

Niamh at 9 months



Niamh at 3 years



Niamh at 5 years



A comparative analysis of breastfeeding rates in: Ireland, New Zealand, UK and Australia

Growing Up in Ireland (James Williams)

Growing Up in New Zealand (Susan Morton)

*Longitudinal Study of Australian Children
(Jan Nicholson)*

Millennium Cohort Study (Lucinda Platt)



Objectives

1. To consider the feasibility and potential of international comparative research using GUII, GUiNZ, LSAC and MCS.
2. To compare breastfeeding rates in Australia, Britain, Ireland and New Zealand using data from their respective child cohort studies.
3. To identify the factors significantly associated with breastfeeding in the four countries in question.



Correlates of breastfeeding initiation - previous research

❖ *Mother's characteristics*

- Mother's age (positively related to initiation)
- Pre-natal care initiation and attendance at ante-natal classes (positive)
- Maternal education (positive)
- Family social class (positive)
- Support for breastfeeding from partner (positive)
- Support for breastfeeding from mother's own mother (positive)
- Quality of partnership (positive)
- Breastfed herself (positive)
- Labour force status (at work outside home negatively related, though timing of return sometimes identified as stronger correlate)
- Labour market policies, e.g. leave entitlements



Correlates of breastfeeding initiation - previous research

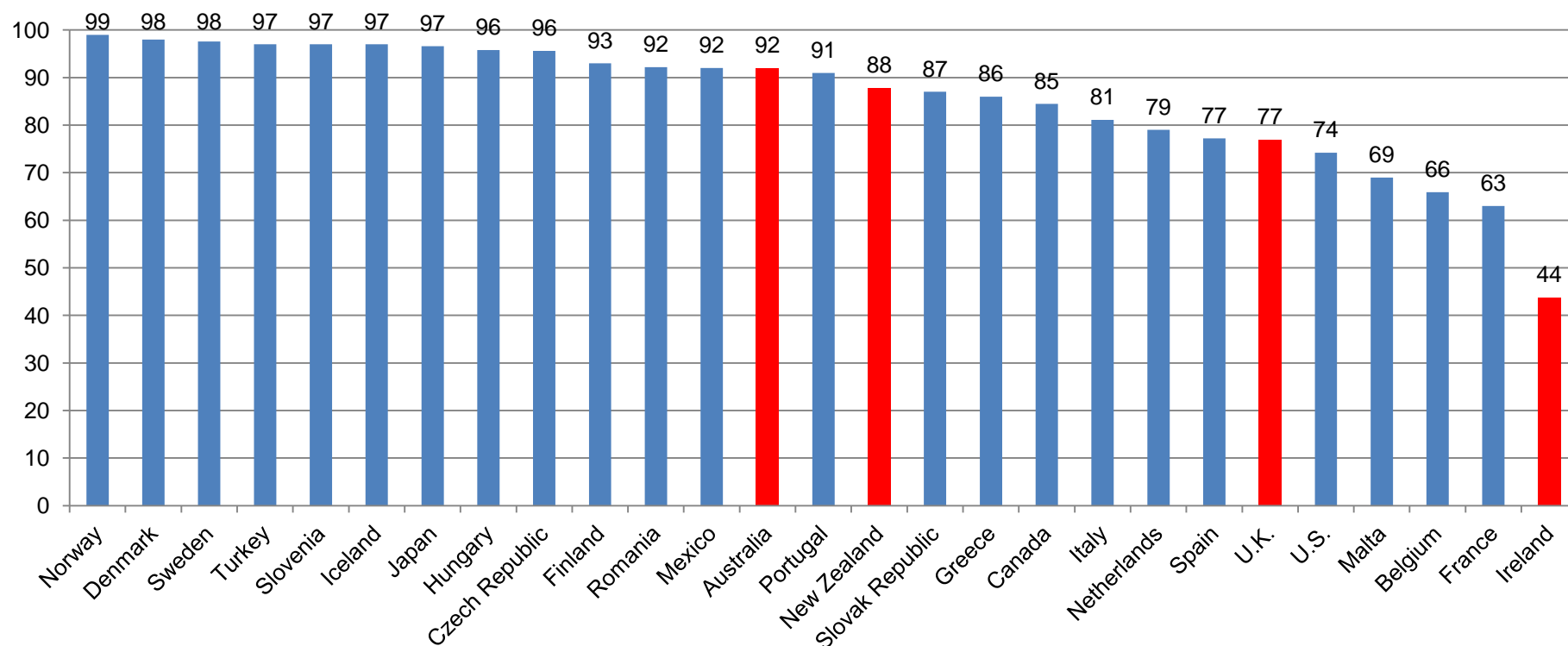
❖ *Child's characteristics*

- Birthweight (positively related)
- Gestational age (positively related)
- Admission to NICU or Special Care Nursery (negatively related)
- Singleton birth (positively related)
- Parity (initiation negatively related to parity)

e.g. Galtry, 2003; Tarrant *et al.*, 2009; Kelaher *et al.*, 2009; Mandal *et al.*, 2012; Baker and Milligan, 2008; Noble *et al.*, 2001; Scott *et al.*, 2001; Kruse *et al.*, 2005; Layte and McCrory, 2012.

