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**A SUMMARY GUIDE TO  
WAVE 2  
OF THE INFANT COHORT  
(AT 3 YEARS)  
OF  
GROWING UP IN IRELAND**

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May 2013

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# 1. INTRODUCTION

In this document we provide the reader with a brief summary of the second wave of the Infant Cohort (at 3 years) from the *Growing Up in Ireland* study, as well as an overview of the microdata files (Researcher and Anonymised) from that round of the project.

*Growing Up in Ireland* - the National Longitudinal Study of Children – is the first project of its kind ever undertaken in Ireland and, as such, aims to explore the many and varied factors that contribute to or undermine the wellbeing of children currently living here. A two cohort longitudinal design was adopted with one cohort of 11,134 infants (aged 9 months) and the other of 8,568 9-year olds, with a view to improving our understanding of children’s development across a range of domains. Since the project is longitudinal in nature respondents in both cohorts are being interviewed on a number of occasions. The families of the infants were interviewed when the children were 9 months and 3 years old<sup>1</sup> (the focus of the current document), while the older cohort and their parents/guardians were interviewed at 9 and 13 years of age.

The 11,134 children representing the infant cohort were born between 1<sup>st</sup> December 2007 and the 30<sup>th</sup> June 2008 and data collection for the first wave at age 9 months took place between September 2008 and April 2009. Data collection for the second wave at age 3 years took place between December 2010 and July 2011 and resulted in a completed datafile of 9,793 cases.

This report describes in detail the background, design, instruments and procedures used only in respect of Wave 2 of the Infant Cohort. Wave 1 of this cohort (and the Child Cohort) are the subjects of a parallel set of reports. The focus here is on the sample design and response rates in Wave 2 of the Infant Cohort, the nature and content of the questionnaires and other instrumentation, along with a broad overview of the datasets.

## 1.1 Background

*Growing Up in Ireland* provides a very important input to the implementation of The National Children’s Strategy - a major national plan for children, published in 2000 by the then Department of Health and Children. The principal objective of the Study is to provide evidence-informed research into childhood and children’s wellbeing. This increased

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<sup>1</sup> The children and their parents/guardians are also being interviewed in their homes from March – September 2013 when the children are 5 years of age.

understanding of the determinants and drivers of wellbeing and its change and transformation over time will be used to assist in policy formation and the design and delivery of services for children and their families.

*Growing Up in Ireland* was commissioned by the Irish Government. It is funded by the Department of Children and Youth Affairs in association with the Department of Social Protection and the Central Statistics Office. Detailed recommendations for the design of a National Longitudinal Children's Study were first presented in a paper entitled *Design of the National Children's Strategy – Longitudinal Study of Children* (Collins, 2001). The current study stems from a Request for Tender<sup>2</sup> which was issued by the then Department of Health and Children in December 2004. After an assessment and evaluation process throughout 2005 and early 2006, work on the project began in April 2006 by a research consortium led by the Economic and Social Research Institute (ESRI) and Trinity College Dublin (TCD).

The study provides an immense amount of information on children and their families, and explores those factors impacting on the child's physical health and development, social/emotional/behavioural wellbeing, and educational achievement/intellectual capacity. Full reports from the first wave of each cohort, and summary key findings from the second waves have already been released<sup>3</sup> – as well as papers based on data from previous rounds of the study.

While children's current wellbeing is of immense importance, researchers are also cognisant of future outcomes for children as they develop into young adults. By gathering comprehensive data on childhood development the study will provide a statistical basis for policy formation and applied research across all aspects of a child's development – currently and into the future.

*Growing Up in Ireland* has nine main objectives as set out below:

1. To describe the lives of Irish children, to establish what is typical and normal as well as what is atypical and problematic
2. To chart the development of Irish children over time, to examine the progress and wellbeing of children at critical periods from birth to adulthood
3. To identify the key factors that, independently of others, most help or hinder children's development
4. To establish the effects of early child experiences on later life

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<sup>2</sup> *Request for Tenders (RFT) for Proposals to Undertake a National Longitudinal Study of Children in the Republic of Ireland*, issued by the National Children's Office of the Department of Health and Children and the Department of Social and Family Affairs, December 2005, p.20.

<sup>3</sup> May 2013

5. To map dimensions of variation in children's lives
6. To identify the persistent adverse effects that lead to social disadvantage and exclusion, educational difficulties, ill health and deprivation
7. To obtain children's views and opinions on their lives
8. To provide a bank of data on the whole child
9. To provide evidence for the creation of effective and responsive policies and services for children and families.

Full details on the underlying theoretical and conceptual framework can be found in Greene *et al.*, 2010<sup>4</sup>.

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<sup>4</sup> Available at [http://www.growingup.ie/fileadmin/user\\_upload/documents/Technical\\_Reports/GUI\\_Background\\_and\\_Conceptual\\_Framework.pdf](http://www.growingup.ie/fileadmin/user_upload/documents/Technical_Reports/GUI_Background_and_Conceptual_Framework.pdf)

## 2. SAMPLE DESIGN

### 2.1 Sample Design at Wave 1

Full details on the population, sampling frame and sample design for the infant cohort are given in a separate, dedicated publication entitled *Sample Design and Response in Wave 1 of the Infant Cohort (at 9 months) of Growing Up in Ireland*; <http://www.ucd.ie/t4cms/GUI-SampleDesignResponseInfants.pdf>. This subsection provides a brief recap as an introduction for the sample design in Wave 2.

There were just over 70,000 births in Ireland in 2007, with the first of the *Growing Up in Ireland* infants being born in December of that year. This figure represents growth of nearly 20,000 in the number of annual births between 1989 and 2007. As well as an increase in the overall number of births, there have been other notable socio-demographic changes in the Irish infant population over the last 20 years. The number of non-marital births has more than tripled (going from an average of 5,643 births per year in the period 1981-1990 to over 23,640 in 2007 (from 9% to 33% of annual births); mothers' average age at birth is older (up from 29.6 years in 1989 to 31.1 years in 2007); and inward immigration during the 00s means that the infant (as well as the adult) population in 2007 was probably more ethnically diverse than ever before in Ireland's history: nearly 20% of births in that year were to mothers of non-Irish nationality.

The Child Benefit<sup>5</sup> register was used as the sampling frame to select potential respondents. This administrative database had some extremely attractive characteristics as a sampling frame. It contained a comprehensive up-to-date listing of eligible members of the relevant population; had a wide range of relevant characteristic variables which made it extremely attractive as a sampling frame and was already in an electronic form which could be technically accessed with relative ease.

There was a total of 41,185 infants registered on the Child Benefit Register as having been born between 1st December 2007 and 30th June 2008. Children for inclusion in the Study were sampled over this seven month reference period, with a view to carrying out fieldwork for Wave 1 when they were 9 months of age, between September 2008 and March / April 2009. The sample was selected on a systematic basis, pre-stratifying by marital status, county of residence and nationality of payee as well as number of children in the claim - all variables which were available from the information recorded on the Benefit Register. A simple

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<sup>5</sup> Child Benefit is a near-universal regular social welfare payment to families with children. Children are to be registered within 6 months of being born or becoming part of the family (e.g. through adoption), or of the family coming to reside in the State.

systematic selection procedure based on a random start and constant sampling fraction was used.

For Wave 1, the valid address response rate was 64.3 per cent with a refusal rate of 22.0 per cent. When we exclude responses coded as ‘No contact, despite call backs’ we get a valid contact response rate of 70.2 per cent. The final completed Wave 1 sample was 11,134 infants and their families, and this formed the target sample for Wave 2.

## 2.2 Sample Design at Wave 2

*Growing Up in Ireland* is a longitudinal study based on the same set of children and their families over time.

The Wave 2 target sample included all 11,134 Study Children who participated in the first round of interviewing. The Study Child is the longitudinal focus of the study. We are interested throughout the study in tracking, interviewing, measuring and testing the child, regardless of changes in his/her family composition, structure, location etc. In this respect the study is based on a pure, fixed panel of children who were nine months of age at the time of first interview. After the initial sample selection no additions<sup>6</sup> were made to the sample with the only loss being through interwave non-response or attrition (including moving outside the jurisdiction) and death. Therefore the longitudinal population which we are referring to at Wave 2 is the population of nine-month olds (and their families) who were resident in Ireland at Wave 1 and who continued to be resident in Ireland at Wave 2.

Children were interviewed in the month following their third birthday (i.e. in their 37<sup>th</sup> month). As the infants had been born between 1<sup>st</sup> December 2007 and 30<sup>th</sup> June 2008, it followed that fieldwork for Wave 2 took place between December 2010 and July 2011 as the children turned three years of age.

## 2.3 Response Rates

As noted, the Wave 1 sample was selected from the Child Benefit Register. The overall response rate in the Wave 1 sample was just over 64 per cent.

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<sup>6</sup> Additions to membership of the Study Child’s household between Wave 1 and 2 interviews (in the form of new members residing in the household or being born into the household) are, of course, recorded on the household register in Wave 2.

Table 2.1 summarises response outcomes for Wave 2. From this, one can see that the overall response rate in Wave 2 was over 91 per cent when based on valid addresses only (that is excluding families who have moved abroad). When based on valid addresses contacted this rises to 94 per cent.

**Table 2.1: Summary response rates in Wave 2 of the Infant Cohort (at 3 years)**

|                                   | <b>No. of Cases</b> | <b>A – Gross Response</b> | <b>B – Valid Address Response</b> | <b>C – Valid Contact Response</b> |
|-----------------------------------|---------------------|---------------------------|-----------------------------------|-----------------------------------|
| <b>Outcome</b>                    | <b>N</b>            | <b>Per cent</b>           | <b>Per cent</b>                   | <b>Per cent</b>                   |
| (i) Completed                     | 9793                | 88.0                      | 91.4                              | 94.5                              |
| (ii) Refused                      | 494                 | 4.4                       | 4.6                               | 4.8                               |
| (iii) Other                       | 73                  | 0.7                       | 0.7                               | 0.7                               |
| (iv) Cannot contact               | 349                 | 3.1                       | 3.3                               | <b>100.0</b>                      |
| <b>Total valid</b>                | 10709               |                           | <b>100.0</b>                      |                                   |
| (v) Moved abroad / Child deceased | 425                 | 3.8                       |                                   |                                   |
| <b>Grand Total</b>                | 11134               | <b>100.0</b>              |                                   |                                   |

In Table 2.1 outcome (ii) ('Refused') includes some families who did not definitively refuse to participate in the survey but who failed to participate because they were 'too busy' and continuously broke appointments with the interviewer or who continually put the interviewer off, saying they would participate but never actually did so. These were considered as "soft refusals".

Outcome (iv) ('Cannot contact') includes families who had moved address since their first interview and for when a new address could not be found, as well as other families where no contact was made, despite repeated call backs. Many of these families who had moved address between the first and second round of interviewing may have moved outside the country and so are no longer living in Ireland. As such they really should not be included in the valid sample. Such families were included in the valid sample for calculating response rates, however, unless it could be definitively confirmed that they had left the country.

Outcome (v) ('Moved abroad / child deceased') includes families who were affirmatively identified as having moved out of the Republic of Ireland and a very small number where the Study Child had died between waves.

