



Growing Up in Scotland: Birth Cohort 2, Sweep 1

User Guide

Authors: Paul Bradshaw and Joan Corbett

Date: September 2013

ScotCen
Social Research that works for society

1	Overview of the survey	3
1.1	Study Design	3
1.2	Sample Design	4
1.2.1	Sample design differences from previous cohorts	5
1.3	Data collection.....	5
1.4	Response rates.....	6
2	Using the data	7
2.1	Documentation	7
2.2	The data file	7
2.3	Variables on the data file.....	7
2.4	Variable names and labels	8
2.4.1	Variable naming convention.....	8
2.4.2	Variable labels.....	8
2.4.3	Derived variables	8
2.5	Survey weight	8
2.6	Comparing data between cohorts	9
2.7	Multicoded questions	9
2.8	Dropped Variables	10
2.9	Missing values conventions	10
3	Data content.....	10
3.1	Information about the household	10
3.2	Main socio-economic variables.....	11
3.2.1	National Statistics Socio-economic Classification (NS-SEC)	11
3.2.2	Equivalised household annual income	12
3.3	Area-level variables.....	13
3.3.1	Area-level variables: Scottish Government Urban/Rural Classification	13
3.3.2	Scottish Index of Multiple Deprivation	14
3.3.3	Area-level variables: Carstairs Index	14
3.3.4	Scottish Health Board indicator	15
3.4	Topic measures and instruments.....	15
3.4.1	Parenting: Parenting beliefs.....	15
3.4.2	Parenting: Parenting stress.....	16
3.4.3	Parenting: Infant-maternal attachment - negative feelings about parenting.....	17
3.4.4	Parenting: Home chaos	17
3.4.5	Parenting: Parental knowledge of child development.....	18
3.4.6	Parental Health: Medical Outcomes Study 12-Item Short Form (SF-12).....	18
3.4.7	Child Development: Communication and Symbolic Behaviour Scale – Infant/Toddler Checklist	19
3.4.8	Material deprivation	20

3.5	Interviewer observations	21
3.5.1	Parent-child interactions and child behaviour.....	22
3.5.2	Accommodation and local neighbourhood	24
4	More about GUS	24
4.1	The GUS BC2 Sweep 1 Report.....	24
4.2	Data workshops	25

1 Overview of the survey

Growing Up in Scotland (GUS) is a longitudinal research study aimed at tracking the lives of three cohorts of Scottish children from the early years, through childhood and beyond. Funded by the Scottish Government Education Directorate, its principal aim is to provide information to support policy making, but it is also intended to be a broader resource for secondary analysis.

The overarching aim of the study is set out in its purpose, which is:

“To generate, through robust methods, specifically Scottish data about outcomes throughout childhood and into adulthood for children growing up in Scotland across a range of key domains:

- *Cognitive, social, emotional and behavioural development*
- *Physical and mental health and wellbeing*
- *Childcare, education and employment*
- *Home, family, community and social networks*
- *Involvement in offending and risky behaviour*

Such data will encompass, in particular, topics where Scottish evidence is lacking and policy areas where Scotland differs from the rest of the UK.”

1.1 Study Design

GUS was designed to provide cross-sectional and longitudinal data at a national level about children who were born in particular year and who had survived until the first point of data collection.¹

GUS was initially based on two cohorts of children. The first (known as ‘**birth cohort one**’) was aged approximately 10 months at the time of first interview and involved around 5217 children at the first sweep of data collection. The second (known as the ‘**child cohort**’) was aged approximately 34 months at the first interview and involved around 2800 children at the first sweep.

The second birth cohort ‘**birth cohort two**’ of 6127 children aged around 10 months at the time of the first interview, was recruited in 2011. All cohorts were named samples drawn from Child Benefit records.

The configuration of cohorts and sweeps for all sweeps of data collection launched to date is summarised in Table 1.1. Throughout the text **BC1** refers to the younger of the two cohorts (‘birth cohort one’), **CC** to the slightly older cohort (‘child cohort’) and **BC2** to the most recent birth cohort (‘birth cohort two’).

¹ Because the study does not include children who were stillborn or who died prior to the first contact, the sample is not representative of *all* births in Scotland the reference period.