Comparative rates

Proportion of children ever breastfed in mid 2000's – OECD



- Four countries very different rates – Australia, New Zealand, UK then Ireland
- All four committed in policy terms to support breastfeeding



The Four Cohorts



Growing Up in Ireland



Growing Up in New Zealand



Longitudinal Study of Australian Children



Millennium Cohort Study

Relative sizes



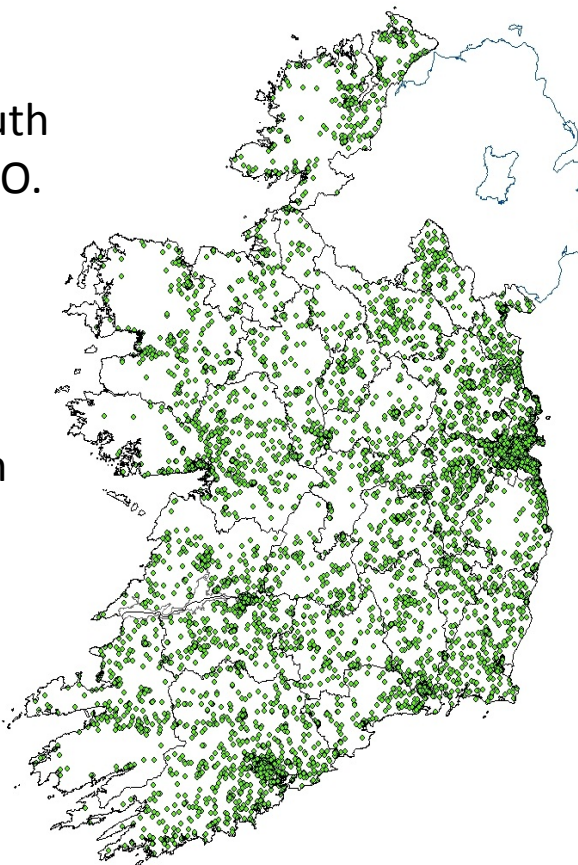
	Ireland	UK	New Zealand	Australia
Area in square kilometres	70,280	241,000	270,000	7,700,000
Population 2011	4.5m	62.6m	4.4m	22.6m
Births 2010	74,976	807,271	63,951	297,900



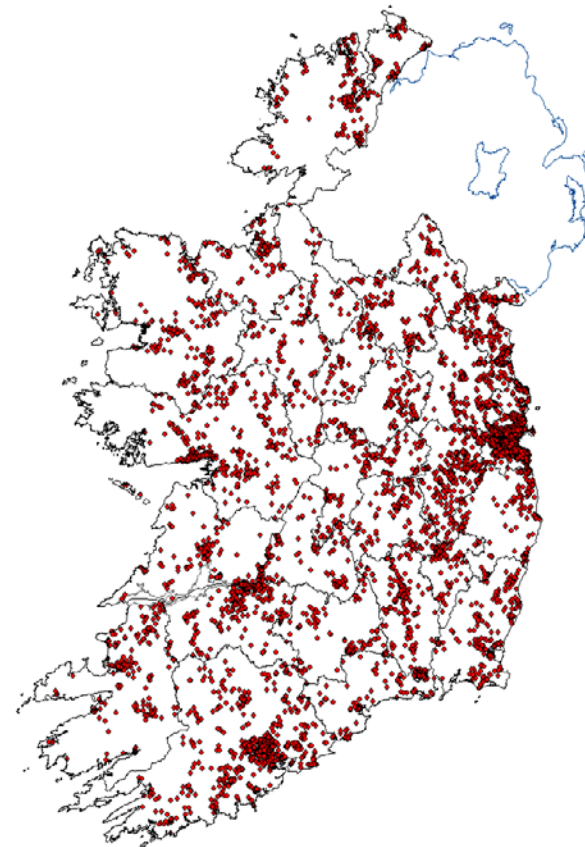
Growing Up in Ireland

- Almost 20,000 children in two cohorts
- Funded by Dept. Children & Youth Affairs; Dept. Social Welfare; CSO.
- Infant Cohort – sampled from Child Benefit Register.
- Child Cohort – sampled through the Primary Schools.
- Both nationally representative, random samples.

Infant Cohort



Child Cohort



Face-to-face surveys at: 9 mths; 3yrs; 5 yrs

9 years; 13 years



The Millennium Cohort Study

- Over 19,000 children
- Recruited from Child Benefit Register
- Funded by ESRC and UK government departments
- One of five British Birth Cohort Studies
- Oversamples for Scotland, Wales and Northern Ireland, areas with high child poverty and, in England, areas with higher ethnic minority populations



Face to face surveys at: 9 months; 3 years; 5 years; 7 years and 11 years



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- The map displays the following DHBs and their locations:
- NORTHLAND DHB** (Orange): Northernmost region.
 - WAITEMATA DHB** (Yellow): West of Auckland.
 - AUCKLAND DHB** (Red): Central North Island, highlighted with a black oval.
 - COUNTIES MANUKAU DHB** (Green): South of Auckland.
 - WAIKATO DHB** (Yellow): Central North Island, south of Auckland.
 - BAY OF PLENTY DHB** (Green): Eastern North Island.
 - TAIRARAHITI DHB** (Orange): Far East of North Island.
 - LAKES DHB** (Yellow): Central North Island, south of Waikato.
 - TARANAKI DHB** (Orange): West Coast of North Island.
 - HAWKES BAY DHB** (Orange): East Coast of North Island.
 - WHANGANUI DHB** (Green): West Coast of North Island, south of Taranaki.
 - MIDCENTRAL DHB** (Orange): Central North Island, south of Waikato.
 - CAPITAL & COAST DHB** (Green): Wellington region.
 - HUTT DHB** (Yellow): South of Capital & Coast.
 - WAIRARAPA DHB** (Green): South of Capital & Coast.
- An inset map in the bottom right corner shows the location of Chatham Island, with a note: "(DERIVED BY HAWKES BAY DHB)".