## 2.4 Attrition

Notwithstanding procedures aimed at minimising longitudinal attrition, interwave non-response is, unfortunately, unavoidable in panel surveys. One can identify a range of characteristics and variables related to attrition. As noted by Watson and Wooden (2009) these fall into two broad categories. First there are characteristics related to the interview in prior waves. These include whether or not the same interviewer visited the family in both

rounds of the survey (interviewer continuity from one round to the next) as well as the respondents' experience of the interview in prior rounds. The latter may be measured directly in terms of follow-up quality assurance checks in which the respondent is asked to record his/her satisfaction with the survey process. As there are obvious difficulties in securing comprehensive information across all respondents using quality assurance back-checks, indirect measures of respondent commitment to and experience of prior round(s) of the survey are often used. These include measures of item non-response as well as time taken to complete the interview in previous waves. Watson and Wooden (2009) note that the beneficial influence of interviewer continuity on inter-wave response rates is often highlighted (Waterton and Lievesley, 1987; Laurie *et al.*, 1999; Hills and Willis, 2001; Behr *et al.*, 2005 and Nicoletti and Peracshi, 2005). The size (and indeed the direction) of the effect is not universally agreed, however. Using data from the European Community Household Panel, Behr *et al.*, (2005) find large and significant effects of interviewer continuity while Nicoletti and Peracshi (2005) find small and insignificant effects (Watson and Wooden, p.162). Negative effects of the length of interview in previous rounds of the survey have also been identified (e.g. by Hillard and Willis, 2001).

The second set of variables found to be associated with interwave attrition are the personal characteristics and attributes of respondents. Given the nature of longitudinal studies one has a substantial range of characteristics from earlier waves of subsequent attriters. A number of respondent characteristics have been identified as having varying degrees of association with subsequent attrition. These have been summarised by Watson and Wooden (2009) as follows:

- Sex – females generally have a higher level of response and lower attrition rate.
- Age – attrition is higher among younger respondents.
- Race / ethnicity – minority status is usually related to higher rates of attrition, perhaps at least in part related to language issues.
- Marital status – attrition is usually lower among (more settled) married respondents and higher among singles.
- Household composition and size –the effects identified in the literature are somewhat mixed. Household composition may operate principally through contact probability. For example, single persons may be less likely than couples to be at home when an interviewer calls. The association between number of children and attrition equally appears to be somewhat mixed, though a negative relationship with number of children in the household probably reflects a greater chance of interviewers finding respondents for larger families being at home.
- Education – although attrition in longitudinal surveys is usually lower among better educated respondents some studies have found the size of the relationship to be relatively small.

- Labour force status – attrition is generally lower among respondents who are economically inactive, again probably because they have a higher chance of being found at home by the interviewer.
- Income – the relationship identified in the literature between income and response / attrition is also mixed. Using Irish data over five rounds of the European Community Household Panel (ECHP) study Watson (2003) found no significant association with family income.

To assess the extent and correlates of differential attrition in Wave 2 of the Infant Cohort (at 3 years) Tables 2.2 – 2.4 outline response rates in Wave 2 classified according to family characteristics in Wave 1.

**Table 2.2: Response outcomes in Wave 2 classified by mother’s educational attainment in Wave 1.**

| Educational Attainment,<br>Wave 1 | Outcome in Wave 2 |         |                |                               |       | Total % |
|-----------------------------------|-------------------|---------|----------------|-------------------------------|-------|---------|
|                                   | Completed         | Refusal | Cannot contact | Moved abroad / Child deceased | Other |         |
| Lower Secondary or less           | 81.9              | 7.1     | 6.4            | 3.5                           | 1.0   | 100     |
| Leaving Cert                      | 85.6              | 5.6     | 4.5            | 3.5                           | 0.7   | 100     |
| Non-degree Cert / Diploma         | 89.4              | 4.3     | 2.3            | 3.5                           | 0.5   | 100     |
| Degree or higher                  | 89.8              | 3.1     | 2.1            | 4.3                           | 0.7   | 100     |
| Total                             | 88.0              | 4.4     | 3.1            | 3.8                           | 0.7   | 100     |

P < 0.001 based on chi-square

From these one can see that attrition is negatively related to maternal education (the higher the level of mother’s education in Wave 1 the lower attrition is likely to be in Wave 2). One can see from Table 2.2, for example, that almost 90 per cent of Study Children whose mother was a graduate participated in the second wave of the study. This compares with just 82 per cent of children whose mother had left school at Lower Secondary level (i.e. at Junior Certificate or less).

**Table 2.3: Response outcomes in Wave 2 classified by family type in Wave 1.**

| Family Type,<br>Wave 1                        | Outcome in Wave 2 |         |                |                              |       | Total % |
|---|-------------------|---------|----------------|------------------------------|-------|---------|
|   | Completed         | Refusal | Cannot contact | Moved abroad/ Child deceased | Other |         |
| One parent 1 child under 18 years             | 80.8              | 7.8     | 7.1            | 3.7                          | 0.5   | 100     |
| One parent 2 or more children under 18 years  | 78.7              | 7.8     | 8.5            | 4.2                          | 0.9   | 100     |
| Two parents 1 child under 18 years            | 87.5              | 3.6     | 2.7            | 5.4                          | 0.9   | 100     |
| Two parents 2 or more children under 18 years | 90.1              | 4.2     | 2.4            | 2.8                          | 0.5   | 100     |
| Total   | 88.0              | 4.4     | 3.1            | 3.8                          | 0.7   | 100     |

P < 0.001 based on chi-square

Table 2.3 indicates that higher attrition levels are associated with one parent families – 79-81 per cent of one parent families participated in the second round of interview compared with 88 – 90 per cent of two parent families.

**Table 2.4: Response outcomes in Wave 2 classified by family social class in Wave 1.**

| Family Social Class,<br>WAVE 1    | Outcome in Wave 2 |         |                   |                                  |       | Total<br>% |
|-----------------------------------|-------------------|---------|-------------------|----------------------------------|-------|------------|
|                                   | Completed         | Refusal | Cannot<br>contact | Moved abroad /<br>Child deceased | Other |            |
| Professional / Managerial         | 91.3              | 2.9     | 1.9               | 3.3                              | 0.5   | 100        |
| Other non manual / skilled manual | 86.6              | 5.5     | 3.3               | 3.9                              | 0.7   | 100        |
| Semi-skilled / Unskilled manual   | 85.5              | 5.2     | 3.2               | 5.0                              | 1.1   | 100        |
| Total                             | 88.0              | 4.4     | 3.1               | 3.8                              | 0.7   | 100        |

P < 0.001 based on chi-square

Finally, Table 2.4 shows a strong relationship in participation at the second wave with family social class (91 per cent among Professional / Managerial families, compared with 86 per cent among those in the Semi-skilled / Unskilled manual group).

Overall, the three tables in question indicate that attrition is higher among more socially disadvantaged groups and one-parent families, driven by a combination of lower achieved contact levels and higher interwave residential mobility ('cannot contact') as well as higher direct refusal rates.

Table 2.5 summarises the association between attrition at Wave 2 and background demographics as they were recorded in Wave 1, in the form of odds ratios. It presents the odds of completing the survey at Wave 2 compared to not completing it for the valid sample (those who moved abroad or who had deceased between waves are excluded from the analysis). Columns A and B focus on bivariate associations. The percentage of each group who participated in the survey in Wave 2 is outlined in Column A. For example, 87 per cent of families who were in the lowest equivalised income quintile in Wave 1 participated. This increased for each quintile, to stand at just under 95 per cent among families in the highest income quintile. Comparable figures are outlined in respect of mother's educational attainment, whether or not there was a change of interviewer between Waves, length of time taken at the Wave / interview and so on.

Column B presents the bivariate odds ratio of participating in Wave 2. One can see, for example, that families in the highest income quintile of Wave 1 were 2.6 times more likely to participate than families in the lowest quintile. In broad terms the figures in Columns A and B of the table indicate that families who were socially disadvantaged in any way – in terms of income, educational attainment, social class, depression status etc. were significantly less likely to participate in Wave 2. Higher attrition was also significantly associated with a change in interviewer between Waves 1 and 2, one as compared to two-parent family status, age of Primary Caregiver (younger ones more likely to be attriters) and urban/rural location (respondents in rural areas were 1.22 times more likely to participate in Wave 2 than those in urban areas).

In Column C we present the same set of odds ratios, controlling for Wave 1 characteristics. The important point to note is that in a multivariate framework not all variables maintain their significant association with participation. Family social class at Wave 1 and interviewer continuity between Waves continue to have a major significant relationship with attrition in Wave 2. For example, relative to families in the Professional / Managerial group those in the other three categories have an odds ratio of 0.65 to 0.73 of participating in Wave 2 (all three being significant). Families who had the same interviewer in both Waves were 1.64 times more likely to participate at Wave 2 than those for whom there had been a change of interviewer. This latter may reflect either greater survey experience on the part of the interviewer by Wave 2, the rapport built up between the interviewer and respondent / family at Wave 1 – or a combination of the two.

**Table 2.5: Association between completing the survey at Wave 2 and background demographics in Wave 1. (A) Percentage of families participating in Wave 2; (B) Predicted Odds Ratio – bivariate association; (C) Predicted Odds Ratio – multivariate association. (n of cases = 10,709)**

| Demographic,<br>Wave 1                                     | Category                     | (A)<br>Percentage<br>Participating<br>in Wave 2 | (B)<br>Predicted<br>OR–<br>bivariate<br>assoc. | (C)<br>Predicted<br>OR–<br>multivariate<br>assoc. |
|--|------------------------------|---|--|---|
| <b>Total</b>   |                              | <b>91.4</b>                                     |  |   |
| <b>Family Income Quintile (eqivalised)</b>                 | Lowest                       | 87.1  | 1 (Ref)  | 1 (Ref)   |
|  | Second                       | 90.6  | 1.43 **  | 1.11 *  |
|  | Third                        | 92  | 1.69 **  | 1.05  |
|  | Fourth                       | 94.1  | 2.36 **  | 1.25  |
|  | Highest                      | 94.6  | 2.60 **  | 1.23  |
| <b>Mother's Educational Attainment</b>                     | Lower Secondary              | 84.9  | 1 (Ref)  | 1 (Ref)   |
|  | Leaving Certificate          | 88.7  | 1.40 **  | 1.17  |
|  | Non-Degree                   | 92.7  | 2.26 **  | 1.50 **   |
|  | Degree                       | 93.9  | 2.73 **  | 1.38 *  |
| <b>Change of interviewer in Wave 2?</b>                    | Different                    | 89.2  | 1 (Ref)  | 1 (Ref)   |
|  | Same                         | 93.2  | 1.65 **  | 1.64 **   |
| <b>Length of time of interview, with<br/>PCG at Wave 1</b> | Quintile 1 (short)           | 91.9  | 1 (Ref)  | 1 (Ref)   |
|  | Quintile 2                   | 91  | 0.89   | 0.86  |
|  | Quintile 3                   | 91.6  | 0.96   | 0.93  |
|  | Quintile 4                   | 92.1  | 1.03   | 0.98  |
|  | Quintile 5 (long)            | 90.7  | 0.87   | 0.83  |
| <b>Primary Caregiver's age</b>                             | <22 years                    | 81.6  | 1 (Ref)  | 1 (Ref)   |
|  | 22 – 25                      | 86.4  | 1.44 *   | 1.12  |
|  | 26 – 29                      | 90.5  | 2.15 **  | 1.26  |
|  | 30 – 32                      | 92.8  | 2.90 **  | 1.50 **   |
|  | 33 – 35                      | 94.1  | 3.57 **  | 1.75 **   |
|  | 36 – 38                      | 92.6  | 2.84 **  | 1.40 *  |
|  | 39+                          | 92.2  | 2.67 **  | 1.42 *  |
| <b>Family Social Class</b>                                 | Professional /<br>Managerial | 94.5  | 1 (Ref)  | 1 (Ref)   |

