6	17	0.8	2037
Non-Irish	365	76.2	113	23.6	1	0.2	478
Total	1375	54.7	1123	44.6	18	0.7	2516
Missing = 11							

4.5 Feeding method at 48 hours or on discharge

By 48 hours (or on discharge, if that was earlier), 42% (n=1,064) of women were exclusively breastfeeding their babies, with a further 13% (n=307) breast and bottle feeding or using expressed breast milk (Table 4.5). Of those who stated that the baby was more than 48 hours old, 35% (n=692) were exclusively breastfeeding. A further 13% (n=254) were breast and bottle feeding or using expressed breast milk (Table 4.6).

Table 4.5: Type of feeding on completion of Phase 1

Feeding method	N	%
Breast only	1064	42.2
Formula	1105	43.9
Combination of Breast and Formula/water	307	12.2
Expressed breast milk	32	1.3
Not feeding yet	11	0.4
Total	2519	100
Missing	8	
Total	2527	

Table 4.6: How the mother was feeding at 48hrs (Phase 1)

Type of feeding	N	%
Breast only	692	35.3
Formula	707	36.0
Combination of breast and formula/water	254	12.9
Expressed breast milk	20	1.0
baby was not feeding at two days	16	0.8
My baby is less than 48hrs old	273	13.9
Total	1962	100
Missing	565	
Total	2527	

Of the women who were still exclusively breastfeeding “today” when they completed Phase 1 (i.e. those still feeding at 48 hours or on discharge, if that was earlier), a higher number of those in the 40-44 age group 55% (n=59) were still breastfeeding, while only 12% (n=7) of those in the youngest age group (15-19) were still breastfeeding (Table 4.7).

Table 4.7: Proportion of women breastfeeding “today” (i.e. question 5) at different ages (Phase 1)

Mothers’ age category	N	% (within this age category)
15-19	7	12.7
20-24	75	35.0
25-29	206	42.3
30-34	372	42.5
35-39	265	43.9
40-44	59	54.6
45-49	2	33.3
Total	987	42.0
Missing	77	

The results of question 6 in Phase 1, presented in Table 4.6 should be interpreted with caution as many of the mothers did not answer it, possibly because they felt they had already given the relevant answer in question 5. Furthermore, many Phase 1 mothers appear to have completed the questionnaire in the first 24 hours. It should be noted that the 48 hour question has been repeated in Phase 2 and is reported in Table 6.1.

5 Results of Phase 2 – Demographics

5.1 Introduction

A profile of the 1,826 women (72%) who completed Phase 2 of the survey is presented here, with details of the age of their babies at the time of this part of the survey and their length of stay in hospital. A profile of women who responded to Phase 1 but not to Phase 2 is also given, for comparison.

Results in this and the following sections are reported in text, figures and tables, as appropriate. In all tables the figures reported represent the valid percent (i.e. after, excluding any missing values). Omitting the missing values when calculating the percentages is in keeping with the fact that data missing for those women who completed Phase 1 but not Phase 2 and for those women who did not participate in either survey, have to be excluded when percentages are shown. The numbers of missing values are presented in each table to allow for clarity of the effect that these may have on results. In some instances, percentages may not add up to 100% due to rounding. Any table not found within the text can be located at the end of that section.

More mothers completed section 4 of the Phase 2 questionnaire (for those breastfeeding from birth) than were found to be breastfeeding at birth and discharge from hospital (n=52). The values for these mothers have been treated as errors in this section and excluded from any analysis relating to mothers who were breastfeeding from birth.

5.2 Sample profile

The sample consisted of 747 (41%) mothers having their first baby and 1072 (59%) mothers having their second or subsequent baby (7 missing). Almost all (99%, n=1785) mothers gave birth to one infant with 1% of mothers surveyed having a multiple birth (n=28) (13 missing) (Tables 5.1 – 5.2). The profile of the sample was

consistent with national figures for mothers having their first baby (41.1% NPRS 2006) and women having their second and subsequent baby (58.9% NPRS 2006).

The majority of mothers had private health insurance (66%, n=1,198), were married (76%, n=1,374), and were employed prior to having their baby (77%, n=1,388) (Tables 5.3 - 5.4). The proportion of the sample who were married was similar but somewhat higher than the national figures (66.5% married, NPRS 2006).

The mean age of mothers completing the survey was 31 years (Table 3.1) with 39% (n=659) of mothers aged between 30 and 34 years old. This is consistent with the national NPRS figures for 2006, where 34% of mothers were in this age group.

The Central Statistics Office highest classification for social class is that of professional workers and this represented 7% (n=123) of mothers in the survey (Table 3.5). There were 592 (34%) mothers who were classified as having managerial and technical professions and 596 (35%) mothers from non-manual professions. Nine mothers were students and 4 were unemployed.

Table 5.1: Number of mothers having first or subsequent baby

Is this your first baby?		
	N	%
Yes	747	41
No	1072	59
Total	1819	100
Missing	7	
Total	1826	

Table 5.2: Number of women having multiple births

Is your baby one of twins, triplets or other multiple births?		
	N	%
No	1785	98.5
Twins	28	1.5
Total	1813	100
Missing	13	
Total	1826	

Table 5.3: Marital status of mothers

What is your current marital status?		
	N	%
Single - never married	372	20.7
Married - first marriage	1374	76.3
Re-married	20	1.1
Separated	18	1.0
Divorced	16	0.9
Total	1800	100
Missing	26	
Total	1826	

Table 5.4: Employment status of mothers

How would you describe your main employment status just before you had your baby?		
	N	%
Working for profit or payment	1388	77.2
Looking for first job	14	0.8
Unemployed	70	3.9
Student or pupil	32	1.8
Looking after home or family	220	12.2
Unable to work - permanent sickness/disability	20	1.1
Others	54	3.0
Total	1798	100
Missing	28	
Total	1826	

Table 5.5: (CSO) social classifications of mothers

CSO Social Classifications		
	N	%
Professional workers	123	7.1
Managerial and technical	592	34.2
Non-manual	596	34.5
Skilled manual	226	13.1
Semi-skilled	138	8.0
Unskilled	1	0.1
All others gainfully occupied and unknown	39	2.3
Student	9	0.5
Unemployed	4	0.2
Total	1729	100
Missing	97	
Total	1826	

5.3 *Profile of the non-respondents*

Of the 2,527 mothers who completed Phase 1, 701 (28%) did not respond to Phase 2. Of these non-responders, 52% (n=343) breastfed their infants at birth and 47% (n=307) formula fed at birth. This is slightly different to the figure for the prevalence of breastfeeding at birth in women who responded to Phase 2 (56% breastfeeding compared to 43% formula feeding). The mean age of non respondents was similar to respondents (30 years of age), but the proportion of non respondents in the youngest age group was higher: 19% (n=67) were less than 24 years old in contrast to 8% (143) for respondents. The social classification of mothers who did not respond to Phase 2 are broadly comparable to respondents, although a higher percentage of unemployed mothers did not respond to Phase 2 (5%, n=32 compared to <1%, n=4).

5.4 Age of the babies at Phase 2 of the Survey

The age of infants in Phase 2 of the survey is, of course, dependent on when their mothers completed the questionnaire. The survey design was intended to make this range as narrow as possible; but, this was difficult to control as it was completely dependent on whether the mother completed the survey as soon as she received it, or following one of the postal reminders or the subsequent telephone reminder.

The key variables on incidence and duration of breastfeeding at 3-4 months are based on the actual age of the baby on the date the survey was completed. Most babies (80%, n=1,460) were aged between 12 and 17 weeks old at that point, ensuring that the objective to collect information on infant feeding at 3-4 months has been achieved for the majority of the cohort. A further 8% (n=146) of babies were aged between 11 and 12 weeks. The mean age of the baby on completion of the survey was 14 weeks with a range from 10 - 25 weeks, 11% (n=199) were greater than 17 weeks old.

The small number of infants who were reported to be less than 10 weeks (n=5) or greater than 25 weeks old (n=3) were treated as data errors and not analysed.

5.5 Length of stay in hospital

The average length of stay in hospital was three days with 62% of women who gave birth in hospital (n=1,107) going home on or before this point. This demonstrates that, where the incidence of breastfeeding at discharge is reported, this is prior to 72 hours for the majority of women. Early discharge on day 1 was reported by 236 (13%) women, with 428 (24%) going home on day 2 and 443 (25%) on day 3. Of the sample, 10 babies were born at home (eight of these under the care of independent midwives and two as part of DOMINO/midwife led hospital schemes). By day 5, 95% of women (n=1,695) were discharged from hospital.

6 Results of Phase 2 – Main findings

This section presents statistics about initiation of breastfeeding from birth to Phase 2 (3-4 months) and the proportion of babies being exclusively and partially breastfed during this time. It also presents data on the factors influencing a woman's decision to breastfeed or not and the reasons given by women for stopping breastfeeding at all stages.

6.1 Prevalence of breastfeeding

6.1.1 Breastfeeding at three differing time points

Prevalence of exclusive and partial breastfeeding at three differing time points is reported in Table 6.1. Just over half the women (n=1,002, 56%) initiated breastfeeding at birth, which is greater than recently reported rates (Tarrant 2008 (47%), ESRI 2006 (44%)). It is worth noting, however, that by the time of discharge from hospital the rate of exclusive breastfeeding had dropped to 49% (n=881) with 2% of infants (n=37) receiving expressed breast milk and 7% (n=127) receiving a combination of breast and formula. It is apparent that some of the infants who were receiving breast milk at discharge received formula for their first feed as the overall proportion receiving some breastmilk at discharge (n=1,045, 58%) is actually higher than the proportion who received breast milk at birth (n=1,002, 56%). This is also evident in Table 6.4.

By the time the women completed Phase 2, the rate of exclusive breastfeeding had declined to 19% (n=347), with the majority of women formula feeding their infants at this point (66%, n=1,205). A further 15% (n=274) were partially breastfeeding at this time.

Table 6.1: Overall rate of breastfeeding at first feed, discharge from hospital and completion of phase 2

Total n=1,826	Incidence of feeding methods at first feed		Incidence of feeding methods at discharge		Incidence of feeding methods at Phase 2 (Q72)	
	N	%	N	%	N	%
Breast only	1,002	56	881	49	347	19
Formula only	774	43	775	42	1,205	66
Baby not feeding	11	1	2	0.1	N/A	N/A
Expressing Breast milk	N/A	N/A	37	2	N/A	N/A
Combination of breast & formula	N/A	N/A	127	7	237	13
Combination of breast & water/juice	N/A	N/A	N/A	N/A	37	2
Missing	39		24		36	

6.1.2 Effect of nationality on breastfeeding

In total, women from 65 different nationalities responded to the survey and Table 6.2 shows the largest groups.

Table 6.2: Nationalities of women

Nationalities of women	N	%
Irish	1,498	82
British	62	3
Polish	45	3
Others	187	10
Total	1,792	98
Missing	34	2
Total	1,826	100

It is evident that Irish women were less likely to initiate breastfeeding when compared with all others groups (52.6% compared to 64.5% of British, 82.2% of Polish and 74.6% of other nationalities) (Table 6.3). Between birth and discharge from hospital, the rate of exclusive breastfeeding falls significantly from 52.6% to 45.0% for Irish women and from 64.5% to 51.7% for British women ($\chi^2 = 46.84$, $df=3$, $p<0.0001$) Showing that the size of the drop is significantly different for Irish and British women (Table 6.4).

Table 6.3: Prevalence of feeding type at birth, by nationality

	Type of first feed			Total
	Breast (%)	Formula (%)	Not feeding yet (%)	
Irish	785 (52.6)	697 (46.7)	10 (0.7)	1,492
British	40 (64.5)	22 (35.5)	0	62
Polish	37 (82.2)	8 (17.8)	0	45
Others	138 (74.6)	46 (24.9)	1 (0.5)	185
Total	1,000	773	11	1,784
Missing n=42				

The largest absolute decrease was among Polish women where the rate falls to 68.9% from 82.2% at birth. Combining the findings from the women who make up the other 62 nationalities (i.e. excluding Irish, British and Polish) reveals a small decline of just 1.7% by discharge home from hospital. Table 4.4 shows that Irish women also constitute the lowest rate of combination feeding at discharge (5.6%) which is much lower than that reported for other groups of women (11.7% for British, 13.3% for Polish and 15.7% for other women) ($\chi^2 = 119.14$, $df=6$, $p<0.0001$).

Table 6.4: Prevalence of feeding type at discharge by nationality

	Irish (%)	British (%)	Polish (%)	Others (%)	Total
Breast	669 (45.0)	31 (51.7)	31(68.9)	129 (72.9)	860
Formula	702 (47.2)	22 (36.7)	6 (13.3)	17 (9.6)	747
Combination	83 (5.6)	71 (1.7)	6 (13.3)	28 (15.8)	124
Expressing BM	32 (2.2)	0	2 (4.4)	3 (1.7)	37
Not feeding	1 (0.1)	0	0	0	1
Total	1487	60	45	177	1,769
Missing					57

*Totals for type of feeding are inconsistent with Table 6.1 due to missing data relating to nationality of the mother

At Phase 2, only 234 (16%) Irish women were exclusively breastfeeding. The majority of Irish infants were being fully formula fed at this point (72%, n=1,077). Table 6.5 also highlights that infants of all other nationalities are more likely than Irish infants to receive some breast milk at 3-4 months ($\chi^2 = 110.02$, $df=9$, $p<0.0001$).

Table 6.5: Type of feeding in last 7 days (Phase 2) by nationality

	Irish (%)	British (%)	Polish (%)	Others (%)	Total
Only Breast Milk	234 (15.6)	16 (26.7)	17 (38.6)	70 (36.1)	337
Combination of breast milk, water or juices	15 (0.01)	0	6 (13.6)	17 (8.8)	38
Only infant formula	1,077 (71.9)	35 (58.3)	16 (36.4)	62 (32.0)	1,190
Combination of breast milk and infant formula	172 (11.5)	9 (15.0)	5 (11.4)	45 (23.2)	231
Total	1498	60	44	194	1,796
Missing					30

*Totals for type of feeding are inconsistent with Table 6.1 due to missing data relating to nationality of the mother.

6.1.3 Prevalence of breastfeeding by hospital of birth

Differences can be seen in the rate of exclusive breastfeeding at birth depending on the hospital where the women gave birth (Table 6.6). Overall, women who gave birth in the care of an independent midwife had the highest rates of breastfeeding with all of these five women breastfeeding at birth, discharge and 3-4 months.

Hospital R had the highest initiation rate for a hospital with 70% of infants receiving breast milk for their first feed. This figure should however be interpreted with caution because of the poor response rate in that unit (18%).

The lowest initiation rates were found among women giving birth in N (25%), S (35%) and Q (39%). These figures should however be interpreted with caution because of the poor response rates in some of these units (6%, 14% and 43% respectively).

Rates of exclusive and partial feeding at discharge demonstrate that some infants who received formula at the first feed were found to be either exclusively or partially breastfeeding at discharge. This is most evident in Q where 30 (45%) infants were exclusively breastfeeding and 4 (6%) were combination feeding at discharge compared to only 26 (39%) who were breastfed for their first feed.

The sharpest decline in exclusive breastfeeding from birth to discharge is evident in Hospital L, with an absolute fall of 19%. Worth noting, is that Hospital L has the highest rate of partial breastfeeding at discharge with 25 (16%) women combining breast and formula feeding at this time (Table 6.6).

Table 6.6: Breastfeeding numbers per hospital for first feed, at discharge and at 3 – 4.5 months

Hospital / IMW*	Total n=1826	% within hospital breastfeeding at 1 st feed		% within hospital exclusively breastfeeding at discharge		% within hospital partially breastfeeding at discharge		% within hospital exclusively breastfeeding at Phase 2		% within hospital partially breastfeeding at Phase 2	
		n	%	n	%	n	%	n	%	n	%
U	5	5	100	5	100	0		5	100	0	0
*R	56	39	70	31	55	4	7	14	25	10	18
L	160	111	69	81	50	25	16	29	18	38	24
*C	75	50	67	47	63	5	7	20	27	12	16
G	52	33	64	28	54	8	15	8	15	12	23
B	75	47	63	46	61	3	4	21	28	12	16
H	214	134	63	130	61	13	6	44	21	44	21
T	76	41	61	38	55	7	10	10	15	13	19
M	69	41	61	38	55	7	10	10	15	13	19
J	102	61	60	58	57	1	1	20	20	12	11
O	40	23	58	24	60	2	5	12	18	7	10
A	165	95	58	85	52	13	8	33	20	28	17

Table 6.6 Continued:

Hospital / IMW*	Total n = 1826	% within hospital breastfeeding at 1 st feed		% within hospital exclusively breastfeeding at discharge		% within hospital partially breastfeeding at discharge		% within hospital exclusively breastfeeding at Phase 2		% within hospital partially breastfeeding at Phase 2	
		n	%	n	%	n	%	n	%	n	%
F	77	43	56	38	50	10	13	15	19	11	14
E	125	60	48	54	43	8	7	24	19	16	13
K	77	37	48	36	47	8	10	15	19	11	14
P	140	66	48	57	41	8	6	20	14	15	11
I	97	46	47	46	47	2	2	16	16	7	7
D	69	32	46	25	36	2	3	11	16	3	4
Q	67	26	39	30	45	4	6	7	11	10	15
*S	52	18	35	18	35	2	4	9	17	2	4
*N	4	1	25	0		0		0		0	
Total	1,797										
Missing=29											

*Denotes response rates of less than 20% for phase 1 of the survey.

*IMW = Independent Midwife

6.1.4 Prevalence of breastfeeding by Local Health Office of residence

Tables 6.7 to 6.11 demonstrate wide variations in the rates of exclusive and partial breastfeeding based on the women's Health Service Executive Administrative Area and Local Health Office (LHO) of residence. Dublin South East has the highest initiation rate at 78%. The lowest rate was in Waterford and Louth (38%). Waterford also has the lowest rate of exclusive breastfeeding at discharge, at 29%. Dublin South West represents the largest fall in absolute terms in breastfeeding from birth to discharge: from 71% at birth, to 47% exclusively breastfeeding at discharge, a drop of 24%. Sligo/Leitrim has the lowest level of exclusive breastfeeding at 3 – 4 months (12%) with Waterford having the lowest rate of any breastfeeding prevalence, at just 17%.

Overall findings for the three time periods are particularly interesting for the West Cork LHO area. Rates here remain consistently high from 76% at birth, to 65% exclusive breastfeeding at discharge and 35% exclusive at 3-4 months (Table 6.10). However, these findings are dominated by the fact that 4 of the women who gave birth in the care of an independent midwife were resident in this area and, as discussed above, such women had a consistently high level of exclusive breastfeeding over the study period. The exclusion of these four women from the Phase 2 data, would result in an exclusive breastfeeding rate of 15% (n=2 from 13) which is lower than the overall national rate of 19% (and lower than the corrected national rate of 18% when the 5 women who gave birth in the care of an independent midwife and responded to Phase 2 are excluded from the total population).

Tables 6.7: Exclusive and partial breastfeeding for first feed, discharge and phase 2 by Health Service Executive Administrative Areas

Health Service Executive Area	Total no. of women	Breastfed at 1 st feed	Exclusive at discharge		Partial at discharge		Exclusive - Phase 2		Partial - Phase 2	
		n	n	%	n	%	n	%	n	%
Dublin Mid-Leinster	489	277	247	50.5	37	7.5	97	19.8	88	17.9
Dublin North East	441	253	223	50.5	35	7.9	91	20.6	56	12.6
South	406	195	187	46.0	24	4.6	73	17.9	72	17.7
West	468	249	214	45.7	31	6.6	84	17.9	67	14.3
Missing=22										

Tables 6.8 – 6.11: Exclusive and partial breastfeeding for first feed, at discharge and Phase 2 by Local Health Office
Table 6.8: Health Service Executive: Dublin Mid-Leinster

Local Health Office	Total no. of women from LHO	*Breastfed at 1st feed		Exclusive at discharge		Partial at discharge		Exclusive - Phase 2		Partial - Phase 2	
		n	%	n	%	n	%	n	%	n	%
Kildare - West Wicklow	86	45	52	41	48	5	6	18	21	15	17
Dublin South East	37	29	78	24	65	5	14	7	19	11	30
Dublin South City	35	25	71	21	60	6	17	8	23	13	37
Dublin South West	17	12	71	8	47	2	12	6	35	0	0
Dublin West	29	19	66	16	55	2	7	5	17	7	24
Dun Laoghaire	32	23	72	22	69	3	9	7	22	7	22
Wicklow	51	29	57	26	51	4	8	13	25	6	12
Longford/Westmeath	92	45	49	44	48	4	4	18	20	11	12
Laois/Offaly	110	50	45	45	41	6	5	15	14	11	10
Total	489										

* In some instances infants were not feeding at birth or women may have switched to breast after the 1st feed resulting in a higher % of breastfeeding at discharge for some LHOs.

Table 6.9: Health Service Executive: Dublin North East

Local Health Office	Total no of women from LHO	*Breastfed at 1st feed		Exclusive at discharge		Partial at discharge		Exclusive - Phase 2		Partial - Phase 2	
		n	%	n	%	n	%	n	%	n	%
Dublin North West	82	47	57	42	51	9	11	20	24	15	18
North Central Dublin	52	38	73	30	58	7	13	12	23	1	2
North Dublin	96	58	60	45	47	10	10	17	18	16	17
Cavan/Monaghan	77	45	58	49*	64	2	3	19	25	12	16
Louth	42	16	38	19*	45	1	2	7	17	3	7
Meath	92	49	53	38	41	6	7	16	17	9	10
Total	441										

*In some instances infants were not feeding at birth or women may have switched to breast after the 1st feed resulting in a higher % of breastfeeding at discharge for some LHOs.

Table 6.10: Health Service Executive: South

Local Health Office	Total no of women from LHO	*Breastfed at 1st feed		Exclusive at discharge		Partial at discharge		Exclusive - Phase 2		Partial - Phase 2	
		n	%	n	%	n	%	n	%	n	%
Cork - South Lee	41	23	56	21	51	2	5	9	22	7	17
Cork - North Lee	43	25	58	23	53	4	9	8	19	7	16
West Cork	17	13	76	11	65	3	18	6	35	1	6
North Cork	40	17	43	16	40	4	10	7	18	7	18
South Tipperary	26	12	46	12	46	0		6	23	3	12
Carlow/ Kilkenny	47	23	49	24	51	2	4	7	17	3	6
Wexford	82	39	48	34	41	2	2	12	15	12	15
Waterford	34	13	38	10	29	3	9	5	15	1	2
Kerry	76	30	45	36	47*	4	5	13	17	9	12
Total	406										

* In some instances infants were not feeding at birth or women may have switched to breast after the 1st feed resulting in a higher % of breastfeeding at discharge for some LHOs.

Table 6.11: Health Service Executive: West

Local Health Office	Total no of women from LHO	*Breastfed at 1st feed		Exclusive at discharge		Partial at discharge		Exclusive - Phase 2		Partial - Phase 2	
		n	%	n	%	n	%	n	%	n	%
Sligo/Leitrim	50	23	46	23	46	5	10	6	12	9	18
Donegal	71	33	46	25	35	3	4	11	15	4	6
Mayo	75	42	56	36	48	8	11	14	19	10	13
Roscommon	29	19	66	18	62	0	0	5	17	7	24
Galway	86	54	63	45	52	5	6	23	27	16	19
Clare	47	24	51	22	47	3	6	8	17	4	9
Limerick	86	40	47	31	36	7	8	13	15	13	15
North Tipperary East Limerick	24	14	58	14	58	0	0	4	17	4	17
Total	468										

(Missing LHO's = 22)

*In some instances infants were not feeding at birth or women may have switched to breast after the 1st feed resulting in a higher % of breastfeeding at discharge for some LHOs.

6.1.5 *Effect of ethnic origin of the mother on breastfeeding*

Prevalence of breastfeeding by nationality is reported earlier and shows wide variations between Irish and non-Irish mothers. When ethnic origins of mothers were examined, similar trends were observed with Irish mothers being less likely to breastfeed than any other ethnic groups. The ethnic origins of the total sample are shown in Table 6.12.

Table 6.12: Ethnic origins of mothers in the overall sample

Ethnic origin of mothers sampled	N	%
Irish	1,518	84.1
Irish Traveller	4	0.2
African	23	1.3
Chinese	11	0.6
Any other white background	194	10.8
Any other black background	1	0.1
Any other Asian background	27	1.5
Other including mixed background	7	0.4
Others	19	1.1
Total	1,804	100
Missing=22		

Table 6.13 shows that, in common with the results for nationality, Irish women and Irish Traveller women are less likely to breastfeed at birth than any other ethnic group ($\chi^2 = 46.48$, $df=8$, $p<0.0001$). Previous reports have suggested that Irish travellers were among the groups least likely to initiate breastfeeding in Ireland (DOH, 2005) but there are so few mothers in this survey (4, 3 of whom responded to Phase 2) that this cannot be reliably assessed here.

Table 6.13: Type of first feed by ethnic origins of mothers in the overall sample

Ethnic Origin / What kind of food did your baby receive for his/her first feed after birth?					
	Breast N	%	Formula N	%	Total
Irish	791	53.4	691	46.6	1,482
Irish Traveller	1	33.3	2	66.7	3
African	14	60.9	9	39.1	23
Chinese	6	54.5	5	45.5	11
Any other white background	140	75.7	45	24.3	185
Any other black background	0	0	1	100	1
Any other Asian background	22	84.6	4	15.4	26
Other including mixed background	6	85.7	1	14.3	7
Others	10	55.6	8	44.4	18
Total	990	56.4	766	43.6	1,756
Missing=70					

6.1.6 Effect of birth order on breastfeeding

Mothers who were having their first baby were more likely to breastfeed (60%, n=433) than formula feed (40%, n=288) at birth (Table 6.14). We also found that more mothers having their second or subsequent baby breastfed at birth (54% n=567, compared to 46% n= 481 who formula fed at birth). This indicates that breastfeeding at birth is now the predominant method of feeding among both first and second time mothers in Ireland ($\chi^2 = 6.15$, $df=1$, $p=0.013$) (Table 6.14). Subgroup analysis revealed that this was also the case for both Irish (n=326, 58% of first time and n=465, 51% of second time breastfed at birth) and non-Irish mothers (n=107, 70% of first time and n=102, 75% of second time breastfed at birth).

National Infant Feeding Survey 2008

Table 6.14: Feeding at birth by birth order

Birth order	Feeding at birth		
	Breast	Formula	Total
	%	%	N
First baby	60	40	721
Second or subsequent baby	54	46	1,048
Missing=57			

By Phase 2, the second time or subsequent mothers (54%, n=566) who breastfed at birth were more likely to be exclusively breastfeeding (38%, n=198) than women having their first baby (28%, n=110) (Table 6.15).

Table 6.15: Feeding ‘in the last week’ (Phase 2) for mothers who breastfed initially by first or subsequent baby

Milk and other fluids that your baby has had in the last 7 days	Is this your first baby?			
	Yes		No	
	N	%	N	%
Only breast milk	110	27.9	198	37.6
Combination of breast milk, water or juices	21	5.3	13	2.5
Only infant formula	173	43.8	204	38.8
Combination of breast milk and infant formula	91	23.0	111	21.1
Total	395		526	
Missing=81				

6.1.7 Effect of previous breastfeeding experience on breastfeeding

Mothers were asked how they had fed their previous infants and were given options of breast, formula or combination feeding. As this question did not determine the duration of any previous breastfeeding the actual extent of this breastfeeding experience is unknown. However, the responses do provide data on, at least, mother's previous experiences of initiating breastfeeding.

Tables 6.16 to 6.19 show that mothers are generally consistent with each baby in regard to breast only, formula only and combination feeding.

Table 6.16: Feeding of previous infants for mothers with at least four other children

	Eldest (%)	2 nd Eldest (%)	3 rd Eldest (%)	4 th Eldest (%)
Breast	26 (37.7)	27 (39.1)	24 (34.8)	26 (37.7)
Formula	31 (44.9)	31 (44.9)	35 (50.7)	33 (47.8)
Combination	12 (17.4)	11 (15.9)	10 (14.5)	10 (14.5)
Total	69	69	69	69

Table 6.17: Feeding of previous infants for mothers with three other children

	Eldest (%)	2 nd Eldest (%)	3 rd Eldest (%)
Breast	60 (32.4)	66 (35.7)	64 (34.6)
Formula	77 (48.7)	84 (45.4)	94 (50.8)
Combination	48 (25.9)	35 (18.9)	27 (14.6)
Total	185	185	185

Table 6.18: Feeding of previous infants for mothers with two other children

	Eldest	2 nd Eldest
	%	%
Breast	74 (27.9)	69 (26.0)
Formula	86 (32.5)	85 (32.1)
Combination	105 (39.6)	112 (42.1)
Total	265	266

Table 6.19: Feeding of firstborn infants for mothers with one other child

	Eldest
	%
Breast	152 (26.9)
Formula	254 (44.9)
Combination	160 (28.3)
Total	566

The proportion who use only formula (i.e. did not breast feed their baby at all) is similar for each type of woman, each of their previous babies and sample group at around 45-50%, but with one exception. Among women with two other infants (n=266), 32% reported "formula only" for both of those children.

6.2 Socio economic status and infant feeding

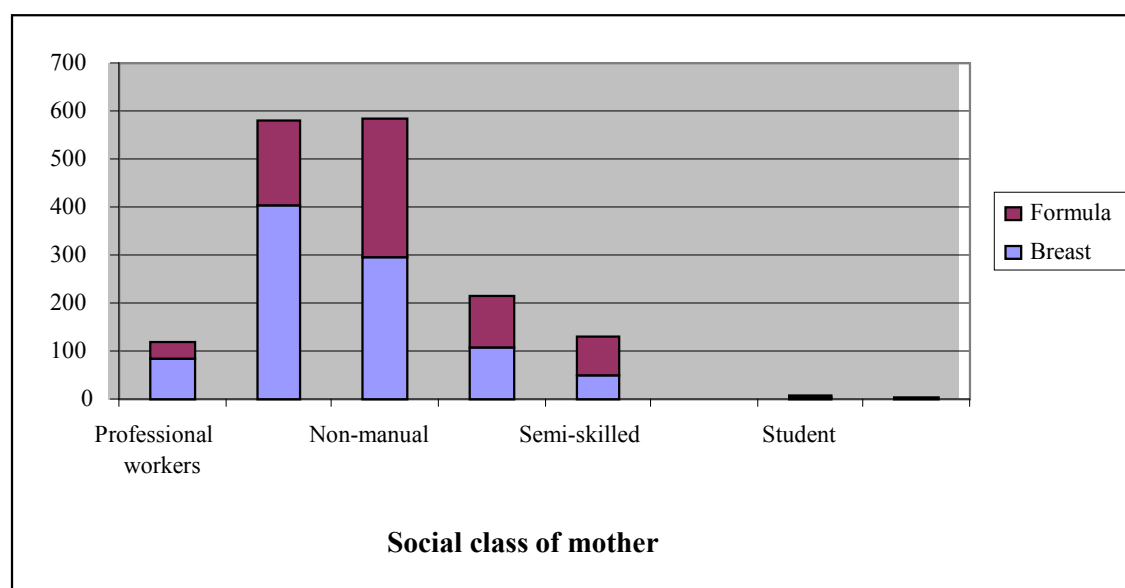
In line with previous national and international studies, the mother's social classification was strongly associated with breastfeeding at birth (Table 6.20 and Figure 2) ($\chi^2 = 85.48$, $df=9$, $p<0.0001$). Mothers who were classified as professional or managerial and technical workers were more likely to initiate breastfeeding than those with non-manual or semi-skilled professions (Table 6.20).

National Infant Feeding Survey 2008

Table 6.20: Feeding at birth by Social Class of mother

Social Classification	Breast		Formula		Total
	N	%	N	%	
Professional workers	83	70	35	30	118
Managerial and technical	402	69	178	31	580
Non-manual	296	51	288	49	584
Skilled manual	107	49	110	51	217
Semi-skilled	49	37	83	63	132
Unskilled	0	0	1	100	1
Student	3	33	6	67	9
Unemployed	3	75	1	25	4
Missing=181					1,645

Figure 2: Feeding at birth by Social Class of mother



Very few women were classified as unskilled workers (n=1), students (9) or unemployed (4). Therefore, the data relating to these groups should be interpreted with caution. Mothers who were classified as unemployed were noted to be more likely to initiate breastfeeding than formula feeding (75% breastfeeding compared to 25% formula feeding).

Prevalence of breastfeeding at 3-4 months continued to correlate with social class of the mother (χ^2 analysis not performed because 47% of cells have counts less than 5) (Table 6.21). It is worth noting, however, that while mothers from higher socio-economic groups were more likely to continue any breastfeeding this is not consistent with rates of exclusive breastfeeding. Switching to full formula feeding was found to be commonest (67%, n=2) among the small number of mothers who were classified as students and least likely in those who were professional workers (35%, n=28) but showed no consistent pattern with the other socio-economic classifications.

Table 6.21: Feeding at 3-4 months for those who breastfed initially by social class of mother

	Only Breast milk	Combination of breast milk water or juices	Only infant formula	Combination of breast milk and infant formula	Total
	(%)	(%)	(%)	(%)	N
Professional workers	29 (36)	1 (1)	28 (35)	22 (28)	80
Managerial and technical	131 (35)	5 (1)	140 (37)	101 (27)	377
Non-manual	74 (28)	13 (5)	131 (50)	42 (16)	260
Skilled manual	41 (41)	7 (7)	38 (38)	14 (14)	100
Semi-skilled	8 (18)	2 (5)	20 (47)	13 (30)	43
All others gainfully occupied and unknown	8 (38)	0	9 (43)	4 (19)	21
Student	1 (33)	0	2 (67)	0	3
Unemployed	1 (50)	1 (50)	0	0	2
Total	294 (33)	29 (3)	368 (41)	196 (23)	887
Missing=115					

Mothers who reported having private health insurance were found to be more likely to breastfeed than formula feed at birth (71%, n=710 breastfed compared to 29%, n=285 who did not) ($\chi^2 = 24.11$, $df = 1$, $p < 0.0001$). Conversely, formula feeding was predominant among mothers who reported that they did not have private health insurance (48%, n=285 breastfed compared with 52% n=304 who did not).

6.3 Duration of breastfeeding

The results presented in this section relate to all mothers who breastfed at birth even if that was for only one feed. Duration here refers to the length of time that those mothers were partially or exclusively breastfeeding their infants.

By two weeks after birth, 35% (n=153) of breastfeeding mothers had discontinued breastfeeding and at one month more than half (55%, n=243) were fully formula feeding.