Face-to-face surveys at: Antenatal; 9 months; 2 years
Phone surveys at: 5 weeks; 35 weeks; 16 months; 23 months

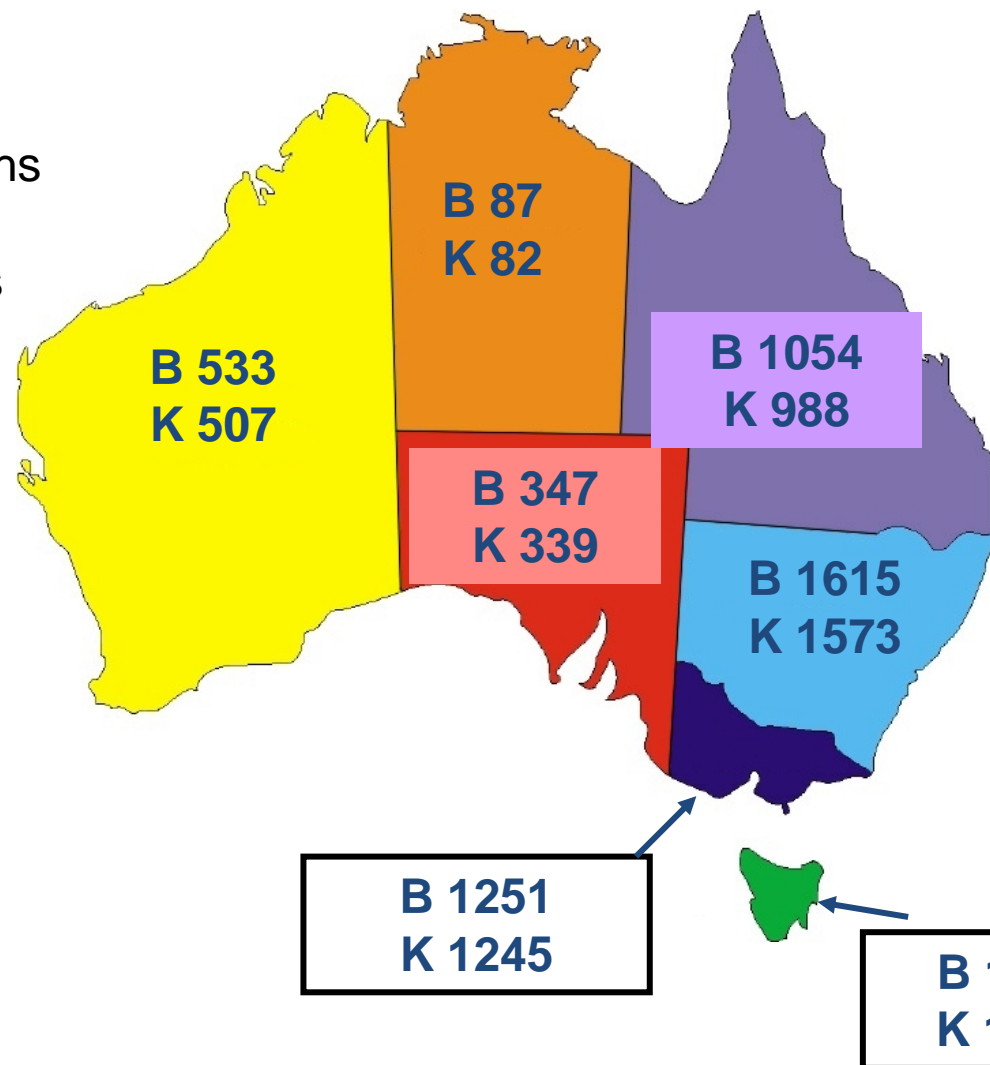


LSAC sample – Wave 1 (2004)

Two cohorts:

B (baby cohort) 5,107 aged 3-19 months

K (kindergarten) 4,983 aged 4-5 years



Surveys at:

B cohort: 0-1; 2-3; 4-5; 6-7

K cohort: 4-5; 6-7; 8-9; 10-11



Underlying conceptual frameworks

- All four studies broadly set within a bio-ecological framework
- Child at the centre of layered contexts or environments
 - Individual child characteristics
 - Proximal social environments, especially family/home
 - Distal social environments, especially school and neighbourhood
 - Macro environmental and policy frameworks (economy; education, health, social policies and supports etc.
- Classic Bronfenbrenner conceptual models



Data harmonisation

- Ex post harmonisation always difficult. Notwithstanding their differences, the four cohorts offer huge potential for international comparative work

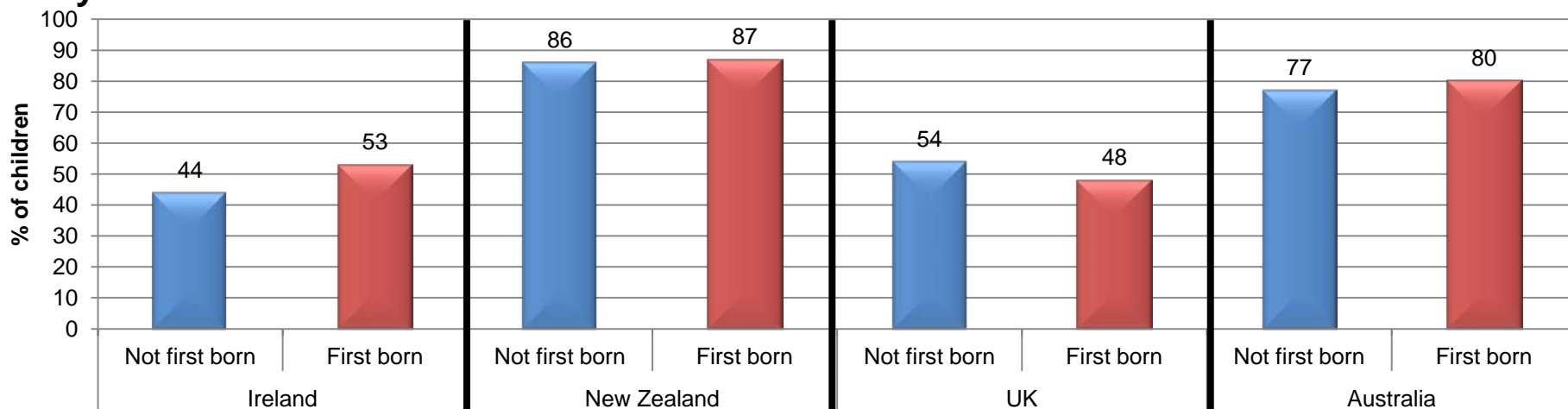
<i>Child's Characteristics</i>	<i>Comparability</i>	<i>Mother's characteristics</i>	<i>Comparability</i>
Sex	High	Health	High
Time in ICU	High	Age	High
Time on a ventilator	High	Born in Study country	High
Gestational age (years)	High	Principal economic status	Moderate
Birth weight (Kgs)	High	Educational attainment	Moderate
Parity	High	Currently depressed	High
<i>Family characteristics</i>		Treated for depression	High
Equivalised family income	High	Currently smokes?	High
Social Welfare dependency	Moderate	Smoked during pregnancy	High
Difficulties making ends meet	Moderate	Drank during pregnancy	High
Housing tenure status	High	Satisfaction with relationship	Low
Family social class	Moderate	Intention to get pregnant with study child	Moderate