Child's age at data collection	Cohort/Year of data collection		
	Child cohort	Birth cohort 1	Birth cohort 2
10 months		2005/06	2011
1-2 yrs (22 months)		2006/07	
2-3 yrs (34 months)	2005/06	2007/08	2013
3-4 yrs (46 months)	2006/07	2008/09	
4-5 yrs (58 months)	2007/08	2009/10	2015
5-6 yrs (70 months)	2008/09	2010/11	
7-8 yrs		2012/13	

A key aim of using multiple cohorts is to allow the study to provide three types of data:

1. Cross-sectional time specific data – e.g. what proportion of 10 month-old children lived in single parent families in 2011?
2. Cross-sectional time series data – e.g. is there any change in the proportion of 10 month old children living in single parent families between 2005 and 2011?
3. Longitudinal cohort data – e.g. what proportion of children who were living in single parent households aged 0-1 are living in different family circumstances at age 5-6?

1.2 Sample Design

The sample design for BC2 was similar, but not identical, to that used for the two previous cohorts.

The initial area-level sampling frame of Primary Sampling Units (PSUs), was created by aggregating Data Zones. Data Zones are small geographical output areas created for the Scottish Government. Data Zones are used to release data from the Census 2001 and other neighbourhood statistics. Each PSU was roughly equal in size ('size' = expected number of births, based on the average number of births in each Data Zone for the preceding 3 years). 160 PSUs were selected with equal probability.

Child Benefit records held by HMRC were used to identify ALL children who were within the eligible age range (born between 1st March 2010 and 28th February 2011) and living in the selected PSUs. In households with twins only one child was selected to reduce burden on the parents.

A letter was sent to the child benefit recipient in all eligible households informing them that they had been selected for inclusion in the study. Recipients were able to opt-out of the study at this stage. Those cases which did not opt out were deemed eligible for interview.²

² Details of the number of eligible cases identified, the number of opt-outs and so on, is provided in section 1.4

1.2.1 Sample design differences from previous cohorts

There are a number of small but important differences in the sample design used for BC2 and the earlier cohorts.

For BC1 and CC, after selecting the eligible children, the DWP made a number of exclusions before transferring the sample details. These exclusions included cases they considered 'sensitive' and children that had been sampled for research by the DWP in the last 3 years. No obvious exclusion of cases was made by HMRC during sample selection for BC2. In addition, whereas for BC1 sample updates were received on a monthly basis from the DWP, for BC2 these were received quarterly. This meant that, compared with BC1, BC2 addresses were more likely to be out of date.

Mothers recruited into the pilot of the Families Nurse Partnership³ (FNP) in the Lothian area of Scotland had expected birth dates in 2010 and 2011. These birth dates meant they were also eligible for recruitment to the second birth cohort (BC2) of the Growing Up in Scotland study. Attempts were made to incorporate as many FNP mothers into BC2 as possible to allow their outcomes to be monitored as the children aged beyond the scope of the pilot programme's evaluation. However, ethical restrictions placed on the recruitment process requiring an opt-in process made this difficult in practice. The team received contact information for just 37 FNP participants and a successful interview was obtained with only 24 of this group. This makes statistically robust separate analysis of this group impossible. They are not identified in the dataset.

As fieldwork progressed it became clear that response rates were lower than expected (due mostly to higher than previous non-contact and refusal rates). 39 additional PSUs were randomly selected and issued in last 3 months of fieldwork.

1.3 Data collection

Data collection involved an interview with the child's main carer. Interviews were carried out in participants' homes, by trained social survey interviewers using laptop computers (otherwise known as **CAPI** – Computer Assisted Personal Interviewing). The interview was quantitative and consisted almost entirely of closed questions and had a median length of 69 minutes. There was a brief, self-complete section in the interview in which the respondent, using the laptop, input their responses directly into the questionnaire programme. The contents of the interview are listed in section 3.

At this sweep, primarily because of the inclusion of questions on the mother's pregnancy and birth of the sample child, interviewers were instructed as far as possible to undertake the interview with the child's mother. Where the child's mother was not available, interviews were undertaken with the child's main carer. The child's mother was the respondent in 98% of cases. In most of the remaining cases the respondent was the child's father with a small number being a grandparent.