|   |                                   |      |         |    |         |    |
|---|-----------------------------------|------|---------|----|---------|----|
|   | Other non manual / skilled manual | 90.1 | 0.53    | ** | 0.64    | ** |
|   | Semi-skilled / Unskilled manual   | 90   | 0.53    | ** | 0.71    | *  |
|   | Class not assigned                | 83.2 | 0.29    | ** | 0.64    | ** |
| <b>Family Type</b>                              | Lone parent                       | 82.9 | 1 (Ref) |    | 1 (Ref) |    |
|   | Two parent                        | 92.6 | 2.59    | ** | 1.42    | ** |
| <b>Number of children under 14 in household</b> |                                   |      | 1.00    |    | 1.00    |    |
| <b>Location</b>                                 | Urban                             | 90.5 | 1 (Ref) |    | 1 (Ref) |    |
|   | Rural                             | 92.1 | 1.22    | ** | 1.14    |    |
| <b>Primary Caregiver Depressed (CES-D)</b>      | Not depressed                     | 92.1 | 1.73    | ** | 1.33    | *  |
|   | Depressed                         | 87.1 | 1 (Ref) |    | 1 (Ref) |    |
| <b>Primary Caregiver born in Ireland?</b>       | Born in Ireland                   | 91.4 | 1 (Ref) |    | 1 (Ref) |    |
|   | Moved to Ireland, last 5 years    | 91.6 | 1.03    |    | 1.27    |    |
|   | Moved to Ireland, 6-10 years ago  | 91.3 | 0.99    |    | 1.11    |    |
|   | Moved to Ireland, 11+ years ago   | 91.8 | 1.05    |    | 0.99    |    |
| <b>Primary Caregiver health</b>                 | Excellent                         | 91.8 | 2.34    | ** | 1.28    |    |
|   | Very good                         | 92.2 | 2.46    | ** | 1.46    |    |
|   | Good                              | 90.8 | 2.07    | *  | 1.40    |    |
|   | Fair                              | 88.1 | 1.55    |    | 1.16    |    |
|   | Poor                              | 83.7 | 1 (Ref) |    | 1 (Ref) |    |

\* significant at  $p < 0.05$

\*\* significant at  $p < 0.01$

## 2.5 Reweighting the Data

To account for the differential attrition the data from Wave 2 of the survey were statistically reweighted to ensure that they were fully representative of the population of children who were resident in Ireland at 9 months and who were still living here at 3 years.

The weighting is based on a standard iterative procedure for adjusting the completed sample to known population totals. The specific weighting system used is called GROSS. This is based on a minimum information loss algorithm which fits population marginals in a regression framework and adjusts the sample to ensure that it produces estimates which match known population parameters. It has been used extensively by the ESRI since 1996<sup>7</sup>.

The sample weights for Wave 2 of the Infant Cohort (at 3 years) were constructed by first adjusting the structure or composition of the Wave 2 sample to the Wave 1 sample, (thus accounting for Wave 2 response and attrition) and secondly by incorporating the weight that

<sup>7</sup> See, for example, Gomulka, J., 1992. "Grossing-Up Revisited", in R. Hancock and H. Sutherland (Eds.), *Microsimulation Models for Public Policy Analysis: New Frontiers*, STICERD, Occasional Paper 17, LSE.

Gomulka, J., 1994. "Grossing Up: A Note on Calculating Household Weights from Family Composition Totals." University of Cambridge, Department of Economics, Microsimulation Unit Research Note MU/RN/4, March 1994.

was calculated at Wave 1. This latter had been generated at Wave 1 to adjust the distribution of the completed Wave 1 sample to known population figures<sup>8</sup>. The first step in generating the Wave 2 weight takes account of differential attrition between Wave 1 and Wave 2, and the second step takes account of differential response and design effects in the original sample at Wave 1.

The main variables used to adjust for differential inter-Wave attrition were:

- Family structure
- Mother's age
- Mother's principal economic status (PES)
- Father's principal economic status (PES)
- Family's social class
- Mother's educational attainment
- Household tenure
- Regional distribution of children by gender
- Mother's marital status
- Mother's nationality
- Mother's residency status

The above variables were all also used to calculate the Wave 1 weights. In addition to these variables, some respondent characteristics which were recorded at Wave 1 were found to be associated with attrition at Wave 2 and so were also included in generating the first step of the Wave 2 weights. These variables were:

- Whether or not child was breastfed at Wave 1
- Whether or not primary caregiver smoked at Wave 1
- Hours worked by primary caregiver at Wave 1
- Primary caregiver's ethnic background at Wave 1
- Length of time family had lived in the local area at Wave 1
- Location of household at Wave 1
- Primary caregiver depression status at Wave 1
- Primary caregiver body mass index (BMI) at Wave 1
- Household income quintile at Wave 1

In summary, the completed sample at Wave 2 was adjusted so that its distribution according to the above variables was in line with that of the Wave 1 completed sample.

Appendix Table 1 provides a detailed breakdown of the structure and composition of the sample at Wave 1 (Column A). Column B outlines changes to the Wave 1 sample arising

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<sup>8</sup> See *Sample Design and Response in Wave 1 of the Infant Cohort (at 9 months) of Growing Up in Ireland* document (<http://www.ucd.ie/t4cms/GUI-SampleDesignResponseInfants.pdf>) for details on how the Wave 1 weight was generated.

(mostly) from the movement of families outside the State between Wave 1 and Wave 2, deaths among Study Children and small adjustments arising from the 2011 Census of Population<sup>9</sup>. Column C summarises the Study Team's best estimate of the Wave 2 population of 9-month-old children who had been resident at Wave 1 and who continued to be resident in Ireland when Wave 2 fieldwork was carried out. The unweighted sample is broken down in Column D, with the final weighted sample outlined in Column E of the table.

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<sup>9</sup> The Census of Population 2011 was carried out in April of that year, almost exactly in the middle of fieldwork with the 3-year-olds. Accordingly, it provided a firm benchmark for the number of 3-year-olds who were resident in the country at that time.

# 3. INSTRUMENT DEVELOPMENT AND PILOTING

## 3.1 Instrument Design

The questionnaires were developed by the Study Team, in association with many other groups and advisors involved in the Study. These are outlined below.

The **Scientific and Policy Advisory Committee (SPAC)** is a non-executive group that provides scientific and policy advice on the content and best practice of the design, implementation and roll-out of the study. Its ten members were selected to represent a broad range of disciplines mostly in areas related to children and large-scale longitudinal national surveys. The expertise of members of the group spans substantive, technical and policy areas.

**Panels of Experts** (containing just over 45 members) assembled by the Study Team. The Panels contributed to the design of the Study as well as to instrumentation. The panels of experts were made up of specialists drawn from a wide range of backgrounds and were consulted throughout the development phase of the project and on an on-going basis. They were asked to suggest domains, topics and questions which were of particular relevance to their specific areas of expertise, and were also asked to provide references to other studies that had previously covered these areas, or for justification for the inclusion of innovative question topics.

Members of the Study Team also met with other relevant stakeholder groups and feedback from these meetings was incorporated into the development of the instrumentation and the design of the project in general.

In developing the instrumentation, the Study Team synchronised, as far as possible, with other longitudinal child cohort studies, to facilitate later comparative research as well as to draw on their experiences and lessons learned.

## 3.2 Piloting the Instruments

Three distinct phases, Pre-pilot, Pilot, and Dress Rehearsal were involved in the testing and piloting of the instrumentation and procedures. Each of these is discussed below.

### ***3.2.1 The Pre-pilot***

The purpose of the 3-year pre-pilot was to get initial feedback on the questions intended for use in the main Primary and Secondary Caregiver questionnaires. Although only a small number of families with children aged around 3 years participated (n=21) they provided very valuable input. The convenience/opportunistic sample used was generated through staff and associates in the ESRI and TCD.

The main findings of the pre-pilot were the need to reduce the overall length of the questionnaire and confirmation of the feasibility of using directly assessed cognitive tests in the home environment.

### ***3.2.2 The Pilot***

The Child Benefit Register had been used to select the sample for the first full infant pilot at Wave 1. The pilot for Wave 2 sought to re-interview those families who had participated in the Wave 1 pilot. A total of 177 families successfully completed interviews in the Wave 2 pilot phase, representing a response rate of just over 88 per cent.

Families in the sample were sent an introductory letter and information sheet in advance of a personal visit from an interviewer.

The pilot test worked well and provided a lot of useful feedback on procedures, protocols, instrumentation and measures. A particularly important aspect of the pilot was the use of the cognitive direct assessments by interviewers.

### ***3.2.3 The Dress Rehearsal***

The sample for the dress rehearsal phase contained families who had taken part in the Wave 1 dress rehearsal. A total of 237 families successfully completed interviews in the Wave 2 dress rehearsal phase, representing a response rate of just under 88%. The dress rehearsal tested a different vocabulary measure to that used in the pilot phase, however, this ultimately proved less satisfactory than the previous one and the main study reverted to the pilot version.

## 4. SURVEY INSTRUMENTS

### 4.1 The Household Instruments

The questionnaires used with the infant cohort in *Growing Up in Ireland* at 3 years were divided into modules of questions according to topic. Interviews were conducted with the Primary Caregiver – the person who provided most care and who knew most about the Study Child (usually the mother or mother figure) and the Secondary Caregiver (where relevant) – the spouse or partner of the Primary Caregiver usually the child’s father or father figure. The different sections in the questionnaires are outlined in Table 4.1 below, and are contained in full in *Questionnaires for Wave 2 of the Infant Cohort (at 3 years)*.

**Table 4.1: Summary of instruments**

| Respondent                                       | Mode                                   | Summary of content                                     |  |   |
|--|--|--|--|---|
| Primary Caregiver                                | CAPI Interview<br>(Main questionnaire) | <b>Module/Section</b>                                  |  |   |
|  |  | A: Household Composition                               |  |   |
|  |  | B: Child’s Habits and Routines                         |  |   |
|  |  | C: Child’s Physical Health and Development             |  |   |
|  |  | D: Parental Health                                     |  |   |
|  |  | E: Child’s Play and Activities                         |  |   |
|  |  | F: Child’s Functioning and Relationships               |  |   |
|  |  | G: Childcare Arrangements                              |  |   |
|  |  | H: Parenting and Family Context                        |  |   |
|  |  | J: Socio-Demographics                                  |  |   |
|  |  | K: About You [the Primary Caregiver]                   |  |   |
|  |  | L: Neighbourhood/Community                             |  |   |
|  |  | Self-completion (on CASI)<br>(Sensitive questionnaire) |  | Reasons for people leaving the household since Wave 1 |
|  |  |  |  | Relationship to child                                 |
| Current marital status                           |  |  |  |   |
| Relationship with partner                        |  |  |  |   |
| Parental stressors scale                         |  |  |  |   |
| Self-rating as a parent                          |  |  |  |   |
| Currently pregnant (women only)                  |  |  |  |   |
| Current smoking and drinking                     |  |  |  |   |
| Drug use   |  |  |  |   |
| Mental health                                    |  |  |  |   |
| Contact with the Criminal Justice System         |  |  |  |   |
| Information on non-resident parent (if relevant) |  |  |  |   |
| Measurements                                     |  |  |  | Height and weight                                     |
|  |  |  |  |   |
| Secondary Caregiver                              | CAPI Interview<br>(Main questionnaire) |  |  |   |

|              |  |  |
|--------------|--|--|
|              |  | A: Introduction                                  |
|              |  | B: Parental Health                               |
|              |  | C: Parenting and Family Context                  |
|              |  | D: Socio-Demographics                            |
|              |  | E: About You [the Secondary Caregiver]           |
|              | <b>Self-completion (on CASI)<br/>(Sensitive questionnaire)</b> |  |
|              |  | Relationship to child                            |
|              |  | Current marital status                           |
|              |  | Relationship with partner                        |
|              |  | Parental stressors scale                         |
|              |  | Self-rating as a parent                          |
|              |  | Currently pregnant (women only)                  |
|              |  | Current smoking and drinking                     |
|              |  | Drug use   |
|              |  | Mental health                                    |
|              |  | Contact with the Criminal Justice System         |
|              |  | Information on non-resident parent (if relevant) |
|              | <b>Measurements</b>  |  |
|              |  | Height and weight                                |
| <b>Child</b> | <b>Measurements</b>  |  |
|              |  | Height and weight                                |
|              |  | Reasoning (Picture Similarities test)            |
|              |  | Vocabulary (Naming Vocabulary test)              |
|              |  | Gross and fine motor exercises                   |

To achieve as inclusive a sample as possible the household questionnaires were also available in a number of different languages (for completion on paper). As well as Irish and English all questionnaires (and other documentation) were available in Chinese, French, Latvian, Lithuanian, Polish and Romanian.