Table 7.1: Time at which breastfeeding mothers changed to full formula feeding

Age of infants when breastfeeding was discontinued		
	N	%
1 - 14 days	153	35.0
15 - 28 days	90	20.6
29 - 42 days	57	13.0
43 - 70 days	88	20.1
Greater than 70 days	49	11.2
Total	437	100

Analysis of the question relating to the food and fluids the infant has had in the last seven days on the Phase 2 survey (question 72) revealed that 377 (41%) of infants who were breastfed at birth were fully formula feeding by the time of the survey. A further 80 women did not answer this question. Table 7.1 shows that 437 mothers gave a response to question 85, which asked when mothers who had started to breastfeed their baby had stopped doing so. It is not possible to resolve this inconsistency in the analysis.

6.4 *Choice of feeding method*

This section examines the intentions of all mothers regarding infant feeding before they had their babies, as recalled after birth. It considers the possible influences on this decision, such as reasons for choosing a particular method of feeding and social pressures.

6.4.1 *Intended method of feeding*

More than half of all mothers said they had planned to breastfeed their infants before they were born (56%). Formula feeding was planned by 33%, and 7% intended to combination feed (Table 8.1). Among those who planned to breastfeed, only 89% breastfed at the first feed meaning that about 1 in 9 mothers who had intended to breastfeed antenatally gave formula milk for the first feed (Table 8.2). However, 2% (n=11) of mothers who had planned to formula feed breastfed at the first feed. Among the 77 (4%) mothers who said they had been undecided about infant feeding before their infants were born, a higher proportion began formula feeding (n=52, 68%) than breastfeeding (n=24, 32%).

Table 8.1: Mothers' intention to feed before their infant was born

Before your baby was born, how did you plan to feed him/her?		
	N	%
Breast	999	55.7
Formula	587	32.7
Combination of breast and formula	130	7.3
I had not decided	77	4.3
Total	1,793	100
Missing=33		

National Infant Feeding Survey 2008

Table 8.2: Mothers' intention to feed before baby was born and type of first feed

Intention to feed by type of infant's first feed			What kind of food did your baby receive for his/her first feed after birth?	
		N	Breast %	Formula %
Before your baby was born, how did you plan to feed her/him?	Breast	986	89	11
	Formula	583	2	98
	Combination of breast and formula	128	68	32
	I had not decided	77	32	68
	Total	1,774	1,000	774
Missing=52				

Table 8.3 shows that mothers who planned to breastfeed exclusively and breastfed their baby at birth were less likely to discontinue in the first two weeks (n=117, 30%) than those who planned to combination feed (n=33, 45%) or those who had not decided (n=10, 56%). Of the small numbers of mothers who planned to formula feed but breastfed initially, 62% (8 of 13) discontinued in the first two weeks. Overall those mothers who planned to and did breastfeed initially were more likely to breastfeed for a longer duration than other mothers. Thus, 16% (63 of 391), of those who planned to breastfeed were still breastfeeding at 10 weeks compared to 8% (6 of 73) who planned to combination feed, 6% (1 of 18) who had not decided and 8% (1 of 13) who planned to formula feed.

Table 8.3 Duration of any breastfeeding among mothers who breastfed at birth and how they planned to feed prior to birth.

Before your baby was born, how did you plan to feed					
Stopped breastfeeding at	Breast %	Formula %	Combination of breast and formula %	I had not decided %	Total %
1 - 14 days	30	62	45	56	34
15 - 28 days	19	0	27	17	20
29 - 42 days	13	15	3	11	12
43 - 70 days	21	15	14	11	20
Greater than 70 days	16	8	11	6	15
Total (number)	391	13	73	18	495

6.4.2 Effect of age and education level on choice of feeding method

The mean age of mothers completing Phase 2 of the survey was 32 years (Table 8.4). Third level non-degree education was most commonly reported as the highest level of education that mothers had achieved (21%, n=372). Fourteen percent (n=222) completed their full time education before the age of 18 and 8% (n=141) indicated that they had not yet completed their full time education.

Table 8.4: Age profile of the sample

Age of mothers surveyed (years)	N	%
<16	3	0.2
16-19	29	1.7
20-24	111	6.5
25-29	347	20.4
30-34	659	38.7
35-39	465	27.3
40-44	82	4.8
>45	5	0.3
Total	1,701	100
Missing=125		

Figure 3 and Table 6.4 show that age of the mother was a significant factor in the initiation of breastfeeding ($\chi^2 = 40.08$, $df = 7$, $p < 0.0001$). The younger the mother when she gave birth the less likely she was to initiate breastfeeding. Among mothers who initiated breastfeeding, those who were aged 40-45 were the most likely to be exclusively breastfeeding at 3-4 months (Figure 4). None of the 32 mothers under 20 years of age were exclusively breastfeeding by Phase 2 of the survey.

Figure 3: Type of first feed by age of the mother

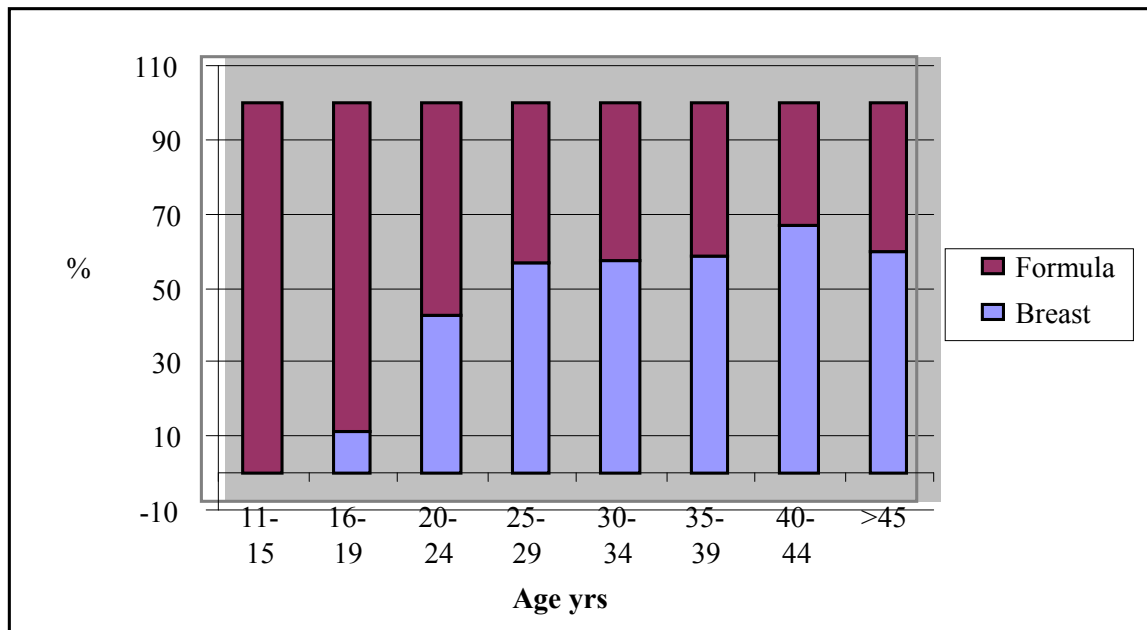
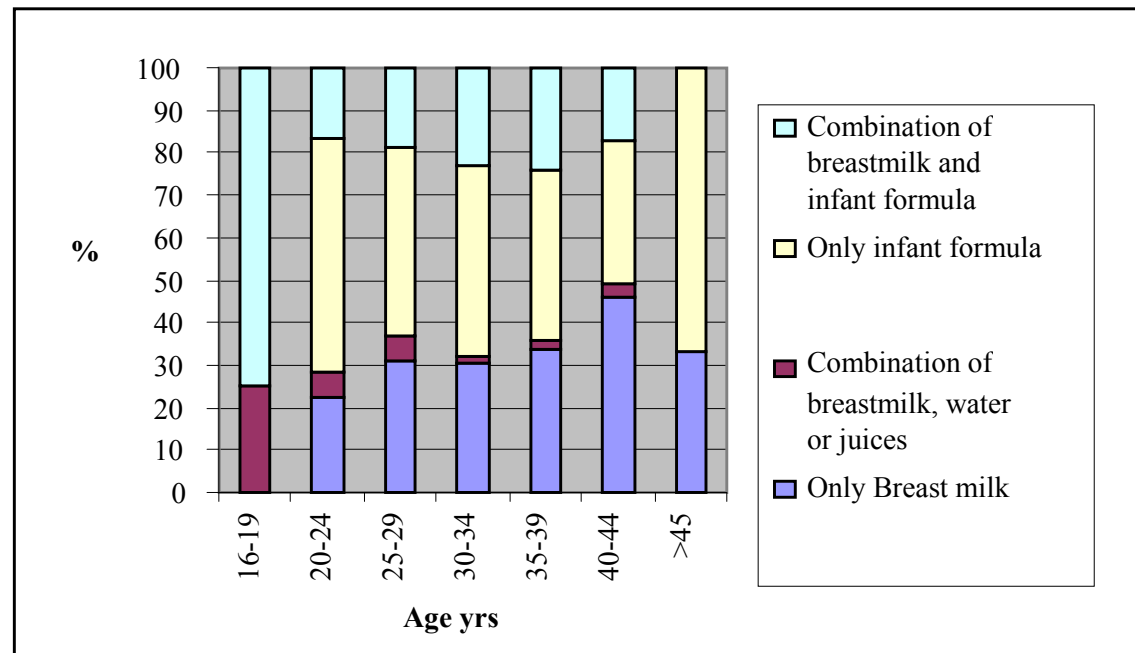


Figure 4: Type of feeding at 3-4 months for those who started breastfeeding by age of the mother



Tables 8.5 and 8.6 show that mothers who breastfed their infants at birth were more likely to have spent a longer time in full time education and have achieved a higher education status. Initiation of breastfeeding at birth was 77% (n=95) among mothers who ceased full time education at 23 years of age compared to 39% (n=96) among those who ceased at less than 18 years ($\chi^2 = 114.390$, $df=7$, $p<0.0001$, Table 8.5).

National Infant Feeding Survey 2008

Table 8.5: Type of first feed after birth by age at which mother ceased full time education

		What kind of food did your baby receive for his/her first feed after birth?		
		Breast (%)	Formula (%)	Total
What age did you cease full time education?	Less than 18 years	96 (39.2)	149 (60.8)	245
	18 years	106 (43.3)	139 (56.7)	245
	19 years	73 (54.9)	60 (45.1)	133
	20 years	72 (51.8)	67 (48.2)	139
	21 years	129 (65.2)	69 (34.8)	198
	22 years	131 (70.4)	55 (29.6)	186
	23 years	95 (76.6)	29 (23.4)	124
	24 years and above	194 (71.6)	77 (28.4)	271
	Total	896 (58.1)	645 (41.9)	1,541
Missing=285				

Women who had achieved a postgraduate degree were most likely to initiate breastfeeding at birth (77%, n=107), while women whose highest level of education was lower secondary were least likely to initiate breastfeeding (29%, n=35) (Table 8.7). This is unlikely to be due to the age of participants on completion of the survey as only 5% (n=6) of those mothers who indicated that they had not finished their full time education (n=141) were aged less than 18 years old.

Table 8.6: Mothers' highest level of education completed to date by type of first feed after birth

		What kind of food did your baby receive for his/her first feed after birth?		
		Breast (%)	Formula (%)	Total
What is the highest level of education (full-time or part-time) which you have completed to date?	No formal education	3 (75)	1 (25)	4
	Primary school education	8 (50)	8 (50)	16
	Lower secondary	35 (28.7)	87 (71.3)	122
	Upper secondary	107 (37.8)	176 (62.2)	283
	Technical or vocational qualification	68 (50.7)	66 (49.3)	134
	Both upper secondary and technical and vocational qualification	48 (45.3)	58 (54.7)	106
	Third level non degree	205 (56.2)	160 (43.8)	365
	Primary degree	146 (73)	54 (27)	200
	Professional qualification	46 (63.9)	26 (36.1)	72
	Both degree and professional qualification	101 (69.2)	45 (30.8)	146
	Postgraduate certificate or diploma	113 (71.9)	44 (28.0)	157
	Postgraduate degree	107 (76.9)	32 (23.0)	139
	Doctorate	7 (70)	3 (30)	10
Total		994 (56.7)	760 (43.3)	1,754
Missing=72				

6.4.3 Reasons for choice of feeding method

Mothers were asked why they thought they might feed their infant by the chosen method and a total of 1,725 women responded to this question, providing a total of 2,813 comments. Among these women, 27 who had intended to breastfeed but who were bottle-feeding gave reasons relating to the circumstances of the birth or the health of the baby after birth, and these were excluded from analysis, leaving 2,786 comments from 1,698 women. These are summarised in Tables 8.7 for the women

who breastfed at birth (2,063 responses from 978 women, an average of 2.11 responses each) and Table 8.8 for the women who bottle-fed at birth (723 valid responses from 720 women, an average of 1 response each). The responses of breastfeeding women fell into nine main categories, with two smaller categories. The responses of bottle-fed women were much more difficult to categorise but merging a number of classifications together, led to 12 categories.

Table 8.7: Breastfeeding mothers' reasons for planning to breast-feed

Why did you think you would feed your baby by this method?	Mothers who breastfed (n=978)	%
Best for baby	841	86
Breastfed before	266	27.2
Easier, more convenient	242	24.7
Mother-baby bonding	206	21.1
Benefits for mother	201	20.1
Natural/ "what breasts are for"	104	10.6
Flexibility - breast and bottle	92	9.4
Mother/ sister (or "whole family") had breastfed	48	4.9
Enjoyable	46	4.7
Wanted to try it	11	1.1
Just knew	6	0.6

National Infant Feeding Survey 2008

Table 8.8: Bottle-feeding mothers' reasons for planning to bottle-feed

Why did you think you would feed your baby by this method?	Mothers who bottle-fed (n=720)	%
Bottle-fed before	165	22.9
Not comfortable with breastfeeding/embarrassed/ breastfeeding does not appeal	138	19.2
Husband can help	81	11.3
Other children in family	68	9.4
Unsuccessful at breastfeeding before	61	8.5
Mother was bottle fed/ family did not want her to breast-feed	54	7.5
Easier to make bottles	36	5.0
Working/ "no time to breast-feed"	34	4.7
Can see how much baby is taking	32	4.4
Always planned to/don't know/ "personal choice"	26	3.6
Medical reasons: on medication or had breast surgery or a smoker	23	3.2
Health professional or hospital discouraged her from breastfeeding	5	0.7

Breastfeeding mothers

As can be seen from the average of more than two responses per woman, mothers who breastfed at birth gave a number of reasons as to why they had chosen to do so. As an example:

"I fed my first baby too and loved it, the bonding was great, it is very convenient. It is the perfect food for babies' tiny digestive systems."

The most frequent reason that breastfeeding mothers gave for choosing to feed by that method was summed up as "best for baby", the reason given by 841 mothers (86%). Many women went into great detail, explaining the health, nutritional and

psychological benefits accruing to breastfed babies, and it was apparent that they had considerable knowledge in this area. These details are not delineated here, as they form the answers to question 33 also, and are described later in this report. The next most popular reasons were because they had breastfed before (n=266, 27.2%) or breastfeeding was easier and more convenient than bottle-feeding (n=242, 24.7%). One woman wrote that breastfeeding was “easier at night-time than bottles” and another that it was “more portable”.

‘Mother-baby bonding’ (n=206, 21.1%), and ‘benefits for the mother’ (n=201, 20.1%) were the next most common reasons given. The most common benefit for the mother that was reported was to help with weight reduction or, as one respondent put it “helps get belly down and weight off”. A smaller proportion of women (n=104, 10.6%) stated that breastfeeding was “natural,” using phrases such as “what breasts are for” and, “God’s design”. Ninety-two women (9.4%) wrote of their decision to breast and bottle-feed together, extolling the health benefits of breastfeeding, coupled with the benefits to them of being able to leave the baby with someone else, on occasion, to be bottle-fed. They also wrote of the flexibility of enjoying the closeness of breastfeeding with the convenience of having their husband or other members of their family able to give a bottle:

“This is my 2nd child so as my first baby would never feed from a bottle due to being breastfed, I didn’t want this to happen again.”

“I had breastfed my 1st child for 8 mths and found it quite hard as I was constantly feeding her. I also found that my husband wasn’t as close as she constantly wanted mammy to feed on. This way with breast and formula we have the best of both worlds.”

Forty-eight women (4.9%) had chosen to breastfeed because their mothers, sisters or “whole family” had breastfed. As one woman said:

“We were breastfed and all my nephews & nieces so far were all breastfed so it feels natural in my family.”

Slightly fewer women (n=46, 4.7%) said they breastfed because it was enjoyable, one stating “love the oxytocin rush” and another “I love it, it’s easy, free and special.” A small group of 11 women (1.1%) stated that they wanted to “try” breastfeeding, having not breastfed before. For example two women wrote:

“This was my third child & I did not try on either of the first two so I wanted to try it this time.”

“Because I hadn’t tried it with my first baby and this was going to be our last baby and I really wanted to say that I had at least tried it.”

Finally, six women stated that they “just knew” they wanted to breastfeed.

Bottle-feeding mothers

Again, many mothers gave a reason as to why they had chosen to bottle-feed:

“I wanted my baby’s father to share the workload. I felt if I breastfed I would be trapped in my home as breastfeeding in public places is not something I would do. I bottle-fed my first baby and she thrived.”

The most frequent reason given by formula-feeding mothers for choosing to bottle-feed was that they had bottle-fed before (n=165, 22.9%). The second most common reason given was that they were not comfortable with breastfeeding, felt embarrassed, or that breastfeeding did not appeal to them or suit them (n=138, 19.2%). As one woman described it:

“.... hated feeling of milk coming in - leaking breasts etc., just not for me, not comfortable with breastfeeding at all.”

One woman also wrote that she “...didn’t want to fail at breastfeeding.”

Eighty-one women (11.3%) felt that their husband could help them more if the baby was bottle-fed. A further 68 women (9.4%) gave the fact that they had other children

as being the reason why they chose to bottle-feed. A similar number (n=61, 8.5%) had breastfed before, without success, which convinced them to bottle-feed in future:

“I tried to breastfeed with my first unsuccessfully so resorted to bottle-feeding for the rest to minimise stress.”

Fifty-four women (7.5%) stated that they themselves had been bottle fed, or that their family did not want them to breastfeed. For example, one woman said:

“... both myself and my husband were formula fed and have no concerns re same.”

Thirty-six (5%) and 34 women (4.7%) gave ‘easier to make bottles’ and ‘working/no time to breast-feed’, respectively as their reason. A further 32 women (4.4%) liked to know the intake of their baby and felt that this was not possible with breastfeeding. As one woman said:

“I like to know exactly how many ozs my baby is taking.”

Twenty-six women (3.6%) said that they had “always planned to” bottle-feed, or that they didn’t know why they had chosen this method, or that it was a “personal choice”. One woman wrote:

“I am also a traveller so I don’t believe in breastfeeding nor do any of my friends. My mother never breastfed me, it’s just in our religion, it’s also by choice.”

In the last major category, 23 women (3.2%) gave medical indications as their reason, including being on medication, having had breast surgery or being a smoker. A small number of women (n=5, 0.7%) said that they had been discouraged from breastfeeding by a health professional or hospital:

“I wanted to try breastfeeding after the birth but I was told by a midwife there was no point feeding breast if I didn’t plan to continue it.”

6.5 Knowledge of the benefits of breastfeeding

The previous section shows that many mothers who planned to breastfeed cited the benefits of breastfeeding as their main reason for doing so. Two questions in the survey related to this issue, one regarding the benefits to mothers themselves and one regarding benefits to the baby.

6.5.1 Knowledge of the benefits of breastfeeding to mothers

A total of 1,285 women chose to respond to question 32 relating to their knowledge of the benefits of breastfeeding, and made 2,437 comments. The 449 women who bottle-fed listed 740 benefits (an average of 1.65 benefits noted per mother), whereas the 836 women who breastfed provided 1,697 benefits of breastfeeding between them (average of 2.03 per person). The reasons are summarised in Table 9.1. The categorisation of the responses of the bottle-feeding women generated ten headings, and the responses of breastfeeding women added a further category. As women could give more than one answer, responses add up to more than 100%.

The benefits of breastfeeding to mothers as described by bottle-feeding women

The majority of these women (n=300, 66.8%) stated that breastfeeding helped mothers to lose weight, regain their pre-pregnancy figure or tone and shape their body (Table 9.1). This was the commonest benefit given, with only half that number (n=148, 33.0%) noting that breastfeeding decreased the risk of cancer in the mother. Bonding with the baby was stated by 117 women (26.1%) to be a benefit, as was the fact that the womb contracts or heals more quickly, which was stated by 65 women (14.5%). Forty-two women (9.4%) noted that it was more convenient not to have to make up bottles, citing the health benefit that this left more time for the mother to rest. Twenty-two women (4.9%) believed that breastfeeding was cheaper, or free, again citing this as a health benefit because it left more money to buy good food. A small number of women cited other health benefits of breastfeeding, with 21 (4.7%) knowing that it prevented osteoporosis, 6 (1.3%) noting the contraceptive effect and 5 (1.1%) noting that it may help to prevent depression.

National Infant Feeding Survey 2008

Table 9.1: The benefits of breastfeeding for the respondent as a mother

	Bottle- feeders n=449	%	Breast- feeders n=836	%
Helps to lose weight, get figure back, tone	300	66.8	480	57.4
Less risk of cancer (breast, ovarian, cervix)	148	33.0	490	58.6
Bonding with baby	117	26.1	174	20.8
Womb contracts/ heals better	65	14.5	277	33.1
Convenient/no bottles to make up	42	9.4	48	5.7
Economic/ free	22	4.9	19	2.3
Prevents osteoporosis	21	4.7	73	8.7
None, don't know	20	4.5	17	2.0
Contraceptive effect	6	1.3	26	3.1
Prevents depression	5	1.1	30	3.6
Relaxing, makes me feel good, helps me sleep	0	0	69	8.3
Total responses	740	100	1,697	100

The benefits of breastfeeding to mothers as described by breastfeeding women

The majority of breastfeeding women (n=490, 58.6%) stated that breastfeeding decreased the risk of cancer in the mother, a larger percentage than in the bottle-feeding group (Table 9.1). Slightly fewer women (n=480, 57.4%) noted that it helped mothers to lose weight, regain their pre-pregnancy figure or tone and shape their body. Bonding with the baby was noted as a benefit by 174 (20.8%). A far greater percentage in this group (n=277, 33.1%) noted that the womb contracted or healed more quickly, answered that breastfeeding prevented osteoporosis (n=73, 8.7%), were aware of the contraceptive effect (n=26, 3.1%) and stated that it helped to prevent depression (n=30, 3.6%). Fewer women gave the generic answers regarding convenience (n=48, 5.7%) and economic advantage (n=19, 2.3%). Sixty-nine women (8.3%) gave responses categorised as “relaxing, makes me feel good, helps me to sleep”, which had not been noted by any of the women who bottle-fed.

6.5.2 Knowledge of the benefits of breastfeeding to infants

A total of 1,341 women responded to question 33 regarding awareness of the advantages of breastfeeding for the infant, and made 3,209 comments. The 475 women who bottle-fed listed 876 benefits (an average of 1.84 benefits noted per mother), whereas the 866 women who breastfed provided 2,333 benefits of breastfeeding between them (average of 2.69 per mother). These are summarised in Table 9.2. The responses of bottle-feeding women were sorted under 16 headings, and the subsequent sorting of the responses of breastfeeding women added another four categories.

The benefits of breastfeeding to infants as described by bottle-feeding women

The majority of bottle-feeding women stated that breastfeeding boosted the immune system, prevented infection or did both (n=300, 63.1%). This was the commonest statement made and, for many women, was the only benefit listed. Just over one fifth gave “nutritious” or “full of vitamins” or a similar statement (n=104, 21.9%) and a further 84 (17.7%) said that breastfeeding prevented the development of allergies, asthma or eczema (Table 9.2). Similar numbers stated that it prevented colic, or was more easily digested or absorbed (n=76, 16%), that it increased mother/infant bonding (n=75, 15.8%) or helped the baby to feel secure. Forty-eight women (10.1%) thought that it helped to prevent obesity or diabetes. Forty-five women (9.5%) gave a vague “breast is best” or “it’s natural” answer and a further 43 (9.1%) stated simply that breastfeeding prevented illness, or was healthier. Twenty-eight (5.9%) knew that it decreased ear infections specifically, and 18 (3.8%) said that it was sterile or prevented gastroenteritis or stomach upsets. Similar numbers thought that breastfeeding decreased constipation (n=17, 3.6%) and led to a higher intelligence quotient (n=15, 3.2%). A small proportion (n=7, 1.5%) said that it lowered the risk of ‘cot death’, was always at the right temperature or could give no answer. Two women spoke of it improving dental or facial development (Table 9.2).

The benefits of breastfeeding to infants as described by breastfeeding women

Again, the majority of breastfeeding women stated that breastfeeding boosted the immune system and/or prevented infection (n=672, 77.6%), a larger percentage than

in the bottle-feeding group (Table 9.2). The vaguer “nutritious” or “full of vitamins” response was not as common in this group, with only 153 (17.7%) giving this answer. A far greater proportion of women in this group knew that breastfeeding prevented the development of allergies, asthma or eczema (n=273, 31.5%) and thought that it prevented colic, or was more easily digested or absorbed (n=246, 28.4%). A higher percentage than was found among bottle-feeding mothers also believed that it increased mother/infant bonding (n=179, 20.1%) or helped the baby to feel secure and 193 knew that it helped to prevent obesity or diabetes (22.3%) (Table 9.2). A smaller proportion of women gave the vague answer of “breast is best” or “it’s natural” (n=47, 5.4%) and 106 (12.2%) stated simply that it prevented illness, or was healthier. More women knew that it prevented ear infections (n=86, 9.9%) and that it was sterile or prevented gastroenteritis or stomach upsets (n=96, 11.1%). Similar numbers knew that breastfeeding decreased constipation (n=31, 3.6%) but higher proportions were aware of its beneficial effect on brain development and intelligence quotient (n=87, 10.1%), decreasing ‘cot death’ (n=37, 4.3%) and its positive effect on dental or facial development (n=43, 5.0%). More women noted that breast milk was always at the right temperature (n=20, 2.3%), and a similar percentage to those in the bottle-feeding group could give no answer (n=14, 1.6%). Fifty women listed a variety of benefits that had not been noted by any bottle-feeding women. These are documented in Table 9.2

National Infant Feeding Survey 2008

Table 9.2: The benefits of breastfeeding for the baby

	Bottle- feeders n=475	%	Breast- feeders n=866	%
Boosts immune system, prevents infection	300	63.1	672	77.6
Nutritious, vitamins etc, No additives	104	21.9	153	17.7
Prevents asthma, allergies	84	17.7	273	31.5
Prevents colic, easily absorbed, easily digested	76	16.0	246	28.4
Bonding, baby feels secure	75	15.8	179	20.1
Prevents obesity, diabetes	48	10.1	193	22.3
Breast is best/ natural	45	9.5	47	5.4
Healthy, less illness	43	9.1	106	12.2
Decreases ear infections	28	5.9	86	9.9
Sterile, prevents stomach upsets	18	3.8	96	11.1
Decreases constipation, less smelly nappies	17	3.6	31	3.6
Higher IQ, better brain development	15	3.2	87	10.1
Always at right temperature	7	1.5	20	2.3
No hard evidence/none/don't know	7	1.5	14	1.6
Decreases cot death	7	1.5	37	4.3
Improves dental/facial/ gum development	2	0.42	43	5.0
Decreases risk of cancer	0	0	11	1.3
Baby grows better, strong bones	0	0	18	2.1
Adapts according to baby's needs	0	0	11	1.3
Cheap, always ready, develops coordination, acts as mild anaesthetic	0	0	10	1.2
Total responses	876	100	2,333	100

6.6 Advice and information about infant feeding during pregnancy

6.6.1 Information sources during pregnancy

All mothers were asked if they had received information about infant feeding during pregnancy. Responses indicate that infant feeding was not discussed with 31% (n=550) of these mothers during pregnancy. However, no significant differences were observed in choice of feeding method at birth between those who received information about infant feeding and those mothers who did not. When asked who they had received information from, the midwife (66% n=824) and the general practitioner (31% n=378) were the health professionals most commonly reported as having discussed infant feeding before birth. Only 15% (n=189) of women reported their obstetrician as having discussed infant feeding with them, while 37% (n=658) of mothers had attended an obstetrician for either private or semi-private care. In addition only 9% (n=158) of the 1523 (84%) women who received information on the health benefits of breastfeeding did so from their obstetrician, compared to close to half (46%) reporting that they had received this information from a midwife (Table 10.1).

Magazines, books and leaflets were reported to have been a common source of information for mothers on the benefits of breastfeeding (45%). Antenatal classes or the hospital was reported by 52 mothers who answered that they obtained information from someone or somewhere else. A further 38 listed the internet or web forums as a source of information on the benefits of breastfeeding.

Table 10.1: Where mothers received advice on health benefits of breastfeeding

Where did you receive information on the health benefits of breastfeeding from?		
	N	%
Midwife	786	46.0
Magazine /book /leaflet	775	45.3
GP	319	18.7
Partner/mother/other family members	260	15.2
Friend	203	11.9
Public Health Nurse	203	11.9
Obstetrician	158	9.2
TV /radio	154	9.0
Somewhere/someone else	144	8.4
Practice Nurse	124	7.3
Total	1,709	100
Missing=117		

6.6.2 Attendance at ante-natal classes

Mothers were asked about antenatal education and 41% (n=738) reported that they had attended antenatal classes during pregnancy. Attendance at antenatal classes was a significant factor for initiation of breastfeeding at birth. Breastfeeding was initiated by 62% of mothers who attended antenatal classes compared to 52% initiation among those who did not attend classes during this pregnancy ($\chi^2=17.19$, $df=1$, $p<0.0001$) (Table 10.2).

Table 10.2: Type of first feed by whether the mother attended antenatal classes during pregnancy

		While you were pregnant did you attend any antenatal classes?			
		Yes	%	No	%
What kind of food did your baby receive for his/her first feed after birth?	Breast	449	62.3	546	52.3
	Formula	271	37.6	496	47.6
Total		720		1042	
Missing=64					

It should be noted that attendance at antenatal classes was associated with the socio-economic status of the mother with 50% (n=60) of professional and 49% (n=289) of managerial and technical workers having attending during pregnancy, compared to only 22% (n=49) of skilled manual and 38% (n=38) of semi-skilled workers.

6.7 Factors related to planned feeding method

The literature review identified certain factors related to social norms such as the feeding method of friends and family, how the mother was fed herself, and type of ante-natal care as influencing her decision to breastfeed. These are discussed in this section.

6.7.1 Knowledge of breastfeeding among family and friends

Table 11.1 shows that only 18% of mothers considered that most of their friends and family breastfeed their infants, while 34% considered that half of them formula fed and half breastfed. This confirms that formula feeding is still perceived as the predominant method of feeding among mothers' peers in Ireland.

National Infant Feeding Survey 2008

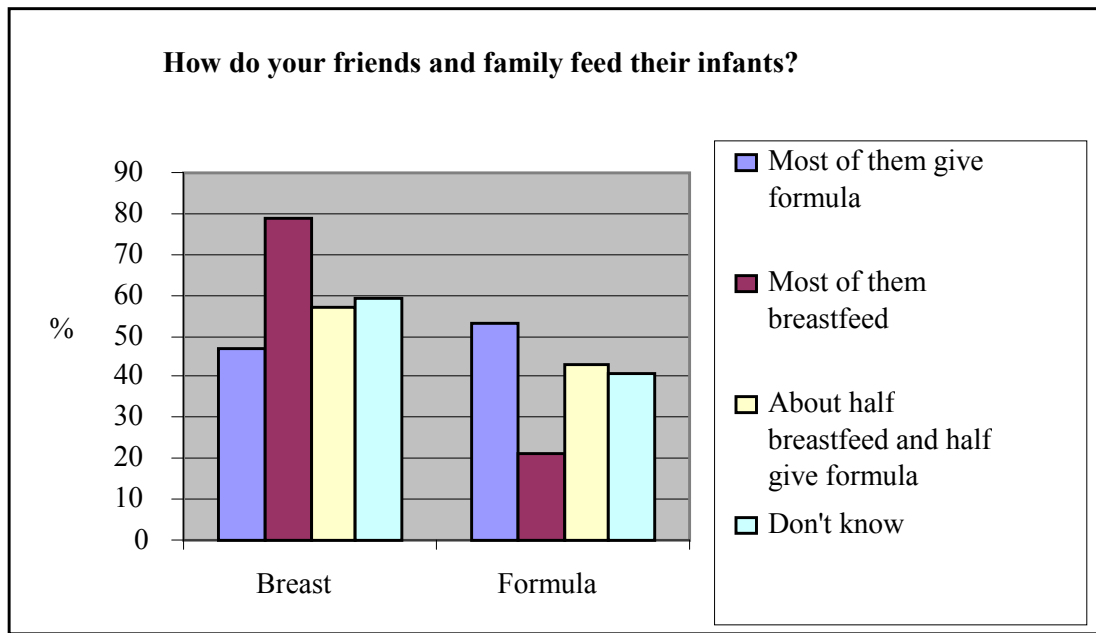
Table 11.1: How friends and family fed their children as infants

How have your friends and family fed their children when they were babies?		
	N	%
Most of them give formula milk	843	46.5
Most of them breastfeed	334	18.4
About half formula feed and half breastfeed	609	33.6
Don't know	28	1.5
Total	1,814	100
Missing=12		

A strong association was noted between how a mother fed at birth and the feeding choices of her friends and family ($\chi^2 = 96.56$, $df=3$, $p<0.0001$) (Table 11.2 and Figure 5). Those mothers who said that most of their friends breastfed their babies were more likely to breastfeed at birth (79%) than those whose friends and family used formula feed (47%). This suggests that peers are influential in a mother's choice of infant feeding method.

Table 11.2: How mothers' friends and family fed their children when they were babies by the kind of food babies received for their first feed after birth.

		What kind of food did your baby receive for his/her first feed after birth?				
		Breast	%	Formula	%	Total
How have your friends and family fed their children when they were babies?	Most of them give formula milk	384	46.9	435	53.1	819
	Most of them breastfeed	252	79.0	67	21.0	319
	About half formula feed and half breastfeed	342	57.1	257	42.9	599
	Don't know	16	59.3	11	40.7	27
	Total	994	56.35	770	43.65	1,764

Figure 5: Feeding at birth by how friends and family feed their infants.