Comparative Results

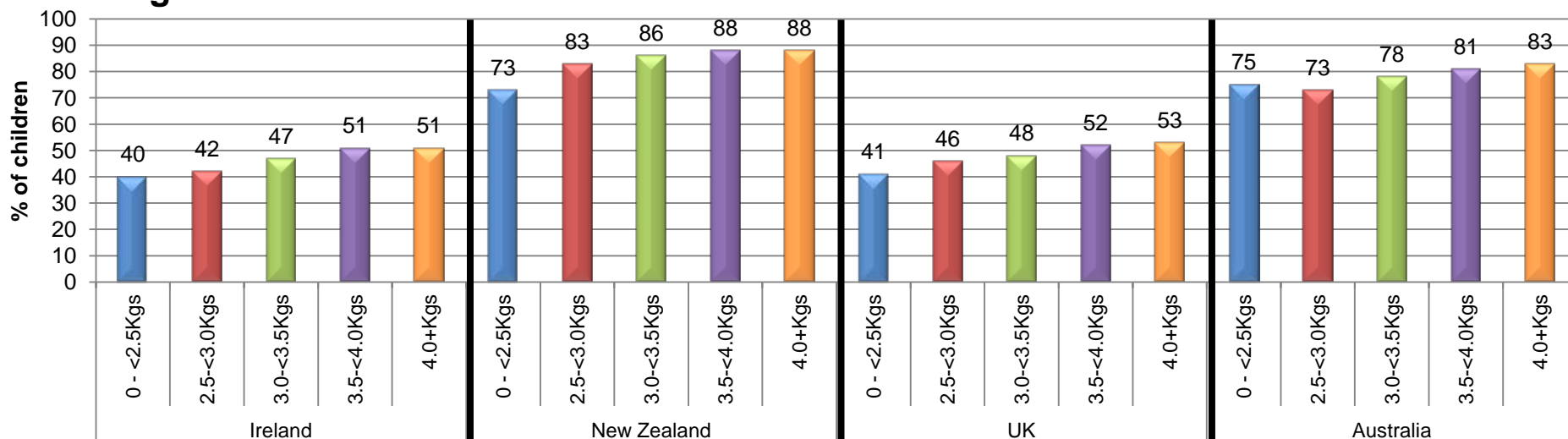


Variations in rates by child's characteristics

Parity

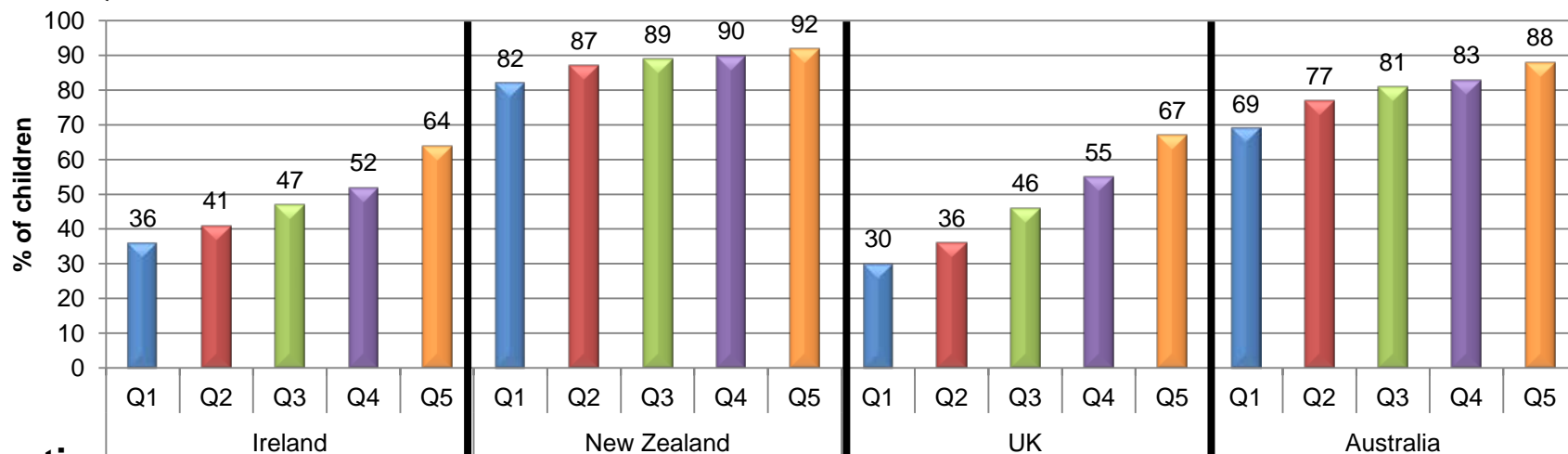


Birth-weight

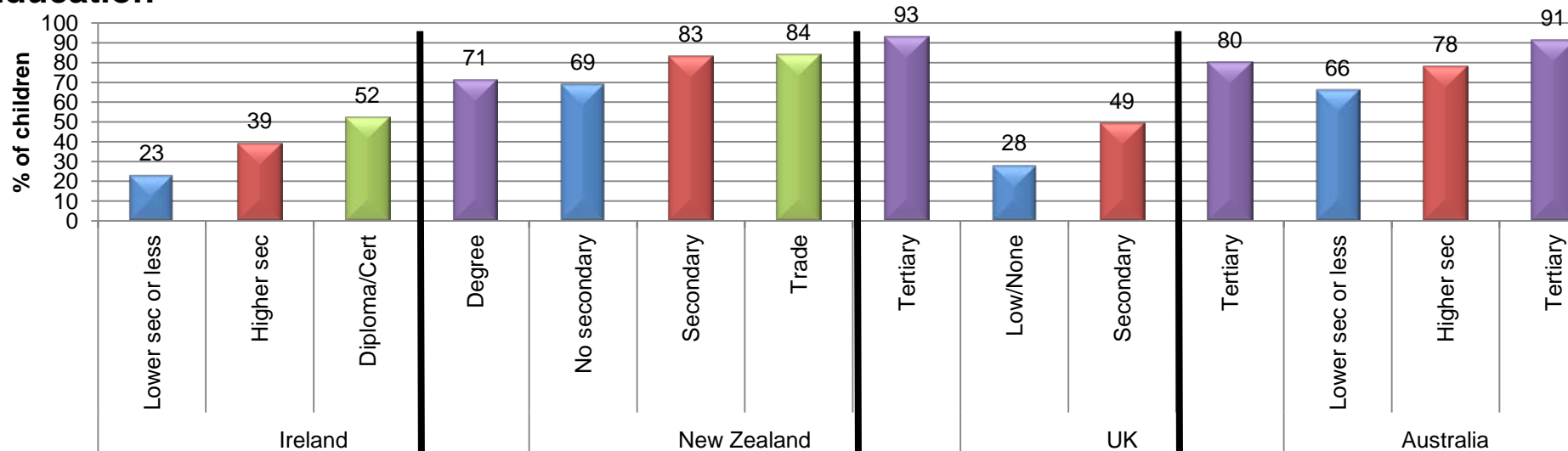


Family's characteristics

Income Quintile

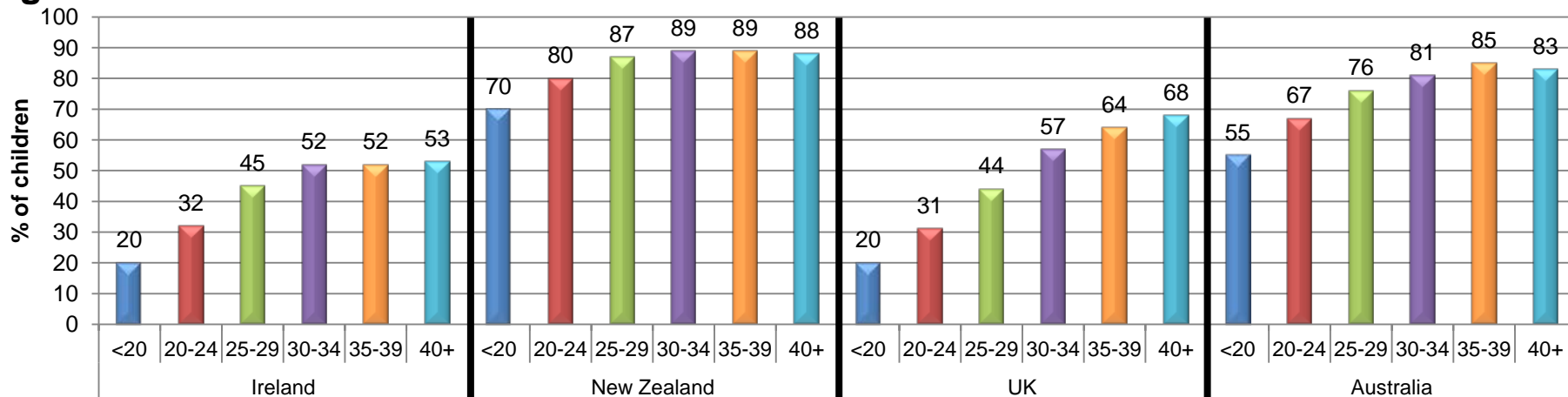


Education

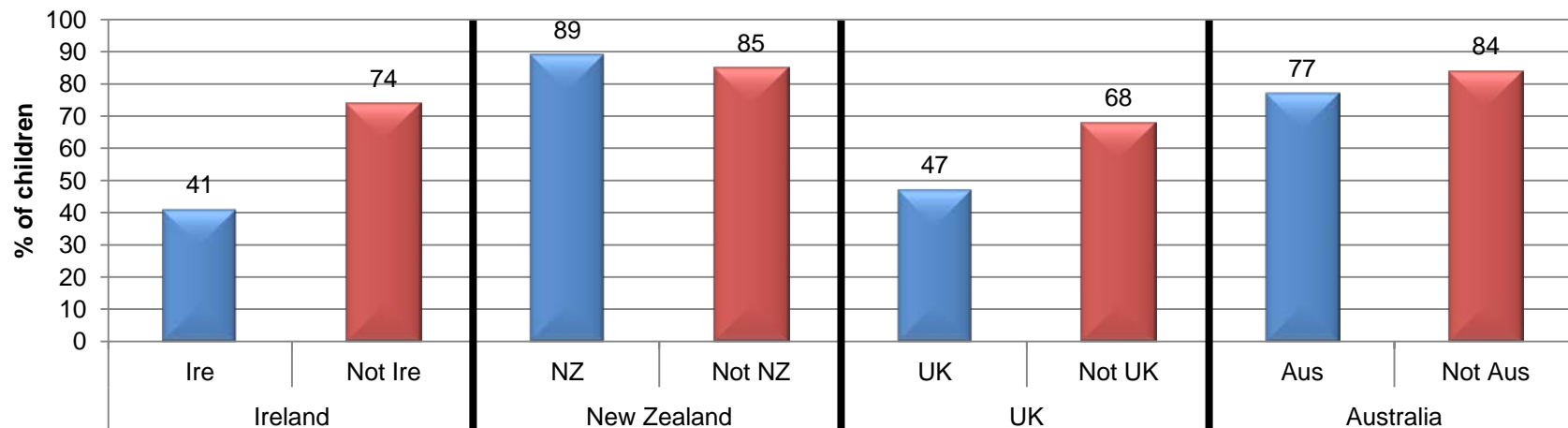


Mum's characteristics

Age

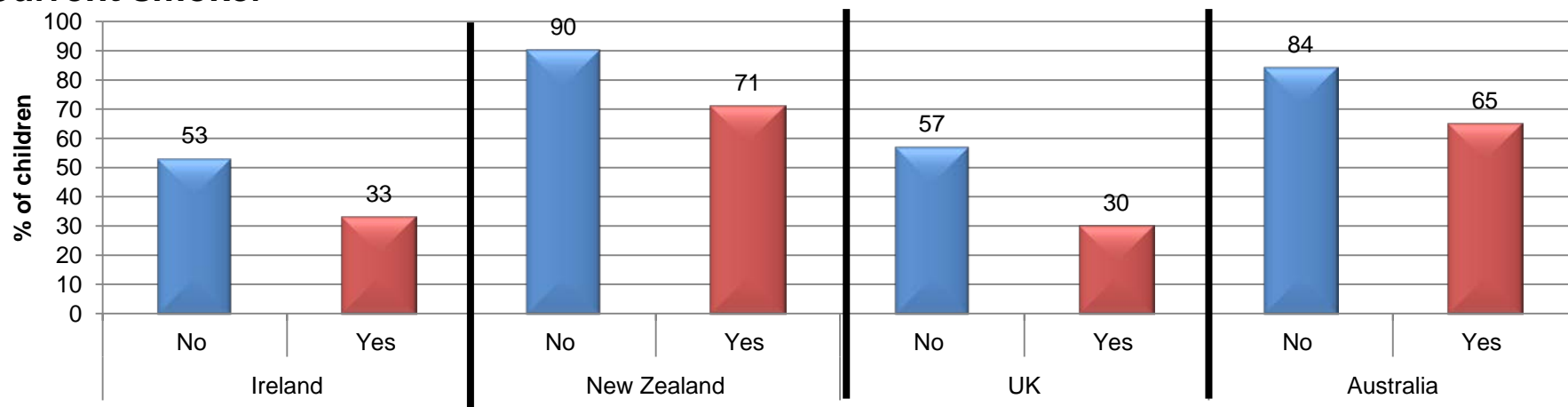


Country of birth

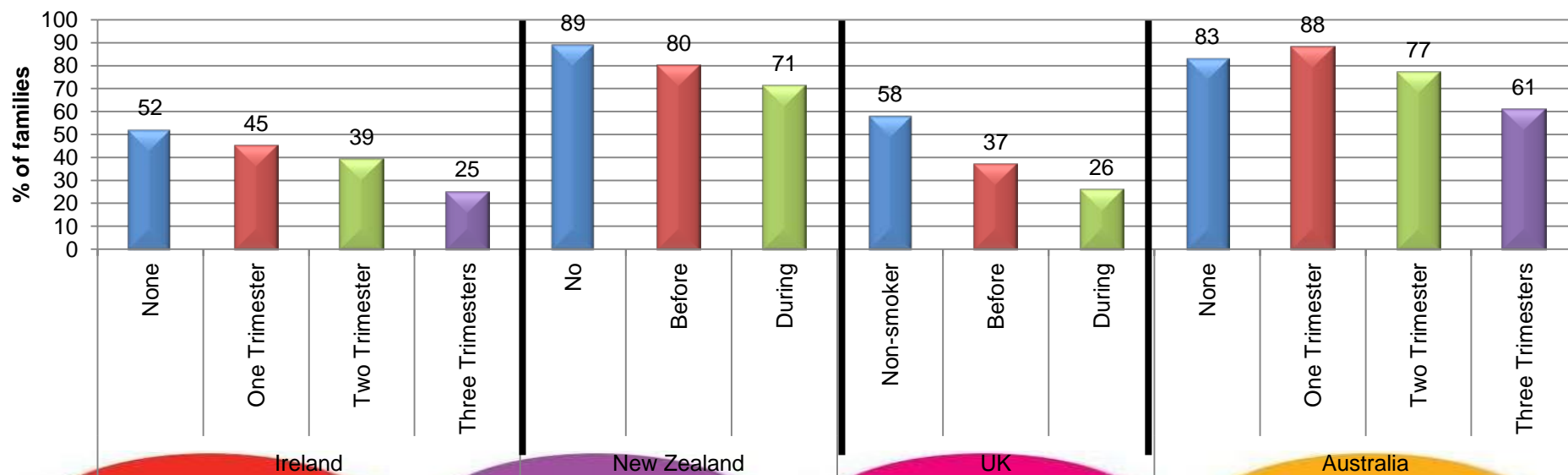


Mum's characteristics

Current smoker

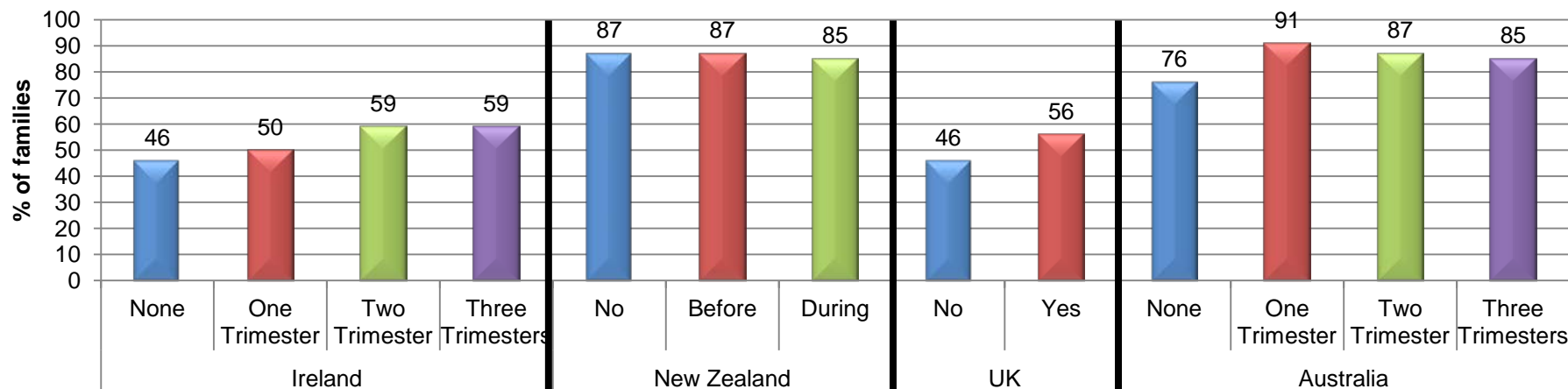