In addition to the above questionnaires which were administered to the Primary and Secondary Caregivers interviewers recorded the adults' height and weight as well as the height and weight of the child. A medically approved mechanical SECA 761 weighing scales was used for the adults' weight and a Leicester measuring stick for both adult and child height. Children's weight was measured with a SECA 835 digital weighing scales.

Children also undertook two standardised cognitive tests which were administered directly by the interviewer in the home. These tests were the Picture Similarities and Naming Vocabulary scales from the British Abilities Scales (Elliott, Smith & McCulloch, 1996), measuring reasoning/problem solving and vocabulary respectively. In addition, the interviewer asked the child to demonstrate gross and fine motor skills by standing on one leg, throwing a ball overhand, and copying a vertical line drawn by the parent.

# 5. FIELDWORK AND IMPLEMENTATION

## 5.1 Interviewer Training

Fieldwork was carried out by the ESRI's national panel of interviewers. All interviewers received in-depth training prior to beginning work on the project. This included the following modules:

1. Background and objectives of the study
2. Detailed review of the content of all questionnaires
3. Familiarisation with, and practice on, using the Computer Assisted Personal Interview system (CAPI)
4. Fieldwork procedures
5. Adult and child measurements (height and weight) and GPS co-ordinates
6. Instruction and practice in the administration of the direct child assessments (reasoning, vocabulary and motor exercises)
7. Child protection guidelines and incident reporting
8. Ethics
9. Summary of other documentation used in the administration of the survey

## 5.2 Vetting

*Growing Up in Ireland* was carried out under the Statistics Act (1993). This is the same legislation as is used, for example, to carry out the Census of Population. Interviewers were appointed as 'Officers of Statistics' for the purposes of this project. This included a confidentiality clause on non-disclosure of information which was recorded in respect of a family or child to any unauthorised person, for any purpose.

In addition to being appointed Officers of Statistics, all interviewers and all other staff involved in the project were security vetted by An Garda Síochana.

## 5.3 Contacting a Household

Information about the second phase of the study was sent to the families who had taken part in Wave 1 in advance of the first contact from the interviewer. Interviewers then made a first face-to-face visit to the household to organise an appointment to carry out the interview at a time which was convenient for the family. Inclusion in the second Wave of the study was on an opt-out basis with consent forms being signed by the parent (s)/ guardian(s) prior to the start of the interview.

A copy of the introductory letter, information leaflet and the consent forms are included in *Questionnaires and Fieldwork Documentation for Wave 2 of the Infant Cohort (at 3 years)*.

#### **5.4 Follow Up / Tracing Information**

On successful completion of the surveys, interviewers asked the Primary Caregiver to fill out a follow-up/tracing sheet. This recorded contact details of someone from outside the household who would be able to assist the Study Team in contacting the family should they move between the current and subsequent interviews. In addition, respondents were asked to provide signed consent to allow tracing through the Child Benefit Register.

Families were also asked if they would be willing to be contacted about taking part in any further work in relation to the study, such as any future nested studies that may arise.

#### **5.5 Incidents**

A detailed *Growing Up in Ireland* Child Welfare and Protection protocol was developed by the Study Team. One aspect of this involved an incident report system. All incidents were immediately reported by interviewers to their Field Support Contact at Head Office and a detailed Incident Report Form was completed. Given that interviews often took place outside office hours during the week and also at weekends, interviewers were provided with an emergency telephone number which could be used to contact the Study Team on a 24-hour, 7 day basis. Interviewers were instructed that in extreme circumstances, where a child or other vulnerable person was thought to be in immediate danger they should use their own discretion and contact the Gardai if necessary, without recourse to the Study Team.

# 6. STRUCTURE AND CONTENT OF THE DATA FILE

## 6.1 The Structure of the Data Files

Both the Researcher Microdata File (RMF) and Anonymised Micordata File (AMF) are presented as a flat rectangular datafile based on a simple concatenation of all questionnaires administered to respondents. The case-base is the Study Child. This means that the user does not have to be concerned about matching Primary and Secondary Caregiver questionnaires within household.

## 6.2 Variable Naming

Variables for Wave 2 of the Infant Cohort are prefixed with a 'b' for 'birth cohort', 'pc' or 'sc' for Primary or Secondary Caregiver, and '2' to indicate the second wave of data collection. For example, question B1 from the Primary Caregiver questionnaire Wave 2 of the Infant Cohort has the variable name 'bpc2B1'. Other variables from the second wave not directly referring to either caregiver (and some derived variables) are prefixed 'b2'. The only exceptions to this convention are the household grid variables which are prefixed with the person number for ease of reading. For example, the variable for the sex of the person on line 1 of the grid is 'P1sexW2' where 'W2' indicates Wave 2 data.

Blocks of variables appear in the dataset in the following order (variable prefixes are shown in brackets):

- Household Grid (p1xxW2, p2xxW2 etc)
- Primary Caregiver Main Questionnaire (bpc2)
- Primary Caregiver Sensitive Questionnaire (bpc2S)
- Secondary Caregiver Main Questionnaire (bsc2)
- Secondary Caregiver Sensitive Questionnaire (bsc2S)
- Physical Measurements (bpc2, bsc2 or b2 [child])
- Derived Variables (b2)

The Study Team would advise that the data are used in conjunction with the Questionnaire Documentation. This is probably the easiest way to get a broad overview of the topics included in the data file. The user should note, of course, that with a view to ensuring anonymisation of the data, not every question from the questionnaires is included in the datafile – particularly in the case of the *AMF*. A list of variables included in each datafile is available via the appropriate summary data dictionary.

### 6.3 Identification Codes

The identification code on the RMF is a simple sequence number running from 100 to 1,113,400. Each household has the same identification code at Wave 2 as it had at Wave 1 to enable matching of the datafiles where necessary.

### 6.4 The Household Grid

The household grid contains the information on the members of the household, i.e. who lives in the household, his/her person number on the grid, gender, relationship to both the primary caregiver and the Study Child, age and principal economic status. This information (except for economic status) was collected at Wave 1 and fed forward for review and update (as appropriate) by the respondent in the course of the interview at Wave 2. Details were recorded such that the Primary Caregiver (usually the mother) was on line 1, the Study Child was on line 2, and the Secondary Caregiver (if relevant) was on line 3. The Study Child's twin or triplet etc was on lines 4, 5 as appropriate unless there was no Secondary Caregiver, in which case they were on lines 3, 4.

At Wave 2, the Primary Caregiver from Wave 1 was asked to check that the information recorded was correct and, if not, to provide a correction. New people could also be added to the grid and others removed. The variables labelled 'P1xxW2' etc represent the information current at Wave 2 including any corrections. On the *RMF only*, the original line number for the person at Wave 1 can be found in the variables named 'origlineP1' etc. Note that individuals with an original line number from 21 onwards are new additions to the grid at Wave 2. The variables named 'xstillp3' etc. indicate whether or not the person on that line number (e.g. line 3) at Wave 1 is still resident in the household.

In families in which the Primary Caregiver at Wave 1 had become the Secondary Caregiver by Wave 2 (and hence would not be completing the Wave 2 Primary Caregiver Questionnaire), s/he was asked to review (and correct if necessary) the grid information which s/he had provided at the first interview. This was done to meet the guarantees of confidentiality of information which were given to respondents at Wave 1. At the first interview in Wave 1 respondents were told that no-one would have sight of the information which they provided in the course of their interview, including the information contained in the household grid. In a small number of families where the Primary Caregiver from Wave 1 was no longer resident with the child in the household, a completely new household grid was filled out by the new Primary Caregiver at Wave 2. Whether or not the Primary Caregiver and Secondary Caregiver roles at Wave 2 are being filled by the same individual as in Wave 1 is indicated by the variables 'xpcgstatph2' and 'xscgstatph2'.

As noted, where there is a Secondary Caregiver, s/he will be person 3 on the household grid. However, not all persons on line 3 of the household grid are Secondary Caregivers. For

example, in a one-parent family the third person will be another household member (other than the Primary Caregiver or Study Child). A variable has been included in the database to highlight whether or not a partner of the Primary Caregiver (by definition the Secondary Caregiver) is resident in the household (**b2\_Partner**).

Details obtained in the household grid, such as dates of birth, gender and relationships are very important in terms of derived variables. Consequently, some editing of the information took place where it was clear from associated details that this was appropriate. There are, however, a few minor outstanding anomalies between the information given on the interviewer administered household grid and that given in the Primary Caregiver Sensitive questionnaire (self-completed on CASI). The reader should note that (for anonymisation purposes) exact dates of birth have been removed from the archived file and replaced with age in years.

### **6.5 The Main Respondent – Primary Caregiver**

The Primary Caregiver was self-identified within the home as the person who provided most care to the Study Child and who knew most about him/her. In most cases, this was the child's mother. As noted above, in some cases the Primary and Secondary Caregiver from Wave 1 had swapped roles between waves. This is flagged by the variables '**xpcgstatph2**' and '**xscgstatph2**' (note that more detailed information on the inter-wave swapping of roles is provided in the *RMF*).

### **6.6 Twins**

A data record exists for each child included in the sample. All non-singleton children are coded as '**b2\_Nonsingleton**' in the file.

In situations where there was a non-singleton in a family a core questionnaire was administered to the Primary and Secondary Caregivers (where relevant) in the normal way to record the characteristics of the informant. These core questionnaires included details on, for example, the informant's health status and lifestyle, socio-demographic characteristics etc. In addition, the Primary and Secondary Caregivers were asked to complete a questionnaire containing the relevant questions specific to each of the non-singleton Study Children – for example, in respect of the Primary and Secondary Caregiver's relationship with the child. Some additional questions on the twins and triplets were also asked of the Primary Caregiver. Following the interview, a data record was constructed for each sampled non-singleton child to include the common questions from the Primary and Secondary Caregiver as well as the child-specific questions from the individual questionnaires.

## 6.7 Weighting Variables

In line with best practice in sample surveys the data have been re-weighted or statistically adjusted to ensure that the sample is wholly representative of the population from which it has been drawn. By doing this one ensures that the structure of the completed sample is in line with the structure of the population along key socio-demographic and other dimensions. The datafile contains a weighting factor (**WGT\_3YR**) as well as a grossing factor (**GROSS\_3YR**). The weighting factor (**WGT\_3YR**) incorporates the structural adjustment of the completed sample to the population, whilst maintaining the total completed sample size of 9,793 cases. The grossing factor (**GROSS\_3YR**) calibrates to the Wave 2 population total of 70,500 children aged 3 years in the population who were resident in Ireland at Wave 1 and continued to be resident at Wave 2. Both **WGT\_3YR** and **GROSS\_3YR** provide the user with the same structural breakdown of the data. The former can be used in significance testing and data modelling. More detail on the specifics of the weighting / grossing procedure is provided in Chapter Two above.