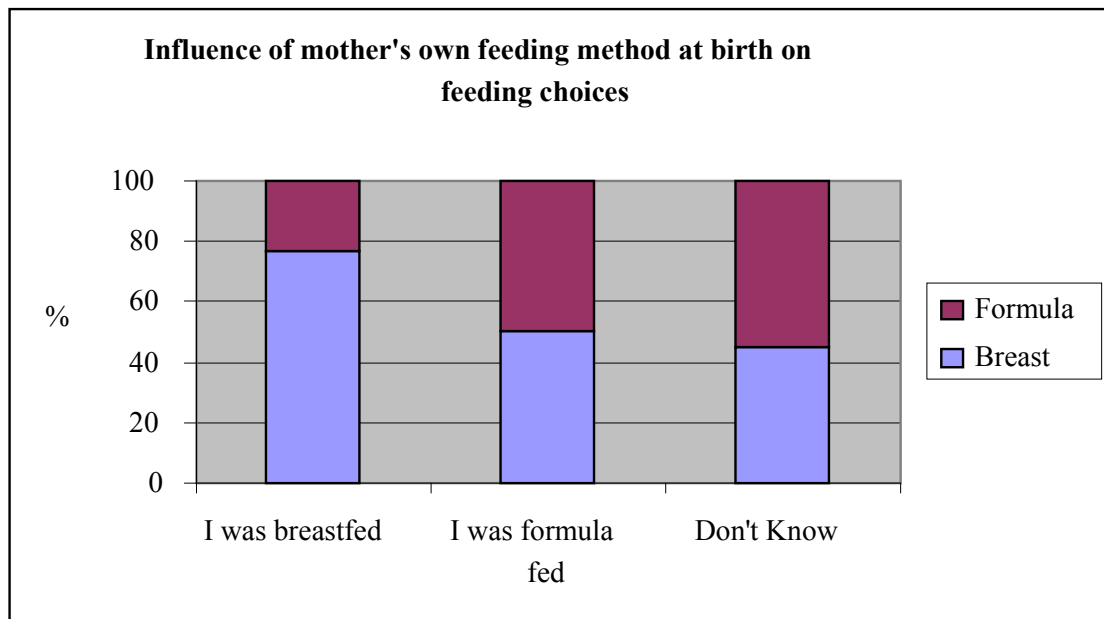
6.7.2 *How mothers were fed themselves*

Mothers were also asked how they were fed themselves when they were newborn and the majority (72%) reported that they had been formula fed (Table 11.3). Figure 6 shows that the mothers who were breastfed as infants were more likely to initiate breastfeeding at birth (76%) than those who were formula fed (50%) or did not know how they were fed (45%) ($\chi^2 = 96.27$, $df=2$, $p<0.0001$).

Table 11.3: How mothers were fed themselves as infants

How were you fed when you were a newborn baby?		
	N	%
Breastfed	441	24.4
Formula fed	1,293	71.6
Don't Know	73	4.0
Total	1,807	100

Figure 6: How the mother was fed herself by feeding method at birth



6.7.3 *Ante-natal care*

Combined antenatal care between general practitioner and hospital was the predominant type of care reported (46%, n=834) and a further 32% (n=572) had private antenatal care from a consultant obstetrician. Women who received antenatal care of any type were more likely to breastfeed than formula feed at birth, with 60% (n=55) of those women who reported not having received antenatal care formula feeding at birth compared to 40% (n=37) who breastfed. This result should be interpreted with caution as the proportion of women who reported having no antenatal care (5%, n=92) appears considerably greater than we would have expected from the ESRI data (0.4% for the 2005 figures).

6.8 *Factors relating to birth, postnatal care and support*

6.8.1 *Type of birth*

Normal birth was listed by 968 (54%) of all mothers sampled (Table 12.1). Mothers who had a caesarean section or vacuum delivery were more likely to discontinue breastfeeding by discharge (n=50, 14%) than those who had a normal or forceps

delivery (n=45, 8%) ($\chi^2 = 22.15$, $df=6$, $p<0.0001$) (Table 12.2). Among breastfeeding mothers who had a normal delivery, 84% (n=462) were still breastfeeding at discharge while only 73% (n=93) of those having a vacuum delivery and 72% (n=175) of caesarean section mothers reported breastfeeding at this time.

Table 12.1: Type of birth among sample

Type of delivery	N	%
Normal	968	54.0
Forceps	77	4.3
Vacuum	224	12.5
Caesarean section	522	29.1
Total	1,791	100
Missing=35		

Table 12.2: Type of birth and breastfeeding at discharge by among mothers who breastfed at birth

Type of birth	Breast		Switched to Formula		Combination		Total
	N	%	N	%	N	%	N
Normal	462	84.3	41	7.5	37	6.8	548
Forceps	36	72.0	4	8.0	9	18.0	50
Vacuum	93	72.7	18	14.2	11	8.6	128
Caesarean section	175	72.3	32	13.2	27	11.2	242
Total	766		95		84		968

*Mothers who were expressing breast milk or were not feeding are not included due to small numbers

6.8.2 *Type of pain relief*

Epidural analgesia was the method most commonly reported for pain relief during labour (59%, n=1023) followed by Entonox, which was used by 51% of mothers (n=874). Type of analgesia was not found to be a statistically significant factor for type of feeding at discharge or by 3-4 months, although more mothers who discontinued by discharge were found to have had an epidural (64% compared to 59% who continued any breastfeeding) or pethidine (22% compared to 19%) than those who continued any breastfeeding.

6.8.3 *Birth weight*

The mean birth weight for the infants in this sample was 3.4 Kg (Table 12.3). Breastfeeding was the predominant method of feeding at birth and discharge for all of the categories of birth weight, except for those infants that were smaller than 3 Kg at birth. These infants were more likely to be formula fed at birth and discharge from hospital ($\chi^2 = 15.88$, $df=3$, $p<0.0001$).

Table 12.3: Weight of infants at birth

Birth weight of infants		
	N	%
Less than 3 Kg	248	13.7
3Kg to 3.5 Kg	614	33.9
3.5Kg to 4 Kg	602	33.2
Greater than 4 Kg	348	19.2
Total	1,812	100

Table 12.4: Type of first feed by the weight of infants at birth

		What kind of food did your baby receive for his/her first feed after birth?				
		Breast	%	Formula	%	Total
Weight of baby	Less than 3 Kg	106	44.9	130	55.1	236
	3 Kg - 3.5 Kg	345	57.5	255	42.5	600
	3.5 Kg - 4 Kg	336	57.0	253	42.9	589
	Greater than 4 Kg	206	60.9	132	39.1	338
Total		993		770		1,763
Missing=63						

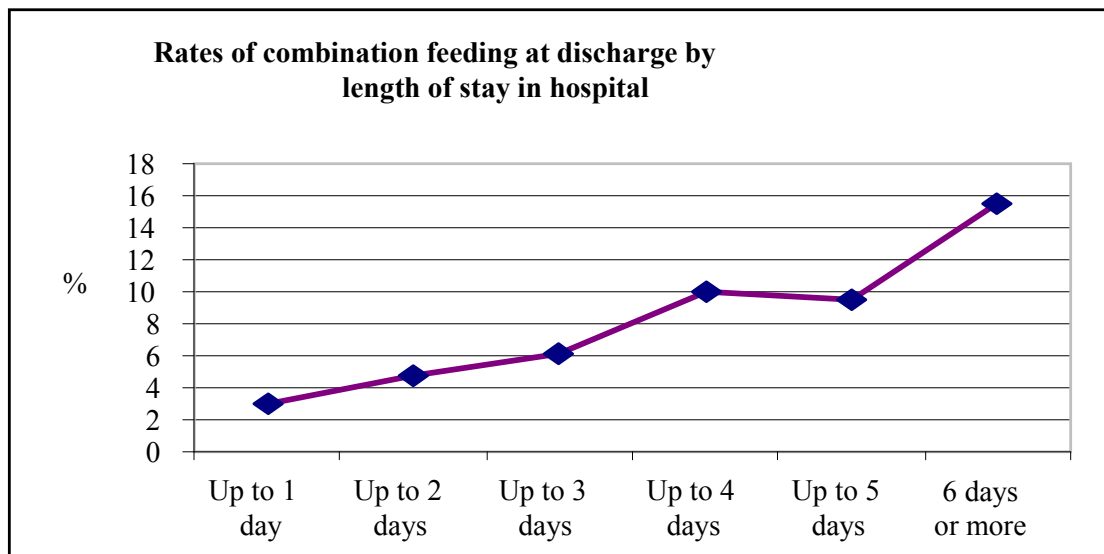
6.8.4 Skin to skin contact

Skin to skin contact in the first hour after birth was reported by 79% (n=1431) of mothers. Those mothers who had skin to skin contact after birth were more likely to breastfeed than formula feed for the first feed (85% of breastfeeding mothers had skin to skin contact compared to 72% of formula feeding mothers) ($\chi^2 = 40.49$, $df = 2$, $p < 0.0001$). Skin to skin contact was not found to influence feeding at discharge from hospital.

6.8.5 Length of stay

The average length of stay in hospital was three days with 62% of women who gave birth in hospital (n=1,107) going home on or before this point. Length of stay was not found to be a significant factor on whether the mother had continued or discontinued breastfeeding by the time she went home from hospital. However, the longer the breastfeeding mother stayed in hospital, the more likely she was to be combination feeding at discharge (Figure 7).

Figure 7: Rates of combination feeding by day of discharge from hospital



6.8.6 Advertising

When asked whether they had ever seen an advertisement for infant formula, 93% (n=1676) of mothers reported that they had, while only 59% (n=1060) reported ever seeing an advertisement for breastfeeding. No statistical differences were noted relating to type of infant feeding and whether a woman reported having seen an advertisement for breastfeeding or for formula feeding.

6.8.7 Support and assistance with infant feeding

Table 12.4 shows that mothers felt that their own experience was the most important factor in helping them in relation to infant feeding, followed by health professionals. Peer or support groups were reported to have the least impact.

Table 12.5: Source of the most helpful information all mothers received about feeding since their baby was born.

Thinking about the most helpful information you received about feeding since your baby was born. Who or what had the most impact on you?		
	N	%
Own experience	1,078	59.7
Health professionals (midwife / nurse / G.P)	705	39.0
Friends / other mothers	584	32.3
Your mother	469	26.0
Sister	268	14.8
Books /magazines / TV	237	13.1
Partner	217	12.0
Others	100	5.5
Other relatives	95	5.3
Voluntary organisations (Cuidiú, La Leche League)	87	4.8
Mother-in-law	80	4.4
Peer or support groups	69	3.8

For those mothers who reported ‘others’, the internet was the source most commonly documented (n=52). Of these, 24 mothers specifically referred to the website www.rollercoaster.ie.

Information on how to get help with infant feeding was provided to 76% (n=1,372) of mothers in the postnatal period. Those mothers who were breastfeeding at birth or discharge from hospital were more likely to report having been given this information than those who were formula feeding (88% of breastfeeding mothers compared to 58% of formula feeding mothers).

Table 12.6 highlights that the majority of women felt that their partner was a great help to them at home in the early days of infant feeding. A quarter of mothers also had their mother or relative staying to assist them during this time.

Table 12.6: Support during the early postnatal period

In the early days of feeding your baby, did you have any help at home with you?		
	N	%
My partner was a great help	1,351	74.6
My mother / relative came to stay	462	25.5
My partner had to return to work so I did not get as much help as I would have liked	288	15.9
Others	132	7.3
I didn't feel that I needed any help	128	7.1
I live with my family who helped out	62	3.4
I employed someone to help me at home in the early days	27	1.5
I live alone but had a lot of help	26	1.4
I live alone and did not get as much help as I would have liked	10	0.6
I lived with my family but did not get as much help as I would have liked	2	0.1
I am able to use my private health insurance to pay someone to help me	2	0.1

Among mothers who were breastfeeding from birth, 81% (n=754) were shown how to put the baby to the breast during the first few days. This assistance was provided predominantly by a midwife (n=597, 79%), nurse (n=261, 35%) or midwifery student (n=46, 6%). The maternity care assistant also provided help to 5% of mothers. Assistance with how to put the baby to the breast was not found to be an important factor in helping mothers to continue breastfeeding until discharge, as 94% of those who discontinued, compared to 81% of all mothers who started breastfeeding, had been given assistance to put their baby to the breast.

Only 3% (n=25) of mothers reported that someone stayed with them for a whole feed, while 58% (n=431) reported that someone returned to check on them during the feed and 35% (n=262) of mothers reported that they had assistance for the beginning of a feed only. Of those who received assistance with breastfeeding during the first few

days, 13% (n=95) found this assistance “not very useful” and 11 mothers (1.5%) reported that the assistance given was “not useful at all”.

In the early days of feeding, 313 breastfeeding mothers (36%) gave their baby other fluids and many (n=209) of these did so because they were advised to, while the rest (n=104) wanted to give their baby fluids (formula or water) other than breast milk. Rooming in was practised by 83% (n=773) of breastfeeding mothers, with 16% (n=152) reporting that their baby did not stay beside them at all times in hospital.

6.8.8 Support services for breastfeeding mothers

Those mothers who were breastfeeding at birth were asked about knowledge of, access to and satisfaction with community breastfeeding support services (Table 12.7). The most common support service provided to mothers was contact details for the public health nurse (n=589, 65%). Less than half of the mothers who breastfed initially (n=431, 48%) were given any information about a community breastfeeding support group.

Table 12.7: Provision of information on breastfeeding support services

Were you given any information about any of the following?		
	N	%
Contact details for Public Health Nurse	589	65.1
Community breastfeeding support group	431	47.6
La Leche League	378	41.8
Cuidiú (Irish Childbirth Trust)	163	18.0
Community mothers programme	132	14.6
I was not given any information about support services	123	13.6
Others	43	4.8
Association of Lactation Consultants in Ireland	28	3.1
Private lactation consultant	19	2.1
Total	905	100

National Infant Feeding Survey 2008

Table 12.8 shows that many women did not seek any support services for breastfeeding and among those that did seek such support most found these services with ease. It is worth noting that nine (1%) mothers were unable to access any services and a further 33 (4%) found it difficult or very difficult to access support services.

Table 12.8: Ease of finding breastfeeding support services

How easy was it for you to find breastfeeding support services?		
	N	%
Did not seek any support services	539	58.9
Very easy	174	19.0
Easy	84	9.2
Fairly easy	76	8.3
Difficult	27	3.0
Very difficult	6	0.7
I was unable to access support services	9	1.0
Total	915	100

The public health nurse was the service that mothers most commonly cited as the support service accessed. This was followed in frequency by the community breastfeeding support group and La Leche League (Table 12.9).

National Infant Feeding Survey 2008

Table 12.9: Support services utilised

Which of the following breastfeeding support services did you use?		
	N	%
I did not use any support services	558	62.3
Public Health Nurse	166	18.5
Community breastfeeding support group	110	12.3
La Leche League	74	8.3
Hospital breastfeeding support group	42	4.7
Community mothers programme	23	2.6
Private lactation consultant	11	1.2
Cuidiú (Irish Childbirth Trust)	10	1.1
Association of Lactation Consultants in Ireland	3	0.3
Others	29	3.2
Total	895	100

Table 12.10 shows that of those mothers who accessed breastfeeding support services 36% (n=114) indicated that the service was excellent and a further 39% (n=125) were very happy with services. Eighteen mothers (6%) said that the service was poor and two mothers thought that the service was very poor.

Table 12.10: Satisfaction with support services

If you accessed any breastfeeding support services, please tell us about how helpful these services were		
	N	%
Excellent	114	35.8
Very good	125	39.3
Satisfactory	59	18.6
Poor	18	5.7
Very poor	2	0.1
Total	318	100

6.9 Use of pacifiers, food other than breast milk, and weaning practices

6.9.1 Use of pacifiers

Mothers were asked if they gave their baby a dummy or soother, and 64% (n=1176) of infants were using one at 3-4 months. Of these, 57% (n=684) of infants were given a soother before they were two weeks old and 70% of infants, a further 13%, had a soother by 3 weeks (n=833). Mothers who were formula feeding at discharge were more likely to give their baby a soother than those who were breastfeeding (75% of those who were formula feeding at discharge compared to 55% who were breastfeeding then). Use of a soother is also associated with discontinuation of breastfeeding by 3-4 months (74%, (n=342) of those switching to fully formula feeding compared to 37% (n=130) exclusively breastfeeding). Mothers who were partially breastfeeding at 3-4 months were more likely to give their baby a soother than those 130 women who were exclusively breastfeeding (60%, n=140 of 'breast milk and formula' fed infants, compared to 51% n=21 of 'breast milk and other fluids' fed infants).

6.9.2 Timing of introduction of formula

Table 13.1 shows that formula was introduced on the first postnatal day to 53% of breastfed infants among the 110 mothers who answered the relevant question.

National Infant Feeding Survey 2008

Table 13.1 Time when breastfeeding mothers first introduced formula

How old was your baby when they were first given infant formula?		
	N	%
1 day	58	52.7
2 days	10	9.1
4-7 days	12	10.9
8-14 days	4	3.6
15-21 days	5	4.5
22-28 days	3	2.7
29-35 days	2	1.8
36-42 days	4	3.6
43-49 days	2	1.8
50 days+	10	9.1
Total	110	100

The large number of women who did not answer this question means that it is difficult to estimate the true prevalence of this practice.

Two hundred and nineteen breastfeeding mothers (26%) reported that they had never given their baby infant formula by 3-4 months old (Table 13.2). A further 9% (n=76) had given formula milk only once or twice since birth.

Table 13.2 Frequency of giving formula milk by breastfeeding mothers since birth

Since your baby was born, what best describes how often you have given him or her infant formula?		
	N	%
Never given infant formula	219	25.9
Almost all feeds	261	30.9
About half of all feeds	63	7.4
One or two feeds a day	108	12.8
A few feeds a week, not every day	58	6.9
A few feeds since birth, not every week	61	7.2
Once or twice since birth	76	9.0
Total	846	100

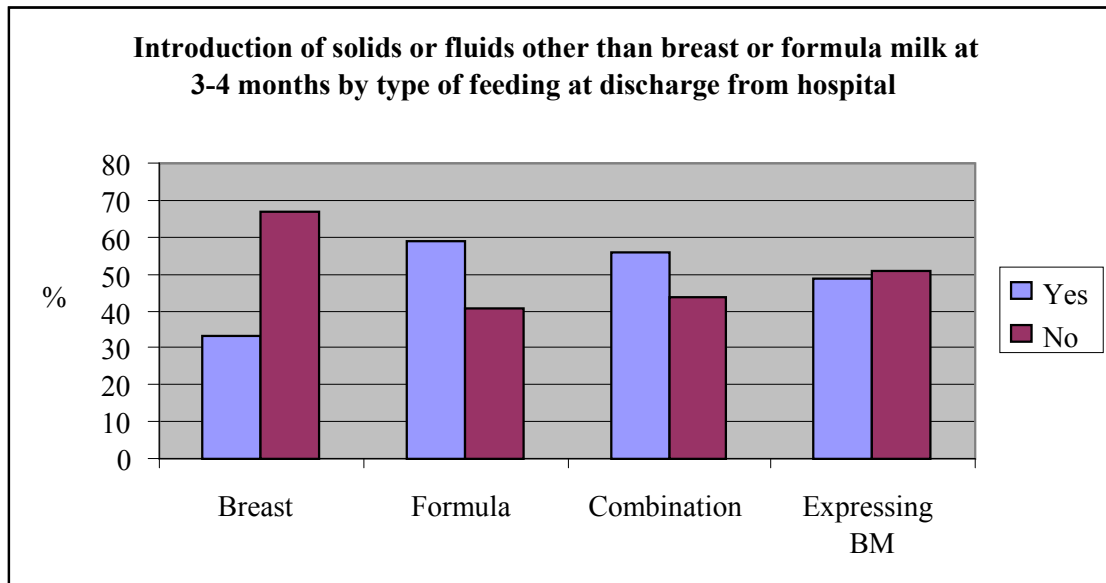
6.9.3 Introduction of food other than breast milk or formula

When asked if they give their baby anything other than breast or formula milk, for example water, baby rice, fruit or juices, 821 women (46%) replied that they did (Table 13.3). Women who formula fed (n=437, 58%) or who were both breast and bottle-feeding (n=69, 56%) were more likely to give additional foods than those who exclusively breastfed (n=285, 32 %) or gave their babies expressed breast milk (n=18, 48%) (Figure 8).

Table 13.3: Use of food other than breast milk or formula among all mothers

Do you give your baby anything other than breast or formula milk, for example, water, baby rice, fruit or juices?		
	N	%
Yes	821	45.7
No	974	54.3
Total	1,795	100
Missing=31		

Figure 8: Type of feeding at discharge and whether the mother has introduced solids or fluids other than breast milk or formula at Phase 2.



Introduction of food or fluids into the infant's diet by Phase 2 was more common among mothers from lower socio-economic categories ($\chi^2 = 39.61$, $df=7$, $p<0.0001$). The socio-economic categories of the sample have been described previously in Table 5.5. While 51% of the 136 mothers from 'Semi-skilled' occupations had given their infant something other than breast or formula milk only 33% of 119 mothers from 'Professional workers' occupations had done so at Phase 2 (Table 13.4).

National Infant Feeding Survey 2008

Table 13.4: Proportion of mothers who give their baby something other than breast or formula milk by social classification of the mother

Do you give your baby something other than breast or formula milk?			
		Yes	No
<i>CSO Social Classification</i>	n	%	%
Professional workers	119	33	67
Managerial and technical	584	37	63
Non-manual	587	51	49
Skilled manual	221	52	48
Semi-skilled	136	51	49
Unskilled	1	0	100
All others gainfully occupied and unknown	39	41	59
Student	9	67	33
Unemployed	4	50	50
Total	1,700		
Missing=126			

In line with social classification of the mother, introduction of something other than breast or formula by Phase 2 was also most common among those mothers with the lowest educational achievements (Table 13.5).

Table 13.5: Proportion of mothers who give their baby something other than breast or formula milk by educational attainment of the mother

Do you give your baby anything other than breast or formula milk?			
		Yes	No
<i>Mothers highest level of education</i>	n	%	%
No formal education	5	80	20
Primary school education	16	69	31
Lower secondary	125	66	34
Upper secondary	285	59	41
Technical or Vocational qualification	133	59	41
Both upper secondary and technical and vocational qualification	111	56	44
Third level non degree	367	43	57
Primary degree	202	37	63
Professional qualification	68	44	56
Both degree and professional qualification	152	34	66
Postgraduate cert or diploma	161	33	67
Postgraduate degree	139	23	77
Doctorate	10	20	80
Total	1,774		
Missing=52			

6.10 Challenges with infant feeding and infant health

6.10.1 Admission to special or intensive care baby unit

Admission to special or intensive care baby unit after birth occurred for 15% (n=296) of infants. Jaundice (n=66, 28%) and prematurity (n=64, 28%) were the most commonly reported reasons for admission (Table 14.1). Mothers whose infants were

admitted to special or intensive care were in general less likely to be breastfeeding at discharge from hospital (40%, n=95) than those who were not admitted (52%, n=686) but were more likely to be expressing breast milk (10% compared to 1%) or combination feeding (13% compared to 6%) ($\chi^2 = 80.02$, $df=4$, $p<0.0001$). This was still apparent at 3-4 months with mothers whose babies had been admitted to special or intensive care after birth and were breastfed being more likely to have changed to full formula feeding than those who were not (47%, n=75 compared to 42%, n=335).

Table 14.1: The most common reasons for admission to special or intensive care baby unit

Which of the following best describe the reason why your baby was admitted		
	N	%
Others	69	29.6
Jaundice	66	28.3
Premature	64	27.5
Breathing difficulty	36	15.5
Low blood sugars	34	14.6
Meconium at the delivery	16	6.9
Unwell	11	4.7

The most frequent response given for the ‘others’ category related to suspected sepsis (n=28) or fetal distress during labour (n=15) and delivery. Admission to special or intensive care baby unit after birth was not found to affect discontinuation of breastfeeding by discharge from hospital or 3-4 months.

6.10.2 Problems encountered by infants

Table 14.2 shows that 41% (n=693) of mothers reported that their baby had not encountered any problems by Phase 2. The most common problem encountered by infants was colic or wind (33.5%, n= 566).

Table 14.2: Showing problems encountered by infants in the total sample by 3-4 months

Has your baby suffered from any of the following problems?		
	N	%
My baby has never been sick or had any problems	693	41.0
Colic or wind	566	33.5
Constipation	250	14.8
Others	183	10.8
Thrush	168	9.9
Sickness or vomiting	158	9.4
Diarrhoea	142	8.4
Chest infection	84	5.0
Not gaining enough weight	67	4.0
Ear infection	16	0.9
Urinary tract infection	16	0.9
Gaining too much weight	14	0.8
Total	1,689	100

“Others” included a variety of responses, but by far the most common problem reported here related to reflux, with 45 mothers reporting this as a problem for their infants. A further 26 infants had an eye infection and 19 had been diagnosed with eczema.

National Infant Feeding Survey 2008

Table 14.3: Problems encountered by infants by feeding method at discharge from hospital

Problems encountered	Breast	%	Formula	%	Comb	%	Express/ Not Feeding	%	Total
Baby has never been sick	370	33.3	265	27.2	45	24.5	7	11.9	688
Sickness or vomiting	69	6.2	69	7.1	12	6.5	4	6.8	154
Constipation	101	9.1	114	11.7	24	13.0	9	15.3	249
Diarrhoea	46	4.1	81	8.3	11	6.0	2	3.4	140
Chest infection	43	3.9	35	5.2	6	3.3	0	0	84
Ear infection	7	0.6	7	0.7	2	1.1	0	0	16
Urinary tract infection	7	0.6	6	0.9	2	1.1	1	1.7	16
Colic or wind	255	23.0	231	23.7	52	28.4	19	32.2	557
Thrush	78	7.0	69	7.1	11	6.0	6	10.2	164
Not gaining enough weight	46	4.1	11	1.1	6	3.3	4	6.8	67
Gaining too much weight	5	0.5	7	0.7	2	1.1	0	0	14
Others	84	7.6	79	8.1	11	6.0	7	11.9	181
Total	1,111	100	974	100	184	100	59	100	2,330

* Infants not feeding at discharge are not included as they account for only two of the infants for whom a response was provided for in this question. Some mothers ticked more than one option.

Table 14.3 highlights that mothers who were breastfeeding at discharge from hospital were more likely to report that their infants had never been sick than those who were formula feeding, combination feeding or expressing milk. Infants who were breastfeeding were more likely to have been reported as not gaining enough weight and were less likely to have encountered any other problems than those who were formula feeding at discharge.

National Infant Feeding Survey 2008

Many of the infants reported in Table 14.3 may not have continued breastfeeding for a long period following discharge. Table 14.4 therefore presents problems encountered by infants based on type of feeding at 3-4 months, restricted to those who were breastfeeding at birth.

Table 14.4: Problems encountered by infants based on feeding at 3-4 months for those who were breastfeeding at birth

Problems encountered	Only breast milk	%	Comb of breast milk water or juices	%	Only infant formula	%	Comb of breast and infant formula	%	Total
Baby has never been sick	166	38.8	14	25.5	156	24.4	92	31.0	428
Sickness or vomiting	27	6.3	3	5.5	48	7.5	16	5.4	94
Constipation	24	5.6	10	18.2	83	13.0	28	9.4	145
Diarrhoea	11	2.6	2	3.6	46	7.2	9	3.0	68
Chest infection	15	3.5	0	0	23	3.6	13	4.4	51
Ear infection	3	0.7	1	1.8	4	0.6	1	0.3	9
Urinary tract infection	1	0.2	2	3.6	6	0.9	3	1.0	12
Colic or wind	105	24.8	15	27.3	149	23.3	73	24.6	342
Thrush	24	5.6	5	9.1	55	8.6	15	5.1	99
Not gaining enough weight	7	1.6	2	3.6	24	3.8	23	7.7	56
Gaining too much weight	1	0.2	0	0	2	0.3	4	1.3	7
Others	44	10.3	1	1.8	43	6.7	20	6.7	108
Total	428	100	55	100	639	100	297	100	1,319

* Some mothers ticked more than one option

In this instance, those infants whose mothers who were combination or had switched to fully formula feeding by 3-4 months were more likely to report that their infants had been sick than those who were exclusively breastfeeding. Colic or wind is marginally more prevalent among breastfeeding and combination mothers than formula feeding mothers.

6.10.3 Challenges related to breastfeeding

When asked if there were any problems breastfeeding their baby in the early days, 54% (n=497) of breastfeeding mothers responded that they had encountered a problem. Table 14.5 provides a summary of where mothers received help with feeding challenges in the early days following birth.

Table 14.5: Where breastfeeding mothers received help with feeding challenges in the early days following birth

Did anyone give you help with these problems in the early days?		
	N	%
Midwife helped me	234	28.1
Nurse helped me	144	17.3
Lactation consultant or dedicated breastfeeding midwife in hospital helped me	129	15.5
Public Health Nurse helped me	110	13.2
Friend / relative helped me	69	8.3
Other	40	4.8
Doctor / GP helped me	23	2.8
Member of local support group helped me	21	2.5
Private lactation consultant helped me	5	0.6

When mothers were asked to identify if they had any of the following as a result of breastfeeding some mothers provided more than one answer (Table 14.6).

Table 14.6: Problems encountered as a result of breastfeeding

Problems encountered as a result of breastfeeding		
	N	%
Nipple pain	459	50.7
Blocked ducts	159	17.6
Mastitis	107	11.8
Other	72	8.0
Thrush	53	5.9
None of the above	338	37.3
Total	905	100

Table 12.6 shows that nipple pain was the predominant problem encountered (n=459, 50.7%) with a further 32 mothers citing cracked nipples in the other responses. Engorgement was reported by 18 mothers who listed 'other' breastfeeding problems.

Having encountered one of these problems was not a significant factor for discontinuation of breastfeeding at 3-4 months as those mothers who encountered no problems were just as likely (and in some instances, more likely) to have switched to full formula feeding (Table 14.7).

Table 14.7: Problems encountered, if any, and type of feeding at 3-4 months

Problems encountered	Only breast milk	%	Comb of breast milk water or juices	%	Only infant formula	%	Comb of breast and infant formula	%	Total
Mastitis	38	32.2	1	0.8	55	46.6	24	20.3	118
Blocked ducts	75	40.8	4	2.2	69	37.5	36	19.6	184
Thrush	18	28.6	4	6.3	25	39.7	16	25.4	63
Nipple pain	179	33.6	18	3.4	220	41.3	116	21.8	533
Others	27	32.9	3	3.7	40	48.8	12	14.6	82
No problems	107	27.0	18	4.5	184	46.3	88	22.2	397

6.10.4 Problems related to breastfeeding in the early days

Women were asked about the problems they encountered in the early days of breastfeeding. Of the 1,022 women who breastfed their baby, 60% (n=612) of respondents identified that they had had at least one problem with 48% (n=296) experiencing at least two problems.

The problems encountered by women are summarised in Table 14.8 and fell into ten main categories.

Table 14.8: Problems reported related to early breastfeeding difficulties

The problems you experienced breastfeeding your baby in the early days (n=612)		
Categories of problems	N	%
Difficulty latching baby on	230	36.6
Nipple problems	177	28.9
Milk supply	92	15
Baby's health	79	12.9
Baby's feeding pattern	79	12.9
Mother's wellbeing	43	7
Hungry baby	42	6.9
Breast problems	39	6.4
Preterm /Ill baby	37	6.1
Breast / Nipple infection	35	5.7

Difficulties getting baby to latch on:

The most frequent problem encountered by women in the early days of breastfeeding was difficulties getting their baby latched on to the breast. Two hundred and thirty (37.6%) found this difficult with a number of women putting forward various reasons as to why it was: flat or inverted nipples (17), baby not interested / refused / 'lazy' (13), breast engorgement (2), would only latch on to one breast (11), big breasts (3), baby had a problem such as cleft palate, fractured collar bone, mucousy/stuffy nose, small mouth (10).

Difficulty getting the baby to latch on was also associated with cracked, sore/painful and bleeding nipples for 24.3% (n=56) of women. Less frequently, it was associated with breast engorgement (n=15, 6.5%) and problems with milk supply (n=11, 4.8%).

Nipple problems:

Women described encountering various problems with their nipples (n=177, 28.9%) as they breastfed their babies. The majority of women (n=162, 91.6%) who had problems with their nipples described developing sore/painful nipples with 62 women

stating that they were very sore/painful. Four women referred to their nipples as being 'tender'.

The next most common problem that women described was 'cracked nipples' (n=76, 42.9%), with the majority also stating that they were sore/painful (n=43, 56.6%).

Bleeding nipples was a problem for 37 women (20.9% who encountered problems). Of these women, 12 women stated that they were sore/painful as well (but did not mention them being cracked), five stated they were cracked (but did not mention them being sore), with ten women stating that their nipples had cracked, were sore and painful, and bled. The following responses illustrate how women described these problems and the impact it had:

"Cracked, sore, bleeding nipples"

"Just sore, but eased after a few days"

"V sore to feed & nipples bled & nearly stopped breastfeeding cause it was so painful. I was crying with the pain on some feeds, Must have been mad to put up with that pain"

Breast problems:

A number of women experienced breast problems (n=39, 6.4%), which they described as engorgement (n=28, 71.8%) or breast soreness (n=11, 28.2%). As stated already, this was associated with difficulties latching the baby on for 15 women (38.5%) and sore/cracked nipples for 16 women (41%).

Baby ill or preterm:

Thirty seven women (6.1%) referred to difficulties trying to feed their preterm baby (n=16, 43.2%), a baby in NICU (n=16, 43.2%), a small baby (n=2, 5.4%), or a baby being tube fed (n=2, 5.4%).

Milk supply:

Ninety two (15%) women described various problems with their milk supply. Almost half these women (n=44, 47.8%) stated that they did not have “enough milk” or had a “reduced supply”, with a further 26 women (n=25, 28.3%) stating that their baby “didn’t get enough milk”. When both these categories are combined, the majority of women (n=69, 75%) referring to problems with their milk supply, perceived that they did not have enough milk for their baby. Twenty five women (27.2%) perceived their milk to be “slow in coming in”. Two women referred to having a delay in ‘letdown’, another two referring to fast ‘letdown’.

Mother’s wellbeing:

Issues relating to their own health and wellbeing were identified by 43 (7%) women as leading or contributing to problems breastfeeding their baby in the early days postnatally. Seventeen of these women (39.5%) identified having a caesarean birth as contributing to breastfeeding problems, in particular problems with their milk supply (n=9, 20.9%) and difficulties latching baby on (n=6, 14%).