Smoking during pregnancy

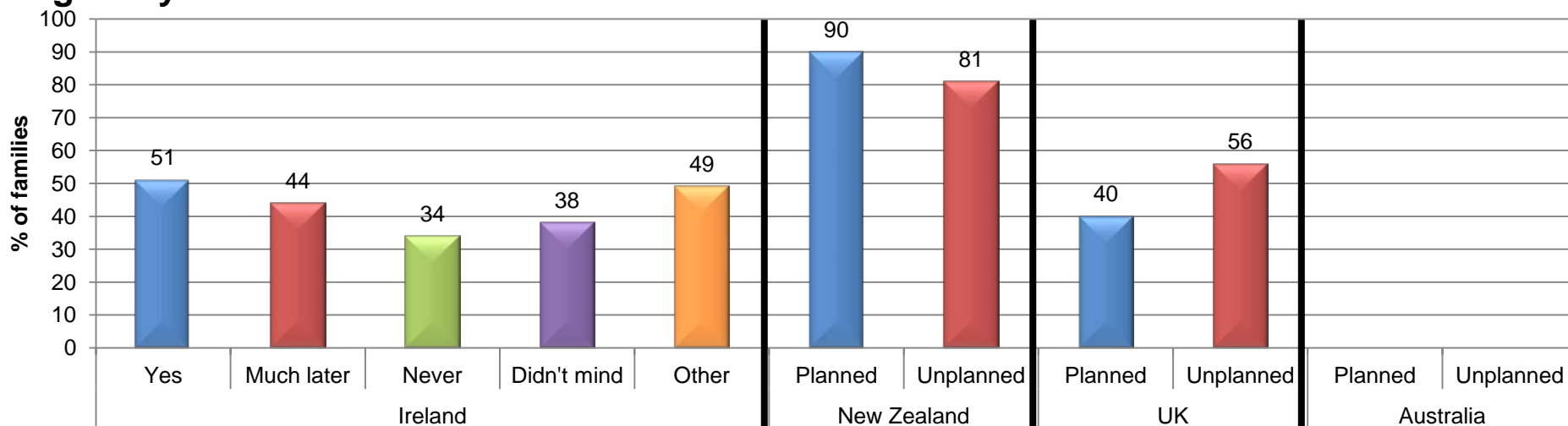


Mum's characteristics

Drinking during pregnancy



Pregnancy intentions



Odds ratios from multivariate models for breastfeeding at 1 month or on leaving hospital (Ireland)

	Ire	NZ	UK	Aus
Boy	-ve	-ve	n.s.	n.s.
ICU	n.s.	+ve	n.s.	n.s.
Ventilator	n.s.	+ve	—	n.s.
Pre-term	-ve	-ve	n.s.	-ve
Birthweight	n.s.	-v.e	n.s.	n.s.
Parity (not first born)	-ve	n.s.	-ve	-ve
Family income	-ve	n.s.	-ve	n.s.
Welfare dependency	n.s.	n.s.	n.s.	n.s.
Economic strain	-ve	n.s.	+ve	n.s.
Accommodation tenure	n.s.	n.s.	n.s.	n.s.
Family social class	+ve	n.s.	n.s.	n.s.