## 6.8 Derived Variables

In this section we discuss the derived variables included in the dataset. Most of the derived variables are included at the end of the data file, i.e., after the Secondary Caregiver sensitive questionnaire, with the exception of the weighting and grossing variables (**WGT\_3YR**; **GROSS\_3YR**) and the variable relating to the number of caregivers in the household (**b2\_Partner**).

### 6.8.1 Household type (*b2\_hhtype4*)

This fourfold variable is based on whether or not the Study Child is living in a one or two parent family as well as the number of children (under 18 years) living in the household. This gives us a classification as follows:

- One parent, one child
- One parent, two or more children
- Two parents, one child
- Two parents, two or more children

A child is defined solely in terms of age (under 18 years) and not in terms of relationship to the Study Child or others in the household.

### 6.8.2 Household income and class

#### 6.8.2.1 Equivalised household income (**b2\_Equivinc**; **b2\_EIncQuin**; **b2\_EIncDec**)

In order to make meaningful comparisons between households on their income, household size and structure must be taken into account. This is done by creating an ‘equivalised’ income. In *Growing Up in Ireland*, an equivalence scale was used to assign a “weight” to each household member. The equivalence scale used assigned a weight of 1 to the first adult

in the household, 0.66 to each subsequent adult (aged 14+ years living in the household) and 0.33 to each child (aged less than 14 years). The sum of these weights in each household gives the household's equivalised size – the size of the household in adult equivalents. Disposable household income is recorded as total gross household income less statutory deductions of income tax and social insurance contributions. Household equivalised income is calculated as disposable household income divided by equivalised household size. This gives a measure of household disposable income which has been “equivalised” to account for the differences in size and composition of households in terms of the number of adults and/or children they contain.

Equivalised income is also given in quintiles and deciles in the datafile.

### **6.8.2.2 Household class (b2\_hsdclass)**

Social Class of Primary and Secondary Caregiver is based on their occupation. In the course of the survey, both caregivers (where relevant), were asked to provide details on their occupations from current or previous employment outside the home<sup>10</sup>. On this basis it is possible to generate a social class classification for both Primary and Secondary Caregiver. The classification used was that adopted by the Irish Central Statistics Office (CSO) with seven categories as follows:

1. Professional workers
2. Managerial and technical
3. Non-manual
4. Skilled manual
5. Semi-skilled
6. Unskilled
7. All others gainfully occupied and unknown

The household's Social Class is then taken as the highest Social Class category of both partners in the household (as relevant). This standard procedure is referred to as the ‘dominance criterion’. Households where both caregivers are currently economically inactive and have not held any previous employment in the past are classified as ‘validly no social class’, as they have no occupation code upon which to base their social class.

### **6.8.3 Household location (b2Region)**

This question was forward fed in Wave 2 from the answer provided to question MMM6 at Wave 1 (MM, Section M, Question 6 in the Wave 1 Primary Caregiver questionnaire) for

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<sup>10</sup> Current occupation if economically active; previous occupation if retired or unemployed.

families who had not changed address between waves. For other families, the region code which was assigned was based on the family's new address. This code designates the household as being in an urban or rural location. Whether or not the household changed address between waves has been added to the file as derived variable **b2\_moved**.

#### **6.8.4 Physical measurements – Height, weight, and Body Mass Index (BMI)**

##### **6.8.4.1 Height / Weight**

The heights of the Primary and Secondary Caregivers from Wave 1 were fed forward to Wave 2 and were not retaken unless they were missing at Wave 1 or flagged for rechecking. Adult weight was recorded for both parental caregivers. Heights and weights were recorded at Wave 2 for all study children (unless they were unable to be measured).

All weights were recorded in kilograms using medically approved weighing scales: a flat mechanical scales for adults (SECA 761) and a digital scales for children (SECA 835). Height for both adults and children was recorded in centimetres using a standard measuring stick (Leicester portable height measure).

All measurements were recorded on the laptop (in CAPI) during the course of the interview.

The heights and weights recorded by the interviewer were edited to remove clearly implausible values. The Wave 2 measurements (which include the forward-fed height values where available) can be found in the following variables:

- Primary Caregiver Height (**bpc2cms**)
- Secondary Caregiver Height (**bsc2cms**)
- Child Height (**b2kidcms**)
- Primary Caregiver Weight (**bpc2kgs**)
- Secondary Caregiver Weight (**bsc2kgs**)
- Child Weight (**b2kidkgs**)

##### **6.8.4.2 BMI**

BMI scores for Primary and Secondary Caregivers were derived from interviewer measures (bpc2BMI and bsc2BMI) and were also recoded into categories – underweight, healthy, overweight and obese - (bpc2BMI\_CAT and bsc2BMI\_CAT) based on the Garrow-Webster thresholds. Note that the BMI values for the *AMF* have been re-calculated based on the top and bottom-coded weights and heights included in that datafile rather than the original spectrum of measurements that are included in the *RMF*. A BMI value for the three-year-old Study Child is included in the *RMF* only.

### 6.8.5 Direct Assessments

There were three types of direct assessment administered to the three-year-olds, two standardised tests of cognitive ability and a set of motor exercises.

#### 6.8.5.1 Cognitive Tests

Two tests from the British Abilities Scales were used to assess the child's cognitive ability: the Picture Similarities (*ps*) test which taps into non-verbal reasoning and the Naming Vocabulary (*nv*) test which is a measure of English vocabulary. The datafile contains the raw score for each test (*b2\_psraw*, *b2\_nvrawscore*) as well as the standardised 'ability scores' for each (*b2\_psabscore*, *b2\_nvabscore*) and the t-scores (*b2\_pstscore*, *b2\_nvtscore*) and percentile scores (*b2\_pspercentile*, *b2\_nvpercentile*) which are transformed from the ability score based on age and tables in the test manual (Elliott et al., 1996).

#### 6.8.5.2 Motor Exercises

Children were asked to complete three exercises to demonstrate that they had attained a number of developmental milestones in the area of gross and fine motor development. The two items which were designed to assess gross motor competency was whether the child could stand on one leg for two seconds or more (*bpc2E11*) and whether the child could throw a ball in an overhand fashion (*bpc2E12*). Fine motor competencies were assessed by asking the child to draw a straight line after the parent had demonstrated this activity (*bpc2E13*) and recording whether or not the child held the pencil in a pincer grip between thumb and forefinger while doing so (*bpc2E14*). These observed items were supplemented by the parent-report items on whether the child could ride a tricycle and manipulate toys with small pieces like lego or jigsaws (*bpc2E9* and *bpc2E10* respectively).

## 6.9 Scaled Measures Used in the Study

A number of scaled measures were used in the *Growing Up in Ireland* study and scored by the research team using protocols provided by the authors. These are briefly described below:

### 6.9.1 Quality of the Parent-child relationship (Child Parent Relationship Scale – Short Form. Pianta, 1992)

The Pianta CPR-S is a fifteen-item measure that reflects both positive and negative aspects of the parent-child relationship. It was asked of both the Primary and Secondary Caregiver in the main questionnaires at sections B7 and C1 respectively. It produces a *Positive Aspects* subscale (*bpc2\_positive*, *bsc2\_positive*) and a *Conflicts* subscale (*bpc2\_conflict*, *bsc2\_conflict*).

### **6.9.2 *Child's Temperament (Abbreviated version of the Short Temperament Scale for Toddlers. Prior, Sanson, Smart et al, 2001)***

Child temperament was measured using an abbreviated version of the Short Temperament Scale for Toddlers (STST; Prior, Sanson, Smart et al, 2000). This parent-report instrument comprises 13 items and yields scores for each of three subscales; *Sociability* (**b2\_sociability**), *Persistence* (**b2\_persistence**) and *Reactivity* (**b2\_reactivity**). This inventory appears on the Primary Caregiver Questionnaire at E1.

### **6.9.3 *Strengths & Difficulties Questionnaire - SDQ (Goodman, 1997)***

The SDQ was used as an indicator of the child's behaviour. It is a parent-report measure and appears on the Primary Caregiver questionnaire as F1. It comprises four negative subscales and one positive subscale as well as a 'total difficulties' score (**b2\_SDQtotaldiffs**). The subscales are *Emotional symptoms* (**b2\_SDQemotional**), *Conduct* (**b2\_SDQconduct**), *Hyperactivity* (**b2\_SDQhyper**), *Peer problems* (**b2\_SDQpeerprobs**), and the positive subscale *Prosocial* (**b2\_SDQprosocial**). The total difficulties subscale is based on the four negative subscales.

### **6.9.4 *Parenting Style Measure (from the Longitudinal Study of Australian Children [LSAC])***

Questions H2 and H3 on the Primary Caregiver Questionnaire (C2 and C3 on the Secondary Caregiver Questionnaire) were taken from parental self-report measures used in LSAC. These yield scores for each of three different parenting dimensions: *Warmth* (**bpc2\_warmth**, **bsc2\_warmth**), *Hostility* (**bpc2\_hostility**, **bsc2\_hostility**) and *Consistency* (**bpc2\_consistency**, **bsc2\_consistency**).

### **6.9.5 *Parental Stress Scale (Berry and Jones, 1995)***

The Parental Stress Scale is a self-report scale used to assess both the positive and negative aspects of parenthood. At three-years the *Parental Stressors* subscale from this measure was asked of both Primary and Secondary Caregivers at S21. The subscale scores are presented as variables **bpc2\_stress** and **bsc2\_stress** on the datafile.

### **6.9.6 *The Dyadic Adjustment Scale - DAS-4. (Sabourin, Valois & Lussier, 2005) – RMF only***

The quality of the couple relationship was indexed using the short 4-item form of the Dyadic Adjustment Scale (DAS-4) (c.f. Sabourin, Valois & Lussier, 2005). It provides an assessment of dyadic satisfaction based on participants' self-report and is used as a means of categorising relationships as either distressed or adjusted. Findings suggest that the short form of the DAS used in the current study has maintained the content coverage of the original 32-item DAS

(Spanier, 1976) while maintaining good psychometric properties (Sabourin et al, 2005). The scale appears as items S19 and S20 on the sensitive supplementary questionnaire for both Primary and Secondary Caregivers. A general satisfaction score is generated from the sum of all four items (**bpc2\_DAS**, **bsc2\_DAS**).

#### **6.9.7 FAST Alcohol Screening Test (Hodgson, Alwyn, Hodgson et al, 2002) – RMF only**

The FAST alcohol screening test was developed in the UK as a short screening tool for alcohol misuse. The scale comprises four items, however the test authors assert that 50% of people may be classified as ‘hazardous’ or ‘not hazardous’ drinkers using the answer to the first item “how often do you have EIGHT or more drinks on one occasion?” (six drinks for women). The items appear as S26 on the sensitive supplementary questionnaire for both the Primary and Secondary Caregiver. When these items are scored as 0 – 4, a person is classified as a ‘hazardous’ drinker if their total score is 3 or more. As anyone who answers S26a/b as having six or eight drinks on one occasion as weekly or more often is automatically classified as a hazardous drinker, not everyone will have a continuous score from 0 to 4. The classification is enclosed as **bpc2\_fastclass** and **bsc2\_fastclass**.

#### **6.9.8 Centre for Epidemiological Studies Depression Scale – RMF only**

The Center for Epidemiological Studies Depression Scale (CES-D) is a widely used self-report measure that was developed specifically as a screening instrument for depression in the general population, as opposed to being a diagnostic tool that measures the presence of clinical depression. *Growing Up in Ireland* used the 8-item short version of the CES-D and obtained a total score for both Primary (PCG) and Secondary (SCG) Caregivers (**bpc2\_CEStotal**; **bsc2\_CEStotal**). These are the sum of the raw scores from S33 on the Primary and Secondary Sensitive questionnaires.