Sixteen of these women described problems with their health (37.2%) such as being ill (5), anaemia / blood transfusion (5), infection (4), taking medication (2) and a third degree tear as posing difficulties.

Women also stated that exhaustion, tiredness, and lack of sleep were problems for them while breastfeeding in the early days (n=15, 34.9% of women who reported problems). As one woman wrote: “I was wrecked and they didn’t take the baby at any stage so really lacked sleep in the days after the birth.”

Breast / nipple infection:

Thirty five women (5.7%) stated that they had problems directly related to their breasts and/or nipples. The commonest problem experienced was mastitis (n=21, 60%), with two women going on to developing an abscess. Eight women (22.9%) developed thrush and six women (17.1%) reported having a blocked duct. For 15 women (42.9%) these problems were also associated with sore/cracked/bleeding nipples.

Baby's feeding patterns:

Some women described behaviours that their babies displayed as being problematic in relation to breastfeeding (n=79, 12.9%). These behaviours included: would not/refused to suckle (n=25, 31.7%), sleepy/won't stay awake (n=24, 30.4%), constantly feeding (n=18, 22.8%), unsettled/crying (n=15, 19%), long feeds/slow (n=12, 15.2%), preference for one breast (n=2, 2.5%), and using the breast as comforter (n=1, 1.3%). For example:

“Baby was latching on but not sucking resulting in her becoming lethargic and unable to feed. Expressing and cup feeding solved this”.

“She did not stay on long enough for full feed. She took lots of short feeds and fell asleep on my breast”.

“Baby started to refuse breast”.

These behaviours were also associated with difficulties latching baby (n=13, 16.5%), problems with milk supply (n=10, 12.7%) and sore/cracked nipples (n=8, 10.1%).

A hungry baby:

Forty two women (6.9%) women described their baby as being ‘very hungry’, feeding constantly, crying all the time, or unsettled and crying and wanting to feed all the time.

Baby's health:

Concerns about her baby's health were a problem for a number of mothers breastfeeding in the early days after birth (n=79, 12.9%). These problems were: jaundice (n=21, 26.6%), weight loss (n=21, 26.6%), low blood sugar (n=16, 20.3%), baby with reflux/wind (n=9, 11.4%), mucousy (n=4, 5.1%), dehydration (n=4, 5.1%), problems with tongue (n=3, 3.8%), TTN (Transient Tachynopea of the Newborn) (n=1, 1.3%), teeth (n=1, 1.3%), and lactose intolerance (n=1, 1.3%).

6.10.5 Feeding outside the home

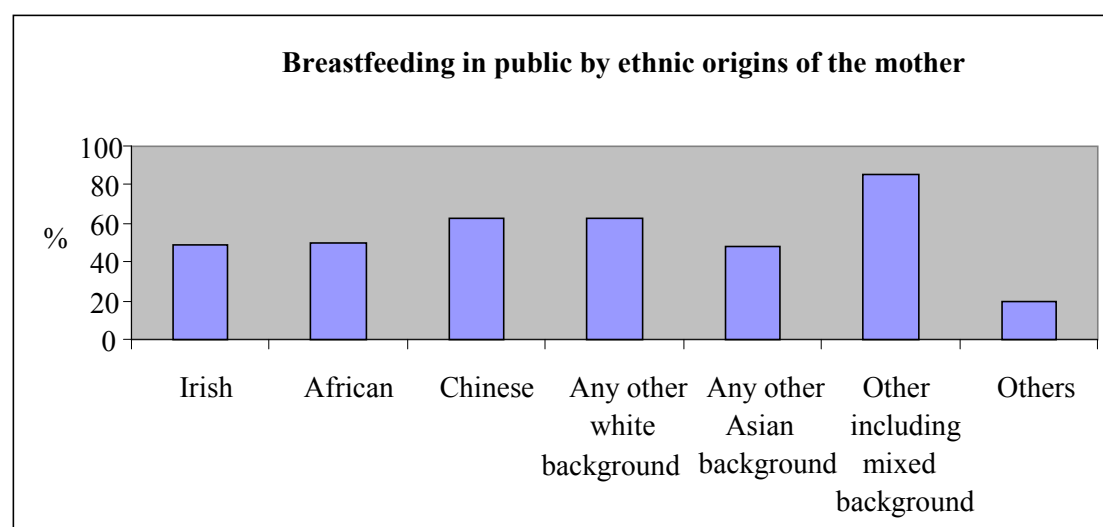
By 3-4 months just over half of those mothers (53%) who were breastfeeding initially had breastfed in public (Table 15.1).

Table 15.1: Prevalence of feeding in public among mothers breastfeeding initially

Since your baby was born, have you ever fed him/ her in a public place?		
	N	%
No - never fed in a public place	165	18.0
Yes - breastfed in public	487	53.1
Yes – bottle-fed infant formula in public	190	20.7
Yes – bottle-fed expressed breast milk in public	76	8.3
Total	918	100

When mothers are separated into their ethnic groups (Figure 9) it is apparent that women who are Irish are among those least likely to breastfeed in public with only 49% (n=412) having done so compared to 63% (n=100) of those from any other white background and 86% (n=6) of others including mixed backgrounds. Among the 23 Asian women in the survey who were breastfeeding, 48% (n=11) reported that they had breastfed in public, while 20% (n=3) of the 15 women who responded to “other” ethnic groups had breastfed in public.

Figure 9: Percentage of mother’s breastfeeding in public by ethnic group



Figures 10 and 11 also highlight that there was a degree of variation in the prevalence of public breastfeeding among the different demographic subgroups. Mothers breastfeeding initially who were classified as having achieved an educational award of primary degree or greater than a primary degree were more likely than their counterparts to breastfeed in public.

Figure 10: Percentage of mothers breastfeeding in public by highest education level achieved

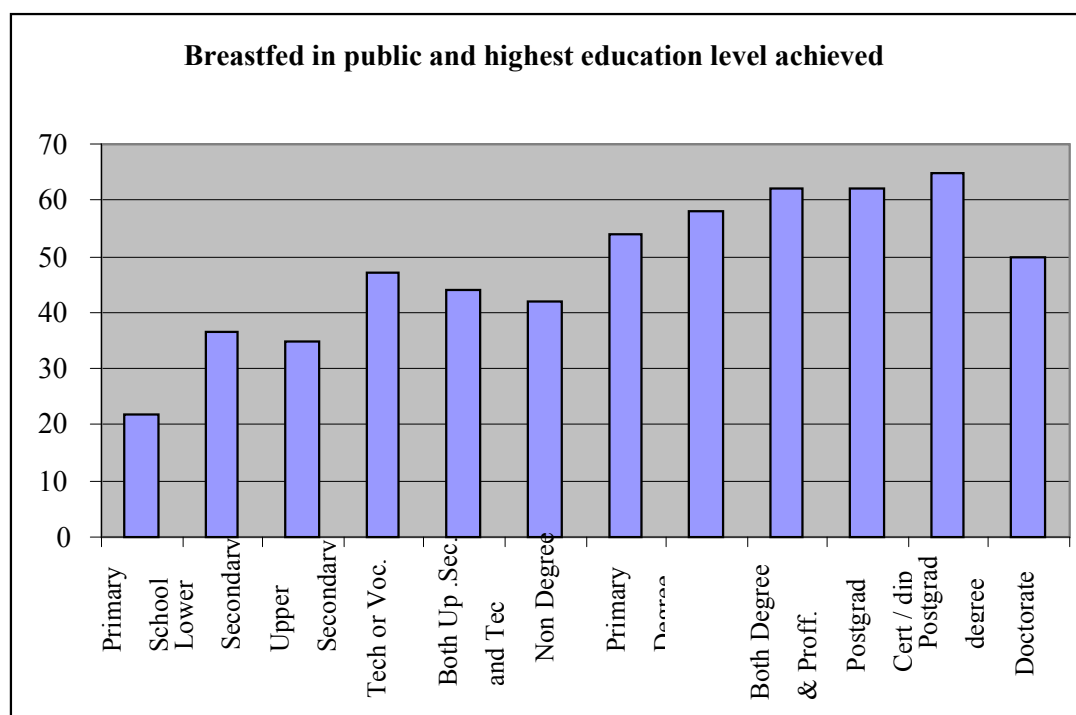
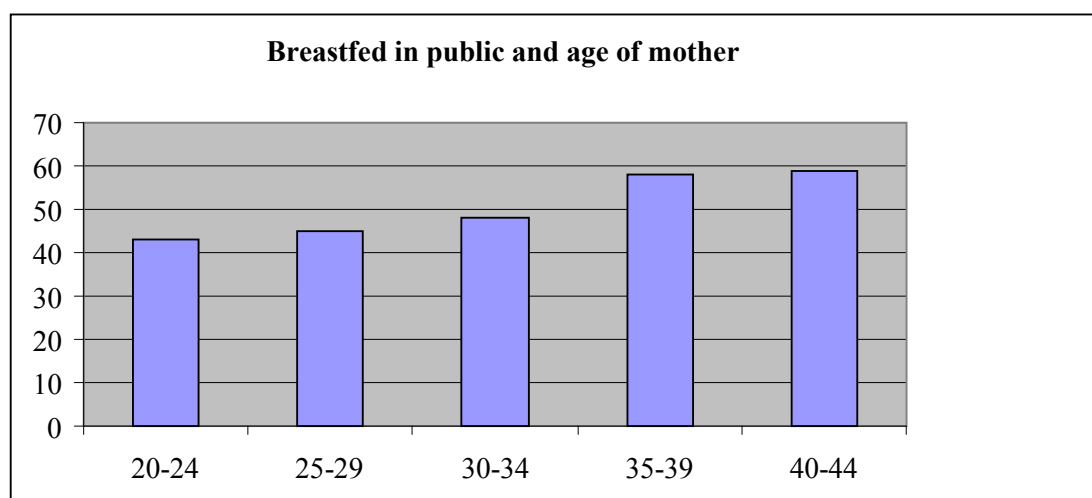


Table 15.1: Mothers breastfeeding in public by highest education level achieved

		Breastfed in public	
		N	%
What is the highest level of education (full-time or part-time) which you have completed to date?	No formal education	0	0
	Primary school education	2	22.2
	Lower secondary	15	36.5
	Upper secondary	42	35.0
	Technical or Vocational qualification	32	47.0
	Both upper secondary and technical or vocational qualification	24	44.4
	Third level non degree	91	41.7
	Primary degree	85	54.1
	Professional qualification	28	58.3
	Both degree and professional qualification	71	62.8
	Postgraduate cert or diploma	74	62.7
	Postgraduate degree	76	65.5
	Doctorate	4	50
Total		487	53.2

None of the three breastfeeding mothers under 20 years of age and only one of the three mothers over 45 (33%) breastfed in public. The older a mother was the more likely she was to have breastfed in public (Figure 11).

Figure 11: Percentage of mothers breastfeeding in public by age of mother**Table 15.2: Percentage of mothers breastfeeding in public by age of mother**

Percentage and number of mothers breastfeeding in public by age of mother		
Breastfed in public	N	%
16-19	0	0
20-24	21	42.9
25-29	94	45.4
30-34	193	47.8
35-39	161	58.3
40-44	35	59.3
>45	1	33.3
Total	487	53.1

6.10.6 Barriers to mothers breastfeeding their infants in public

Mothers were asked if they had access to facilities to breastfeed their infants in public, to investigate factors that may deter them from breastfeeding in public. One third of mothers who breastfed initially (n=298, 33%) had not encountered any problems finding somewhere to feed their baby in public. However, a greater proportion (n=351, 39%) said they had encountered problems finding somewhere to feed their infants and

11% (n=100) of mothers had been stopped or made to feel uncomfortable about breastfeeding in a public place.

Table 15.3 Problems finding somewhere to breastfeed in a public place

Have you ever had problems finding somewhere to breastfeed your baby in a public place?		
	N	%
Never tried	250	27.8
Yes	351	39.0
No	298	33.1
Total	899	100

Mothers were asked what factors had discouraged or put them off breastfeeding in public and 46% (n=370) cited lack of a suitable venue. A quarter (n=204, 25%) of mothers did not feel confident enough to breastfeed in public, 17% (n=136) were made to feel uncomfortable by other people and 16% (n=131) had concerns regarding hygiene standards. A third had never tried to breastfeed in public.

6.10.7 Medications and breastfeeding

Mothers who were breastfeeding at birth were asked if anyone had advised them not to breastfeed or to stop breastfeeding in order to take a prescribed medication since their baby was born. The majority of mothers (90%, n=824) reported that this had not happened to them. Of the 10% (n=88) who had been advised to stop to take a prescribed medication these mothers were unsurprisingly more likely to be fully formula feeding at 3-4 months (56% compared with 39% of mothers who had not been advised to stop to take a medication).

6.11 Preferred length of breastfeeding

6.11.1 Mothers' views of breastfeeding duration

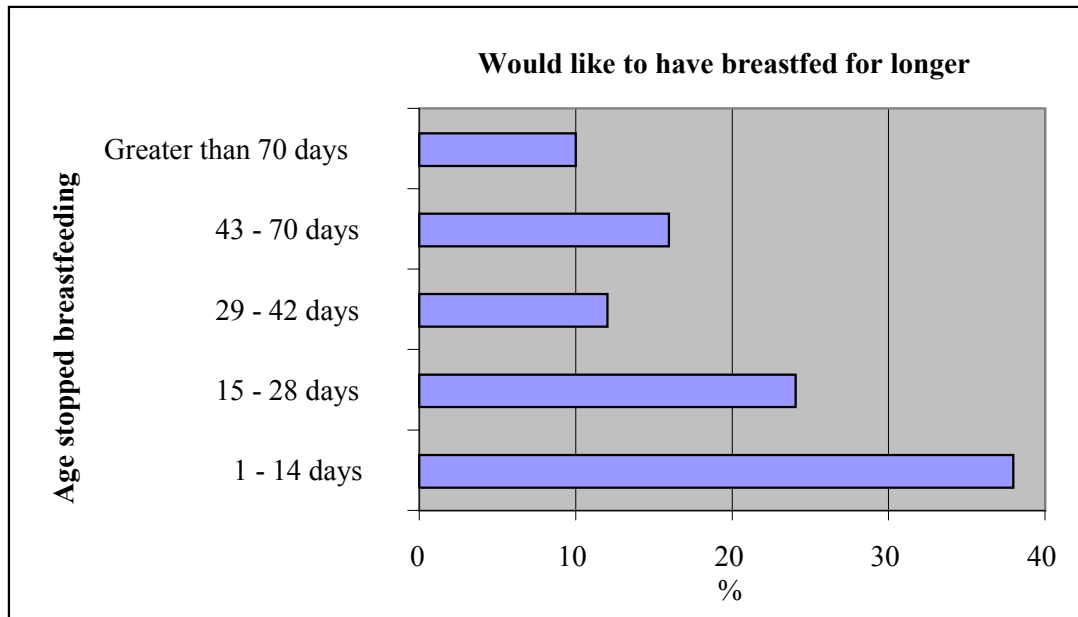
Mothers who breastfed initially were asked to describe how they felt about the duration of their breastfeeding experience (Table 16.1). Almost equal proportions breastfed for as long as they intended (n=396, 44%) as said that they would like to have breastfed for longer (n=404, 45%). The remainder, (n=102, 11%) indicated that they had breastfed for longer than intended.

Table 16.1: Whether or not mothers would like to have breastfed for longer.

Which of the following best describes breastfeeding your baby?		
	N	%
Would like to have breastfed for longer	404	44.8
Breastfed for as long as intended	396	43.9
Breastfed for longer than intended	102	11.3
Total	902	100

Among those mothers who had switched to fully formula feeding at 3-4 months, 81% (n=359) said that would like to have breastfed for longer. The proportion of mothers who would like to have breastfed for longer declined with the duration of breastfeeding as indicated in Figure 12. Around three quarters of mothers (74%) who discontinued breastfeeding before six weeks indicated that they would like to have breastfed for longer.

Figure 12: Age of the baby at which the mother stopped breastfeeding and whether she would have liked to continue for longer



6.11.2 Factors assisting mothers to continue or stop breastfeeding

Mothers who breastfed initially were asked who or what had helped them most to continue breastfeeding. In common with the help reported by mothers who formula fed, the mother's own experience was cited as the most influential factor in helping them most (n=600, 73%) and least (n=231, 35%) to continue breastfeeding (Tables 16.2 and 16.3). The mother's partner was cited by 31% (n=257) as helping them to continue breastfeeding

National Infant Feeding Survey 2008

Table 16.2: Breastfeeding mothers' views on who or what helped them most to continue breastfeeding

Who or what helped you most to continue breastfeeding?		
	N	%
Own experience	600	73.3
Partner	257	31.4
Health professionals (midwife/nurse/Public Health Nurse/GP)	183	22.3
Friends / other mothers	169	20.6
Your mother	130	15.9
Books / magazines / TV	70	8.5
Others	58	7.1
Other relatives	52	6.3
Peer or support group	41	5.0
Voluntary organisation (Cuidiú, La Leche League)	34	4.2
Mother in law	22	2.7
Total	819	100

Table 16.3: Breastfeeding mothers' views on who or what helped them least to continue breastfeeding

Who or what helped you least to continue breastfeeding?		
	N	%
Own experience	231	35.1
Others	98	14.9
Other relatives	87	13.2
Health professionals (midwife/nurse/Public Health Nurse/GP)	86	13.1
Your mother	80	12.1
Mother in law	75	11.4
Friends / other mothers	62	9.4
Books / magazines / TV	55	8.3
Partner	45	6.8
Voluntary organisation (Cuidiú, La Leche League)	34	5.2
Peer or support group	32	4.9
Total	659	100

Among mothers who had discontinued breastfeeding by Phase 2, the mother's own experience was cited by 83% (n=352) as influencing them to stop breastfeeding. Equal numbers of mothers (n=57, 13%) indicated that their partner and health professionals had influenced them to stop breastfeeding.

16.4: Who or what influenced the mother to stop breastfeeding

Who or what influenced the mother to stop breastfeeding		
	N	%
Own experience	352	83.0
Health professionals (midwife/nurse/Public Health Nurse/GP)	57	13.4
Partner	57	13.4
Others	51	12.0
Your mother	29	6.8
Friends / other mothers	18	4.2
Other relatives	17	4.0
Mother in law	7	1.7
Books / magazines / TV	2	0.5
Peer or support group	1	0.2
Voluntary organisation (Cuidiú, La Leche League)	0	0.0
Total	424	100

6.12 Mothers who were formula feeding from birth

The survey contained 6 six questions relating to formula feeding to assess information regarding infant feeding for those mothers who were formula feeding from birth. We found that 38% (n=251) of these mothers were shown how to make up a formula feed during pregnancy or in the postnatal period. Of those who were shown, 54% (n=133) were shown by a midwife, 29% (n=72) by a family member and 17% (n=43) by the public health nurse.

Several feeds are prepared at a time and stored by 58% (n=384) of mothers, while 40% (n=260) make up each feed as it was needed. Sixteen mothers (2%) reported that they had only ever used ready-to-feed formula by the time their infant was 3-4 months old.

In line with national guidelines on making up formula feeds (Food Safety Authority of Ireland 2007), 67% (n=428) of mothers allowed the water to cool for 30 minutes before making up feeds. However, 11% (69) reported using water that had just boiled. Four mothers use bottled water and 1 reported using tap water to make up formula feeds.

Mothers who were formula feeding from birth felt that their own experience (n=473, 72%) was what assisted them most in formula feeding their infants. The sources of help that were mentioned least often were health professionals (n=138, 28%) and voluntary organisations (n=131, 27%) were said to have assisted them least to bottle-feed their infants.

6.12.1 Sub group analysis - formula feeding women's views

The aim of the qualitative aspect of this study was to uncover the experiences and views of women who are least likely to breastfeed in Ireland. Focus groups and interviews sought to examine how, when and why bottle feeding women made decisions around their choice of infant feeding. Women were also asked for their views about breastfeeding and had much to share about their opinions and experiences. A large amount of data was generated from two focus groups. Telephone interviews were then used to expand and strengthen the emerging categories. We stopped data collection after six telephone interviews, when no new substantive themes were emerging.

Ten women participated in the qualitative part of the study, six of whom were married and four were living with their partners. Two mothers had given birth to their first baby and the remainder had between 2 and 7 children. Pseudonyms have been used throughout this report to protect the anonymity of the women.

Three major themes evolved from the focus groups and interviews, suggesting that the major influences on infant feeding for these women are: personal attitudes toward feeding methods, external influences on infant feeding methods and future attitudes toward infant feeding. Within these themes, thirteen sub-themes are utilised to provide an illustrative summary of the findings (Saldaña 2009).

Personal attitudes toward feeding methods

Breastfeeding is not for me

Bottle feeding women who agreed to take part in the focus groups and interviews had very definite views about their choice of feeding and most suggested that breastfeeding was simply not for them:

“as soon as I found the blue line I had decided I’m bottlefeeding, that’s it end of story” (Rosie)

“it was never, yeah it was never, breastfeeding is just not for me” (Maura)

When asked why breastfeeding was not for them, the women reported that they could not envisage themselves breastfeeding:

“I just knew I was not comfortable breast feeding, god no. Don’t get me wrong I wouldn’t be against it but I always said I’d bottle feed” (Cathy)

“I mean I just couldn’t imagine doing it, I would listen to advice but I was not changeable. Yeah really breastfeeding was never an issue” (Susan)

Just knew I would bottle feed

The literature suggests that many women make decisions about infant feeding outside of the context of engagement with maternity services and often before they are pregnant (Hoddinott and Pill 1999, Earle 2000). While this was apparent for some

women in our study, others indicated that they hadn't given infant feeding any thought before confirmation of their pregnancy.

“As soon as I found out I was pregnant I decided. Hadn't given it any thought before that really but I think it was bottles all along for me” (Jackie).

Among the women who said that they had always known how they would feed their babies, one commented:

“no it just wasn't for me not, I'd say I'd have always said that” (Rosie).

Commitment to choices

Women talked about the strength of their feelings about deciding to bottle feed and they suggested that this was important to them, and to other mothers. It was apparent that they felt that this was shared equally among breast and bottle feeding mothers, as is clearly articulated by Cathy:

“when a mother gets it into her head that she will, she's going to breastfeed, I got it into my head I didn't want to breastfeed there was no persuading me at all”

Once they had reached their decision, women clearly felt that this was not amenable to change:

“I'd be fairly strong willed, I'd go with what I want, I don't think I'd let people influence me in that way” (Beth)

“No, I know my own mind. If I decide on something I do it, no one will sway me to do something or not do something. If I want to do it I'll do it and if I don't I won't, no one will push me into anything” (Jackie)

Women had developed strategies to disengage from others when they talked to them about breastfeeding:

“by the fifth time (antenatal visit) I pretended to be considering breastfeeding to stop the conversation” (Rosie)

“I used to tell Sandra (friend who had breastfed) that I was thinking about doing it just to shut her up, but I wasn’t going to” (Susan)

One of the participants had breastfed a previous infant but had selected formula fed on the survey tool. When asked why she had chosen this, she responded:

“you couldn’t really say he was breastfed, I only did it for a day and then gave up so it wouldn’t be right to put down breastfed would it (questioning)” (Orla)

Bottle feeding is just as good

Although almost all the women talked about the notion that breast was best it was clear from their views and experiences that they believed bottle feeding was just as good for their baby.

“I know all there is to know about you know the extra benefits the baby gets and the whole lot from the mother’s milk and all that, I mean I’ve seen (first child’s name), like my first son and he thrived and he still is a very strong and healthy little boy and now at this stage he’s one and I mean he’s just a really Billy Butcher of a child” (Maura)

“I know a lot of people say it’s better for the baby but no I would encourage anyone to try it. Try it and see how you go but I mean if it’s not for you don’t be afraid to go for the bottle. Don’t think you have to breastfeed and this is it, it’s not the only way to go because there is bottles too” (Cathy)

Murphy (1999) and Earle (2000) have previously described this phenomenon, suggesting that bottle feeding mothers are aware of the benefits of breastfeeding and go to great lengths to justify their decision, as is demonstrated by Rosie:

“There is a lot of women out there that should breastfed, I probably should have breastfed but the bottle was probably the better answer because I had 3 big babies and they were all hungry. I mean they are healthy looking and they gained weight and you know so I don’t think breast is best to me it isn’t. I don’t think it is, I think bottle is just as good”

Although they were aware of the benefits of breastfeeding, the women did not seem to be influenced by this knowledge:

“Its great for the baby but a child never died on formula either” (Beth)

It’s easier to bottle feed

In line with the literature (Stewart-Knox et al. 2003, Earle 2000) these women undoubtedly considered bottle feeding to be easier than breastfeeding. This seemed to be the majority view in the focus groups and among the interview participants. Women also commented that this was a very important factor when choosing how to feed their baby:

“Bottle feeding is just easier. Yeah the bottles are handy, you know you are not as tied to the baby, I don’t mean I’d want to leave the baby every hour of the day but it means somebody can baby-sit for you, you know partners can get up in the middle of the night and do a feed, to me its easier ” . (Orla)

Women also used numerous ways to explain the ease of bottle feeding over breastfeeding. These related predominantly to the birth of the baby and the postnatal period:

“I think that the woman has gone basically through enough and that if she can have a little rest and her partner can actually feed the baby, instead of

breastfeeding yourself, it's making you twice as, more tired then you already are anyway". (Sonia)

"to me breastfeeding wouldn't be an issue because I think it just takes a lot more out of your body and you are already wrecked enough for the first few weeks (after birth)" (Jackie)

Beth commented that her previous experience of postnatal breast tenderness had been a reinforcing factor in choosing to bottle feed this baby:

"it's just something I can't, I know how much pain I was in on my first one, my breasts were more sore than anything else and I thought I would never have a baby breastfeeding because it was too painful. That was without even breastfeeding"

Some women commented that the needs of their other children were an important factor in choosing bottle feeding:

"I think that if you have other children it's very demanding and draining on you as it is so I think breastfeeding would just you know be too much work". (Avril)

"There is a time commitment with breastfeeding with other children it's just too much (gesturing)" (Rosie)

For some of the women, the ease of getting other people to feed her baby and the freedom associated with bottle feeding were important:

"You can have help from your husband and family to artificially feed, I can drop her off with my mother if I need to and I don't need to be worrying. You can't get that help if you are breastfeeding. I must say I'd hate to be tied to it the whole time" (Avril)

The notion of breastfeeding as restricting freedom was consistent with results from the postal survey and previous research (Stewart-Knox et al. 2003). Bottle feeding is perceived as providing independence from the baby which the women seem to value.

Knowledge and attitudes towards breastfeeding

We asked the women how they felt about breastfeeding and they were clear to point out that they were not against breastfeeding for other mothers and felt it was the ‘right’ thing to do:

“I am happy to see others breastfeeding it?? is the most natural thing in the world” (Cathy)

“I advised my daughter (who was 22 weeks pregnant) to give breastfeeding a go I would never put anyone else off breastfeeding but I told her it’s her choice and don’t be disappointed if it doesn’t work out” (Avril)

An important issue for many of the women was the physical notion of breastfeeding. Jackie commented that:

“I would have loved to have wanted to do it. I just never felt comfortable with anything on my breast, man or child (laughing). It does nothing for me”

“Honestly I think breastfeeding is uncomfortable in every way and I really think that it’s pointless” (Susan)

It wasn’t clear what Susan was referring to in her reference to ‘uncomfortable in every way’ but this seemed to link to breastfeeding being physically uncomfortable.

Importance of personal history and memories of breastfeeding

The survey results had highlighted that how the woman was fed herself and the behaviour and attitudes of her peers were influential in infant feeding decisions. Therefore, we asked the women in the qualitative part of this project to discuss

whether they had any experience of breastfeeding among family and friends. Although many of the women knew someone who had breastfed, several could not recall having ever seen a baby breastfeeding:

“I don’t know anyone who has breastfed except for (partner’s) mother, I wouldn’t have seen anyone do it. That sounds mad doesn’t it” (Susan)

“Anybody I ever remember feeding their babies it’s always been with bottles” (Jackie)

Some of the women talked about particular incidents relating to breastfeeding or recounted stories that they felt might have influenced them in bottle feeding:

“ I remember when I was small my aunt came from America and we went out for the day and she started breastfeeding a toddler in public, I was a small child but I still remember it, I nearly died I was mortified (laughing)” (Aine)

Limited exposure to breastfeeding has previously been shown to have a negative influence on attitudes towards breastfeeding (McFadden and Toole 2006). In contrast increased exposure to breastfeeding correlates with increased initiation of breastfeeding (Griffiths et al. 2005).

External influences on infant feeding

Influence of partner and family

Family influences:

Previous exposure to breastfeeding among family and friends was a deterrent for some women. However, other women commented that they had family members who would be supportive of breastfeeding. In particular, having a sister who breastfed and the context of her experience, was relevant:

“I have a sister she had a child just before me and she breastfed and I thought no way, the child just kept screaming, she wasn’t satisfied with the breast milk”. (Sonia)

“I witnessed my sister trying to breastfeed and I didn’t like the way it was going and I just said the bottles are easier” (Beth)

This was countered by positive family experiences from some of the women:

“My cousin had a bad bad experience breastfeeding but now I have a sister-in-law that just had a baby and she breastfed and she thinks it’s the best thing ever”(Maura)

“My mother was pro breast feeding, she breastfed us all but I don’t remember it. There was no anti breastfeeding from other family members either, they’d actually be into it” (Orla)

Mothers and mothers in law were seen as having an interest in infant feeding but messages they conveyed to the new mothers were seen as subtle rather than having a strong influence or opinion:

“His (partner) mother asked me, she’s probably the only one that asked me would I breastfeed because she breastfed a couple of her children but I said no I wouldn’t feel comfortable with it so that was the end of that then” (Rosie)

“My own mother maybe would have influenced me I’d say, she was the only one I’d say, but now she wouldn’t have sat down and said ‘now you know you have to do this and that’ but she probably if I had said I’m going to bottle feed she probably would have said ‘oh maybe that’s a better idea, you know it might be easier for you’. That’s the sort of way, it wasn’t that she influenced me in such a way but I just know what she’d have preferred” (Orla)

Partner influences:

In common with previous research (Stewart-Knox et al. 2003) all ten women felt that their partners had not influenced them in any way:

“My husband didn’t have any choice of decision and would have supported me whatever” (Jackie)

“My partner was not involved in decision to feed and left it up to me, we didn’t discuss it” (Rosie)

However, women perceived bottle feeding as a way of enabling bonding with the baby’s father:

“I wanted to make sure the father bonded with the child as well because I know if you breastfeed the father doesn’t bond as much” (Avril)

“My other children were all bottle fed and he’d feel left out now I’d say cause he loves giving them their night feed when they are babies” (Rosie)

Perceptions of the attitudes of health professionals

During their pregnancies women had differing views about the promotion of breastfeeding by health professionals. A common theme was the notion of the ‘pushy’ midwife:

“In the hospital on my first child he’s 11 now, the midwives came around and they wanted everybody to breastfeed but I felt a bit under pressure to do it and I wasn’t comfortable doing it. If anything they probably persuaded me to bottle feed more than breastfeeding I think” (Jackie)

“They (midwives) are very, very encouraging today for breast they push you a lot at the hospital visits” (Orla)

However, those who had other children felt that health professionals did not try to encourage breastfeeding if they had not breastfed before:

“Nobody spoke about it this time. I suppose because it was my second child they didn’t. They just took for granted that I’d be bottle feeding again” (Avril)

Women’s views of breastfeeding in Ireland

Given the low incidence of breastfeeding in Ireland it is not surprising that women felt that bottle feeding represented the cultural norm in Ireland:

“In Ireland it’s more normal to bottle feed” (Jackie)

They highlighted that previous and current generations had reinforced bottle feeding as the predominant method of feeding:

“Breastfeeding was not done in my generation, never, never, did I see anyone breastfeeding when I was growing up” (Cathy)

“There is still a brigade out there who just think you shouldn’t talk about it at all (breastfeeding)” (Rosie)

Future attitudes towards infant feeding

The following themes were stimulated by questions about how breastfeeding might be promoted in Ireland. Women were keen to suggest that they would not deter other women from breastfeeding but their responses showed limited expectancy for the success of promotional activities (Blyth et al. 2002).

Advice for other mothers

“I said you know try it see how you go, if it’s for you well and good and if it’s not don’t be afraid to try a bottle. You know, but at the same time try your

breastfeeding to see how it goes. I'm not anti-breastfeeding in any way I'm certainly not" (Sonia)

"I'd tell other mums by all means give it a shot if you want to breastfeed but there's no crime in giving bottles either. Do what suits you best" (Rosie)

Views on breastfeeding promotion

Women were asked to reflect on breastfeeding promotion in Ireland and provided thoughts and strategies which were consistent with normalising breastfeeding:

"I think when they are having the antenatal classes before hand, before you have the baby that maybe if they brought a woman along who was prepared to breastfeed in the class, I know it might sound a bit weird" (Jackie)

"You know they could just maybe let the other mothers see (a woman breastfeeding) because when you say breastfeed to a young girl who is after giving birth to a baby it's very strange and it's kind of a bit off-putting as well. If they've seen it beforehand it mightn't be so scary for them. But if they haven't seen it it's like no way I'm not doing it, you might entice other people to try and give it a go" (Susan)

Despite offering strategies to encourage other mothers, almost all of the women suggested that this would not have influenced them.

Nothing would persuade me

Many women in this study gave a clear message that they were not amenable to the notion of breastfeeding in the future. This was a phenomenon, which was not found in our review of the published literature.

"I don't think anything would change my mind but for other mums maybe if there's a meeting just before antenatal checks with a few of us that you know

just to discuss it and see something, it might influence a few more to go with it but it wasn't said to me at all" (Avril)

"Mothers, if they get it into their heads they want to breastfeed they are going to but if they don't there's no persuading them" (Beth)

"I would never do it not even if (baby) had been preterm" (Aine)

Only one of the participants in the qualitative study suggested that she may be willing to breastfeed in the future:

"I mean if I was to go and have another baby I wouldn't say I definitely wouldn't breastfeed, I probably wouldn't but I wouldn't say definitely not" (Susan)

Discussion

This qualitative component of the study of infant feeding in Ireland has been exploratory but its findings nevertheless suggest that women who bottle feed base their infant feeding decisions on many social and experiential factors. Many of the findings have been corroborated by previous research in contexts outside of the Republic of Ireland (Hoddinott and Pill 1999, Stewart-Knox et al. 2003, Greene et al. 2003). In contrast to previous research (Greene et al. 2003, Tarrant 2008) women did not implicitly highlight embarrassment as an influential factor.