Fieldwork was undertaken over a fourteen month period commencing in January 2011. The sample was issued in twelve monthly waves at the beginning of each month

³The FNP is a preventative nurse-led intensive home visiting programme offered to young mothers having their first baby. It begins in early pregnancy and is orientated to the future health and well-being of the child.

and each month's sample was in field for a maximum period of two and a half months. For example, sample 2 was issued at the beginning of February 2011 and remained in field until mid-April 2011.

To ensure that respondents were interviewed when their children were approximately the same age, each case was assigned a 'target interview date'. This was identified as the date on which the child turned 10.5 months old. Interviewers were allotted a four-week period based on this date (two weeks either side) in which to secure the interview. In difficult cases, this period was extended up to and including the child's subsequent birthday which allowed a further four weeks. 68% of interviews were undertaken when the child was aged 10 months and 26% at age 11 months. Around 3% were 8 or 9 months and 3% were 12 months or older.

Observation data on child behaviour, parent-child interactions and the local area was also collected by the interviewer.

1.4 Response rates

Details of the number of cases issued and achieved and the response rates are presented in Table 1.2. The equivalent figures for BC1 are included for comparison.

	Birth cohort 2	Birth cohort 1
All children with eligible dates of birth	9640	8218
Cases removed/opted out (<i>% of all eligible</i>)	202 (2%)	966 (12%)
Cases issued to field	9438	7252
Cases achieved	6127	5217
Response rate:		
As % of all eligible children	64%	63%
As % of all issued	65%	72%
Unproductive cases (<i>% of issued cases</i>)	3311 (35%)	2035 (28%)
<i>Non-contact</i>	1399 (15%)	777 (11%)
<i>Refusal</i>	1696 (18%)	1157 (16%)
<i>Other unproductive</i>	216 (2%)	101 (1%)

An interview was achieved in 65% of cases issued to field and for 64% of all identified, eligible cases. It is possible to compare the latter figure with BC1 data, where the equivalent response rate was 63%.

Differences in the way the Child Benefit sample was administered by HMRC and DWP between the two cohorts – in particular the process by which cases were removed and the opt-out process undertaken – mean that the response rate for the *issued* sample is not directly comparable between them. Further details on differences in the sampling approach, in case outcomes, and in sample representativeness between the two cohorts are provided separately in the data user guide. However, the achieved samples are considered suitably similar in final composition and representativeness to allow valid comparison.

2 Using the data

2.1 Documentation

The documentation is provided as 3 PDF files organised into the following sections:

- A representation of the CAPI questionnaire with variable names added and the show cards used during the interview.
- The Data Documentation comprising list of variables in the dataset (including derived variables) by topic and a separate list of derived variables with their SPSS syntax
- Project instruction containing interviewer and coding instructions.

2.2 The data file

The GUS BC2 sweep 1 data consists of one SPSS file:

GUSC2SW1.sav	6127 cases	Birth cohort
--------------	------------	--------------

2.3 Variables on the data file

The data file contains questionnaire variables (excluding variables used for administrative purposes) and derived variables. The variables included in the file are detailed in the “**Variable List**” document in the data section of the documentation. As far as possible they are grouped in the order they were asked in the interview. As such, following the questionnaire design, they are grouped according to topic. This document is the best place to look/search for variables when planning your analysis.

Once you have decided which variables to include in your analysis, you should look up details of the question wording using the questionnaire documentation (all variables on the data file are given by name in the copy of the interview schedules provided), or use the data documentation to find the syntax which produced the derived variables. You cannot rely on the individual variable and value labels to always capture the detail of the question asked, or the answer categories used, so reading the interview documentation is essential.

For variables with answers following a scale, such as ‘Strongly agree’ to ‘Strongly disagree’ it must be noted that the order of the answer categories may not follow systematically an ascending or descending scale throughout the list of variables. Also the answers may equally refer to positive or negative statements. The phrasing of the question and the list of answers provided on the showcards - if any - shape the variables. The user must therefore take these variations into account when creating derived variables.