Mother’s physical health	+ve	+ve	+ve	+ve
Mother’s mental health	n.s.	n.s.	-ve	n.s.
Mother’s age	+ve	n.s.	+ve	n.s.
Mother’s education	+ve	+ve	+ve	+ve
Mother NOT born in country of study	++ve	n.s.	++ve	n.s.
Mother works outside home	-ve	-ve	n.s.	n.s.
Mother smokes	-ve	-ve	-ve	-ve
Mother drank in pregnancy	+ve	n.s	+ve	+ve
Relationship quality	n.s.	n.s.	n.s.	n.s.
One-parent family	n.s.	—	-ve	n.s.
Pregnancy intention	n.s	n.s.	n.s.	—



Summary

3 objectives at start of presentation

1. Feasibility and potential of comparative research using the four cohorts

Achieved.

- Difficulties in ex-post harmonisation. Some compromises but high level of harmonisation possible.
- Work undertaken by email exchanges. No site visits.
- Potential for greater harmonisation exists. Returns very high.



Summary

2. Compare breastfeeding rates in the four countries.

Achieved.

- Very high initiation rates in Australia and New Zealand, high in UK. Very low in Ireland.
- Rates for cohort studies very consistent with those from other national sources.



Summary

3. Identify the factors significantly associated with breastfeeding in the four countries.

Achieved.