A non-breast-feeding culture can be found to pervade among these mothers. It is apparent that in order to influence other mothers, promotion of breastfeeding must normalise breastfeeding within Irish society. In common with breastfeeding women (Bailey et al. 2004), bottle feeding women require positive breastfeeding role models (Stewart-Knox et al. 2003) in order to counter the apparent negative influences and discourses surrounding breastfeeding.

Health professionals also need to target all mothers for promotion of breastfeeding and not make assumptions about women based on their previous infant feeding

methods. Promotion of breastfeeding among women who did not breastfeed their earlier children is however, likely to be difficult, as they displayed little motivation (Janke 1994) to breastfed and had a staunch commitment to formula feeding their infants.

Promotion of breastfeeding must therefore take account of the complex contexts in which women make decisions and the timing of those decisions.

6.13 Future intentions

Mothers were asked at 3-4 months how they would feed any future infants and 43% (n=770) reported that they would breastfeed and a further 21% (n=365) would choose combination feeding. Among mothers who formula fed from birth, 13% (n=96) would consider breastfeeding a future infant and a further 13% (n=95) would choose combination feeding.

7 Results of Phase 3 – Main findings

All infants were at least six months old at the time of Phase 3, with an age range of 24-38 weeks (Table 17.1). The majority of infants were between 24 and 28 weeks (61%, n=270) with 79% (n=352) between 26 and 30 weeks ensuring that the objective to collect information on infant feeding at 6-7 months has been achieved. Analysis from Phase 2 had revealed variations in the reporting of breastfeeding by individual mothers when they were asked about the previous 24 hours and the previous 7 days, which is dependent on when they completed the questionnaire. Therefore, the Phase 3 questionnaire also collected information from mothers about feeding when their infant was exactly 6 months old, in addition to their “current” feeding method. We have used these data on feeding at six months for comparisons with Phase 2 and for the analyses reported here.

Table 17.1 shows that 32% (n=144) of infants were 7-8 months old when their mothers completed the survey, meaning that some recall of feeding at six months was required for mothers in the survey. However, it has been shown previously that accurate recall of infant feeding events can be observed up to 14 years postpartum (Launer et al 1994).

Table 17.1: Baby age in categories

	N	%
24 weeks	13	2.9
25-28 weeks	257	57.8
29-32 weeks	144	32.4
33-38 weeks	30	6.7
Total	444	100
Missing	17	
Total	461	

7.1 Prevalence of breastfeeding at six months

7.1.1 Prevalence of exclusive and partial breastfeeding

Prevalence of exclusive and partial breastfeeding at six months is reported in Table 18.1. Exclusive breastfeeding was reported by 13% (n=61) of the 461 mothers who responded to Phase 3. This is just 6% of the 1002 mothers who responded to Phase 2 and had breastfed their infants at birth. A further 51% (n=230) of Phase 3 mothers were partially breastfeeding at six months and 36% (n=167) reported that they had discontinued breastfeeding.

Table 18.1: Type of feeding at six months old

	N	%
Breast milk only	61	13.3
Formula milk only	12	2.6
Breast milk and other fluids	20	4.4
Formula and other fluids	2	0.4
Breast milk and solid food or spoon feeds	85	18.6
Formula milk and solid foods or spoon feeds	69	15.1
Breast milk, solid foods or spoon feeds and other fluids	125	27.3
Formula milk, solid foods or spoon feeds and other fluids	84	18.1
Total	458	100
Missing	3	
Total	461	

Tables 18.2 and 18.3 show rates of any breastfeeding when mothers completed the Phase 3 survey. The rate of exclusive breastfeeding is highest when measured in the previous 24 hours, with 21% (n=94) reporting exclusive breastfeeding for this period. Further analysis reveals that this is because many women who are breastfeeding supplement their babies with other fluids once a week or less.

National Infant Feeding Survey 2008

These tables exclude solid foods, which would be expected to form part of the infant's diet after six months of age. At completion of Phase 3, 74 mothers (16%) report that the only fluid their infant has ever received is breast milk, while 174 mothers (38%) report some breast milk feeding in the past seven days. The proportion of women who discontinued breastfeeding between six months and completion of Phase 3 is 10% (n=44).

Table 18.2: Milk and other fluids given to baby in the past 24 hours

	N	%
Only breast milk	94	20.5
Combination of breast milk and water or juice	53	11.5
Only infant formula	102	22.3
Combination of breast milk and infant formula	57	12.4
Combination of breast milk, infant formula and water or juice	37	8.0
Combination of infant formula milk and water or juice	114	24.9
Total	457	100
Missing	4	
Total	461	

Table 18.3: Milk and other fluids given to baby in the past 7 days

	N	%
Only breast milk	74	16.3
Combination of breast milk and water or juice	57	12.5
Only infant formula	81	17.8
Combination of breast milk and infant formula	56	12.3
Combination of breast milk, infant formula and water or juice	61	13.4
Combination of infant formula milk and water or juice	125	27.3
Total	454	100
Missing	7	
Total	461	

Table 18.4 shows that in common with the findings of Phase 2 for the period up to 3-4 months, Irish women were more likely to have discontinued breastfeeding than women from other nationalities over the subsequent months. Among Irish mothers who participated in Phase 3 (n=327), 39% (n=127) had discontinued breastfeeding compared to 31% (n=40) of non-Irish mothers.

Table 18.4: Milk feeding at 6 months by nationality of the mother

Feeding at 6 months	Irish	%	Non-Irish	%
Any breastfeeding	200	61.2	91	69.5
Formula feeding	127	38.8	40	30.5
Total	327	100	131	100
Missing = 3				

7.1.2 Prevalence of breastfeeding by Local Health Office of residence

Tables 18.5 to 18.9 show variations in the rates of exclusive and partial breastfeeding based on the women's Health Service Executive (HSE) Administrative Area and Local Health Office (LHO) of residence. In common with Phase 2 (Table 18.4), the rate of any breastfeeding is highest in the Dublin Mid-Leinster area where 5% (n=24) of the mothers living in this area were still exclusively breastfeeding and 14% (n=69) were partially breastfeeding their infants at six months. The largest decline in any breastfeeding between Phase 2 and six months is evident in HSE area South where 94 mothers (22%) discontinued breastfeeding during this time.

Table 18.5: Exclusive and partial breastfeeding at phase 3 (6 months) by Health Service Executive Administrative Areas

Health Service Executive Area	Total no. of women (Phase 2)	%	Rate of exclusive breastfeeding at 6 months	%	Rate of partial breastfeeding at 6 months	%
Dublin Mid-Leinster	489	100	24	5	69	14
Dublin North East	441	100	13	3	68	15
South	406	100	10	3	41	10
West	468	100	13	2	52	11
Missing LHO's = 22						

Tables 18.6 to 18.9 show the rates of exclusive and partial breastfeeding at birth, Phase 2 and six months for each Local Health Office (LHO). These tables include the rates of overall breastfeeding at six months and the rate for only those mothers who initiated breastfeeding in each area. The highest rate of exclusive breastfeeding is in Wicklow with 13% (n=7) of the 92 mothers from this LHO exclusively breastfeeding at six months. No mother reported exclusively breastfeeding at six months in Dublin South West, Dublin West, North Cork, Wexford, Waterford, Kerry and Sligo/Leitrim.

The highest proportion of any breastfeeding is in West Cork with 35% (n=6) of the 17 mothers from this area continuing breastfeeding until 6 months. As noted above, this high rate of breastfeeding in the West Cork area may be attributed to the fact that four of the women who gave birth under the care of an independent midwife were resident in this area and, as was evident in Phase 2, these women were found to have consistently high rates of breastfeeding over the course of the study period. The lowest prevalence of breastfeeding for a Local Health Office is in Waterford, where only two mothers (6%) were partially breastfeeding at 6 months.

Table 18.6: Health Service Executive: Dublin Mid-Leinster

Local Health Office (LHO)	Dublin South East		Dublin South City		Dublin South West		Dublin West	Dun Loaghaire
Total no of women from LHO	N	37	35	17	29	32		
Breastfed at first feed	N	29	25	12	19	23		
	%	78	71	71	66	72		
Exclusive - Phase 2	N	7	8	6	5	7		
	%	19	23	35	17	22		
Partial - Phase 2	N	11	13	0	7	7		
	%	30	37	0	24	22		
Exclusive - Phase 3	N	1	4	0	0	2		
(all mothers from LHO)	%	2	11	0	0	6		
(LHO mothers who breastfed at birth)	%	3	16	0	0	23		
Partial - Phase 3	N	5	4	4	4	4		
(all mothers from LHO)	%	13	11	23	13	12		
(LHO mothers who breastfed at birth)	%	17	16	33	21	17		
Missing data from Phase 3 (non-respondents)	N	7	5	2	5	4		

Table 18.6: Health Service Executive: Dublin Mid-Leinster Contd

Local Health Office	Kildare-West Wicklow		Wicklow	Longford/Westmeath	Laois/Offaly
Total no of women from LHO	N	86	51	92	110
Breastfed at first feed	N	45	29	45	50
	%	52	57	49	45
Exclusive - Phase 2	N	18	13	18	15
	%	21	25	20	14
Partial - Phase 2	N	15	6	11	11
	%	17	12	12	10
Exclusive - Phase 3	N	2	7	5	3
(all mothers from LHO)	%	2	13	5	2
(LHO mothers who breastfed at birth)	%	4	24	11	6
Partial - Phase 3	N	18	10	12	8
(all mothers from LHO)	%	20	20	13	7
(LHO mothers who breastfed at birth)	%	40	34	27	16
Missing data from Phase 3 (non-respondents)		6	1	8	8

Table 18.7: Health Service Executive: Dublin North East

Local Health Office	Dublin		North Central Dublin	North Dublin	Cavan/ Monaghan	Louth	Meath
	North West	North East					
Total no of women from LHO	N	82	52	96	77	42	92
Breastfed at first feed	N	47	38	58	45	16	49
	%	57	73	60	58	38	53
Exclusive - Phase 2	N	20	12	17	19	7	16
	%	24	23	18	25	17	17
Partial - Phase 2	N	15	1	16	12	3	9
	%	18	2	17	16	7	10
Exclusive - Phase 3	N	3	2	2	3	1	2
(all mothers from LHO)	%	3	3	2	3	2	2
(LHO mothers who breastfed at birth)	%	6	5	3	6	6	4
Partial - Phase 3	N	24	11	1	10	4	6
(all mothers from LHO)	%	29	21	12	13	9	6
(LHO mothers who breastfed at birth)	%	51	28	22	22	25	35
Missing data from Phase 3 (non-respondents)		2	0	5	8	4	8

Table 18.8: Health Service Executive: South

Local Health Office	Cork-South Lee		Cork North Lee	West Cork	North Cork
Total no of women from LHO	N	41	43	17	40
Breastfed at first feed	N	23	25	13	17
	%	56	58	76	43
Exclusive - Phase 2	N	9	8	6	7
	%	22	19	35	18
Partial - Phase 2	N	7	7	1	7
	%	17	16	6	18
Exclusive - Phase 3	N	4	2	2	0
(all mothers from LHO)	%	10	4	12	0
(LHO mothers who breastfed at birth)	%	17	8	15	0
Partial - Phase 3	N	3	5	4	3
(all mothers from LHO)	%	7	11	23	8
(LHO mothers who breastfed at birth)	%	13	20	30	17
Missing data from Phase 3 (non-respondents)		3	3	1	4

Table 18.9: Health Service Executive: South Contd

Local Health Office	South Tipperary		Carlow/ Kilkenny	Wexford	Waterford	Kilkenny
Total no of women from LHO	N	26	47	82	34	76
Breastfed at first feed	N	12	23	39	13	30
	%	46	49	48	38	45
Exclusive - Phase 2	N	6	7	12	5	13
	%	23	17	15	15	17
Partial - Phase 2	N	3	3	12	1	9
	%	12	6	15	2	12
Exclusive - Phase 3	N	1	1	0	0	0
(all mothers from LHO)	%	3	2	0	0	0
(LHO mothers who breastfed at birth)	%	8	4	0	0	0
Partial - Phase 3	N	4	5	7	2	8
(all mothers from LHO)	%	15	11	8	6	11
(LHO mothers who breastfed at birth)	%	33	22	21	15	27
Missing data from Phase 3 (non-respondents)		2	0	7	3	7

Table 18.9: Health Service Executive: West

Local Health Office	Sligo/ Leitrim	Donegal	Mayo	Roscommon	Galway	Clare	Limerick	North Tipp/ East Limerick
Total no of women from LHO	N 50	71	75	29	86	47	86	24
Breastfed at first feed	N 23	33	42	19	54	24	40	14
	% 46	46	56	66	63	51	47	58
Exclusive - Phase 2	N 6	11	14	5	23	8	13	4
	% 12	15	19	17	27	17	15	17
Partial - Phase 2	N 9	4	10	7	16	4	13	4
	% 18	6	13	24	19	9	15	17
Exclusive - Phase 3	N 0	2	1	2	1	3	2	3
(all mothers from LHO)	% 0	3	1	7	1	6	2	12
(LHO mothers who breastfed at birth)	% 0	6	2	11	2	13	5	21
Partial - Phase 3	N 5	10	8	3	12	4	8	2
(all mothers from LHO)	% 10	14	11	10	14	8	9	8
(LHO mothers who breastfed at birth)	% 22	30	19	16	22	17	20	14
Missing data from Phase 3 (non-respondents)	4	1	11	4	11	3	7	4

7.2 Use of supplementation and weaning

7.2.1 Supplementation with formula milk

Table 19.1 reports how often mothers have given formula milk. It shows that 92 mothers (21%) had not given formula milk to their baby since Phase 2. This table does not account for any other fluids or foods given to the baby since Phase 2. However, it does show that formula use among mothers is difficult to categorise when measured over the course of a week or month. For instance, 30 mothers (7%) have given their baby formula only once or twice since Phase 2 and a further 21 (5%) reported using formula for a few feeds but not every week. This supports the need to measure breastfeeding in longitudinal studies rather than at defined time intervals or on a specific day.

Table 19.1: How often mothers have given formula milks since they completed Phase 2

	N	%
Never given formula	92	21.2
All feeds	77	17.8
Almost all feeds	79	18.2
About half of all feeds	54	12.5
One or two feeds a day	57	13.1
A few feeds each week, but not every day	23	5.3
A few feeds, but not every week	21	4.8
Only one or twice	30	6.9
Total	433	100
Missing	28	
Total	461	

National Infant Feeding Survey 2008

Table 19.2 reports the age at which breastfed infants were first given any other fluids and shows that between 15 and 20 weeks is the most common time for the introduction of other fluids (n=119, 31%). It should be noted that 78 mothers did not answer this question.

Table 19.2: Age when baby was given any fluid other than breastmilk

	N	%
1-6 weeks	75	22.2
7-14 weeks	53	13.8
15-20 weeks	119	31.1
21-24	73	18.8
25-28 weeks	53	13.8
Older than 28 weeks	1	0.2
Total	383	100
Missing	78	
Total	461	

When asked why they give their baby drinks other than breast or formula milk the most common reason in Phase 3 was that mothers felt that their baby was thirsty (n=105) (Table 19.3). This was followed by helping with the baby's constipation (n=61) and to prepare the baby for drinking from a cup (n=41), which was given in response to the "Some other reason" option.

National Infant Feeding Survey 2008

Table 19.3: Drinks given other than milk

	N	%
I don't give my baby drinks	178	37.2
Because he/she is thirsty	105	21.9
To help his/her constipation	61	12.7
To help colic/wind/hiccups	21	4.3
To settle him/her	16	3.3
To give him/her extra vitamins	15	3.1
Some other reason	82	17.1
Total	478	100

7.2.2 *Reasons for the introduction of formula while breastfeeding*

When asked why they had started to give infant formula along with breast milk, 284 women responded giving a total of 416 reasons. These are summarised into eight main categories in Table 19.4.

Table 19.4: Mother's reasons for giving infant formula

Category	N (416)	%
Wanted to wean baby off the breast	122	29.3
Getting a break from breastfeeding	65	15.6
Milk supply/hungry baby	64	15.4
Busy lifestyle/other children	43	10.3
Night feeds	38	9.1
To give other foods	30	7.2
To get baby accustomed to taking a bottle	30	7.2
Challenges associated with breastfeeding	20	4.8

Wanted to wean baby off the breast:

The most common reason given for the introduction of formula along with breast milk was to “wean the baby off the breast” (n=122). Of these mothers, 88 reported that they were weaning their baby as they were “getting back to work”. And, of the mothers who introduced formula to resume working, 18 specifically commented that expressing while working was either “too much hassle”, “awkward”, or “time consuming”. One woman wrote:

“trying to maintain a supply when you are working is just a nightmare, you need to give the formula too”.

Getting a break from breastfeeding:

Many women commented that they had started to introduce formula feeds to get a “break from breastfeeding” (n=65). It was evident that these women felt giving the

baby a bottle allowed for flexibility and separation from the baby at short notice. For example:

“now that she takes a bottle I have more personal freedom and feel I am getting my life back”

Other women introduced a bottle so that “dad could share the feeds” (n=16) or “family can help out” (n=5).

A further 14 women had introduced a bottle when they were separated from their baby for varied periods of time. For example:

“If I’m going out for the night or am away I give her the odd bottle of formula”.

Milk supply/hungry baby:

Formula was first introduced by 64 mothers because they felt their baby was “hungry” (n=38) or they felt that “supply did not satisfy baby” (n=20). Although supply issues and a hungry baby could be seen as separate issues they are categorised together as mothers frequently mention both as a reason for introducing formula. For example:

“I felt that my milk was no longer enough for my baby and he was constantly hungry so I started giving him a bottle in the evenings at about 4 months”.

A further six mothers commented that they had introduced formula because of poor weight gain in their infant. Of these mothers, four stated that supplementation had been advised by their GP or Public Health Nurse.

Busy lifestyle/other children:

It was evident from responses that many women felt that the introduction of formula was related to their other children or the demands of their busy lives. One woman wrote that she:

National Infant Feeding Survey 2008

“introduced formula after about 12 weeks as I was finding the increase in demand from baby difficult especially since I have other children, I simply did not have time to spend all day breastfeeding”.

This was also attributed to breastfeeding twins (n=2), and “jealousy from the other kids” (n=3).

Night feeds:

Women reported that they gave formula at night as they felt this enabled them to get more rest and sleep (n=38). For example:

“we give our baby formula for the last feed every night in the hope that he will sleep for longer”.

To give other foods:

Introduction of solid foods or cereals was the reason given for the introduction of formula by 28 mothers. These mothers frequently commented that they “use formula to mix” with other foods. Two mothers commented that they gave formula for some nutritional benefit, one of whom wrote:

“I gave formula because they say breastfeeding is not enough for his iron store at this stage”.

To get baby accustomed to taking a bottle:

Several women commented that formula had been introduced “to avoid problems with baby taking a bottle” (n=30). Some of these mothers either had experience of this kind of difficulty with previous infants or knew someone who did. For example, one woman wrote that she:

“wanted my baby to take a bottle as my sister had huge problems getting her baby off the breast”.

Challenges associated with breastfeeding:

This theme covers many different and diverse reasons for the introduction of formula milk while breastfeeding. These include eight mothers who stated that they had been expressing breast milk only and is best summed up by the following comment:

“I had always found latching him on difficult so I have been expressing since 8 weeks and now I give some formula as well”

Women also stated that they introduced formula because of “sore nipples” (n=6), mastitis or abscess (n=4) and maternal weight loss (n=2).

In the comments that were not categorised (n=4), there were varied responses: “to enjoy alcohol”, “pressurised by manager at work to stop expressing”, “using ready to feed cartons when I go out is much easier than messing around with EBM” and “to help with colic”.

7.3 Challenges with infant feeding and infant health

7.3.1 Infant health or feeding problems

Table 19.5 shows that 23% (n=144) of mothers reported that their baby had not encountered any problems by Phase 3. In common with our findings in Phase 2, colic or wind was the most frequent problem (n=105, 17%), followed by constipation (n=80, 13%). Reflux was the most common problem given by mothers who reported that their baby had a problem other than those listed (n=21). Eighteen mothers reported that their baby had suffered from a cold. Mothers could tick all boxes that were relevant, meaning that the total number of responses is greater than the sample size.

Table 19.5: Problems encountered by babies

	N	%
My baby has never been sick	144	23.1
Colic or wind	105	16.9
Constipation	80	12.8
Sickness or vomiting	55	8.8
Others	63	10.1
Chest infection	43	6.9
Thrush	42	6.7
Diarrhoea	32	5.1
Ear infection	25	4.0
Not gaining enough weight	23	3.7
Urinary tract infection	6	0.9
Gaining too much weight	3	0.4
Total	621	100

7.3.2 Challenges with breastfeeding

Women were asked if there were any difficulties breastfeeding their baby since Phase 2, and 78% (n=346) reported that there had been no problems (Table 19.6). The nature of the difficulties described by the 22% (n=95) who reported that they had encountered problems are summarised in Table 19.7.

Table 19.6: Number of women experiencing problems with breastfeeding since the last questionnaire

	N	%
Yes	95	21.5
No	346	78.5
Total	441	100
Missing	20	
Total	461	

Table 19.7: Problems encountered with breastfeeding since Phase 2

Category	N	%
Specific problems related to the breast	28	30.1
Baby led difficulties	23	24.7
Insufficient supply/hungry baby	18	19.3
Problems introducing bottles	14	15.0
Baby biting	10	10.7
Total	93	

Specific problems related to the breast:

Mothers reported a variety of breast problems, which they felt were associated with breastfeeding. These included mastitis (n=11), blocked ducts (n=6), sore nipples (n=5), breast thrush (n=4) and breast abscess (n=2).

Baby led difficulties:

Some mothers described that their baby had “refused” to breastfeed (n=7), “weaned” (n=3) or had become “fussy” (n=3) or “distracted” (n=2) while breastfeeding. A further 7 mothers reported that their baby was either “waking constantly for comfort feeds at night” or “refused to breastfeed during the day” (n=2).

Insufficient supply/hungry baby:

In common with responses to other free text questions, some mothers reported that “supply problems” had been a difficulty while breastfeeding (n=10). Other mothers felt that this had more to do with having “a very hungry baby” (n=8)

Problems introducing bottles:

Some mothers felt that the biggest problem with breastfeeding was trying to introduce a bottle (n=12). One wrote that she had:

“no problems trying to breastfeed but I could not get her to take a bottle and there is no info on this, just trial and error really”.

Two mothers who had introduced formula commented that they had difficulty getting the baby to breastfeed, with one of them commenting:

“as soon as I introduced a bottle the baby preferred it and it became more and more of a battle to breastfeed”

Baby biting:

Mothers reported that the emergence of their infant’s teeth had led to biting, which made breastfeeding difficult and is best described by the following response:

“she got two teeth at four months and bites my nipples leaving them very, very sore”.

Two responses are not categorised above, and these came from two mothers who described “breastfeeding in public” or “when you have guests” as a difficulty encountered while breastfeeding.

7.3.3 Specific problems associated with breastfeeding since Phase 2

When mothers were asked to identify if they had any of a list of specific problems as a result of breastfeeding, some mothers provided more than one answer (Table 19.8).

Blocked ducts were the commonest problem encountered (n=41, 9%). A further 36 mothers cited nipple pain (8%). Mastitis was a problem for 28 mothers (6%).

Table 19.8: Problems experienced since Phase 2

	N	%
Blocked ducts	41	9.0
Nipple pain	36	7.9
Mastitis	28	6.1
Thrush	13	2.8
Other	12	2.6
None of the above	324	71.3
Total	454	100
Missing	7	
Total	461	

7.3.4 Assistance with breastfeeding related problems

Women who had experienced a problem with breastfeeding since Phase 2 were asked if they had received any help with these difficulties (Table 19.9). The most common answer given was that no one had helped them with the difficulties (n=46, 11%). Where they had received help, women reported in similar numbers that they had received this from a friend or relative (n=20, 5%), doctor or general practitioner (n=18, 4%) and public health nurse (n=18, 4%). Thirteen women (3%) cited other people as the sources of help, the most common of which was partner or husband (n=6), followed by the internet (n=4) and own experience (n=2).

Table 19.9: People who helped mothers with problems

	N	%
I didn't have any problems	293	67.9
No one helped me with these problems	46	10.6
Friend/relative	20	4.6
Doctor/GP	18	4.1
Public health nurse	18	4.1
Other	13	2.8
Member of local support group	11	2.5
Breastfeeding midwife in hospital	7	1.6
Lactation consultant helped me	3	0.6
Private lactation consultant	2	0.4
Total	431	100
Missing	30	
Total	461	

7.4 Infant feeding and employment

Three quarters of the mothers in Phase 3 were (or are) currently employees in their main job (n=333, 74%) (Table 20.1). A further 15% (n=69) categorised themselves as looking after home or family.

National Infant Feeding Survey 2008

Table 20.1: Employment status in main job

	N	%
Employee	333	74
Self-employed, with paid employees	12	2.6
Self-employed, without paid employees	31	6.8
Assisting relative/other (not receiving fixed wage or salary)	5	1.1
Looking after home/family	69	15.3
Total	450	100
Missing	11	
Total	461	

At the time of completing Phase 3, 34% (n=153) of the mothers were in paid work (Table 20.2). This is considerably lower than before the birth of this baby (n=376, 83%).

Table 20.2: In paid work at Phase 3

	N	%
Yes	153	34.3
No	290	65.6
Total	443	100
Missing	18	
Total	461	

Table 20.3 shows that mothers who are not in paid employment are more likely to be breastfeeding at six months than those who were employed. This is the case for both exclusive and partial breastfeeding. Of those mothers exclusively breastfeeding at Phase 3, 72% (n=43) are not in employment compared to 28% (n=17) who are employed. However, being in current employment was not found to correlate significantly with breastfeeding at six months ($\chi^2=1.8$, $df=2$, $p=0.40$).

National Infant Feeding Survey 2008

Table 20.3: Type of feeding at 6 months and mother's current employment status

Type of feeding at 6 months	In paid work at Phase 3				Total
	Yes	%	No	%	
Exclusive breastfeeding	17	28.3	43	71.7	60
Partial breastfeeding	75	34.2	144	65.8	219
Formula feeding	61	37.9	100	62.1	161
Total	153	34.8	287	65.2	440
Missing = 21					

Tables 20.4 and 20.5 show the number of hours worked per week and the age of the infants when their mother returned to work for those women who were working when they completed Phase 3.

Table 20.4: Number of hours worked per week

	N	%
Less than 15 hrs a week	25	16.8
Between 15 and 30 hrs a week	66	44.3
31 or more hours	51	34.2
Varies	7	4.7
Total	149	100
Missing	4	
Total	153	

National Infant Feeding Survey 2008

Table 20.5: Age of infants when mothers returned to work

	N	%
Less than 3 months	9	6.2
Less than 4 months	7	4.8
Less than 5 months	15	10.3
Less than 6 months	48	33.1
Less than 7 months	45	31.0
More than 7 months	21	14.5
Total	145	100
Missing	8	
Total	153	

Although variations can be observed, the number of hours that the mother worked ($\chi^2=4.7$, $df=6$, $p=0.57$) and the age of the baby when she returned to work ($\chi^2=3.67$, $df=10$, $p=0.96$) were not found to influence breastfeeding rates significantly at six months (Tables 20.6 and 20.7).

Table 20.6: Type of feeding at Phase 3 by number of hours the mother is working

	Exclusive breastfeeding		Formula feeding		Partial Breastfeeding		Total
Number of hours a week mother works	N	%	N	%	N	%	N
Less than 15 hrs a week	5	29.4	7	12.1	13	16.8	25
Between 15 and 30 hrs a week	6	35.3	27	46.6	33	44.3	66
31 or more hours	4	23.5	22	37.9	25	34.2	51
Varies	2	11.8	2	3.4	3	4.1	7
Total	17	100	58	100	74	100	149
Missing = 4							

National Infant Feeding Survey 2008

Table 20.7: Type of feeding by age of baby when mother returned to work

	Exclusive breastfeeding		Formula feeding		Partial Breastfeeding		Total
Babies age in months when mother returned to work	N	%	N	%	N	%	N
Less than 3	1	5.9	3	5.5	5	6.8	9
Less than 4	1	5.9	4	7.3	2	2.7	7
Less than 5	1	5.9	6	10.9	8	11.0	15
Less than 6	5	29.4	15	27.3	28	38.4	48
Less than 7	6	35.3	18	32.7	21	28.8	45
More than 7	3	17.6	9	16.4	9	12.3	21
Total	17	100	55	100	73	100	145
Missing = 8							

Table 20.8 shows that facilities to express breast milk were provided by the employers of 17% (n=22) of the mothers when they returned to work. A further 9% (n=12) of mothers who had returned to work indicated that their employer provided facilities to breastfeed their infant. No facilities were provided by the employers of 47% (n=60) of mothers, and 27% of mothers who had returned to work reported that they did not know if any facilities are provided.

Table 20.8: Provision of facilities by employers to express or breastfeed

	N	%
Yes - to express milk	22	17.1
Yes - to breastfeed	12	9.3
No - Neither	60	46.5
Don't know	35	27.1
Total	129	100
Missing	24	
Total	153	

When the provision of facilities to express breast milk or breastfeed at work is compared against the feeding patterns of those mothers in employment, more mothers are found to continue any breastfeeding if these facilities are available (19%, n=17 breastfeeding compared to 15%, n=9 formula feeding) ($\chi^2=11.79$, $df=3$, $p=0.008$). However, it should be noted that most breastfeeding mothers have an employer who does not provide facilities to breastfeed or express breastmilk and this proportion is higher than the proportion of mothers who switched to formula feeding (51%, n=47 of breastfeeding mothers compared to 39%, n=23 of formula feeding mothers).

Table 20.9: Type of feeding by availability of facilities to express or breastfeed at work

Provision of facilities by employers to express or breastfeed						
	Any breastfeeding		Formula feeding		Total	
	N	%	N	%	N	%
Yes - to express milk	17	18.5	9	15.3	26	17.2
Yes - to breastfeed	11	12.0	2	3.4	13	8.6
No - Neither	47	51.1	23	39.0	70	46.4
Don't know	17	18.5	25	42.4	42	27.8
Total	92	100	59	100	151	100
Missing = 2						

Mothers who had returned to work were asked how their baby was cared for while they worked. The use of a childminder or nanny was the commonest form of childcare utilised (27%, n=53) (Table 20.10) (Some mothers ticked more than one of the answers).

Table 20.10: How baby is cared for while mother is at work

	N	%
Childminder/nanny	53	26.7
Husband or partner	44	22.2
Other crèche or nursery	36	18.1
The child's grandparent(s)	27	13.6
Another relative	11	5.5
Workplace crèche or nursery	10	5
Baby cared for by me at work	8	4
Friend	6	3
Other person or place	3	1.5
Total	198	100

All mothers were asked if they planned to work again within the next year and Table 20.11 shows that a large majority plan to work either full-time (n=156, 41%) or part-time (n=130, 34%).

Table 20.11: Mother's plans to start work again within the next year

	N	%
Yes, full-time	156	40.7
Yes, part-time	130	33.9
No	63	16.4
Don't know	34	8.9
Total	383	100
Missing	78	
Total	461	

When the mother's type of feeding is compared with her plans for employment over the next year, it is apparent that those mothers who had discontinued breastfeeding

were more likely to be planning to resume work ($\chi^2=18.47$, $df=6$, $p=0.005$). Among mothers who were continuing any breastfeeding at Phase 3, 25% (n=45) do not plan to resume work over the next year compared to 29% (n=29) of formula feeding mothers. More breastfeeding mothers are also unsure of their plans to work over the next year (12%, n=26) than those who have switched to formula at Phase 3 (6%, n=6).

Table 20.12: Type of feeding by mother's plans to work in the next year

Do you plan to start work again within the next year						
	Any breastfeeding		Formula feeding		Total	
	N	%	N	%	N	%
Yes, full-time	62	34.3	42	42.9	104	37.3
Yes, part-time	48	26.5	38	38.8	86	30.8
No	45	24.9	29	21.0	57	20.4
Don't know	26	11.6	6	6.1	32	11.5
Total	181	100	98	100	279	100
Missing = 29						

7.5 Preferred length of breastfeeding

Mothers were asked about the duration of breastfeeding and Table 21.1 shows that 160 mothers (36%) are breastfeeding for as long as they intended and a further 84 (19%) indicated that they had breastfed for as long as intended when they stopped. However, 108 mothers (24%) would have liked to breastfeed for longer and 90 mothers (20%) breastfed for longer than intended.

Table 21.1: Duration of breastfeeding in relation to previous intention

	N	%
I am breastfeeding for as long as I had intended	160	36.2
I would like to have breastfed for longer	108	24.4
I have breastfed for longer than I intended	90	20.4
I have breastfed for as long as intended	84	18.8
Total	442	100
Missing	19	
Total	461	

7.6 Support and assistance with infant feeding

7.6.1 Support services used

When asked about the breastfeeding support services women had used, 44% (n=245) indicated that they did not use support services (Table 21.2). The most common support service used was the public health nurse (20%, n=111), followed by a community breastfeeding support group (13%, n=74).

Table 21.2: Breastfeeding support services used

	N	%
I did not use any support services	245	44.1
Public Health Nurse	111	20
Community breastfeeding support	74	13.3
Hospital breastfeeding support	26	4.6
Other	19	3.4
Community mothers programme	18	3.2
Cuidiu	10	1.8
ALCI	3	0.5
Private lactation consultant	5	0.9
Total (women could select as many options as applied)	555	100

National Infant Feeding Survey 2008

Table 21.3 shows that among those women who did seek support services, 83 (19%) found it very easy to find such services. However, some women indicated that they found it difficult (n=18, 9%) or very difficult (n=5, 1%), and 8 (2%) women were unable to access support services.

Table 21.3: Ease of finding breastfeeding support services

	N	%
Did not seek any support services	247	55.2
Very easy	83	18.5
Easy	46	10.2
Fairly easy	40	8.9
Difficult	18	4.0
Very difficult	5	1.1
I was unable to access support services	8	1.7
Total	447	100
Missing	14	
Total	461	

All mothers were asked if they had been given any information on how to get help with feeding their babies since Phase 2 (Table 21.4). The majority (58%, n=262) had not received such information from anyone.

Table 21.4: Information on how to get help with feeding since the last questionnaire

	N	%
Yes	187	41.6
No	262	58.3
Total	449	100
Missing	12	
Total	461	

In common with the results from Phase 2, (59%, n=1,078) table 21.5 shows that mothers felt that their own experience had had the most impact on them (24%, n=282), when they were asked to recall the most helpful information that they had received.