Also included in the file are two variables (**bpc2\_CESD**; **bsc2\_CESD**) which categorise respondents into ‘depressed’ or ‘not depressed’.

#### **6.9.9 Scaled Items Relating to Diet**

There are two sets of items relating to diet in the Wave 2 Primary Caregiver Questionnaire which were abbreviated from standardised scale measures. An adapted version of the Sallis Amherst Questionnaire (Sallis, Taylor, Dowda et al, 2001) which was used by LSAC and the *Growing Up in Ireland* middle childhood cohort at Wave 1 appears as item C25. It enables classification of children’s diet as more or less healthy along the dimensions of: fruit, vegetables, high sugar drinks, energy dense foods and full/low fat milks.

Two subscales adapted from the Parental Feeding Style Questionnaire (Wardle et al, 2002) appear at C26. These items measured two abbreviated constructs representing *Parental Control* (C26a, c, e and f) and *Emotional Feeding* (C26b and d).

## 6.10 Coding and Editing

### 6.10.1 Consistency Checks

The CAPI questionnaires administered in *Growing Up in Ireland* consisted mainly of closed questions. The program included extensive range and cross-variable consistency checks (both hard and soft)<sup>11</sup>. This meant that much of the coding and data checking was effectively dealt with as the interview took place. However, in some cases open questions were needed to capture verbatim responses that would have been difficult to pre-code. Where relevant, these were coded into separate categorical variables after the interview was completed. Other questions did have a pre-defined coding frame but also had an ‘other-specify’ option for those responses which did not fit into any of the pre-coded categories - again answers were recorded on a verbatim basis by the interviewer. In this instance responses to these questions had to be recoded with additional categories. The newly coded responses for additional codes or variables appear in the *RMF* dataset. All verbatim text from the original responses has been removed as a safeguard to protecting respondent’s identity. In terms of editing the data, regular checks were carried out on the data as they were returned from the field and inconsistencies dealt with.

With a second wave of data there arises the possibility of longitudinal inconsistencies, as well as cross-sectional inconsistencies within wave. For some key variables such as marital status these were checked and edited to provide more consistency where appropriate. However, there remain some cases that are inconsistent where it was not possible to make a judgement on an appropriate edit.

### 6.10.2 Forward-feed from Wave 1

To reduce interview time at Wave 2 some variables were fed forward from Wave 1 and not asked again in the course of the second interview unless, for example, they were missing or a new respondent was completing the interview for the first time<sup>12</sup>. Where the Primary Caregiver and Secondary Caregiver from Wave 1 had swapped roles, the appropriate information was exchanged. A summary of all the variables that were fed forward from Wave 1, and the rules for determining their administration at Wave 2 is provided in Table 6.1 below.

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<sup>11</sup> ‘Hard’ edit consistency checks in a CAPI program refer to cross-variable consistency checks which must be resolved by the interviewer in the field at the time of questionnaire administration. Until the inconsistency is resolved by the interviewer it will not be possible to continue administering the questionnaire. In contrast, a ‘soft’ edit consistency check is one which signals an apparent inconsistency, or extreme value from a respondent’s answer to a question or set of questions. The extreme value may or may not be correct. If the interviewer administering the survey feels that it is a valid value, albeit extreme, s/he can suppress the soft edit check and continue with administering the survey.

<sup>12</sup> Information from the household grid and adult height was also fed forward..

**Table 6.1: Details on variables forward-fed from Wave 2 (excluding household grid)**

| Variable name                    | Variable description  | Rules  |
|----------------------------------|---|--|
| bpc2C23                          | Total duration of breastfeeding                                     | If the child was still being breastfed at time of the Wave 1 interview   |
| bpc2J6/bsc2D2                    | Year of returning to work   | If PCG/SCG had not been working at Wave 1 but was working (or on maternity leave) at Wave 2, or if missing at Wave 1 |
| bpc2K4-K7/bsc2E3-E6              | Literacy and numeracy   | If literacy or numeracy problems indicated at Wave 1, or new respondent or missing                                   |
| bpc2K10-K11_code/bsc2E9-E10_code | Citizenship   | If not an Irish citizen at Wave 1, or new respondent or missing.   |
| bpc2K12-K14/bsc2E11-E13          | Country of birth and length of time living in Ireland <sup>13</sup> | If new respondent or missing.  |
| b2region                         | Region of residence   | If changed address since Wave 1 or missing   |

### 6.10.3 Differences between Anonymised (AMF) and Researcher (RMF) Microdata Files

To preserve the anonymity of respondents names, dates of birth and open text variables were removed from both types of file. In addition, *for the AMF only*, some variables with a higher risk of being disclosive were either removed or had their values banded into larger groups so that frequencies with low cell counts are not visible. In some instances this was achieved by either bottom or top coding (or both) of outlying cases. In others, continuous scores have been grouped into categories. Information particularly likely to be sensitive in nature (i.e. the majority of the variables in the sensitive questionnaires) has been removed from the AMF.

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<sup>13</sup> Note that in regard to feeding forward information on length of time living in Ireland, discrete categories were used: ‘in the last year’, ‘1-5 years ago’, etc. This leads to some complications for forward-feeding as some people may fall into the same category as two years previously – and others may have changed. Participants who indicated ‘in the last year’ at Wave 1 had their response to this question fed-forward to Wave 2 as ‘1-5 years ago’; however, all older categories remain the same for other relevant respondents: e.g. a participant who said ‘1-5 years ago’ at Wave 1 will be in the ‘1-5 years ago’ category at Wave 2 as a more accurate estimation without actual year of arrival is not possible.

## 7. ETHICAL CONSIDERATIONS

In undertaking research with families and children ethical considerations assumed primary importance. Procedures relating to child protection were informed by the Children First: National Guidance for the Protection and Welfare of Children (Department of Children and Youth Affairs, 2011) as well as the relevant Acts in Irish legislation. Three acts are of particular relevance for this Study; they are the Data Protection Acts 1988, 2003 and the Statistics Act, 1993. All interviewers, as well as other staff working on *Growing Up in Ireland*, were security vetted by An Garda Siochana (the Irish Police Service).

All work in Wave 2 of the infant cohort was carried out under ethical approval granted by a dedicated and independent Research Ethics Committee convened by the Department of Children and Youth Affairs, especially for *Growing Up in Ireland*. The Research Ethics Committee was very rigorous in its review and consideration of all the materials and procedures used in the project.

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# APPENDIX

**Appendix Table 1: Structure and composition of Wave 1 sample, interwave adjustments and exits from the longitudinal population and unweighted and grossed sample from Wave 2.**

| Characteristic Variable                       | A                        |               | B  |               | C                                  |               | D                        |               | E                     |               |
|---|--------------------------|---------------|--|---------------|------------------------------------|---------------|--------------------------|---------------|-----------------------|---------------|
|   | Wave 1 pop <sup>14</sup> |               | Wave 1 - Wave 2 adjustments<br>(exits and Census 2011 estimates) |               | Estimated Wave 2 pop <sup>15</sup> |               | Unweighted Wave 2 sample |               | Grossed Wave 2 sample |               |
|   | No of Children           | % of Children | No of Children   | % of Children | No of Children                     | % of Children | No of Children           | % of Children | No of Children        | % of Children |
| <b>1. Family Structure</b>                    |                          |               |  |               |                                    |               |                          |               |                       |               |
| Cohabiting couple with children, 3 Persons    | 5783                     | 7.9           | 302  | 9.6           | 5481                               | 7.8           | 874                      | 8.9           | 5490                  | 7.8           |
| Cohabiting couple with children, 4 persons    | 3426                     | 4.7           | 133  | 4.2           | 3293                               | 4.7           | 581                      | 5.9           | 3308                  | 4.7           |
| Cohabiting couple with children, 5 persons    | 1209                     | 1.6           | 60   | 1.9           | 1149                               | 1.6           | 258                      | 2.6           | 1148                  | 1.6           |
| Cohabiting couple with children, 6 persons    | 411                      | 0.6           | 16   | 0.5           | 395                                | 0.6           | 104                      | 1.1           | 410                   | 0.6           |
| Cohabiting couple with children, 7 persons    | 202                      | 0.3           | 7  | 0.2           | 195                                | 0.3           | 70                       | 0.7           | 189                   | 0.3           |
| Husband and wife with children, 3 Persons     | 16751                    | 22.7          | 903  | 28.6          | 15848                              | 22.5          | 2129                     | 21.7          | 15896                 | 22.5          |
| Husband and wife with children, 4 persons     | 18192                    | 24.7          | 717  | 22.7          | 17475                              | 24.8          | 2432                     | 24.8          | 17548                 | 24.9          |
| Husband and wife with children, 5 persons     | 11087                    | 15.1          | 316  | 10.0          | 10771                              | 15.3          | 1427                     | 14.6          | 10842                 | 15.4          |
| Husband and wife with children, 6 persons     | 3989                     | 5.4           | 145  | 4.6           | 3844                               | 5.5           | 592                      | 6.0           | 3905                  | 5.5           |
| Husband and wife with children, 7 persons     | 1732                     | 2.4           | 45   | 1.4           | 1687                               | 2.4           | 245                      | 2.5           | 1714                  | 2.4           |
| Lone parent with children 2 or 3 or 4 persons | 9895                     | 13.4          | 486  | 15.4          | 9409                               | 13.3          | 767                      | 7.8           | 9075                  | 12.9          |
| Lone parent with children 5 or 6 or 7 persons | 983                      | 1.3           | 31   | 1.0           | 952                                | 1.4           | 314                      | 3.2           | 975                   | 1.4           |
| Total   | 73662                    | 100.0         | 3161   | 100.0         | 70499                              | 100.0         | 9793                     | 100.0         | 70500                 | 100.0         |
| <b>2. Mother's Age</b>                        |                          |               |  |               |                                    |               |                          |               |                       |               |
| Mother, 25 yrs or less                        | 11194                    | 15.2          | 656  | 20.7          | 10538                              | 14.9          | 1279                     | 13.1          | 10382                 | 14.7          |
| Mother, 26-30 years                           | 17363                    | 23.6          | 923  | 29.2          | 16440                              | 23.3          | 2310                     | 23.6          | 16373                 | 23.2          |
| Mother, 31-35 yrs                             | 26814                    | 36.4          | 1077   | 34.1          | 25737                              | 36.5          | 3580                     | 36.6          | 25785                 | 36.6          |
| Mother, 36-40 yrs                             | 15192                    | 20.6          | 435  | 13.8          | 14757                              | 20.9          | 2212                     | 22.6          | 14896                 | 21.1          |
| Mother, 41yrs or more                         | 3100                     | 4.2           | 72   | 2.3           | 3028                               | 4.3           | 412                      | 4.2           | 3064                  | 4.3           |
| Total   | 73662                    | 100.0         | 3163   | 100.0         | 70500                              | 100.0         | 9793                     | 100.0         | 70500                 | 100.0         |

<sup>14</sup> The Wave 1 population figures are derived from the grossed Wave 1 sample. See *Sample Design and Response in Wave 1 of the Infant Cohort (at 9 months) of Growing Up in Ireland* document (<http://www.ucd.ie/t4cms/GUISampleDesignResponseInfants.pdf>) for details on how the Wave 1 weight was generated.