2.4 Variable names and labels

2.4.1 Variable naming convention

Variables names are normally made up of 8 characters, the first indicates the source of the variable, the second the sweep of data collection and the rest is an indication of the question topic. Therefore where the same question was asked in the different sweeps, the names will usually be the same apart from the second character. If a variable name has changed substantially between sweeps this is marked in the variable list. The naming convention is summarised in Table 2.1

Table 2.1 GUS variable naming conventions

Source of data		Sweep/Sweep		Key theme prefix	Sub-theme stem	Variable number/ abbreviation
Non- sequential Capitals: M, D, AL		Sequential lower case: a, b, c..		Non- sequential Capitals: e.g. C, P, N...	Abbreviated lower case: e.g. hea,	e.g. 01 – 99 or lp, nc, cb
Source code	Details	Sweep code	Details			
AL	Area Level variable	a	Sweep 1 (2011)			
D	Derived variable	b	Sweep 2 (2013)			
M	Main carer interview	c	Sweep 3 (2015)			

2.4.2 Variable labels

The variable labels have been shortened to be 80 characters or fewer as far as possible; the first two show the source and year of the data (as in the variable name). Although the labels give an indication of the topic of the question it is essential to refer to the questionnaire to see the full text of the question and the routing applied to that variable. The variable list shows the page numbers of the relevant questionnaire section.

2.4.3 Derived variables

Derived variables included in the dataset are listed with the questionnaire variables for the same topic. The SPSS syntax used to create them can be found in the “Derived Variables” section of the documentation.

2.5 Survey weight

Weighting has been used to correct for different selection probabilities (in households with twins) and for non-response. After applying the weights, results from the GUS sample will be representative of all children born in Scotland (who survive to 10 months) in the corresponding period.

The final weights were generated in a number of stages. The first stage generated selection weights to correct the differential selection probabilities for some children. The second stage modelled non-response bias and generated a non-response weight. This weight corrects for the effects of non-response. The third stage adjusted created

a weight to allow for the inclusion of FNP mothers in the full sample (who, because they are all aged under 21 and living in Lothian otherwise introduce sample bias). The final stage adjusted the composite selection and non-response weight to create a set of calibration weights. These weights make the (weighted) sample match the population in terms of the variables used to calibrate, in this case: age of child benefit recipient, number of children in the household and age and sex of the child.

The final GUS BC2 sweep 1 weights are contained in the variable **DaWTbrth**.

Further details on the weighting procedure can be provided on request.

2.6 Comparing data between cohorts

The variable name does not identify the cohort it was asked of in any way. Therefore where the same question was asked of both cohorts, or the same variable was derived for each, the names will be exactly the same. For example, DaHGagc indicates the cohort child's age in months at sweep 1. This variable is available both in the BC2 sweep 1 and BC1 sweep 1 datasets.

Where there is a variable in the BC2 sweep 1 dataset that has a matching variable in the BC1 sweep 1 dataset this has been indicated in the variable list.

2.7 Multicoded questions

Some questions in the survey enabled participants to give more than one answer. In the final dataset each of the answer options has been converted into a binary variable with the people who selected that option coded 1 and the rest coded 0.

As an example, question MaPGvd is a "CODE ALL THAT APPLY" question which asks "Did you take vitamin D supplements (including multivitamins) prior to or during your pregnancy?". The code frame consists of five values:

- 1 Yes – prior to becoming pregnant
- 2 Yes – during the first 3 months
- 3 Yes – during the second 3 months
- 4 Yes – during the last 3 months
- 5 No

The five answer options have been converted into five separate binary variables as follows:

MaPGvd01 - code 1: those who took vitamin D prior to becoming pregnant; code 0: those who didn't.

MaPGvd02 - code 1: those who took vitamin D during the first 3 months of pregnancy; code 0: those who didn't.

MaPGvd03 - code 1: those who took vitamin D during the second 3 months of pregnancy; code 0: those who didn't.

MaPGvd04 - code 1: those who took vitamin D during the last 3 months of pregnancy; code 0: those who didn't.

MaPGvd05 - code 1: those who did *not* take any vitamin D prior to or during their pregnancy; code 0: everyone else.