Table 21.5: Source of the most helpful information mothers received about feeding since the baby was born

	N	%
Own experience	282	24.3
Health professionals	200	17.2
Friends/other mothers	195	16.8
Books/magazines/TV	118	10.1
Your mother	112	9.6
Sister	68	5.8
Partner	53	4.5
Others	36	3.1
Peer or support groups	28	2.4
Voluntary organisations	28	2.4
Mother-in-law	22	1.8
Other relatives	18	1.5
Total	1160	100

7.6.2 Support to continue breastfeeding

All mothers were asked who or what had helped them most to continue breastfeeding and, as with Phase 2 findings, the mother's own experience was most commonly reported (Table 21.6).

Table 21.6: Factors or people that helped mothers most to continue breastfeeding

	N	%
Own experience	331	43.6
Partner	124	16.3
Friends/other mothers	70	9.2
Health professionals	66	8.6
Your mother	49	6.4
Books/magazines/TV	35	4.6
Others	24	3.1
Other relatives	21	2.7
Voluntary organisations	20	2.6
Peer or support group	14	1.8
Mother in law	5	0.6
Total	759	100

7.7 Discontinuation of breastfeeding

7.7.1 Reasons for discontinuing breastfeeding

Mothers who had discontinued breastfeeding between Phase 2 and Phase 3 were asked why they stopped breastfeeding and a total of 148 women responded to this question, giving 192 reasons. The responses are summarised in Table 21.6 and fell into seven main categories.

Table 21.6: Breastfeeding mothers' reasons for stopping breastfeeding

Category	N	%
Discontinued due to busy lifestyle/other children	48	25.0
Perceived insufficient milk supply/hungry baby	39	20.3
Lack of facilities or uncomfortable with feeding in public	33	17.2
Felt it was time to stop/Breastfed as long or longer than intended	25	13.0
Problems associated with breastfeeding	19	9.9
Returning to work	18	9.4
Lack of support for breastfeeding/wanted partner to share feeding	10	5.2
Total	192	

As can be seen from the responses, there were varied reasons given for discontinuing breastfeeding and women provided lengthy descriptions.

Discontinued due to busy lifestyle/other children:

The most frequent reason that mothers gave for stopping breastfeeding can be summed up as “had enough, was really feeling tied to it”, this was the reason given by 48 mothers (25%). Many women went into great detail, explaining family commitments and hectic demands on their daily lives and it was clear that women felt that breastfeeding was placing restrictions on their life. Many mothers felt that these demands made it impossible to continue any breastfeeding. One wrote:

“Going on to Infant formula was the only practical option for me, between school runs, after school activities and the demands of looking after two other children I had to give up after 4 months”.

It was also evident that many women felt that continuing breastfeeding was difficult when they had other children, with 12 reporting something such as “it was harder to continue with the other children, I was just too busy”.

Women also spoke of discontinuing before a planned or unplanned event such as weddings, funerals or illness in their family (n=10). An example was “family wedding in America – had to leave baby at home”.

Perceived insufficient milk supply/hungry baby:

In common with results from Phase 2, women described various problems with their milk supply. Women (n=28) stated that their “milk was drying up” or had a “reduced supply”. A further 11 women wrote that their baby “didn’t get enough milk” or they “couldn’t keep up with the demand”. Some of the women (n=6) seemed to be aware that there were reasons contributing to their diminished supply, with two of these reporting:

“used nipple shields for 5 months and supply was always a problem”

“went away for the weekend and had to give formula, tried to express but couldn’t get good supply going after I came back”.

Lack of facilities or uncomfortable with feeding in public:

Two similar themes were evident for women around feeding in public and stopping breastfeeding. Some women stated that they had stopped because of “a lack of public places to feed the child” (n=7) but this was clearly linked to a discomfort with breastfeeding in public (n=26) with statements such as “very difficult to go out in public”.

The link between the lack of public facilities and the difficulties this posed for mothers is best summed up by the following response:

“I found myself staying at home as I was not comfortable breastfeeding in public and so it is easier to stay at home. I had to stop then because I needed to get out of the house and back to normal again”.

Felt it was time to stop/Breastfed as long as or longer than intended:

It was evident that for many mothers they had “decided from the start” on a duration of breastfeeding and stopped when they had reached this time point (n=11). Other mothers gave free text responses that they “felt it was time” to stop (n=11) or had “fed for longer than I ever intended” (n=5).

Problems associated with breastfeeding: (19)

Problems associated with breastfeeding contributed to stopping for reasons relating to both the mother and the baby. The most common problem reported in this part of the survey related to “baby biting the breast” or “baby was teething” (n=9). Ten mothers reported specific issues related to breastfeeding such as “mastitis” (n=4), abscess (n=2) and “attachment difficulties” (n=1). Although not specifically a problem associated with breastfeeding, three mothers reported that they “needed to stop to take medication” or were admitted to hospital.

Returning to work:

Eighteen women gave the specific reason of “returning to work” for stopping breastfeeding. Two of these women commented that expressing would not be “feasible” or “realistic” while working.

Lack of support for breastfeeding/wanted partner to share feeding:

A “lack of support” for breastfeeding was the reason for discontinuation given by six women, such as this comment:

“my partner and his mother, brother and sister continually nagged me to give the baby formula so in the end I just gave up”

A further four women said that they gave up so that their partner or family could “share the load”.

7.7.2 Age of infants when Phase 3 mothers discontinued breastfeeding

The mean age of the infant when the mothers who responded to Phase 3 discontinued breastfeeding was 20 weeks, with 105 mothers (53%) having discontinued between 12

and 20 weeks (Table 21.7). This analysis includes all mothers who had discontinued at time of completing Phase 3 (n=220), remembering that these women are the subset who were still breastfeeding at Phase 2 (i.e. when their baby was 3-4 months old).

Table 21.7: Age of infants when they were last given breastmilk or breastfed

	N	%
12-16	55	27.5
17-20 weeks	50	25.0
21-24 weeks	51	25.5
25-28 weeks	36	18.0
29-32 weeks	5	2.5
33-34 weeks	3	1.5
Total	200	100
Missing = 20		

7.7.3 Factors influencing discontinuation

Table 21.8 shows that among mothers who had discontinued breastfeeding by Phase 3, the majority 64% (n=144) cited their own experience as influencing them to stop breastfeeding, which is congruent with results from Phase 2. Health professionals were found to be less influential on the decision to stop at Phase 3 than they had been for mothers who discontinued in Phase 2 (13% in Phase 2 compared to 3.5% in Phase 3). This is not surprising given that the mothers would have less contact with health professionals in the interval between Phase 2 and Phase 3, than in the interval between birth and Phase 2. Women could select more than one factor when answering this question.

National Infant Feeding Survey 2008

Table 21.8: Factors or people that influenced mothers who have discontinued to stop breastfeeding

	N	%
Own experience	144	63.7
Others	22	9.7
Partner	16	7.1
Your mother	14	6.2
Other relatives	12	5.3
Friends/other mothers	8	3.5
Health professionals	8	3.5
Mother in law	2	0.9
Total	226	100

Mothers who had discontinued breastfeeding at the time of Phase 3 were asked what, if anything, would have assisted them to continue and the responses are provided in Table 21.9.

Table 21.9: Factors that would have assisted mothers to continue breastfeeding

Category	N	%
Nothing	72	38.1
Additional support	49	25.7
Longer maternity leave	30	15.9
Improved facilities for breastfeeding mothers	20	10.6
Better supply	18	9.5
Total	189	100

A total of 171 mothers responded to this question, providing 189 different replies.

Nothing would have assisted:

Many mothers (38%, n=72) indicated that nothing would have assisted them to continue or that they felt it was time to stop breastfeeding. For example:

“nothing would have helped me, I was ready to stop and am very happy that I fed for as long as I did”.

Additional support:

Of the mothers who indicated that additional support would have assisted them to continue, the commonest type of support referred to was from family or partners but health professionals and support groups were also mentioned. One mother commented:

“if my husband didn’t work such long hours or if my family lived closer I might have been able to continue. I needed someone to care about me”.

Among mothers who commented on the need for greater support from groups or professionals, eight of these referred specifically to the Public Health Nurse:

“more visits from the PHN may have helped me to keep going as I felt there was no consistent advice around me”.

Three mothers also stated they may have continued if there was a support group available to them.

Other women commented that “childcare”, “a nanny”, “if my husband grew breasts” and “a different set of friends and family” may have assisted them to feed for longer. Four mothers also commented on “the lack of a breastfeeding culture in Ireland” or “less pressure to give up at six months and stop making me feel like a freak”.

A further eight mothers gave factors related to the infant which they felt could not be helped, such as:

National Infant Feeding Survey 2008

“if he didn’t grow teeth I’d have kept going, but nobody could have assisted me with that”.

Longer maternity leave:

The need for a longer period of paid maternity leave to assist with longer breastfeeding was suggested by 30 (16%) mothers. One wrote:

“if maternity leave was longer or maybe if I wasn’t going back to work full-time I would have continued for longer”.

Facilities:

Some women commented that better facilities for breastfeeding mothers would have assisted them to feed for longer. For example:

“if there were more places to breastfeed as I wasn’t comfortable to feed in public and I was sick of staying at home”.

One woman also suggested that “there are no fashionable tops for breastfeeding in, I was sick of wearing the same clothes and didn’t feel like flashing in public”.

Better supply:

Eighteen mothers felt that having a better milk supply would have enabled them to continue feeding. One mother commented:

“If I had of had a better milk supply I would have kept it up but I was feeding all day and he was just never contented”

8 Discussion

8.1 Introduction

The purpose of this study was to provide baseline data on the rate of exclusive and partial breastfeeding from birth to 48 hours, and at 3-4 months and 6-7 months following birth, to ascertain what factors influence a decision to breastfeed or not, and to determine the reasons given by women for stopping breastfeeding. The results clearly highlight that breastfeeding rates are increasing in Ireland but remain low in comparison with other countries.

8.2 Limitations and success of the survey

We employed several strategies to maximise the response rate for this survey, including making the entry stage relatively simple for the new mothers and regular follow-up of non-responders in later stages. The response rate to Phase 1 ensured that we had a large sample of more than 2500 women to begin with, representing approximately a third of women who gave birth in Ireland at the start of the second quarter of 2008. It is impossible to know if this is a representative sample without more data on the non-respondents, but the congruence with the findings of other research and with demographic data for Ireland is re-assuring. However, it is possible that over-sampling of women who were more likely to breastfeed may have occurred (see section 19.1). While the research team went to great lengths to ensure that this would not happen, some midwives in distributing the questionnaire may have interpreted the focus of the survey as being to assess breastfeeding rates and, therefore, may have been more inclined to give the Phase 1 questionnaire to women who were breastfeeding rather than those who were formula feeding. In addition, women who were breastfeeding may have been more motivated to respond to a questionnaire of this type.

Based on our site visits, the main obstacles to achieving a higher response rate in Phase 1 were the pressures of work on staff in the maternity units, making it difficult for them to spend time distributing the questionnaire and encouraging the women to

complete it. This may be reflected in the wide variation in response rates among the different sites. Our subsequent response rates of 72% and 74% for Phase 2 and Phase 3 respectively are good for a postal questionnaire, and the quality of the data is generally high. It is impossible to be certain that non-responses have not introduced bias into our findings. However, the large number of women who took part still provides extremely useful, unique data for understanding breastfeeding in Ireland at the end of the first decade of the twenty-first century.

8.3 *Breastfeeding rates*

Results from Phase 2 of this study show a breastfeeding initiation rate of 56% and while this is an encouraging increase on those previously reported the stark differences between Irish and non-Irish mothers in the survey should be noted. When results are reviewed separately, it is evident that Irish mothers are still much less likely to initiate breastfeeding (50%) than non-Irish mothers living in Ireland (76%). This is still evident in rates of discontinuation at six months with Irish women less likely to be still breastfeeding by this time. The disparities between Irish and non-Irish women has been reported previously by Tarrant (2008) in a study of one Dublin maternity unit and this survey shows that this is evident throughout Ireland. Is it also worth noting that the rate of 49.6% of breastfeeding among Irish mothers is the same as that reported in 1978 for mothers of higher socio-economic status. Considering the economic changes that have occurred in Ireland since the 1970s it is surprising that this rate has not increased more dramatically and thus demonstrates that factors affecting initiation rates are more complex than simply the socioeconomic status of the mother.

By the time of discharge from hospital, exclusive breastfeeding has dropped to 49% (n=881) and by 3-4 months (Phase 2) the rate of exclusive breastfeeding had declined to 19% (n=347) with a further 15% of mothers (n=274) partially breastfeeding at this time. The most recently published ESRI (2008) figure for exclusive breastfeeding on discharge from hospital is based on data collected in 2005 and is 44%, which indicates that there may have been an increase in breastfeeding on discharge over the last few years.

At Phase 3, exclusive breastfeeding was reported by 18% (n=61) of the 461 mothers who were breastfeeding at Phase 2, which is 10% of the 621 who were either exclusively or partially breastfeeding their babies at Phase 2, 6% of the 1002 mothers who had breastfed their infants at birth and responded to Phase 2, and only 2.4% of the 2,527 mothers who took part in Phase 1. A further 230 mothers were partially breastfeeding at six months, which is 37% of the 621 who were either exclusively or partially breastfeeding their babies at Phase 2, 23% of the 1002 mothers who had breastfed their infants at birth and responded to Phase 2, and only 9% of the 2,527 mothers who took part in Phase 1. These findings indicate that very few women and infants in Ireland are receiving the benefits of breastfeeding for the duration recommended by the World Health Organisation (2001).

Challenges in determining exclusive breastfeeding

Results from Phase 3 of this study reveal that many women who are breastfeeding supplement their babies with other fluids only once a week or less. The rate of exclusive breastfeeding is therefore highest when measured in the previous 24 hour period. This poses challenges for determining breastfeeding exclusivity, which has been noted in other infant feeding surveys (Bolling et al 2006). As this survey aimed to determine the proportion of infants feeding at 3 different time points the results relate to how the mother was feeding her baby at that time point, and not her recall of the total period from birth. Therefore, as has been suggested by Bolling et al (2006), exclusive breastfeeding refers only to the time period specified in that question. Analysis of the mothers who were exclusively breastfeeding when they completed Phase 3 reveals that there are just 2 infants who have only ever been given breastmilk since birth.

8.3.1 Regional variations in breastfeeding rate

The highest incidences of initiation were found in the Dublin South East Local Health office area (n=29, 78%) and the lowest was found in Waterford and Louth (n=16, 38% and n=13, 38%). Rates of breastfeeding were previously reported as lower in Louth than in County Meath in a study of breastfeeding in this region (Howell et al

1999). Variations in initiation rates can be found depending on the hospital where the mother gave birth. The highest initiation rates were found among births to women cared for by independent midwives, with all eight women initiating breastfeeding at birth and all five of the mothers who responded to Phase 2 breastfeeding at 48 hours and at 3-4 months. Three of these women were still exclusively breastfeeding at 6-7 months. Hospital R had the highest initiation rate of all hospitals (n=39, 70%) and N (n=1, 25%) had the lowest.

8.3.2 Factors affecting initiation

Socio-economic status

This survey assessed breastfeeding initiation based on three measures of socio-economic status suggested by the literature to be predictive of breastfeeding behaviour (Dyson et al 2005) and demonstrates that there are clear differences in breastfeeding prevalence among women from different socio-economic backgrounds. This finding is also consistent with other, smaller, Irish studies (Twomey et al 2000, Lande et al 2003, Tarrant 2008). Among those mothers categorised as “Professional workers,” 70% initiated breastfeeding compared to 37% of “Semi-skilled” workers. As small numbers of “unskilled”, “Students” and “Unemployed” mothers participated in this survey it is difficult to draw comparisons based on these three groups. Mothers who had private health insurance were also found to be more likely to initiate breastfeeding than those who did not, as were those who had longer durations of education and achieved higher academic levels. The findings also highlight that attendance at antenatal classes was associated with initiation of breastfeeding, but this is unsurprising given that consistent with other research, attendance at classes is linked with socio-economic status of the mother (Fabian et al 2004).

Age of the mother

Consistent with findings from previous research (Bolling et al 2006, Taylor et al 2006) this study confirmed that the age of the mother was associated with initiation and duration of feeding, with mothers aged 40-45 being most likely to be exclusively breastfeeding at 3-4 months. None of the 32 mothers under 20 years of age were

exclusively breastfeeding at Phase 2 of the survey. This finding clearly emphasises the need to target breastfeeding promotion at younger mothers.

Knowledge of the benefits of breastfeeding

Mothers who chose to breastfeed at birth were aware of the health related benefits of breastfeeding that this would confer on their infants and it is clear that this influenced their decision to breastfeed. Text answers summarised in Table 6.8 highlight that these mothers are knowledgeable about the health, nutritional and psychological advantages of breastfeeding. In contrast, mothers who chose bottle-feeding at birth were likely to state that they had chosen this method for reasons of convenience or embarrassment related to breastfeeding, which has been noted previously by Tarrant (2008) among Irish mothers. Mothers who breastfed were also more likely than their bottle-feeding counterparts to cite specific benefits of breastfeeding to the mother and infant (Tables 7.1 and 7.2). Given that knowledge of the benefits of breastfeeding were important determinants of choosing this method, there is a need to highlight and inform all pregnant women about the specific advantages that it confers on mother and infant in the short and long term.

Previous unsatisfactory breastfeeding experiences

Among bottle-feeding mothers, it was evident that a previous unsuccessful attempt at breastfeeding had deterred them from attempting this method of feeding with their new baby. There exists currently, a paucity of literature on the possible impact of unsatisfactory breastfeeding experiences on future infant feeding choices (Mozingo et al 2000).

Parity

Breastfeeding at birth is now the predominant method of feeding among both first and second time mothers in Ireland. Mothers who were having their first baby were more likely to breastfeed (60%, n=433) than formula feed (40%, n=288) and more mothers having their second or subsequent baby also breastfed at birth (54% n=567, compared to 46% n= 481 who formula fed at birth).

One unexpected finding was that those mothers who had two previous infants had lower rates of breastfeeding for those infants, than mothers with any other number of

children. Other data in this survey do not provide an explanation for this and the literature review also failed to suggest that this may be an important determinant of breastfeeding initiation. Thus, this is almost certainly due to chance within this dataset and illustrates the importance of reviewing the existing research to identify hypotheses to test, and the need to be very cautious in making recommendations if an unexpected finding occurs. Nonetheless, findings from the qualitative component of this study suggest that having other children was a barrier to breastfeeding for bottle feeding women, which has been previously noted by Stewart-Knox et al (2003).

8.4 Duration of breastfeeding

By two weeks after birth, 35% (n=153) of breastfeeding mothers had discontinued breastfeeding and at one month more than half (55%, n=243) were fully formula feeding. Noteworthy, is the finding that 44% of mothers who had discontinued by Phase 2, indicated that they had breastfed for as long as intended and therefore did not plan to continue breastfeeding for the duration recommended by both national and international standards. Given that previous research suggests intended length of breastfeeding is associated with actual duration (Vogel 2003) there is an urgent need to inform women of the benefits that can be attained from breastfeeding for longer durations.

The largest absolute decrease in breastfeeding rates at discharge from hospital can be found among Polish women. In the light of literature from other countries suggesting that longer durations of residency can negatively impact on breastfeeding initiation rates this finding is highly relevant to the changing demographics of Irish society (Rossiter 1992, Gibson-Davis and Brooks-Gunn 2006). The reason for this finding cannot be extrapolated from the survey results; however, it is relevant to health professionals to ensure that these women are provided with the required support and assistance to initiate and continue breastfeeding.

Mothers who had discontinued breastfeeding by Phase 3 indicated that their busy lifestyles and the needs of other children had been an influential factor in the decision

to stop breastfeeding. This has also been reported in Northern Ireland by Stewart-Knox et al (2003).

8.4.1 Impact of care

Antenatal care

The survey findings demonstrate that infant feeding was not discussed with many women during pregnancy (31%, n=550) and this is confirmed by the views of the women who participated in the qualitative aspect of the study.

In line with previous Irish research (Tarrant 2008) breastfeeding was initiated by a higher proportion (62%) of mothers who attended antenatal classes. However, attendance among this sample was found to be associated with the socio-economic status of the mother which is also a determinant of breastfeeding initiation.

Birth and postnatal care

Factors relating to birth, postnatal care and support revealed that those mothers who had discontinued shortly after birth were more likely to have had a caesarean section or vacuum delivery. Among breastfeeding mothers who had a normal delivery, 83% (n=462) were still breastfeeding at discharge while only 73% (n=93) of those having a vacuum delivery and 72% (n=175) of caesarean section mothers reported breastfeeding at this time. Findings from Dewey et al (2003) also support this finding and suggest that caesarean births are associated with a delay of about one day in 'milk coming in'. Given that Ireland, like many countries, has seen a steady rise in this practice (Matthews et al 2003) this finding has implications for both mothers and maternity care providers. Leung et al (2002) have also previously noted that vacuum delivery is associated with 'early abandonment' of breastfeeding and suggest that this is likely to be as a result of perineal trauma and the discomfort felt by the baby.

Results also revealed that the longer a mother stayed in hospital after birth the more likely she was to be combination feeding at discharge from hospital. It should be noted that this may be attributed to mode of delivery, because women who had caesarean births may have a longer stay than those who experience a normal birth.

Nevertheless, the practice of supplementing breastfeeding infants in hospital is known to be a risk factor for early cessation and is frequently not medically indicated (Tender et al 2009).

It is noteworthy that infants that were under 3 Kg at birth were more likely to be formula fed at birth and on discharge from hospital than infants who weighed more than 3 Kg. The review of the literature supports this finding in the Irish context with Joyce et al (1978 & 1984) and Tarrant (2008) reporting similar findings for lower birth weight infants. Given that breastfeeding confers numerous health benefits to all infants, but is particularly beneficial to those who have lower birth weights, this is a finding that has implications for targeting and promotion of breastfeeding.

Support services

The most common community breastfeeding support service provided to Phase 2 mothers was contact details for the public health nurse (n=589, 65%). Less than half of the mothers who breastfed initially (n=431, 48%) were given any information about a community breastfeeding support group. This finding is disappointing given that over a hundred and fifty Health Service Executive and voluntary breastfeeding support groups are available nationally (HSE 2009).

The public health nurse was also the service that mothers most commonly cited as the support service accessed. This was followed in frequency by the community breastfeeding support group and La Leche League. Among mothers who accessed breastfeeding support services, 36% (n=114) indicated that the service was excellent and a further 39% (n=125) were very happy with services.

Results from Phase 2 and Phase 3 were consistent in showing that the mother's own experience was the source of the most helpful support, and the source that had the most impact on them.

Future intentions

An important finding from the study was that among mothers who formula fed from birth, 13% (n=96) would consider breastfeeding a future infant and a further 13% (n=95) would choose combination feeding. This is highly relevant to future practice

and breastfeeding, as women who choose to formula feed have been described as lacking the intrinsic motivation to breastfeed and it is suggested that the demographic factors associated with bottle-feeding are not easily modifiable (Blyth et al 2002). However, it is clear that a proportion of these women would be willing to breastfeed their future infants.

8.4.2 *Women's reasons for discontinuing*

Many women perceived insufficient milk supply as a barrier to successful breastfeeding. This is consistent with the findings of Gatti (2008) and, as is evident from the women's responses (Table 21.6), contributed to cessation of breastfeeding between Phases 2 and 3. The common reason given for discontinuing breastfeeding at this time was the busyness of the women's lifestyles and the demands of family life (25%, n=48).

The lack of facilities and embarrassment associated with feeding in public were also cited as reasons for discontinuing breastfeeding by Phase 3. The findings from Phase 2 had also confirmed that breastfeeding mothers had encountered problems finding somewhere suitable to feed their infants in public (39%, n=351). More worryingly, 11% (n=100) of women had been stopped or made feel uncomfortable about breastfeeding in a public place. The literature also suggests that embarrassment related to breastfeeding in public is a deterrent to initiation of breastfeeding for Irish mothers (Tarrant 2008).

8.5 *Conclusion*

This survey has collected valuable data on the prevalence and duration of exclusive breastfeeding in Ireland and highlighted that although breastfeeding is now the predominant method of feeding at birth there remains a sharp decline in the two weeks after birth. In addition, the survey establishes the factors influencing the infant feeding decisions of women in Ireland, the reasons they start and the reasons they stop breastfeeding. This knowledge will support the continuing development of

national and local strategies to address the rates of breastfeeding initiation and duration in Ireland.

8.6 Recommendations

It is recommended that:

- Breastfeeding promotion should be targeted at those women and in those areas shown to have lowest rates of breastfeeding initiation and continuation.
- In particular, women from lower socio-economic groups should continue to receive specific advice, support and assistance in order to increase breastfeeding initiation among this group.
- The promotion of breastfeeding at societal level should be further developed so that teenage, pregnant and postnatal women (and men) are exposed to positive images of breastfeeding, through school and antenatal education programmes, thus assisting them to make informed decisions about infant feeding choices. .
- Policies on the use of in-hospital supplementation of breastfed babies with formula should be reviewed and its use decreased.
- Health professionals should be made aware of the effect of caesarean and instrumental birth on breastfeeding and additional support should be offered to these women.
- Health professionals in those areas shown to have lowest rates of breastfeeding initiation and continuation should receive specific education on how to advise and support women who wish to breastfeed.
- Hospital discharge advice should provide information on the existence of services to support breastfeeding, tailored to the woman's area of residence.
- National campaigns should continue to highlight the presence and support offered by breastfeeding support groups.
- Women who are formula feeding should receive advice prior to discharge on how to make up bottle feeds correctly.
- To counter the sharp decline in breastfeeding in the first two weeks, support and assistance should be provided for breastfeeding mothers at home during this time.

National Infant Feeding Survey 2008

- Facilities for breastfeeding outside the home need to be enhanced and made more visible so that women can feel more confident about breastfeeding in public.
- Phase 1 of this survey should be repeated bi-annually, with funded local data collectors to ensure a more complete sample, to monitor breastfeeding rates at birth and discharge.
- Phases 2 and 3 of this survey should be repeated every four years to monitor breastfeeding rates at 2-3 months and 6-7 months.

Further research

- Further research is required to understand why the small number of women who gave birth at home are those most likely to exclusively breastfeed.
- Future surveys should also take consideration of the need to collect data on the effect of duration of residency in Ireland on breastfeeding rates among non-Irish women.
- The introduction of education programmes for health professionals and women, and new initiatives to support women breastfeeding in the community, need to be introduced and evaluated within the context of research studies.

9 References

Amir L H and Donath S M (2008) Socioeconomic status and rates of breastfeeding in Australia: evidence from three national health surveys. Medical Journal of Australia **189**(5) 254-6.

An Bord Altranais (2001) Guidelines for Midwives An Bord Altranais Dublin.

Anderson J, Johnstone B and Remley D (1999) Breastfeeding and cognitive development: a meta-analysis. American Journal of Clinical Nutrition **70**(4) 525-35.

Aniansson G, Alm B, Andersson B, Hakansson A, Larsson P and Nylen O (1994) A prospective cohort study on breastfeeding and otitis media in Swedish infants. Pediatric Infectious Disease Journal **13**(3) 183-8.

Bailey C, Pain R H and Aarvold J E (2004) A give it a go' breast-feeding culture and early cessation among low-income mothers. Midwifery **20**(3) 240-50.

Banderali G, Riva E, Scaglioni S, Agstoni C and Giovannini M (2003) Monitoring breastfeeding rates in Italy. Acta Paediatrica (Supplement) **91**(441) 6-8.

Barber C M, Abernathy T, Steinmetz B and Charlebois J (1997) Using a breastfeeding prevalence survey to identify a population for targeted programs. Canadian Journal of Public Health **88** 242-5.

Beral V, Bull D, Doll R, Peto R and Reeves G (2002) Collaborative Group on Hormonal Factors in Breast Cancer. Breast cancer and breastfeeding: collaborative reanalysis of individual data from 47 epidemiological studies in 30 countries, including 50,302 women with breast cancer and 96,973 women without the disease. Lancet **360**(9328) 187-95.

Blyth R, Creedy DK, Dennis CL, Moyle W, Pratt J, De Vries SM (2002) Effect of maternal confidence on breastfeeding duration: An application of breastfeeding self-efficacy theory. Birth **29**(4) 278-84.

Bolling K, Grant C, Hamlyn B and Thornton A (2006) Infant Feeding Survey 2005 The Information Centre, Department of Health, Social Services and Public Safety UK London.

Bonuck K A, Freeman K and Trombley M (2005) Country of origin and race/ethnicity: impact on breastfeeding intentions. Journal of Human Lactation 21(4) 320-6.

Burgess S W, Dakin C J and O'Callaghan M J (2006) Breastfeeding does not increase the risk of asthma at 14 years. Pediatrics 117(4) 787-92.

Cattaneo A, Davanzo R and Rofani L (2000) Are data on the prevalence and duration of breastfeeding reliable? Acta Paediatrica 89(1) 88-93.

Carr E C J and Worth A (2001) The use of telephone interviewing for research Nursing Times research 6(1) 511-24.

Chantry C J, Howard C R and Auinger P (2006) Full breastfeeding and associated decrease in respiratory tract infection in US children. Pediatrics 117(2) 425-31.

Connolly J, Cullen J H and MacDonald D (1981) Breast Feeding Practice and Factors Related to Choice of Feeding Method. Irish Medical Journal 74(6) 166-9.

Connolly P (2003) Ethical principles for Vulnerable Groups. Office of the First Minister and Deputy First Minister, Belfast.

Central Statistics Office (2007) Census 2006 Preliminary Report. Central Statistics Office, Ireland.

Cuidiú (2007) Cuidiú-ICT's Consumer Guide to Maternity Services in Ireland. Cuidiú. <http://www.cuidiu-ict.ie/frulcrum.html?ep=13&ad=22&to=0> Accessed 14th July 2008.

Cummings R and Klineberg R (1993) Breastfeeding and other reproductive factors and the risk of hip fractures in elderly women. International Journal of Epidemiology 22(4) 684-91.

Davis M (1998) Review of the evidence for an association between infant feeding and childhood cancer. International Journal of Cancer Supplement 11 29-33.

Der G, Batty G D and Deary I J (2006) Effect of breast feeding on intelligence in children: prospective study, sibling pairs analysis, and meta-analysis. British Medical Journal **333**(7575) 945-10.

Dewey K, Heinig M and Nommsen-Rivers L (1995) Differences in morbidity between breastfed and formula-fed infants The Journal of Pediatrics **126**(5) 696-702.

Department of Health (1994) A National Breastfeeding Policy for Ireland. Department of Health The Stationery Office, Dublin.

Department of Health and Children (2005) Breastfeeding in Ireland: A Five Year Strategic Action Plan. Department of Health and Children The Stationery Office, Dublin.

Dewey K G, Nommensen-Rivers L A, Heinig J M and Cohen R J. (2003) Risk factors for suboptimal infant breastfeeding behaviour, delayed onset of lactation and excess neonatal weight loss. Pediatrics **112**(3) 607-19.

Dubois L and Girard M (2003) Social determinants of initiation, duration and exclusivity of breastfeeding at the population. Canadian Journal of Public Health **94**(4) 300-5.

Duncan B, Ey J, Holberg C J, Wright A L, Martinez F D and Taussig L M (1993) Exclusive breastfeeding for at least 4 months protects against otitis media. Pediatrics **91**(5) 867-72.

Dyson L, McCormick F and Renfrew M J (2005) Interventions for promoting the initiation of breastfeeding. Cochrane Database of systematic Reviews In The Cochrane Database of Systematic Reviews: Issue 2. Chichester UK John Wiley & Sons Ltd. Issue 2. Art. No.: CD001688. DOI: 10.1002/14651858.CD001688.pub2.

Earle S (2000) Why some women do not breast feed: bottle feeding and fathers' role. Midwifery **16**(4) 323-30.

Economic and Social Research Institute (2008) Breastfeeding Practice (derived from the NPRS data for 2005). HIPE & National Perinatal Reporting System Unit Economic and Social Research Institute, Dublin.

Economic and Social Research Institute (1991-2007) National Perinatal Statistics. National Perinatal Reporting System Department of Health and Children, Dublin.

Economic and Social Research Institute (2006) Breastfeeding initiation rates 2003. HIPE & National Perinatal Reporting System Unit Economic and Social Research Institute, Dublin.

Edwards P, Roberts I, Clarke M, DiGuseppi C, Pratap S, Wentz R, Kwan I and Cooper R (2007) Methods to increase response rates to postal questionnaires. In The Cochrane Database of Systematic Reviews: Issue 2. Chichester UK John Wiley & Sons Ltd DOI: 10.1002/14651858.MR000008.pub2.

Enger S, Ross R, Henderson B and Bernstein L (1997) Breastfeeding history pregnancy experience and risk of breast cancer. British Journal of Cancer **76**(1) 118-23.

European Union (2004) EU Project on Promotion of Breastfeeding in Europe, Protection, promotion and support for breastfeeding in Europe: a blueprint for action. (Ed) European Commission, Luxembourg.

Fabian M H, Rådestad J I and Waldenström U (2004) Characteristics of Swedish women who do not attend childbirth and parenthood education classes during pregnancy. Midwifery **20**(3) 226-35.

Fewtrell M S (2004) The long-term benefits of having been breastfed. Current Paediatrics **14** 97-103.

Field A (2005) Discovering Statistics Using SPSS. SAGE publications, London.

Fitzpatrick C C, Fitzpatrick P E and Darling M R N (1994) Factors associated with the decision to breastfeed among Irish women. Irish Medical Journal **87**(5) 145-6.

Food Safety Authority of Ireland (2007) Guidance Note 22 – Information relevant to the Development of Guidance Material for the Safe Feeding of Reconstituted Powdered Infant Formula. FSAI, Ireland.

Freeman V (1996) A longitudinal study of growth, feeding practices and iron status in healthy children from birth to two years of age. In Department of clinical medicine and paediatrics PhD Trinity College Dublin, Dublin.

Gatti L (2008) Maternal perceptions of insufficient milk supply in breastfeeding. Journal of Nursing Scholarship **40**(4) 355-63.

Gavin B (2002) A report on the pilot project to promote breastfeeding in community care area 1 & recommendations to promote and support breastfeeding in the Area Health Boards. Department of Health Promotion East Coast Area Health Board and Breastfeeding Support Committee Community Care Area 1, Dublin.