<sup>15</sup> The Wave 2 population is derived from the Wave 1 population, minus those identified as having left the country or as having deceased (Exits) plus some adjustments to bring the figures in line with the CSO Census of Population 2011 figures for this age cohort.

|   |       |       |      |       |       |       |      |       |       |       |  |
|---|-------|-------|------|-------|-------|-------|------|-------|-------|-------|--|
| <b>3. Mother's Principal Economic Status (PES)</b>  |       |       |      |       |       |       |      |       |       |       |  |
| Mother, Working for payment or profit               | 41282 | 56.0  | 1381 | 43.7  | 39901 | 56.6  | 5754 | 58.8  | 39867 | 56.5  |  |
| Mother, Looking for first regular job or unemployed | 4025  | 5.5   | 268  | 8.5   | 3757  | 5.3   | 304  | 3.1   | 3676  | 5.2   |  |
| Mother, Student or pupil                            | 1143  | 1.6   | 54   | 1.7   | 1089  | 1.5   | 194  | 2.0   | 1057  | 1.5   |  |
| Mother, Looking after home/family                   | 26431 | 35.9  | 1359 | 43.0  | 25072 | 35.6  | 3443 | 35.2  | 25194 | 35.7  |  |
| Mother, other PES                                   | 782   | 1.1   | 101  | 3.2   | 681   | 1.0   | 98   | 1.0   | 705   | 1.0   |  |
| Total   | 73662 | 100.0 | 3163 | 100.0 | 70500 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |  |
| <b>4.Father's Principal Economic Status (PES)</b>   |       |       |      |       |       |       |      |       |       |       |  |
| Father, Working for payment or profit               | 56600 | 76.8  | 2245 | 71.0  | 54355 | 77.1  | 7644 | 78.1  | 54648 | 77.5  |  |
| Father, Looking for first regular job or unemployed | 3892  | 5.3   | 317  | 10.0  | 3575  | 5.1   | 732  | 7.5   | 3625  | 5.1   |  |
| Father, Student or pupil                            | 430   | 0.6   | 17   | 0.5   | 413   | 0.6   | 75   | 0.8   | 413   | 0.6   |  |
| Father, Looking after home/family                   | 879   | 1.2   | 11   | 0.3   | 868   | 1.2   | 69   | 0.7   | 869   | 1.2   |  |
| Father, Other PES                                   | 976   | 1.3   | 54   | 1.7   | 922   | 1.3   | 191  | 2     | 890   | 1.3   |  |
| Father, Other [Lone mothers - father not resident]  | 10885 | 14.8  | 518  | 16.4  | 10367 | 14.7  | 1082 | 11    | 10056 | 14.3  |  |
| Total   | 73662 | 100.0 | 3162 | 100.0 | 70500 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |  |
| <b>5.Family's Social Class</b>                      |       |       |      |       |       |       |      |       |       |       |  |
| Family, Professional workers                        | 9659  | 13.1  | 427  | 13.5  | 9232  | 13.1  | 1862 | 19.0  | 9295  | 13.2  |  |
| Family, Managerial and technical                    | 25672 | 34.9  | 1007 | 31.9  | 24665 | 35.0  | 3092 | 31.6  | 24745 | 35.1  |  |
| Family, Non-manual                                  | 13251 | 18.0  | 408  | 12.9  | 12843 | 18.2  | 1618 | 16.5  | 12775 | 18.1  |  |
| Family, Skilled manual                              | 10853 | 14.7  | 549  | 17.4  | 10304 | 14.6  | 1301 | 13.3  | 10303 | 14.6  |  |
| Family, Semi-skilled                                | 5672  | 7.7   | 281  | 8.9   | 5391  | 7.6   | 724  | 7.4   | 5391  | 7.6   |  |
| Family, Unskilled                                   | 1542  | 2.1   | 115  | 3.6   | 1427  | 2.0   | 148  | 1.5   | 1460  | 2.1   |  |
| Family, Family validly has no class code            | 7013  | 9.5   | 375  | 11.8  | 6638  | 9.4   | 1048 | 10.7  | 6532  | 9.3   |  |
| Total   | 73662 | 100.0 | 3162 | 100.0 | 70500 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |  |
| <b>6. Mother's Education</b>                        |       |       |      |       |       |       |      |       |       |       |  |
| Mother, No Formal Education                         | 145   | 0.2   | 10   | 0.3   | 135   | 0.2   | 25   | 0.3   | 147   | 0.2   |  |
| Mother, Primary Education                           | 2474  | 3.4   | 143  | 4.5   | 2331  | 3.3   | 191  | 2.0   | 2241  | 3.2   |  |
| Mother, Lower Secondary                             | 10314 | 14.0  | 403  | 12.7  | 9911  | 14.1  | 852  | 8.7   | 9873  | 14    |  |
| Mother, Leaving Cert.                               | 18623 | 25.3  | 780  | 24.7  | 17843 | 25.3  | 1834 | 18.7  | 17827 | 25.3  |  |
| Mother, Technical or Vocational                     | 2990  | 4.1   | 114  | 3.6   | 2876  | 4.1   | 878  | 9.0   | 2845  | 4.0   |  |
| Mother, Technical Vocational and Leaving Cert.      | 2988  | 4.1   | 165  | 5.2   | 2823  | 4.0   | 448  | 4.6   | 2870  | 4.1   |  |
| Mother, Non-degree                                  | 14643 | 19.9  | 566  | 17.9  | 14077 | 20.0  | 1945 | 19.9  | 14104 | 20    |  |
| Mother, Primary degree                              | 6308  | 8.6   | 308  | 9.7   | 6000  | 8.5   | 1368 | 14.0  | 6050  | 8.6   |  |
| Mother, Professional qualification (degree status)  | 2456  | 3.3   | 120  | 3.8   | 2336  | 3.3   | 391  | 4.0   | 2352  | 3.3   |  |
| Mother, Both degree and professional qualification  | 4112  | 5.6   | 167  | 5.3   | 3945  | 5.6   | 518  | 5.3   | 3989  | 5.7   |  |
| Mother, Post-graduate certificate or diploma        | 5068  | 6.9   | 161  | 5.1   | 4907  | 7.0   | 593  | 6.1   | 4904  | 7.0   |  |
| Mother, Post-graduate degree                        | 3128  | 4.2   | 206  | 6.5   | 2922  | 4.1   | 665  | 6.8   | 2900  | 4.1   |  |

|  |       |       |      |       |       |       |      |       |       |       |
|--|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| Mother, Doctorate (Ph.D)                       | 414   | 0.6   | 22   | 0.7   | 392   | 0.6   | 85   | 0.9   | 397   | 0.6   |
| Total  | 73662 | 100   | 3165 | 100.0 | 70498 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |
| <b>7. Household tenure</b>                     |       |       |      |       |       |       |      |       |       |       |
| Owner occupied with or without loan            | 53412 | 72.5  | 1526 | 48.3  | 51886 | 73.6  | 6794 | 69.4  | 52049 | 73.8  |
| Being purchased from a Local Authority         | 710   | 1.0   | 9    | 0.3   | 701   | 1.0   | 43   | 0.4   | 713   | 1.0   |
| Rented from a Local Authority                  | 6017  | 8.2   | 234  | 7.4   | 5783  | 8.2   | 642  | 6.6   | 5714  | 8.1   |
| Rented from a Voluntary Body or private market | 12693 | 17.2  | 1344 | 42.5  | 11349 | 16.1  | 2140 | 21.9  | 11258 | 16.0  |
| Occupied free of rent                          | 831   | 1.1   | 49   | 1.6   | 782   | 1.1   | 174  | 1.8   | 766   | 1.1   |
| Total  | 73662 | 100.0 | 3162 | 100.0 | 70501 | 100.0 | 9793 | 100   | 70500 | 100.0 |
| <b>8. Region / Child's gender</b>              |       |       |      |       |       |       |      |       |       |       |
| Border - boys                                  | 4363  | 5.9   | 160  | 5.1   | 4203  | 6.0   | 533  | 5.4   | 4232  | 6.0   |
| Dublin - boys                                  | 10005 | 13.6  | 507  | 16.0  | 9498  | 13.5  | 1131 | 11.5  | 9453  | 13.4  |
| Mid-East - boys                                | 4928  | 6.7   | 252  | 8.0   | 4676  | 6.6   | 673  | 6.9   | 4701  | 6.7   |
| Midland - boys                                 | 2377  | 3.2   | 92   | 2.9   | 2285  | 3.2   | 333  | 3.4   | 2313  | 3.3   |
| Mid-West - boys                                | 3230  | 4.4   | 133  | 4.2   | 3097  | 4.4   | 528  | 5.4   | 3093  | 4.4   |
| South-East - boys                              | 4097  | 5.6   | 205  | 6.5   | 3892  | 5.5   | 517  | 5.3   | 3867  | 5.5   |
| South-West - boys                              | 5231  | 7.1   | 222  | 7.0   | 5009  | 7.1   | 729  | 7.4   | 5014  | 7.1   |
| West - boys                                    | 3578  | 4.9   | 116  | 3.7   | 3462  | 4.9   | 523  | 5.3   | 3495  | 5.0   |
| Border - girls                                 | 3907  | 5.3   | 134  | 4.2   | 3773  | 5.4   | 528  | 5.4   | 3831  | 5.4   |
| Dublin - girls                                 | 9461  | 12.8  | 568  | 17.9  | 8893  | 12.6  | 1080 | 11.0  | 8833  | 12.5  |
| Mid-East - girls                               | 4825  | 6.5   | 176  | 5.6   | 4649  | 6.6   | 659  | 6.7   | 4682  | 6.6   |
| Midland - girls                                | 2238  | 3.0   | 79   | 2.5   | 2159  | 3.1   | 315  | 3.2   | 2106  | 3.0   |
| Mid-West - girls                               | 2993  | 4.1   | 100  | 3.2   | 2893  | 4.1   | 477  | 4.9   | 2845  | 4.0   |
| South-East - girls                             | 3883  | 5.3   | 110  | 3.5   | 3773  | 5.4   | 527  | 5.4   | 3793  | 5.4   |
| South-West - girls                             | 5131  | 7.0   | 169  | 5.3   | 4962  | 7.0   | 751  | 7.7   | 4979  | 7.1   |
| West - girls                                   | 3415  | 4.6   | 142  | 4.5   | 3273  | 4.6   | 489  | 5.0   | 3263  | 4.6   |
| Total  | 73662 | 100.0 | 3164 | 100.0 | 70498 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |
| <b>9. Mother's Marital Status</b>              |       |       |      |       |       |       |      |       |       |       |
| Mother, Cohabiting                             | 5085  | 6.9   | 212  | 6.7   | 4873  | 6.9   | 635  | 6.5   | 4856  | 6.9   |
| Mother, Deserted                               | 150   | 0.2   | 2    | 0.1   | 148   | 0.2   | 18   | 0.2   | 145   | 0.2   |
| Mother, Divorced                               | 552   | 0.7   | 44   | 1.4   | 508   | 0.7   | 85   | 0.9   | 479   | 0.7   |
| Mother, Married                                | 49023 | 66.6  | 2059 | 65.1  | 46964 | 66.6  | 6629 | 67.7  | 46828 | 66.4  |
| Mother, Seperated                              | 783   | 1.1   | 61   | 1.9   | 722   | 1.0   | 75   | 0.8   | 747   | 1.1   |
| Mother, Single                                 | 17652 | 24    | 775  | 24.5  | 16877 | 23.9  | 2296 | 23.4  | 17050 | 24.2  |
| Mother, Unkown                                 | 289   | 0.4   | 4    | 0.1   | 285   | 0.4   | 45   | 0.5   | 284   | 0.4   |
| Mother, Widowed                                | 128   | 0.2   | 6    | 0.2   | 122   | 0.2   | 10   | 0.1   | 111   | 0.2   |
| Total  | 73662 | 100.0 | 3163 | 100.0 | 70499 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |
| <b>10. Mother's Nationality</b>                |       |       |      |       |       |       |      |       |       |       |
| Mother, Ireland                                | 54886 | 74.5  | 2371 | 75.0  | 52515 | 74.5  | 7189 | 73.4  | 52500 | 74.5  |
| Mother, Britain                                | 2695  | 3.7   | 123  | 3.9   | 2572  | 3.6   | 376  | 3.8   | 2582  | 3.7   |
| Mother, Western Europe                         | 5670  | 7.7   | 252  | 8.0   | 5418  | 7.7   | 793  | 8.1   | 5381  | 7.6   |
| Mother, Eastern Europe                         | 3143  | 4.3   | 120  | 3.8   | 3023  | 4.3   | 428  | 4.4   | 3037  | 4.3   |