Because a respondent could have replied with more than one answer, that respondent could have a value 1 for a number of these variables (however, the nature of the question dictates that having a code 1 at *MaPGvd05* precludes having a code 1 at any of the variables *MaPGvd01 – MaPGvd04*). The missing values are the same across all five variables.

2.8 Dropped Variables

All variables in the questionnaire documentation with '[not in dataset]' next to their name have been deleted from the archived dataset (or have been transformed into derived variables instead).

The following types of variables have been deleted or replaced with a derived variable coded into broader categories in order to reduce the potential to identify individuals:

- Those containing text
- Those which contained a personal identifier (e.g. name/address)
- Those considered to be disclosive, such as:
 - Detailed ethnicity
 - Detailed religion
 - Language spoken at home
 - Full interview date
 - Full date of birth
 - Timing variables

There are no geographical variables in the archived dataset beyond area urban-rural classification, the Scottish index of multiple deprivation summary variable, and a derived variable identifying some of the Scottish Health Board areas.

Some of these variables may be available on request, including via the UKDS Secure Data Service.

2.9 Missing values conventions

- 1 Not applicable: Used to signify that a particular variable did not apply to a given respondent, usually because of internal routing.
- 8 Don't know, Can't say.
- 9 No answer/ Refused

These conventions have also been applied to most of the derived variables.

3 Data content

3.1 Information about the household

In addition to the questions asked about the child and parents, the respondent was also asked about each household member. The gender, age and marital status of each household member was collected along with their relationship to each other and the cohort child (see page 5 of the questionnaire for details of the relationship variables). Each person was identified by their person number, which they will retain through each sweep of the survey.

A set of derived summary household variables is also included in the data. Amongst other things these detail the number of adults, number of children or number of natural parents in the household. A list of these variables is included in Table 3.1. A set of variables which allow identification of the respondent and their partner (if present) in the household grid are also included. These permit easier analysis of respondent's and partner's age, marital status and relationship to other people in the household. The age variables have been banded for all persons in the household except the study child.

Table 3.1 Selected household derived variables	
Variable name	Variable label
DaHGnmad	Da - Number of adults (16 or over) in household
DaHGnmkd	Da - Number of children in household
DaHGnmsb	Da - Number of siblings in household
DaHGnp01	Da - Number of natural parents in household
DaHGrsp01	Da - Whether respondent is natural mother
DaHGrsp02	Da - Whether respondent is natural father
DaHGnp02	Da - Natural mother in household
DaHGnp03	Da - Natural father in household
DaHGnp04	Da - Respondent living with spouse/partner
DaMothID	Da – Mother's ID (= Person number in household)
DaFathID	Da - Father's ID
DaRespID	Da – Respondent's ID
DaPartID	Da – Respondent's partner's ID
DaRespAg	Da - Respondent's age (banded)
DaRPAge	Da – Respondent's partner's age (banded)
DaRPsex	Da - Respondent partners sex
DaHGmag6	Da - Childs nat mothers age at interview (banded)

3.2 Main socio-economic variables

3.2.1 National Statistics Socio-economic Classification (NS-SEC)

The National Statistics Socio-economic Classification (NS-SEC) is a social classification system that attempts to classify groups on the basis of employment relations, based on characteristics such as career prospects, autonomy, mode of payment and period of notice. There are fourteen operational categories representing different groups of occupations (for example higher and lower managerial, higher and lower professional) and a further three 'residual' categories for full-time students, occupations that cannot be classified due to a lack of information or other reasons. The operational categories may be collapsed to form a nine, eight, five or three category system.

The Growing Up in Scotland dataset includes the five category system in which respondents and their partner, where applicable, are classified as managerial and professional, intermediate, small employers and own account workers, lower supervisory and technical, and semi-routine and routine occupations. A sixth category 'never worked' is also coded on this variable. The decision on whether or not this category should be included as a separate category, incorporated with category 5 'Semi-routine or routine' or set to 'missing' is dependent on the particular analysis to which it is being applied.

Further information on NS-SEC is available from the National Statistics website at: <http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/soc2010/soc2010-volume-3-ns-sec--rebased-on-soc2010--user-manual/index.html>.