Gdalevich M, Mimouni D and Mimouni M (2001) Breastfeeding and the risk of bronchial asthma in childhood: a systematic review with meta-analysis of prospective studies. Journal of Paediatrics **139**(2) 261-6.

Gibson-Davis C and Brookes-Gunn J (2006) Couples' immigration status and ethnicity as determinants of breastfeeding. American Journal of Public Health **96**(4) 641-6.

Gilmore M, O'Driscoll D and Murphy H (1979) A pilot survey of an attempt to promote breast - feeding. Irish Journal of Medical Science **148**(9/10) 272-5.

Government of Ireland (2006) (S.I. No 51 of 2006 Maternity Protection Act 1994 (Extension of Periods of Leave) Order 2006), <http://www.justice.ie/en/JELR/51.pdf/Files/51.pdf>. Accessed 10th October 2008.

Greally T (1997) Breastfeeding in the Mid-West. Mid Western Health Board, Limerick.

Greene J, Stewart-Knox B and Wright M (2003) Feeding preferences and attitudes to breastfeeding and its promotion among teenagers in Northern Ireland. Journal of Human Lactation **19**(1) 57-65.

Griffiths L J, Tate A R and Dezateux C (2005a) Do early infant feeding practices vary by maternal ethnic group? Public Health Nutrition **10**(9) 957-64.

Griffiths L J, Tate A R and Dezateux C (2005b) The contribution of parental and community ethnicity to breastfeeding practices:evidence from the Millennium Cohort Study. International Journal of Epidemiology **34** 1378-86.

Gudnadottir M, Gunnarsson B S and Thorsdottir I (2006) Effects of sociodemographic factors on adherence to breastfeeding and other important infant dietary recommendations. Acta Paediatrica **95**(4) 419-24.

Guisse J M, Austin D and Morris C D (2005) Review of case-controlled studies related to breastfeeding and reduced risk of childhood leukemia. Pediatrics **116**(5) 724-31.

Harder T, Bergmann R, Kallischnigg G and Plagemann A (2005) Duration of breastfeeding and risk of overweight. American Journal of Epidemiology **162**(5) 397-403.

Health Service Executive (2009) Breastfeeding Support Network - Breastfeeding in your County. <http://www.breastfeeding.ie/contacts.php>. Accessed 26th May 2009.

Hofvander Y (2003) Why women don't breastfeed: a national survey. Acta Paediatrica **92**(11) 1243-4.

Hoddinott P and Pill R (1999) Qualitative study of decisions about infant feeding among women in east end of London. British Medical Journal **318**(7175) 30-4.

Howell F, Bedford D, O'Keefe B and Corcoran R (1997) Breastfeeding in the North East: A report. North Eastern Health Board, Department of Public Health Medicine.

Howie P W, Forsyth S, Alston S A, Clark A and Florey C (1990) Protective effect of breastfeeding against infection. British Medical Journal **300** 11-6.

Hurley M and Fogarty J (1992) A study of infant feeding practices in Ireland. Eastern Health Board, Dublin.

Janke J R (1994) Development of the breast-feeding attrition prediction tool. Nursing Research **43** 100-04.

Joyce N, Denham B, Henry G R, Herlihy P and Harris S (1978) Breastfeeding in Relation to Socio-Economic Group and Separation of Mother and Baby. Journal of the Irish Medical Association **71**(9) 297-300.

Joyce N M, Henry G R and Kelly A (1984) Infant feeding practice - Rotunda Hospital 1979/80. Irish Medical Journal **77**(2) 45-8.

Kevany J, Taylor M, Kaliszer M, Humphries S, Torpey A, Conway M and Goldsmith A (1975) Influences on Choice of Infant Feeding Methods. Journal of the Irish Medical Association **68**(20) 499-505.

Kramer M S and Kakuma R (2002) Optimal duration of exclusive breastfeeding. In Cochrane Database of Systematic Reviews 2002 Issue 1. Art. No. CD003517. DOI: 10.1002/14651858.CD003517.

Lande B, Anderson L F, Baerug A, Trygg K U, Lund-Larsen K, Veierod M B and Bjorne G E (2003) Infant feeding practices and associated factors in the first six months of life: The Norwegian infant nutrition survey. Acta Paediatrica **92**(2) 152-61.

Launer L J, Forman M R, Hundt G L, Saroy B, Chang D, Berendes H W and Naggan L (1994) Maternal recall of infant feeding events is accurate. Journal of Epidemiology and Community Health **46**, 203-206.

Lawlor D A, Najman J M, Batty G D, O'Callaghan M J, Williams G M and Bor W (2006) Early life predictors of child intelligence: findings from the Mater-University study of pregnancy and its outcomes. Paediatric and Perinatal Epidemiology **20**(2) 148-62.

Leung G M, Lam T H and Ho L M (2002) Breastfeeding and it's relation to smoking and mode of delivery. Obstetrics and Gynaecology **99**(5) 785-94.

Li R, Darling N, Maurice E, Barker L and Grummer-Strawn L M (2005) Breastfeeding rates in the United States by characteristics of the child, mother or family: The 2002 National Immunization Survey. Pediatrics **115**(1) 31-7.

Loh N R, Kelleher C C and Long S (1997) Can we increase breastfeeding rates? Irish Medical Journal **90** 100-1.

Lowry M and Lillis D F (1993) Infant feeding practices. Irish Medical Journal **86** 13-4.

Lucas A and Cole T J (1990) Breast milk and neonatal necrotising enterocolitis Lancet **336**(8,730) 1519-23.

Lucas A, Morley R and Cole T J (1998) Randomised trial of early diet in preterm babies and later intelligence quotient. British Medical Journal **317**(7171) 1481-8

Marild S, Jodal U and Hanson L A (1990) Breastfeeding and urinary-tract infection. Lancet **336**(8720) 942-3.

Marild S, Hansson S, Jodal U, Oden A and Svedberg K (2004) Protective effect of breastfeeding against urinary tract infection. Acta Paediatrica **95**(5) 164-8.

Matthews T G, Crowley P, Chong A, McKenna P, McGarvey C and O'Regan M. (2003) BJOG: An International Journal of Obstetrics & Gynaecology. 110(4)346-49.

McDermot M and O'Neill C (2000) Infant Feeding Survey. North Western Health Board.

McFadden A and Toole G (2006) Exploring women's views of breastfeeding: a focus group study within an area with high levels of socio-economic deprivation. Maternal Child Nutrition **2**(3) 156-68.

McSweeney M (1986) National Survey of infant feeding practices. Health Education Bureau, Dublin.

McSweeney M and Kevany J (1982) Infant Feeding Practices in Ireland. Trinity College Dublin, Dublin.

Merten S and Ackermann-Liebrich U (2004) Exclusive breastfeeding rates and associated factors in Swiss baby-friendly hospitals. Journal of Human Lactation **20**(1) 9-17.

O'Herlihy B P (1978) Breast Feeding: Incidence and Influences. Journal of the Irish Medical Association **71**(12) 404-7.

Oppenheim A N (1992) Questionnaire Design and Attitude Measurement. Basic Books Inc, New York.

Owen C G, Martin R M, Whincup P H, Davey Smith G and Cook D G (2006) Does breastfeeding influence risk of type 2 diabetes in later life? A quantitative analysis of published evidence. American Journal of Clinical Nutrition **84**(5) 1043-54.

Peat J (2002) A Handbook of quantitative methods. Sage Publications, London.

Rosenblatt K A and Thomas D B (1993) WHO Collaborative Study of Neoplasia and Steroid Contraceptives. Lactation and the risk of epithelial ovarian cancer. International Journal of Epidemiology **22**(2) 192-7.

Rossiter J (1992) attitudes of Vietnamese women to baby feeding practices before and after immigration to Sydney, Australia. Midwifery **8**(3) 103-12.

Royce R A (2006) Birth Spacing—The Long and Short of It. Journal of the American Medical Association **295**(15) 1837-8.

Saldaña J (2009) The coding manual for qualitative researchers SAGE publications Ltd, London.

Sayers G, Thornton L, Corcoran R and Burke M (1995) Influences on breastfeeding initiation and duration. Irish Journal of Medical Science **164**(4) 281-4.

Sheehan D, Krueger P, Watt S, Sword W and Bridle B (2001) The Ontario mother and infant survey: breastfeeding outcomes. Journal of Human Lactation **17**(2) 211-9.

Singh G K, Kogan MD and Dee D L (2007) Nativity/Immigration Status, Race/Ethnicity, and socioeconomic determinants of breastfeeding initiation and duration in the United States, 2003. Pediatrics (Supplement) **119** S38-S46.

Singhal A, Cole T J and Lucas A (2001) Early nutrition in preterm infants and later blood pressure: two cohorts after randomised trials. Lancet **357**(9254) 413-9.

SLÁN (2003) Survey of Lifestyle, Attitudes and Nutrition. Department of Health Promotion, Department of Health and Children, Dublin.

SLÁN (2008) 2007 Survey of Lifestyle, Attitudes and Nutrition. Department of Health Promotion, Department of Health and Children, Dublin.

Stewart-Knox B, Gardiner K and Wright M (2003) What is the problem with breast-feeding? A qualitative analysis of infant feeding perceptions. Journal of Human Nutrition & Dietetics **16**(4) 265-73.

Sweeney M (1984) Infant feeding practices in Ireland. MSc. Department of Community Health Trinity College Dublin, Dublin.

Tarrant R (2008) An investigation of the diets of infants born in Ireland during the first six months of life. In School of Biological Sciences Doctor of philosophy, Dublin Institute of Technology, Dublin.

Taylor J S, Risica P M, Geller L, Kirtania U and Cabral H J (2006) Duration of breastfeeding among first-time mothers in the United States: results of a national survey. Acta Paediatrica **98**(8) 980-4.

Tender J A F, Janakiram J, Arce E, Mason R, Jordan T, Marsh J, Kin S, He J and Moon, R Y (2009) Reasons for in-hospital formula supplementation of breastfed infants from low-income families. Journal of Human Lactation **25**(1) 11-7.

Twomey A, Kiberd B and O'Regan M (2000) Feeding infants - An investment in the future. Irish Medical Journal **93** 248-50.

Venancio S I, Saldiva S R, Mondini L, Levy R B and Escuder M M (2008) Early Interruption of Exclusive Breastfeeding and Associated Factors, State of Sao Paulo, Brazil. Journal of Human Lactation **24**(2) 168-74.

Virtanen S M, Rasanen L, Aro A, Lindstrom J, Sippola H and Lounamaa R (1991) Infant feeding in Finnish children less than 7 yr of age with newly diagnosed IDDM. Childhood Diabetes in Finland Study Group. Diabetes Care **14**(5) 415-7.

Visness C M and Kennedy K I (1997) Maternal employment and health: findings from the 1988 national health survey. American Journal of Public Health **87**(6) 945-50.

Vohr B R, Poindexter B B, Dusick A M, McKinley L T, Wright L L, Langer J C and Poole W K (2006) Beneficial effects of breast milk in the neonatal intensive care unit on the developmental outcome of extremely low birth weight infants at 18 months of age. Pediatrics **118**(1) 115-23.

Vogel A M (2003) Intended plans for breastfeeding duration: a simple tool to predict breastfeeding outcome. Acta Paediatrica **92**(3) 270-71.

Ward M, Sheridan A, Howell F, Hegarty I and O'Farrell A (2004) Infant feeding: factors affecting initiation, exclusivity and duration. Irish Medical Journal **97**(7) 197-9.

WHO (1999) Health 21 - Health for all in the 21st Century. World Health Organisation Regional Office for Europe, Denmark.

WHO/EURO (2001) Development of a Global Strategy on Infant and Young Child Feeding. World Health Organisation Regional Office for Europe, Geneva.

WHO (2003) Infant and young child nutrition: Global strategy on infant and young child feeding.

Yeoh B H, Eastwood J, Phung H and Woolfenden S (2007) Factors influencing breastfeeding rates in South-Western Sydney. Journal of Paediatric Child Health **43**(4) 249-55.

National Infant Feeding Survey 2008

9.1 Appendix 1 – Phase 1 Questionnaire

Confidential National Infant Feeding Survey 2008		<p>5 How are you feeding your baby today?</p> <p>Breast Only (no formula or water) <input type="checkbox"/></p> <p>Formula <input type="checkbox"/></p> <p>Combination of breast and Formula/Water <input type="checkbox"/></p> <p>Expressed breast milk <input type="checkbox"/></p> <p>My baby is not feeding yet <input type="checkbox"/></p>
<p>This information will not be shared with anyone outside of the study group.</p> <p>Your Name:</p> <p>Home Address:</p> <p>Phone number: Your date of birth:</p> <p>Your baby's date of birth: Today's Date:</p>		<p>6 If your baby is more than two days old, how were you feeding her/him at 48hrs?</p> <p>Breast Only (no formula or water) <input type="checkbox"/></p> <p>Formula <input type="checkbox"/></p> <p>Combination of breast and formula/water <input type="checkbox"/></p> <p>Expressed breast milk <input type="checkbox"/></p> <p>My baby was not feeding at two days <input type="checkbox"/></p> <p>My baby is less than 48hrs old <input type="checkbox"/></p>
<p>1 Is your baby in the special care baby unit or at another hospital?</p> <p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p>		<p>7 What is your Nationality?</p> <p>Irish <input type="checkbox"/></p> <p>British <input type="checkbox"/></p> <p>Polish <input type="checkbox"/></p> <p>Lithuanian <input type="checkbox"/></p> <p>Nigerian <input type="checkbox"/></p> <p>Other</p>
<p>2 Before your baby was born, how did you plan to feed her/him?</p> <p>Breast <input type="checkbox"/></p> <p>Formula <input type="checkbox"/></p> <p>Combination of breast and bottle <input type="checkbox"/></p> <p>I hadn't decided <input type="checkbox"/></p>		<p>8 What age were you when you finished full-time education?</p> <p>.....</p>
<p>3 What kind of food did your baby receive for his/her first feed after birth?</p> <p>Breast <input type="checkbox"/></p> <p>Formula <input type="checkbox"/></p> <p>My baby is not feeding yet <input type="checkbox"/></p>		<p>9 What is your occupation?</p> <p>.....</p>
<p>4 How old was your baby at his/her first feed?</p> <p>Less than 30 minutes <input type="checkbox"/></p> <p>Between 30 minutes and 1 hour <input type="checkbox"/></p> <p>Between 1 hour and 4 hours <input type="checkbox"/></p> <p>More than 4 hours <input type="checkbox"/></p> <p>My baby is not feeding yet <input type="checkbox"/></p>		<p>10 What is the occupation of the baby's Father?</p> <p>.....</p>
<p>Thank you for taking the time to complete this survey. Please make sure that you put this survey in the box provided in this ward.</p>		

9.2 Appendix 2 – Phase 2 Questionnaire

☐☐☐☐

Confidential

National Infant Feeding Survey 2008

Phase Two

If for some reason your baby is no longer with you or you do not wish to complete the questionnaire, please tick one of the following boxes and return the questionnaire so that we do not contact you again.

My baby is no longer with me

☐

I do not wish to complete the questionnaire

☐

If you need any further information about the survey please call 01 8963874 or 01 8963553.

Is the information I give confidential?

Yes. No information that you provide will be passed on to anyone outside the research team. Your participation is entirely voluntary. Any information that you give will be treated with the strictest confidence.

Changing address?

If you have changed your address or are planning to change address soon. Please provide your new address so that we may contact you again if necessary

Will I be contacted again?

If you do not return the questionnaire we will contact you again by letter and or by phone in a few weeks to remind you to complete this questionnaire. We will also contact you again in a few months if you are breastfeeding your baby at the moment.

How to fill in this questionnaire

1. If you had twins or a multiple birth, please answer these questions for the baby who was born first.

2. There are 5 sections in this questionnaire.

Please complete Section 1 and 2.

Then follow the instructions that apply to you. This will mean you only fill in the questions that apply to you.

2. Most of the questions can be answered by putting an X in the box next to the answer that applies to you.

Example

Yes ☒ 1
No ☐ 2

3. At a number of questions, it says you can put an X in more than one box.

Please put an X in one or more boxes

4. Sometimes you are asked to write the answer in your own words.

5. Sometimes you are asked to write in a number. Please enter numbers as figures rather than words.

Example

Please give your answer in days

Days

6. If you find that you cannot answer a particular question, please write in why (for example “don’t know”, “can’t remember”).

7. When you have finished, please post this questionnaire to us in the free post envelope provided, even if you are not able to answer all of it.

Thank you very much for your help.

Section 1. About your baby

Q1. What is your baby's first name?

Q2. How old is your baby?

Please write the numbers in the boxes
for the whole weeks and any additional days

Whole weeks plus any additional days

Weeks

and

Days

Q3. Is this your first baby?

Yes
No

☐ 1
☐ 2

Q4. Is your baby one of twins, triplets or other multiple births?

No
Yes, twin
Yes, triplet or other multiple birth

☐ 1
☐ 2
☐ 3

If you have twins or triplets, please answer these questions for the baby who was born first

Q5. Was your baby admitted a special or intensive care baby unit after birth?

Yes
No

☐ 1
☐ 2

Q6. Which of the following best describe the reason why your baby was admitted?

**Please put an X
in all boxes that apply**

My baby was not admitted to special or intensive care
baby unit

☐ 1

Premature

☐ 2

Jaundice

☐ 3

Breathing difficulty

☐ 4

Meconium at the delivery

☐ 5

Low blood sugars

☐ 6

Unwell

☐ 7

Others (please cross and write in)

☐ 8

Q7. Does your baby use a soother or dummy?

Yes
No

☐ 1
☐ 2

Q8. How old was your baby to the nearest weeks or days when you first gave it to them?

Number of days

Days

Or in whole weeks plus any additional days

Weeks

and

Days

My baby has never used a soother or dummy ☐

Q9. Do you give your baby anything other than breast or formula milk for example water, baby rice, fruit or juices?

Yes
No

☐ 1
☐ 2

Q10. If solids / spoon feeds are already introduced, how old was your baby to the nearest weeks when you first gave solids (anything other than breast or formula milk) to them?

Weeks

Q11. Has your baby suffered from any of the following problems?

**Please put an X
in all boxes that apply**

My baby has never been sick or had any problems
Sickness or vomiting
Constipation
Diarrhoea
Chest infection
Ear infection
Urinary tract infection
Colic or wind
Thrush
Not gaining enough weight
Gaining too much weight
Others (please cross and write in)

☐ 1
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6
☐ 7
☐ 8
☐ 9
☐ 10
☐ 11
☐ 12

Section 2. About you

Q12. Thinking back to before you had your baby, how did you plan to feed her / him?

- | | |
|-----------------------------|----------------------------|
| Formula feed | <input type="checkbox"/> 1 |
| Breastfeed | <input type="checkbox"/> 2 |
| Breastfeed and formula feed | <input type="checkbox"/> 3 |
| Had not decided | <input type="checkbox"/> 4 |

Q13. Why did you think you would feed your baby by this method?

Please write in all your reasons

Q14. What type of antenatal care did you receive?

- | | |
|---|----------------------------|
| I did not have antenatal care | <input type="checkbox"/> 1 |
| Midwife led care | <input type="checkbox"/> 2 |
| Hospital based antenatal care | <input type="checkbox"/> 3 |
| Hospital based antenatal care and GP care | <input type="checkbox"/> 4 |
| Semi-private care | <input type="checkbox"/> 5 |
| Private antenatal care from a consultant obstetrician | <input type="checkbox"/> 6 |
| Care from an independent midwife | <input type="checkbox"/> 7 |

Q15. Did anyone discuss feeding your baby with you during pregnancy?

- | | |
|-----|----------------------------|
| Yes | <input type="checkbox"/> 1 |
| No | <input type="checkbox"/> 2 |

Q16. Who discussed feeding your baby with you?

- | | |
|------------------------------------|----------------------------------|
| Midwife | <input type="checkbox"/> 1 |
| Obstetrician | <input type="checkbox"/> 2 |
| GP | <input type="checkbox"/> 3 |
| Practice Nurse | <input type="checkbox"/> 4 |
| Public Health Nurse | <input type="checkbox"/> 5 |
| Others (please cross and write in) | <input type="checkbox"/> 6 _____ |

Q17. While you were pregnant did you attend any antenatal classes?

- | | |
|-----|----------------------------|
| Yes | <input type="checkbox"/> 1 |
| No | <input type="checkbox"/> 2 |

Q18. While you were pregnant with this baby, did you receive any information about the health benefits of breastfeeding?

- Yes ☐ 1
No ☐ 2

Q19. Where did you receive this information from?

- I did not receive any information about the benefits ☐ 1
Partner/mother/other family members ☐ 2
Friend ☐ 3
Midwife ☐ 4
Obstetrician ☐ 5
GP ☐ 6
Public Health Nurse ☐ 7
Practice Nurse ☐ 8
Magazine /book /leaflet ☐ 9
TV /radio ☐ 10
Somewhere/someone else (please cross and write in) ☐ 11 _____

Q20. How have your friends and family fed their children when they were babies?

- Most of them give formula milk ☐ 1
Most of them breastfeed ☐ 2
About half of them formula feed and half breastfeed ☐ 3
Don't know ☐ 4

Q21. How were you fed when you were a newborn baby?

- Breastfed ☐ 1
Formula fed ☐ 2
Don't know ☐ 3

Q22. Was your baby born in hospital or at home?

- Hospital ☐ 1
Home ☐ 2

Q23. How long after the birth of your baby did you stay in hospital?

Please give your answer in days

Days

- My baby was born at home ☐ 1

Q24. On the day that you left hospital (or at 48 hours if you had a home birth), what most accurately describes how you were feeding your baby?

**Please put an X
in one box only**

- | | |
|--|----------------------------|
| Breast | <input type="checkbox"/> 1 |
| Formula | <input type="checkbox"/> 2 |
| Combination of breast and bottle (formula) | <input type="checkbox"/> 3 |
| Expressing breastmilk | <input type="checkbox"/> 4 |
| My baby was not feeding when I went home | <input type="checkbox"/> 5 |
| Can't remember | <input type="checkbox"/> 6 |

Q25. Thinking about the birth itself, what type of delivery did you have?

- | | |
|---|----------------------------|
| Normal | <input type="checkbox"/> 1 |
| Forceps | <input type="checkbox"/> 2 |
| Vacuum extraction (ventouse or suction) | <input type="checkbox"/> 3 |
| Caesarean section | <input type="checkbox"/> 4 |

Q26. While you were in labour, what kind of pain relief did you have, if any?

- | | |
|---------------------------------|----------------------------|
| Epidural or spinal injection | <input type="checkbox"/> 1 |
| Pethidine | <input type="checkbox"/> 2 |
| Gas and air to breath (Entonox) | <input type="checkbox"/> 3 |
| A general anaesthetic | <input type="checkbox"/> 4 |
| Water | <input type="checkbox"/> 5 |
| TENS | <input type="checkbox"/> 6 |
| Nothing at all | <input type="checkbox"/> 7 |

**Q27. How much did your baby weigh when they were born?
Please give your answer in pounds and in ounces or in Kilograms**

Either in pounds (lbs) and ounces

<input style="width: 40px; height: 25px;" type="text"/>	and	<input style="width: 40px; height: 25px;" type="text"/>
lbs		ounces

Or in kilograms

<input style="width: 50px; height: 35px;" type="text"/>
Kgs

Q28. Did you have skin to skin contact with your baby after they were born (in the first hour after birth)?

- | | |
|----------------|----------------------------|
| Yes | <input type="checkbox"/> 1 |
| No | <input type="checkbox"/> 2 |
| Can't remember | <input type="checkbox"/> 3 |

**Q29. What is the main reason that led you to choose the way you fed this baby?
Please write in your reason**

Q30. If you had previous children, how did you feed them?

This is my first baby ☐ 1

	Breast only	Formula only	Combination of breast and formula
Eldest child	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
Second eldest child	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
Third eldest child	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
Fourth eldest child	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4

Q31. If you had another baby, how do you think you would feed that baby?

Breast ☐ 1
 Formula ☐ 2
 Combination of breast and formula ☐ 3

Q32. If you are aware of any health benefits of breastfeeding for you as a mother, please write them in below?

Q33. If you are aware of any health benefits of breastfeeding for the baby, please write them in below?

Q34. Have you ever seen an advertisement on television, radio or in a magazine for infant formula?

Yes ☐ 1
 No ☐ 2

Q35. Have you ever seen an advertisement on television, radio or in a magazine for breastfeeding?

Yes ☐ 1
 No ☐ 2

Q36. Since you had your baby, has anyone given you information on how to get help with feeding your baby if you need to?

Yes ☐ 1
 No ☐ 2

Q37. How old was your baby when the Public Health Nurse first came to visit?

Please give your answer in days

Days

Q38. Thinking about the most helpful information you received about feeding since your baby was born. Who or what had the most impact on you?

**Please put an X
in all boxes that apply**

- | | | |
|---|--------------------------|----|
| Own experience | <input type="checkbox"/> | 1 |
| Friends / other mothers | <input type="checkbox"/> | 2 |
| Partner | <input type="checkbox"/> | 3 |
| Your mother | <input type="checkbox"/> | 4 |
| Mother-in-law | <input type="checkbox"/> | 5 |
| Sister | <input type="checkbox"/> | 6 |
| Other relatives | <input type="checkbox"/> | 7 |
| Health professionals (midwife / nurse / G.P) | <input type="checkbox"/> | 8 |
| Peer or support groups | <input type="checkbox"/> | 9 |
| Voluntary organisations (Cuidiú, La Leche League) | <input type="checkbox"/> | 10 |
| Books /magazines / TV | <input type="checkbox"/> | 11 |
| Others (please cross and write in) | <input type="checkbox"/> | 12 |

Q39. In the early days of feeding your baby, did you have any help at home with you?

**Please put an X
in all boxes that apply**

- | | | |
|--|--------------------------|----|
| My partner was a great help | <input type="checkbox"/> | 1 |
| My partner had to return to work so I did not get as much help as I would have liked | <input type="checkbox"/> | 2 |
| My mother / relative came to stay | <input type="checkbox"/> | 3 |
| I live with my family who helped out | <input type="checkbox"/> | 4 |
| I lived with my family but did not get as much help as I would have liked | <input type="checkbox"/> | 5 |
| I live alone but had a lot of help | <input type="checkbox"/> | 6 |
| I live alone and did not get as much help as I would have liked | <input type="checkbox"/> | 7 |
| I employed someone to help me at home in the early days | <input type="checkbox"/> | 8 |
| I am able to use my private health insurance to pay someone to help me | <input type="checkbox"/> | 9 |
| I didn't feel that I needed any help | <input type="checkbox"/> | 10 |
| Others (please cross and write in) | <input type="checkbox"/> | 11 |

Q40. Do you have private health insurance?

Yes

☐ 1

No

☐ 2

Q41. What is your place of birth? Please write in the county if you were born in Ireland. Otherwise, please write in the country.

Please write in one letter per box

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Q42. What is your nationality?

Please write in one letter per box

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Q43. Where did you usually live one year ago?

Please write in one letter per box

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Q44. What is your current marital status?

Single (never married)

☐ 1

Married (first marriage)

☐ 2

Re-married (following widowhood/divorce/ annulment)

☐ 3

Separated

☐ 4

Divorced

☐ 5

Widowed

☐ 6

Q45. What is your ethnic background?

Irish

☐ 1

Irish traveller

☐ 2

African

☐ 3

Chinese

☐ 4

Any other white background

☐ 5

Any other black background

☐ 6

Any other asian background

☐ 7

Other, including mixed background

☐ 8

Others (please cross and write in)

☐ 9

Q46. Have you finished your full time education?

Yes

☐ 1

No

☐ 2

If yes, please write in the age at which you ceased

Years

Q47. What is the highest level of education (full-time or part-time) which you have completed to date?

- | | | |
|-----------------------------|--|--|
| <input type="checkbox"/> 1 | No formal education | |
| <input type="checkbox"/> 2 | Primary school education | |
| <input type="checkbox"/> 3 | Lower secondary | Junior/Intermediate/Group certificate, 'O' levels/ GCSE, NCVA Foundation certificate, basic skills training certificate, or equivalent |
| <input type="checkbox"/> 4 | Upper secondary | Leaving certificate – applied and vocational programmes, 'A' levels, NCVA level 1 certificate, or equivalent |
| <input type="checkbox"/> 5 | Technical or Vocational qualification | Completed apprenticeship, NCVA level 2/3 certificate, Teagasc certificate, Diploma, or equivalent |
| <input type="checkbox"/> 6 | Both Upper secondary and Technical or Vocational qualification | |
| <input type="checkbox"/> 7 | Third level non degree | National certificate, Diploma NCEA / Institute of Technology or equivalent, Nursing Diploma |
| <input type="checkbox"/> 8 | Primary degree | Third level Bachelor degree |
| <input type="checkbox"/> 9 | Professional qualification | Of degree status at least |
| <input type="checkbox"/> 10 | Both degree and a professional qualification | |
| <input type="checkbox"/> 11 | Postgraduate certificate or diploma | |
| <input type="checkbox"/> 12 | Postgraduate degree | Masters |
| <input type="checkbox"/> 13 | Doctorate | PhD |

Q48. How would you describe your main employment status just before you had your baby?

- | | | |
|---|----------------------------|-------|
| Working for payment or profit | <input type="checkbox"/> 1 | |
| Looking for first job | <input type="checkbox"/> 2 | |
| Unemployed | <input type="checkbox"/> 3 | |
| Student or pupil | <input type="checkbox"/> 4 | |
| Looking after home family | <input type="checkbox"/> 5 | |
| Unable to work due to permanent sickness / disability | <input type="checkbox"/> 6 | |
| Others (please cross and write in) | <input type="checkbox"/> 7 | _____ |

Q49. Do (did) you work as an employee or are (were) you self-employed in your main job?

- | | |
|---|----------------------------|
| Employee | <input type="checkbox"/> 1 |
| Self-employed, with paid employees | <input type="checkbox"/> 2 |
| Self-employed, without paid employees | <input type="checkbox"/> 3 |
| Assisting relative / other (not receiving a fixed wage or salary) | <input type="checkbox"/> 4 |
| Looking after home/family | <input type="checkbox"/> 5 |

Q50. What was your occupation in your main job?

Please describe the occupation fully and precisely giving your full job title

Q51. Are you doing any paid work at the moment?

- | | | |
|---------------------------|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| On paid maternity leave | <input type="checkbox"/> | 2 |
| On unpaid maternity leave | <input type="checkbox"/> | 3 |
| No | <input type="checkbox"/> | 4 |

Q52. Do you plan to start work again within the next two years?

- | | | |
|-----------------------|--------------------------|---|
| Yes, full-time | <input type="checkbox"/> | 1 |
| Yes, part-time | <input type="checkbox"/> | 2 |
| No | <input type="checkbox"/> | 3 |
| Don't know | <input type="checkbox"/> | 4 |
| Working at the moment | <input type="checkbox"/> | 5 |



Thank you for completing the questionnaire so far

If you have been **fully formula feeding** your baby from birth, **please go to the next page**

If you were **breastfeeding or expressing breastmilk** for your baby at birth (even if this was for a short time), please skip to **page 15**

Section 3. Mothers of babies who were formula feeding from birth

Q53. Did anybody show you how to prepare formula feeds during pregnancy or after your baby was born?

- Yes ☐ 1
No ☐ 2

Q54. Who was this?

- Nobody showed me how to prepare feeds ☐ 1
Midwife ☐ 2
Midwifery student ☐ 3
Nursing student ☐ 4
Public Health Nurse ☐ 5
Friend ☐ 6
Family member ☐ 7
Partner ☐ 8
Others (please cross and write in) ☐ 9 _____

Q55. When making up formula feeds for your baby, do you usually

- Make up one feed at a time as you need it ☐ 1
Make up several feeds at a time and store them ☐ 2
Only ever use ready to feed formula ☐ 3

Q56. When making up formula feeds for your baby, do you usually

- Use water that has just boiled ☐ 1
Use water that has been left to cool for 30 minutes ☐ 2
Use water that has been left to cool for longer than 30 minutes ☐ 3
Use water from the tap ☐ 4
Use bottled water ☐ 5
Others (please cross and write in) ☐ 6 _____

Q57. Who or what helped the most in assisting you to bottle feed your baby?

- Own experience ☐ 1
Friends / other mothers ☐ 2
Partner ☐ 3
Your mother ☐ 4
Mother-in-law ☐ 5
Other relatives ☐ 6
Health professionals (midwife / nurse/ public Health Nurse / GP) ☐ 7
Peer or support group ☐ 8
Voluntary organisations (Cuidiú, La Leche League) ☐ 9
Books / magazines / TV ☐ 10
Others (please cross and write in) ☐ 11 _____

Q58. Who or what helped the least in assisting you to bottle feed your baby?

- | | | |
|--|--------------------------|----------|
| Own experience | <input type="checkbox"/> | 1 |
| Friends / other mothers | <input type="checkbox"/> | 2 |
| Partner | <input type="checkbox"/> | 3 |
| Your mother | <input type="checkbox"/> | 4 |
| Mother-in-law | <input type="checkbox"/> | 5 |
| Other relatives | <input type="checkbox"/> | 6 |
| Health professionals (midwife / nurse/ public Health Nurse / GP) | <input type="checkbox"/> | 7 |
| Peer or support group | <input type="checkbox"/> | 8 |
| Voluntary organisations (Cuidiú, La Leche League) | <input type="checkbox"/> | 9 |
| Books / magazines / TV | <input type="checkbox"/> | 10 |
| Others (please cross and write in) | <input type="checkbox"/> | 11 _____ |
-



If you were **formula feeding your baby from birth then you have completed** the questionnaire.

Please return it in the envelope provided.

If you would be willing to take part in a focus group interview about infant feeding please tick the box provided.

☐

Thank you very much for taking the time to complete this questionnaire

Please complete the following questions if you were **breastfeeding your baby at birth or expressing breastmilk** (even if this was for a short time).

Section 4. Mothers of babies who were breastfeeding at birth

Q59. During the first few days, did anyone show you how to put the baby to the breast?

- Yes ☐ 1
No ☐ 2

Q60. Who was this?

- I was not shown ☐ 1
Midwife ☐ 2
Nurse ☐ 3
Midwifery student ☐ 4
Friend / relative ☐ 5
Doctor ☐ 6
Maternity care assistant ☐ 7
Other (please cross and write in) ☐ 8 _____

Q61. Did they stay with you while you were breastfeeding?

- I was not shown ☐ 1
Stayed the whole time until the baby fell asleep ☐ 2
Left once the baby was feeding but came back to check on you ☐ 3
Left once the baby was feeding ☐ 4
Left before the baby had started feeding ☐ 5

Q62. How useful did you find this help at the time?