|  |       |       |      |       |       |       |      |       |       |       |
|--|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| Mother, Africa   | 2197  | 3.0   | 74   | 2.3   | 2123  | 3.0   | 327  | 3.3   | 2132  | 3.0   |
| Mother, Pacific  | 840   | 1.1   | 28   | 0.9   | 812   | 1.2   | 116  | 1.2   | 803   | 1.1   |
| Mother, Middle East  | 122   | 0.2   | 14   | 0.5   | 108   | 0.2   | 19   | 0.2   | 101   | 0.1   |
| Mother, North America  | 352   | 0.5   | 6    | 0.2   | 346   | 0.5   | 60   | 0.6   | 351   | 0.5   |
| Mother, South America  | 233   | 0.3   | 5    | 0.2   | 228   | 0.3   | 42   | 0.4   | 222   | 0.3   |
| Mother, India  | 1168  | 1.6   | 55   | 1.7   | 1113  | 1.6   | 138  | 1.4   | 1142  | 1.6   |
| Mother, Australia New Zealand  | 149   | 0.2   | 2    | 0.1   | 147   | 0.2   | 30   | 0.3   | 150   | 0.2   |
| Mother, China  | 432   | 0.6   | 40   | 1.3   | 392   | 0.6   | 90   | 0.9   | 394   | 0.6   |
| Mother, Other  | 1776  | 2.4   | 75   | 2.4   | 1701  | 2.4   | 185  | 1.9   | 1704  | 2.4   |
| Total  | 73662 | 100.0 | 3163 | 100.0 | 70500 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |
| <b>11. Mother's Residency Status</b>                                 |       |       |      |       |       |       |      |       |       |       |
| Mother, Other  | 3195  | 4.3   | 148  | 4.7   | 3047  | 4.3   | 462  | 4.7   | 3085  | 4.4   |
| Mother, Asylum Seeker  | 1068  | 1.5   | 20   | 0.6   | 1048  | 1.5   | 171  | 1.7   | 1030  | 1.5   |
| Mother, EU - Other   | 183   | 0.2   | 2    | 0.1   | 181   | 0.3   | 23   | 0.2   | 187   | 0.3   |
| Mother, EU National  | 3853  | 5.2   | 163  | 5.1   | 3690  | 5.2   | 465  | 4.7   | 3677  | 5.2   |
| Mother, EU Resident  | 6799  | 9.2   | 302  | 9.5   | 6497  | 9.2   | 992  | 10.1  | 6459  | 9.2   |
| Mother, Irish National   | 51715 | 70.2  | 2223 | 70.3  | 49492 | 70.2  | 6689 | 68.3  | 49484 | 70.2  |
| Mother, Residency Granted  | 2847  | 3.9   | 142  | 4.5   | 2705  | 3.8   | 391  | 4.0   | 2730  | 3.9   |
| Mother, Unverified   | 2999  | 4.1   | 114  | 3.6   | 2885  | 4.1   | 455  | 4.6   | 2871  | 4.1   |
| Mother, Work Permit holder   | 1002  | 1.4   | 48   | 1.5   | 954   | 1.4   | 145  | 1.5   | 977   | 1.4   |
| Total  | 73662 | 100.0 | 3161 | 100.0 | 70500 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |
| <b>EXTRA VARIABLES USED IN WAVE 2 WEIGHTS</b>                        |       |       |      |       |       |       |      |       |       |       |
| <b>12. Was baby ever breastfed?</b>                                  |       |       |      |       |       |       |      |       |       |       |
| Yes  | 41223 | 56.0  | 2232 | 70.6  | 38991 | 55.3  | 5950 | 60.8  | 39087 | 55.4  |
| No   | 32439 | 44.0  | 931  | 29.4  | 31508 | 44.7  | 3843 | 39.2  | 31413 | 44.6  |
| Total  | 73662 | 100.0 | 3163 | 100.0 | 70499 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |
| <b>13. Do you currently smoke daily, occasionally or not at all?</b> |       |       |      |       |       |       |      |       |       |       |
| Daily  | 13383 | 18.2  | 552  | 17.4  | 12831 | 18.2  | 1601 | 16.3  | 12685 | 18.0  |
| Occasionally   | 5510  | 7.5   | 218  | 6.9   | 5292  | 7.5   | 713  | 7.3   | 5231  | 7.4   |
| Not at all   | 54769 | 74.4  | 2392 | 75.7  | 52377 | 74.3  | 7479 | 76.4  | 52584 | 74.6  |
| Total  | 73662 | 100.0 | 3162 | 100.0 | 70500 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |
| <b>14. PCG Hours worked</b>  |       |       |      |       |       |       |      |       |       |       |
| Not working  | 32510 | 44.1  | 1774 | 56.1  | 30736 | 43.6  | 4052 | 41.4  | 30771 | 43.6  |
| 25 or less   | 21479 | 29.2  | 811  | 25.6  | 20668 | 29.3  | 2868 | 29.3  | 20576 | 29.2  |
| 26 - 40  | 17950 | 24.4  | 524  | 16.6  | 17426 | 24.7  | 2625 | 26.8  | 17477 | 24.8  |
| More than 40   | 1724  | 2.3   | 54   | 1.7   | 1670  | 2.4   | 248  | 2.5   | 1677  | 2.4   |
| Total  | 73662 | 100.0 | 3163 | 100.0 | 70500 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |
| <b>15. PCG Ethnic background</b>                                     |       |       |      |       |       |       |      |       |       |       |
| Irish  | 60668 | 82.4  | 1454 | 46.0  | 59214 | 84.0  | 7884 | 80.5  | 59187 | 84.0  |
| Not Irish  | 12994 | 17.6  | 1709 | 54.0  | 11285 | 16.0  | 1909 | 19.5  | 11313 | 16.0  |
| Total  | 73662 | 100.0 | 3163 | 100.0 | 70499 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |

|   |       |       |      |       |       |       |      |       |       |       |  |
|---|-------|-------|------|-------|-------|-------|------|-------|-------|-------|--|
| <b>16. How long family have lived in the local area</b> |       |       |      |       |       |       |      |       |       |       |  |
| 1 or less   | 9738  | 13.2  | 798  | 25.3  | 8940  | 12.7  | 1322 | 13.5  | 8874  | 12.6  |  |
| 2 to 5  | 30387 | 41.3  | 1624 | 51.4  | 28763 | 40.8  | 4100 | 41.9  | 28700 | 40.7  |  |
| More than 5   | 33537 | 45.5  | 740  | 23.4  | 32797 | 46.5  | 4371 | 44.6  | 32925 | 46.7  |  |
| Total   | 73662 | 100.0 | 3162 | 100.0 | 70500 | 100.0 | 9793 | 100.0 | 70500 | 100   |  |
| <b>17. Location of household</b>                        |       |       |      |       |       |       |      |       |       |       |  |
| open  | 20548 | 27.9  | 490  | 15.5  | 20058 | 28.5  | 2828 | 28.9  | 20155 | 28.6  |  |
| village   | 6651  | 9.0   | 277  | 8.8   | 6374  | 9.0   | 921  | 9.4   | 6430  | 9.1   |  |
| town  | 22916 | 31.1  | 1096 | 34.6  | 21820 | 31.0  | 3171 | 32.4  | 21832 | 31.0  |  |
| water   | 1029  | 1.4   | 76   | 2.4   | 953   | 1.4   | 122  | 1.2   | 924   | 1.3   |  |
| galway  | 1042  | 1.4   | 65   | 2.0   | 977   | 1.4   | 172  | 1.8   | 970   | 1.4   |  |
| limerick  | 1236  | 1.7   | 80   | 2.5   | 1156  | 1.6   | 201  | 2.1   | 1125  | 1.6   |  |
| cork  | 1637  | 2.2   | 68   | 2.1   | 1569  | 2.2   | 251  | 2.6   | 1580  | 2.2   |  |
| dubcity   | 17803 | 24.2  | 981  | 31.0  | 16822 | 23.9  | 2029 | 20.7  | 16753 | 23.8  |  |
| dubco   | 801   | 1.1   | 32   | 1.0   | 769   | 1.1   | 98   | 1.0   | 731   | 1.0   |  |
| Total   | 73662 | 100.0 | 3165 | 100.0 | 70498 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |  |
| <b>18. PCG Depression status</b>                        |       |       |      |       |       |       |      |       |       |       |  |
| not depressed   | 64339 | 87.3  | 2603 | 82.3  | 61736 | 87.6  | 8665 | 88.5  | 61773 | 87.6  |  |
| depressed   | 8057  | 10.9  | 441  | 14.0  | 7616  | 10.8  | 981  | 10.0  | 7588  | 10.8  |  |
| Not recorded  | 1267  | 1.7   | 119  | 3.8   | 1148  | 1.6   | 147  | 1.5   | 1138  | 1.6   |  |
| Total   | 73662 | 100.0 | 3163 | 100.0 | 70500 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |  |
| <b>19. PCG BMI</b>                                      |       |       |      |       |       |       |      |       |       |       |  |
| pcg underweight, healthy                                | 37450 | 50.8  | 1897 | 60.0  | 35553 | 50.4  | 4986 | 50.9  | 35334 | 50.1  |  |
| pcg overweight, obese                                   | 32517 | 44.1  | 1116 | 35.3  | 31401 | 44.5  | 4355 | 44.5  | 31610 | 44.8  |  |
| Not recorded  | 3695  | 5.0   | 149  | 4.7   | 3546  | 5.0   | 452  | 4.6   | 3556  | 5.0   |  |
| Total   | 73662 | 100.0 | 3162 | 100.0 | 70500 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |  |
| <b>20. Household income quintile</b>                    |       |       |      |       |       |       |      |       |       |       |  |
| Lowest  | 13592 | 18.5  | 844  | 26.7  | 12748 | 18.1  | 1821 | 18.6  | 12656 | 18.0  |  |
| 2nd   | 13689 | 18.6  | 520  | 16.4  | 13169 | 18.7  | 1679 | 17.1  | 13154 | 18.7  |  |
| 3rd   | 13628 | 18.5  | 425  | 13.4  | 13203 | 18.7  | 1764 | 18    | 13254 | 18.8  |  |
| 4th   | 14762 | 20.0  | 593  | 18.7  | 14169 | 20.1  | 2012 | 20.5  | 14204 | 20.1  |  |
| Highest   | 12511 | 17.0  | 465  | 14.7  | 12046 | 17.1  | 1795 | 18.3  | 12118 | 17.2  |  |
| Not recorded  | 5480  | 7.4   | 317  | 10.0  | 5163  | 7.3   | 722  | 7.4   | 5114  | 7.3   |  |
| Total   | 73662 | 100.0 | 3163 | 100.0 | 70499 | 100.0 | 9793 | 100.0 | 70500 | 100.0 |  |