- Examined range of variables previously identified in the literature – child's characteristics; mother's characteristics; family characteristics. Bivariate and multivariate associations considered.
- Major correlates – even in multivariate analysis
 - Social class (positively related – higher class, higher breastfeeding)
 - Mother's education (positively education – higher education, higher breastfeeding)
 - Mother's health (positively related – better health, higher breastfeeding)
 - Current smoker (negatively related – smokers less likely to breastfeed)



Country-specific factors that reduce probability of breast feeding (multivariate analysis)

- Baby is boy – I, NZ
- Baby was in ICU – NZ
- PreTerm – I, NZ, AU
- Baby was 2nd or subsequent child – I, AU, UK
- Lower income – UK
- Financial difficulties – I
- Depressed mother - UK
- Depressed, treated in pregnancy – I, NZ
- Lone parent – UK



Country-specific factors that increase probability of breast feeding (multivariate analysis)

- Mother immigrant / minority ethnic mother – I, UK
- Mother drank alcohol during pregnancy – I, UK, AU
- Very large differences in rates between mothers born in cohort country vs others in Ireland and UK.



Discussion points

- While all four countries concerned to increase breast feeding duration – as well as initiation, they have very different starting points.
- In UK and Ireland factors associated with lower breast-feeding are attempting to explain “norm” of low rates.
- In Australia and, especially, New Zealand factors associated with breast-feeding explain deviation from norm.
- How far can differences across countries both in starting rates and ‘explanations’ help us to understand the role of institutional and policy differences?
- Can cross-cohort comparisons help even countries where high initial rates to support breast-feeding continuation?
- As well as policies, mothers may differ across countries, e.g. average age, parity across social class, percent born in country. What role do these differences in motherhood play?



Discussion points

Next steps

- Further harmonisation
- Other infant outcomes?
- Pooled analysis (requires further harmonisation and pooling of data)?
- Systematic consideration of compositional differences?



Thank You

Questions?

Odds ratios from multivariate models for breastfeeding at 1 month or on leaving hospital (Ireland)

	Ire	NZ	UK	Aus		Ire	NZ	UK	Aus		Ire	NZ	UK	Aus
<i>Child's gender (Ref Girl)</i>					<i>Acc tenure (Ref Owner)</i>					Lower secondary	0.22	0.32	0.22	0.34
Boys	0.85	0.82	1.02	0.99	Public rent	0.83	0.97	0.88	0.53	Higher secondary	0.40	0.53	0.44	0.47
<i>Stay in ICU ?(Ref No)</i>					Private tenant	2.05	0.89	1.06	0.91	Cert/Diploma	0.63	0.51	--	--
ICU	0.87	0.60	1.08	0.87	Other tenure	1.25	1.43	1.09	0.57	<i>Mum depressed @9mts</i>				
<i>On a ventilator? (Ref No)</i>					<i>Family Class</i>					Currently depressed	0.87	1.02	0.88	1.20
Ventilator	1.05	1.99	--	1.53	Other NonManual	0.66	1.02	0.70	1.70	<i>Mum treated depression?</i>				
<i>Term? (Ref Term)</i>					Skilled Manual	0.73	1.24	1.08	0.62	Treated before pregnancy	1.33	0.82	0.91	--
Pre-term	0.76	0.75	0.99	0.61	Semi skilled	0.90	1.04	0.77	0.56	Treated during pregnancy	0.67	0.78	--	--
Post-term	1.23	2.88	1.09	1.00	Unskilled	0.61	1.48	0.74	0.68	<i>Mum smokes?</i>				
<i>Birth w'ght (Ref 4+Kgs)</i>					None Assigned	0.46	1.10	0.71	--	Currently smokes	0.84	0.38	0.16	0.60
0-<2.5 Kgs	1.02	0.52	0.80	1.15	<i>Mother's Health</i>					Smoked 1 trim	1.04	1.01	0.73	3.70
2.5-<3.0Kgs	0.87	0.73	0.95	0.60	Very good	0.94	0.65	--	0.50	Smoked 2 trim	1.26	1.12	0.92	0.72
3.0-<3.5Kgs	0.93	0.91	0.96	0.71	Good	0.84	0.64	0.89	0.42	Smoked 3 trim	0.72	--	0.75	0.90
3.5-<4.0Kgs	1.12	1.04	1.04	0.80	Fair(vs Excellent)	0.87	0.64	0.80	0.36	<i>Mum drank in pregnancy?</i>				
<i>Parity (Ref First born)</i>					Poor(vs Excellent)	0.51	0.53	0.62	0.43	Drank 1 trim	1.16	--	--	3.16
Higher order	0.73	1.04	0.92	0.70	<i>Mother's Age (Ref 40+)</i>					Drank 2 trim	1.37	--	--	1.48
<i>Family Equi Inc (Ref Q5)</i>					< 20 yrs	1.26	0.43	0.31	0.41	Drank 3 trimesters	1.65	1.06	1.37	1.73
Inc Q1 (Low)	0.73	0.86	0.56	1.23	20-24 yrs	1.92	0.71	0.40	0.72	<i>Quality of relationship</i>				
Inc Q2	0.70	0.87	0.63	1.26	25-29 yrs	2.29	0.77	0.49	0.70	Relationship quality Q1	0.80	0.81	--	1.10
Inc Q3	0.77	0.95	0.86	1.26	26-34 yrs	2.36	0.74	0.66	0.89	Relationship quality Q2	1.01	1.04	1.04	--
Inc Q4	0.75	0.83	0.87	0.97	35-39 yrs	2.68	0.69	0.83	1.06	Relationship quality Q3	1.10	1.00	--	--
No info	0.92	0.84	--	--	<i>Mum born in country?</i>					<i>Family type(Ref 2-parent)</i>				
<i>Welf dep'cy (Ref >50%)</i>					NOT born country	4.55	1.11	3.42	1.07	One-parent family	0.96	--	0.84	0.62
Welfare >50%	1.02	1.02	0.99	2.16	<i>Mum working?</i>					<i>Pregnancy intentions</i>				
<i>Econ Strain (Ref No strain)</i>					Home duties	1.20	1.37	1.41	0.90	Intended then	1.18	1.00	--	--
Economic strain	0.88	0.92	1.44	1.12						Intended later	1.26	0.94	0.97	--
										Didn't mind	1.01	--	--	--
										Other vs (Never)	1.53	--	--	--