- I was not given any help at all at this time ☐ 1
Extremely useful ☐ 2
Very useful ☐ 3
Not very useful ☐ 4
Not useful at all ☐ 5

Q63. If your baby had any fluids (water or formula) other than breastmilk in the early days of breastfeeding, was it because you were advised to or because you wanted your baby to have it?

- Advised to give something else ☐ 1
I wanted to give my baby something else ☐ 2
I only gave my baby breastmilk in the early days of feeding ☐ 3

Q64. Did your baby stay beside you at all times while you were in hospital?

- Yes ☐ 1
No ☐ 2
My baby was born at home ☐ 3

Q65. Were there any problems breastfeeding your baby in the early days?

- Yes ☐ 1
 No ☐ 2

If so, what were they?

Q66. Did anyone give you help with these problems in the early days?

- I didn't have any problems ☐ 1
 Midwife helped me ☐ 2
 Nurse helped me ☐ 3
 Lactation consultant or dedicated breastfeeding
 midwife in hospital helped me ☐ 4
 Public Health Nurse helped me ☐ 5
 Private lactation consultant helped me ☐ 6
 Doctor / GP helped me ☐ 7
 Friend / relative helped me ☐ 8
 Member of local support group helped me ☐ 9
 Other (please cross and write in) ☐ 10 _____

Q67. In the two weeks after you left hospital, did you receive any home visits from any of the following?

- Community midwife ☐ 1
 Public Health Nurse ☐ 2
 Independent midwife ☐ 3
 GP ☐ 4
 No visits in the first two weeks ☐ 5

If you received visits, how many did you receive?

Please write in the number in the box

Q68. Were you given information about any of the following to help with breastfeeding after you went home?

- I was not given any information about support
 services ☐ 1
 Community mothers programme ☐ 2
 Cuidiú (Irish Childbirth Trust) ☐ 3
 La Leche League ☐ 4
 Community breastfeeding support group ☐ 5
 Association of Lactation Consultants in Ireland ☐ 6
 Private lactation consultant ☐ 7
 Contact details for Public Health Nurse ☐ 8
 Others (please cross and write in) ☐ 9 _____
-

Q69. How easy was it for you to find breastfeeding support services?

- | | |
|---|----------------------------|
| I did not seek any support services | <input type="checkbox"/> 1 |
| Very easy | <input type="checkbox"/> 2 |
| Easy | <input type="checkbox"/> 3 |
| Fairly easy | <input type="checkbox"/> 4 |
| Difficult | <input type="checkbox"/> 5 |
| Very difficult | <input type="checkbox"/> 6 |
| I was unable to access support services | <input type="checkbox"/> 7 |

Q70. Which of the following breastfeeding support services did you use?

- | | |
|---|-----------------------------------|
| I did not use any support services | <input type="checkbox"/> 1 |
| Community mothers programme | <input type="checkbox"/> 2 |
| Cuidiú (Irish Childbirth Trust) | <input type="checkbox"/> 3 |
| La Leche League | <input type="checkbox"/> 4 |
| Community breastfeeding support group | <input type="checkbox"/> 5 |
| Hospital breastfeeding support group | <input type="checkbox"/> 6 |
| Association of Lactation Consultants in Ireland | <input type="checkbox"/> 7 |
| Private lactation consultant | <input type="checkbox"/> 8 |
| Public Health Nurse | <input type="checkbox"/> 9 |
| Others (please cross and write in) | <input type="checkbox"/> 10 _____ |

Q71. If you accessed any breastfeeding support services, please tell us about how helpful these services were.

- | | |
|---------------------------------------|----------------------------|
| I did not access any support services | <input type="checkbox"/> 1 |
| Excellent | <input type="checkbox"/> 2 |
| Very good | <input type="checkbox"/> 3 |
| Satisfactory | <input type="checkbox"/> 4 |
| Poor | <input type="checkbox"/> 5 |
| Very poor | <input type="checkbox"/> 6 |

Q72. Thinking about the milk and other fluids that your baby has had in the last 7 days, have they had

- | | |
|---|----------------------------|
| Only breast milk | <input type="checkbox"/> 1 |
| Combination of breastmilk and water or juices | <input type="checkbox"/> 2 |
| Only infant formula | <input type="checkbox"/> 3 |
| Combination of breastmilk and infant formula milk | <input type="checkbox"/> 4 |

Q73. Thinking about the milk and other fluids that your baby has had in the 24 hours, have they had

- | | |
|---|----------------------------|
| Only breast milk | <input type="checkbox"/> 1 |
| Combination of breastmilk and water or juices | <input type="checkbox"/> 2 |
| Only infant formula | <input type="checkbox"/> 3 |
| Combination of breastmilk and infant formula milk | <input type="checkbox"/> 4 |
-

Q74. How old was your baby when they were first given infant formula?

Either in days

Days

Or in weeks

Weeks

My baby was never given infant formula

☐ 1

Q75. Since your baby was born, what best describes how often you have given him or her infant formula?

I have never given my baby infant formula

☐ 1

Almost all feeds

☐ 2

About half of all feeds

☐ 3

One or two feeds a day

☐ 4

A few feeds a week, but not every day

☐ 5

A few feeds since they were born but not every week

☐ 6

Only once or twice since they were born

☐ 7

Q76. Since your baby was born, have you had any of the following as a result of breastfeeding?

Mastitis

☐ 1

Blocked ducts

☐ 2

Thrush

☐ 3

Nipple pain

☐ 4

Other (please cross and write in)

☐ 5

None of the above

☐ 6

Q77. Since your baby was born, have you ever fed him/ her in a public place?

No - never fed in a public place

☐ 1

Yes – breastfed in a public place

☐ 2

Yes – bottle fed infant formula in a public place

☐ 3

Yes – bottle fed expressed breastmilk in a public place

☐ 4

Q78. Have you ever had problems finding somewhere to breastfeed your baby in a public place?

I have never tried to breastfeed my baby in a public place

☐ 1

Yes

☐ 2

No

☐ 3

Q79. Have you ever been stopped or made to feel uncomfortable about breastfeeding in a public place?

- I have never breastfed my baby in a public place ☐ 1
 Yes ☐ 2
 No ☐ 3

Q80. Have any of the following things ever put you off or discouraged you from breastfeeding in a public place?

- I never tried to feed my baby in a public place ☐ 1
 Not feeling confident enough ☐ 2
 Being stopped or asked not to breastfeed ☐ 3
 Being made to feel uncomfortable by other people ☐ 4
 Lack of a suitable place available to breastfeed ☐ 5
 Concerns about hygiene in public places ☐ 6
 Baby wouldn't always feed when you try ☐ 7
 Other (please cross and write in) ☐ 8 _____

Q81. Since your baby was born, did anyone advise you not to breastfeed or to stop breastfeeding to take a prescribed medication?

- Yes ☐ 1
 No ☐ 2

Q82. Which of the following best describes breastfeeding your baby?

- I would like to have breastfed for longer ☐ 1
 I am breastfeeding for as long as I had intended ☐ 2
 I have breastfed for longer than I had intended ☐ 3

Q83. Who or what helped you most to continue breastfeeding?

- Own experience ☐ 1
 Friends / other mothers ☐ 2
 Partner ☐ 3
 Your mother ☐ 4
 Mother in law ☐ 5
 Other relatives ☐ 6
 Health professionals (midwife/nurse/Public Health Nurse/GP) ☐ 7
 Peer or support group ☐ 8
 Voluntary organisation (Cuidiú, La Leche League) ☐ 9
 Books / magazines / TV ☐ 10
 Others (please cross and write in) ☐ 11 _____
-

Q84. Who or what helped you least to continue breastfeeding?

- | | | |
|---|--------------------------|----|
| Own experience | <input type="checkbox"/> | 1 |
| Friends / other mothers | <input type="checkbox"/> | 2 |
| Partner | <input type="checkbox"/> | 3 |
| Your mother | <input type="checkbox"/> | 4 |
| Mother in law | <input type="checkbox"/> | 5 |
| Other relatives | <input type="checkbox"/> | 6 |
| Health professionals (midwife / nurse / Public Health Nurse / GP) | <input type="checkbox"/> | 7 |
| Peer or support group | <input type="checkbox"/> | 8 |
| Voluntary organisation (Cuidiú, La Leche League) | <input type="checkbox"/> | 9 |
| Books / magazines / TV | <input type="checkbox"/> | 10 |
| Others (please cross and write in) | <input type="checkbox"/> | 11 |
-



If you are **still breastfeeding** your baby, then you have **completed** the questionnaire.

Please return it in the envelope provided.

If you would be willing to take part in a focus group interview about infant feeding, please tick the box provided.

☐

Thank you very much for taking the time to complete this questionnaire.

Please continue to complete the following questions if you were breastfeeding your baby at birth but you now use only formula feeding

Section 5. Mothers who breastfed at birth but are now fully formula feeding

Q85. How old was your baby when he / she was last given breastmilk or you put your baby to your breast?

Please give your answer to the nearest number of weeks or days

Either in days

Days

Or in whole weeks plus any additional days

Weeks

and

Days

Q86. If you planned to and started breastfeeding, what were your reasons for stopping breastfeeding?

Please write in all your reasons

Q87. Who or what influenced you to stop breastfeeding?

Own experience

☐

1

Friends / other mothers

☐

2

Partner

☐

3

Your mother

☐

4

Mother in law

☐

5

Other relatives

☐

6

Health professionals (midwife/nurse/Public Health Nurse/GP)

☐

7

Peer or support group

☐

8

Voluntary organisation (Cuidiú, La Leche League)

☐

9

Books / magazines / TV

☐

10

Others (please cross and write in)

☐

11



Thank you very much for taking the time to complete this questionnaire.

Please return it in the envelope provided.

If you would be willing to take part in a focus group interview about infant feeding please tick the box provided.

☐

9.3 Appendix 3 - Phase 3 Questionnaire

☐☐☐☐

Confidential

National Infant Feeding Survey 2008

Phase Three

If for some reason your baby is no longer with you or you do not wish to complete this questionnaire, please tick one of the following boxes and return the questionnaire so that we do not contact you again.

My baby is no longer with me

☐

I do not wish to complete the questionnaire

☐

If you need any further information about the survey please call 01 8963874 or 01 8963553

Is the information I give confidential?

Yes. No information that you provide will be passed on to anyone outside the research team. Your participation is entirely voluntary. Any information that you give will be treated with the strictest confidence.

Changing address?

If you have changed your address or are planning to change address soon, please provide your new address so that we may contact you again, if necessary.

Will I be contacted again?

If you do not return the questionnaire, we will contact you again, in a few weeks time, by letter and/or by phone to remind you to complete this questionnaire.

If you indicated on the last questionnaire that you would like to take part in a focus group, then we will contact you again shortly to see if you are still interested in taking part.

How to fill in this questionnaire

1. If you had twins or a multiple birth, please answer these questions for the baby who was born first.

2. There are Three 3 sections in this questionnaire.

Please complete Section 1 and 2.

Then follow the instructions that apply to you. This will mean you only fill in the questions that apply to you.

3. Most of the questions can be answered by putting an X in ONE of the boxes relevant to you.

Example

Yes ☒ 1
No ☐ 2

4. At a number of questions, it says you can put an X in more than one box.

Please put an X in one or more boxes

5. Sometimes you are asked to write the answer in your own words.

Please write in all your reasons

6. Sometimes you are asked to write in a number. Please enter numbers as figures rather than words.

Example

Please give your answer in days

5

Days

7. If you find that you cannot answer a particular question, please write in why (for example “don’t know”, “can’t remember”).

8. When you have finished, please post this questionnaire to us in the free post envelope provided, even if you are not able to answer all of it.

Thank you very much for your help.

Section 1. About your baby

Q1. How old is your baby?

Please write the numbers in the boxes
for the whole weeks and any additional days

Whole weeks plus any additional days and
Weeks Days

If you have twins or triplets, please answer these questions for the baby who was born first

Q2. Thinking about the milk and other fluids that your baby has had in the last 7 days, has he / she had

- Only breastmilk ☐ 1
- Combination of breastmilk and water or juices ☐ 2
- Only infant formula milk ☐ 3
- Combination of breastmilk and infant formula milk ☐ 4
- Combination of breastmilk, infant formula milk and water or juices ☐ 5
- Combination of infant formula milk and water or juices ☐ 6

Q3. Thinking about the milk and other fluids that your baby has had in the last 24 hours, has he / she had

- Only breastmilk ☐ 1
- Combination of breastmilk and water or juices ☐ 2
- Only infant formula ☐ 3
- Combination of breastmilk and infant formula milk ☐ 4
- Combination of breastmilk, formula milk and water or juices ☐ 5
- Combination of formula milk and water or juices ☐ 6

Q4. When your baby was six months old (24 weeks) which of the following best describes his or her type of feeding?

- Breastmilk only (no other food or fluids) ☐ 1
- Formula milk only (no other food or fluids) ☐ 2
- Breastmilk and other fluids (e.g. formula milk, juice or water but no solid foods) ☐ 3
- Formula and other fluids (e.g. juice or water but no solid foods) ☐ 4
- Breastmilk and solid foods or spoon feeds ☐ 5
- Formula milk and solid foods or spoon feeds ☐ 6
- Breastmilk, solid foods or spoon feeds and other fluids (e.g. formula milk, juice or water) ☐ 7
- Formula milk, solid foods or spoon feeds and other fluids (e.g. juice or water) ☐ 8

Q5. Since you filled out our last questionnaire, what best describes how often you have given your baby infant formula?

- I have never given my baby infant formula ☐ 1
All feeds ☐ 2
Almost all feeds ☐ 3
About half of all feeds ☐ 4
One or two feeds a day ☐ 5
A few feeds each week, but not every day ☐ 6
A few feeds, but not every week ☐ 7
Only once or twice ☐ 8

Q6. If you give your baby fluids other than breastmilk, how old was your baby to the nearest number of weeks when you gave them any kind of fluid other than breastmilk?

Weeks
My baby has never had any fluids other than breastmilk ☐

Q7. If you give your baby drinks other than milk, is this mainly...?

- I don't give my baby drinks other than milk ☐ 1
Because he/she is thirsty ☐ 2
To give him/her extra vitamins ☐ 3
To help his/her colic/wind/hiccups ☐ 4
To help his/her constipation ☐ 5
To settle him/her ☐ 6
Some other reason (please cross and write in) ☐ 7 _____

Q8. If you give your baby infant formula and breastmilk, please tell us the main reason why you started to give your baby infant formula along with breastmilk?
Please write in all your reasons

Q9. If you give your baby solids or spoon feeds, how old was your baby to the nearest number of weeks when you first gave solids foods to her / him?

Weeks
My baby has never had solids or spoon feeds ☐

Q10. Has your baby suffered from any of the following problems?

**Please put an X
in all boxes that apply**

- | | | |
|---|--------------------------|----|
| My baby has never been sick or had any problems | <input type="checkbox"/> | 1 |
| Sickness or vomiting | <input type="checkbox"/> | 2 |
| Constipation | <input type="checkbox"/> | 3 |
| Diarrhoea | <input type="checkbox"/> | 4 |
| Chest infection | <input type="checkbox"/> | 5 |
| Ear infection | <input type="checkbox"/> | 6 |
| Urinary tract infection | <input type="checkbox"/> | 7 |
| Colic or wind | <input type="checkbox"/> | 8 |
| Thrush | <input type="checkbox"/> | 9 |
| Not gaining enough weight | <input type="checkbox"/> | 10 |
| Gaining too much weight | <input type="checkbox"/> | 11 |
| Others (please cross and write in) | <input type="checkbox"/> | 12 |

Section 2. About you

Q11. Since you completed the last questionnaire, has anyone given you information on how to get help with feeding your baby if you need to?

- | | | |
|-----|--------------------------|---|
| Yes | <input type="checkbox"/> | 1 |
| No | <input type="checkbox"/> | 2 |

Q12. Thinking about the most helpful information you received about feeding since your baby was born. Who or what had the most impact on you?

**Please put an X
in all boxes that apply**

- | | | |
|--|--------------------------|----|
| Own experience | <input type="checkbox"/> | 1 |
| Friends / other mothers | <input type="checkbox"/> | 2 |
| Partner | <input type="checkbox"/> | 3 |
| Your mother | <input type="checkbox"/> | 4 |
| Mother-in-law | <input type="checkbox"/> | 5 |
| Sister | <input type="checkbox"/> | 6 |
| Other relatives | <input type="checkbox"/> | 7 |
| Health professionals (midwife / public health nurse / practice nurse/ G.P) | <input type="checkbox"/> | 8 |
| Peer or support groups | <input type="checkbox"/> | 9 |
| Voluntary organisations (Cuidiú, La Leche League) | <input type="checkbox"/> | 10 |
| Books /magazines / TV | <input type="checkbox"/> | 11 |
| Others (please cross and write in) | <input type="checkbox"/> | 12 |

Q13. Where or from whom did you get advice or information about when to give your baby solid foods?

- Nobody gave me any advice ☐ 1
- Own experience ☐ 2
- Friends / other mothers ☐ 3
- Partner ☐ 4
- Your mother ☐ 5
- Mother-in-law ☐ 6
- Sister ☐ 7
- Other relatives ☐ 8
- Health professionals (midwife / public health nurse /practice nurse/ G.P) ☐ 9
- Peer or support groups ☐ 10
- Voluntary organisations (Cuidiú, La Leche League) ☐ 11
- Books /magazines / TV ☐ 12
- Others (please cross and write in) ☐ 13 _____

Q14. Do (did) you work as an employee or are (were) you self-employed in your main job?

- Employee ☐ 1
- Self-employed, with paid employees ☐ 2
- Self-employed, without paid employees ☐ 3
- Assisting relative / other (not receiving a fixed wage or salary) ☐ 4
- Looking after home/family ☐ 5

Q15. Are you in paid work at the moment?

- Yes ☐ 1 **Go to Q16**
- No ☐ 2 **Go to Q20**

Q16. How many hours a week do you work?

- Less than 15 ☐ 1
- Between 15 and 30 ☐ 2
- 31 or more hours ☐ 3
- Varies ☐ 4

Q17. What age was your baby when you returned to work?

- Less than 3 months ☐ 1
- Less than 4 months ☐ 2
- Less than 5 months ☐ 3
- Less than 6 months ☐ 4
- Less than 7 months ☐ 5
- More than 7 months ☐ 6

Q18. How is your baby cared for while you are at work?

- Childminder/nanny ☐ 1
Workplace crèche or nursery ☐ 2
Other crèche or nursery ☐ 3
Husband or partner ☐ 4
The child's grandparents(s) ☐ 5
Another relative ☐ 6
Friend ☐ 7
Baby is cared for by me at work ☐ 8
Other person or place (please cross and write in) ☐ 9 _____

Q19. Does your employer provide facilities at work for you to express milk, or breastfeed your baby?

- Yes - to express milk ☐ 1
Yes - to breastfeed ☐ 2
No - neither ☐ 3
Don't know ☐ 4

Q20. Do you plan to start work again within the next year?

- Yes, full-time ☐ 1
Yes, part-time ☐ 2
No ☐ 3
Don't know ☐ 4

Q21. Which of the following best describes breastfeeding your baby?

- I would like to have breastfed for longer ☐ 1
I am breastfeeding for as long as I had intended ☐ 2
I have breastfed for as long as I had intended ☐ 3
I have breastfed for longer than I had intended ☐ 4

Q22. Were there any problems breast feeding your baby since our last questionnaire?

- Yes ☐ 1
No ☐ 2

If so, what were they?

Q23. Did anyone give you help with these problems?

- | | | |
|---|--------------------------|----------|
| I didn't have any problems | <input type="checkbox"/> | 1 |
| No one helped me with these problems | <input type="checkbox"/> | 2 |
| Lactation consultant helped me | <input type="checkbox"/> | 3 |
| Breastfeeding midwife in hospital helped me | <input type="checkbox"/> | 4 |
| Public Health Nurse helped me | <input type="checkbox"/> | 5 |
| Private lactation consultant helped me | <input type="checkbox"/> | 6 |
| Doctor / GP helped me | <input type="checkbox"/> | 7 |
| Friend / relative helped me | <input type="checkbox"/> | 8 |
| Member of local support group helped me | <input type="checkbox"/> | 9 |
| Other (please cross and write in) | <input type="checkbox"/> | 10 _____ |

Q24. How easy was it for you to find breastfeeding support services?

- | | | |
|---|--------------------------|---|
| I did not seek any support services | <input type="checkbox"/> | 1 |
| Very easy | <input type="checkbox"/> | 2 |
| Easy | <input type="checkbox"/> | 3 |
| Fairly easy | <input type="checkbox"/> | 4 |
| Difficult | <input type="checkbox"/> | 5 |
| Very difficult | <input type="checkbox"/> | 6 |
| I was unable to access support services | <input type="checkbox"/> | 7 |

Q25. Which of the following breastfeeding support services did you use?

- | | | |
|---|--------------------------|----------|
| I did not use any support services | <input type="checkbox"/> | 1 |
| Community mothers programme | <input type="checkbox"/> | 2 |
| Cuidiú (Irish Childbirth Trust) | <input type="checkbox"/> | 3 |
| La Leche League | <input type="checkbox"/> | 4 |
| Community breastfeeding support group | <input type="checkbox"/> | 5 |
| Hospital breastfeeding support group | <input type="checkbox"/> | 6 |
| Association of Lactation Consultants in Ireland | <input type="checkbox"/> | 7 |
| Private lactation consultant | <input type="checkbox"/> | 8 |
| Public Health Nurse | <input type="checkbox"/> | 9 |
| Others (please cross and write in) | <input type="checkbox"/> | 10 _____ |

Q26. If you accessed any breastfeeding support services, please tell us how helpful these services were.

- | | | |
|---------------------------------------|--------------------------|---|
| I did not access any support services | <input type="checkbox"/> | 1 |
| Excellent | <input type="checkbox"/> | 2 |
| Very good | <input type="checkbox"/> | 3 |
| Satisfactory | <input type="checkbox"/> | 4 |
| Poor | <input type="checkbox"/> | 5 |
| Very poor | <input type="checkbox"/> | 6 |

Q27. Since our last questionnaire, have you had any of the following as a result of breastfeeding?

- | | | |
|-----------------------------------|--------------------------|---------|
| Mastitis | <input type="checkbox"/> | 1 |
| Blocked ducts | <input type="checkbox"/> | 2 |
| Thrush | <input type="checkbox"/> | 3 |
| Nipple pain | <input type="checkbox"/> | 4 |
| Other (please cross and write in) | <input type="checkbox"/> | 5 _____ |
| None of the above | <input type="checkbox"/> | 6 |

Q28. Who or what helped you most to continue breastfeeding?

- | | | |
|--|--------------------------|----|
| Own experience | <input type="checkbox"/> | 1 |
| Friends / other mothers | <input type="checkbox"/> | 2 |
| Partner | <input type="checkbox"/> | 3 |
| Your mother | <input type="checkbox"/> | 4 |
| Mother in law | <input type="checkbox"/> | 5 |
| Other relatives | <input type="checkbox"/> | 6 |
| Health professionals (midwife/public health nurse/practice nurse/GP) | <input type="checkbox"/> | 7 |
| Peer or support group | <input type="checkbox"/> | 8 |
| Voluntary organisation (Cuidiú, La Leche League) | <input type="checkbox"/> | 9 |
| Books / magazines / TV | <input type="checkbox"/> | 10 |
| Others (please cross and write in) | <input type="checkbox"/> | 11 |
-

Q29. Who or what helped you least to continue breastfeeding?

- | | | |
|--|--------------------------|----|
| Own experience | <input type="checkbox"/> | 1 |
| Friends / other mothers | <input type="checkbox"/> | 2 |
| Partner | <input type="checkbox"/> | 3 |
| Your mother | <input type="checkbox"/> | 4 |
| Mother in law | <input type="checkbox"/> | 5 |
| Other relatives | <input type="checkbox"/> | 6 |
| Health professionals (midwife / public health nurse/ practice nurse/ GP) | <input type="checkbox"/> | 7 |
| Peer or support group | <input type="checkbox"/> | 8 |
| Voluntary organisation (Cuidiú, La Leche League) | <input type="checkbox"/> | 9 |
| Books / magazines / TV | <input type="checkbox"/> | 10 |
| Others (please cross and write in) | <input type="checkbox"/> | 11 |
-



If you are **still breastfeeding** your baby (even if only occasionally), then you have **completed** the questionnaire.

Please return it in the envelope provided.

If you would be willing to take part in a focus group interview about infant feeding, please tick the box provided.

☐

Thank you very much for taking the time to complete this questionnaire.

**Please continue to complete the following questions if you were
breastfeeding your baby at birth
but
you now use only formula feeding**

Section 3. Mothers who breastfed at 3-4 months but are now fully formula feeding

Q30. How old was your baby when he / she was last given breast milk or you put your baby to your breast?

Please give your answer to the nearest number of weeks and days

Whole weeks plus any additional days

Weeks

and

Days

Q31. What were your reasons for stopping breastfeeding?

Please write in all your reasons

Q32. Who or what influenced you to stop breastfeeding?

- | | | |
|--|--------------------------|----|
| Own experience | <input type="checkbox"/> | 1 |
| Friends / other mothers | <input type="checkbox"/> | 2 |
| Partner | <input type="checkbox"/> | 3 |
| Your mother | <input type="checkbox"/> | 4 |
| Mother in law | <input type="checkbox"/> | 5 |
| Other relatives | <input type="checkbox"/> | 6 |
| Health professionals (midwife/public health nurse/ practice nurse/GP) | <input type="checkbox"/> | 7 |
| Peer or support group | <input type="checkbox"/> | 8 |
| Voluntary organisation (Cuidiú, La Leche League) | <input type="checkbox"/> | 9 |
| Books / magazines / TV | <input type="checkbox"/> | 10 |
| Others (please cross and write in) | <input type="checkbox"/> | 11 |

Q33. What, if anything, would have helped you to continue breastfeeding?




Thank you very much for taking the time to complete this questionnaire.

Please return it in the envelope provided.

If you would be willing to take part in a focus group interview about infant feeding please tick the box provided.

☐

9.4 Appendix 4 – Antenatal information leaflet

<p><u>What is the study about?</u> The purpose of the survey is to identify current feeding practices including what and how mothers feed their babies</p> <p><u>What do I have to do?</u> Please complete the questions in this survey and put it in the box provided on the ward.</p> <p><u>Will I be contacted again?</u> We would like to contact you again in a few months time to find out how you are feeding your baby as he or she gets older. That is why at the beginning of the survey we have asked you to give us your contact details.</p> <p><u>Is the information I give confidential?</u> Your participation is entirely voluntary. Any information that you give will be treated with the strictest confidence. No information that you provide will be passed on to anyone outside the research team.</p>	<p><u>Who is conducting the study?</u> The survey is being conducted by researchers from the School of Nursing and Midwifery, Trinity College Dublin on behalf of the Health Service Executive.</p> <p><u>What approval does this study have?</u> This study has received research ethical approval from the research ethics committee of the Faculty of Health Sciences, University of Dublin Trinity College.</p> <p><u>Where can I get more information or ask questions about the study?</u> You are free to ask any questions about the study or about being a participant. You may contact the researcher on the below contact details if you have further questions. If you require any further information about the survey please call....</p> <p><u>Thank you very much for your help</u></p>	<p>Confidential</p> <p>National Infant Feeding Survey 2008</p>  <p>We have been asked by the Health Services Executive to conduct a confidential infant feeding survey among all new mothers in Ireland</p> <p>The success of this research depends entirely on your participation so we do hope that you will be able to take part.</p>
---	---	--

9.5 Appendix 5 – Reminder letter for Phase 2

National Infant Feeding Survey 2008

Dear Mother

We recently sent you a questionnaire asking for information on how you have fed your baby since birth. We are writing to encourage you to complete the questionnaire and return it to us as soon as possible.

This confidential national infant feeding survey will provide information about infant feeding when babies are 48hrs old and again at three to four months. The survey is being conducted by researchers from the School of Nursing and Midwifery, Trinity College Dublin on behalf of the Health Service Executive. The success of this research depends entirely on your participation so we do hope that you will be able to take part.

The information that you give will be treated in strict confidence by us. It will be used only for the purpose of the study.

We do hope that you will be able to participate in this research. If you feel unable to complete the questionnaire please return it anyway and we will not bother you any further. If you have any questions about the survey, **please call**

If you have already completed and returned the questionnaire to us, thank you for your help and we apologise for troubling you again.

Thank you very much for your help with this important study.

Yours sincerely,

9.6 Appendix 6 – Participant information leaflet

Participant Information Leaflet - focus group interview

The national infant feeding survey 2008

This information sheet contains information that may help you decide if you would like to take part in a focus group interview.

What is a focus group?

A focus group is where a group of people meet to discuss and share their experiences on a particular topic. The group usually consists of 5 – 9 individuals. Being part of a group can help you explore and clarify your views in a way that might not be possible in a one to one interview.

Why do we want to undertake a focus group?

As part of national infant feeding study, we want to undertake focus group interviews to explore further issues that may arise from the analysis of the questionnaires or issues that it is not possible to explore adequately by questionnaire. We hope these interviews will provide us with information that would not otherwise emerge. We will also be able to illustrate the information from the questionnaires by using participants' own words. This can be a very powerful way of getting a point across.

What this study is about

We have been asked by the Health Services Executive to conduct a confidential infant feeding survey among all new mothers in Ireland, and we hope that you will take part in a focus group.

This study will provide information about infant feeding when babies are 48hrs old and again at three to four months and six to seven months. The success of this research depends entirely on your participation so we do hope that you will be able to take part.

What is the purpose of this study?

The purpose of this study is to evaluate the infant feeding decisions of Irish mothers. The feedback you provide will help us gain an understanding of your views and experiences.

Who else is involved in focus group interviews?

All women who filled in the national infant feeding questionnaire while in hospital after having their baby are being invited to take part in this study.

What will my participation involve?

This would involve meeting in a group of approximately 5 - 9 women. This meeting will take approximately one hour of your time. During this time we would discuss and explore a specific set of issues. This would be based on your experiences of feeding your baby. To ensure we have an accurate account of what the group tells us, a tape recorder would be used to record the focus group.

Do I have to participate?

No, participation is voluntary. You would also be free to leave the focus group at any time. If you decide not to participate or to leave during the focus group you will not be asked why, and there will be no consequences because of this.

What will happen to the information from the focus group interview?

Once the interview is over, the information on the tape will be transcribed onto paper so we can read it and begin the process of looking at the information for common meanings between participants.

Where will the information be stored and for how long?

The tape recording will be stored in a locked drawer in the researchers' workplace. The tape recording will then be transferred to a password protected computer. Any subsequent printed transcripts of the interviews will also be stored in a locked drawer. At no stage will your name appear on the interview tape or the transcript. Each participant will be allocated a code number/pseudonym. Each tape recording and written transcript will be given a

number for identification purposes. We are the only people who will know the number corresponding to your name and we will not divulge this to anyone. This means that you will not be identifiable from the information you provide.

Who will have access to the information?

The only people who will have access to the tape-recording are the research team and the person who types up the tape recordings, who will assure us of confidentiality in data recording and storage. At no stage will your name appear on the tape or in the transcript.

Will all information be treated in confidence?

Information will be treated as confidential. However, if you tell us something in the focus group that identifies unsafe midwifery practice we are, as registered midwives, obliged to disclose this information to the appropriate people. If this were to occur, we would inform you of this and the action we will take. We do not require your consent to disclose this information to the appropriate people.

Will I receive payment for participating?

No, but we will cover any expenses you incur attending the focus group and we will provide refreshments during the interview.

We hope this leaflet has answered some of your questions. If you wish further information regarding this part of the data collection process please contact us by calling 01 8963874 or 01 8963553.

Thank you very much for your help

**On behalf of the national infant feeding survey 2008 research team:
Professor Cecily Begley, Ms. Margaret Carroll, Ms Louise Gallagher, Ms.
Sally Millar, Professor Mike Clarke**

9.7 Appendix 7 – Consent form

Consent Prior to Focus Group Interview

Date _____ **Time** _____

This is to certify that I _____, give my consent to be included in the above study.

I confirm that I have read the information leaflet and received an explanation on the aim, purpose, duration and effects of my involvement in the study.

I understand that my participation is voluntary and that I am free to withdraw from the study at any stage if I so wish, without giving an explanation.

I have been informed that I will not be compromised in any way if I decide not to participate in the study or withdraw my consent at any stage during the study.

I give permission to be interviewed as part of the focus group and for the interview to be tape-recorded.

I understand that (i) I may decline to answer any question during the interview, (ii) at the end of the interview I may request that a section of the interview be not used, and (iii) at the end of the interview I may request that the total of my contribution to the focus group interview not be used in the study.

I understand that on completion of the interviews the contents of the tapes will be transcribed.

I understand that the information may be published but my name will not appear on any part of the study, nor will any information that may identify me be used in the study.

Name of participant: _____

Signature of participant: _____

Signature of the researcher: _____

Date: _____

Withdrawal from the Study

Post Focus Group Interview

This is to certify that I _____, no longer wish to take part in this study and ask that you erase all contributions made by me from the transcript of the interview.

Name of participant: _____

Signature of participant: _____

Signature of the researcher: _____

Date: _____

9.8 *Appendix 8 – Interview guide for focus groups*

Semi-structured interview schedule (Focus Groups)

When did you decide how you would feed your baby?

What was the most important thing for you when deciding how to feed your baby?

Did anyone else influence how you fed your baby?

How do you feel about breastfeeding?

Did anybody discuss breastfeeding with you while you were pregnant with this baby?

Is there anything that would have influenced you to breastfeed your baby?

9.9 Appendix 9 – Consent form for telephone interviews

Consent Prior to Telephone Interview

Date _____ **Time** _____

This is to certify that I _____, give my consent to be included in the above study.

I confirm that I have received an explanation on the aim, purpose, duration and effects of my involvement in the study.

I understand that my participation is voluntary and that I am free to withdraw from the study at any stage if I so wish, without giving an explanation.

I have been informed that I will not be compromised in any way if I decide not to participate in the study or withdraw my consent at any stage during the study.

I give permission to be interviewed as part of the telephone interview and for the interview to be tape-recorded.

I understand that (i) I may decline to answer any question during the interview, (ii) at the end of the interview I may request that a section of the interview be not used, and (iii) at the end of the interview I may request that the total of my contribution to the interview not be used in the study.

I understand that on completion of the interviews the contents of the tapes will be transcribed.

I understand that the information may be published but my name will not appear on any part of the study, nor will any information that may identify me be used in the study.

Name of participant: _____

Signature of participant: _____

Signature of the researcher: _____

Date: _____