The relevant variables are included in Table 3.2

Variable name	Description
DaMsec01	Da Respondent NSSEC - 6 Category
DaYsec01	Da Partner NSSEC - 6 Category
DaMsec10	Da Household NSSEC - 6 Category

3.2.2 Equivalised household annual income

The income that a household needs to attain a given standard of living will depend on its size and composition. For example, a couple with dependent children will need a higher income than a single person with no children to attain the same material living standards. "Equivalisation" means adjusting a household's income for size and composition so that we can look at the incomes of all households on a comparable basis. Official income statistics use the 'Modified OECD' equivalence scale, in which an adult couple with no dependent children is taken as the benchmark with an equivalence scale of one. The equivalence scales for other types of households can be calculated by adding together the implied contributions of each household member from the table below.

Household member	Equivalence scale
Head	0.67
Subsequent adults	0.33
Each child aged 0-13	0.20
Each child aged 14-18	0.33

For example, a household consisting of a single adult will have an equivalence scale of 0.67 - in other words he or she can typically attain the same standard of living as a childless couple on only 67 percent of its income. In a household consisting of a couple with one child aged three, the head of the household would contribute 0.67, the spouse 0.33, and the child 0.20, giving a total equivalence scale of 1.20. In other words this household would need an income 20 percent higher than a childless couple to attain the same standard of living.

The distribution of income for the population of the United Kingdom as a whole is taken from the most recent available data from the Family Resources Survey. The data and methodology are the same as those used by the Government in its annual Households Below Average Income publication.

GUS collects a banded version of total net household income from all sources in the main CAPI interview. This income data is adjusted, using the above equivalence scale, according to the characteristics of the household, to produce an equivalised annual household income value. Variables with the full equivalised income scale (**DaEqvinc**) and quintiles of the scale (**DaEqv5**) are available in the datasets.

3.3 Area-level variables

3.3.1 Area-level variables: Scottish Government Urban/Rural Classification

The Scottish Government Urban Rural Classification was first released in 2000 and is consistent with the Government’s core definition of rurality which defines settlements of 3,000 or less people to be rural. It also classifies areas as remote based on drive times from settlements of 10,000 or more people. The definitions of urban and rural areas underlying the classification are unchanged.

The classification has been designed to be simple and easy to understand and apply. It distinguishes between urban, rural and remote areas within Scotland and includes the categories shown in Table 3.4.

Classification	Description
1. Large Urban Areas	Settlements of over 125,000 people
2. Other Urban Areas	Settlements of 10,000 to 125,000 people
3. Accessible Small Towns	Settlements of between 3,000 and 10,000 people and within 30 minutes drive of a settlement of 10,000 or more
4. Remote Small Towns	Settlements of between 3,000 and 10,000 people and with a drive time of over 30 minutes to a settlement of 10,000 or more
5. Accessible Rural	Settlements of less than 3,000 people and within 30 minutes drive of a settlement of 10,000 or more
6. Remote Rural	Settlements of less than 3,000 people and with a drive time of over 30 minutes to a settlement of 10,000 or more

The variables indicating the urban-rural classification of the child’s home address is ALaURin2

For further details on the classification see the Scottish Government website:
<http://www.scotland.gov.uk/Topics/Statistics/About/Methodology/UrbanRuralClassification>

3.3.2 Scottish Index of Multiple Deprivation

The Scottish Index of Multiple Deprivation (SIMD) identifies small area concentrations of multiple deprivation across Scotland. It is based on 37 indicators in the seven individual domains of Current Income, Employment, Health, Education Skills and Training, Geographic Access to Services (including public transport travel times for the first time), Housing and a new Crime Domain. SIMD is presented at data zone level, enabling small pockets of deprivation to be identified. The data zones, which have a median population size of 769, are ranked from most deprived (1) to least deprived (6,505) on the overall SIMD and on each of the individual domains. The result is a comprehensive picture of relative area deprivation across Scotland.

SIMD is regularly updated reflecting local changes in the various indicators. The classificatory variables contained in the BC2 sweep 1 datasets is based on the 2009 version of SIMD. It should be noted that prior GUS datasets pertaining to other cohorts contain variables which use earlier versions of SIMD.

Two variables are included in the dataset. In the first, the data zones are grouped into quintiles. Quintiles are percentiles which divide a distribution into fifths, i.e., the 20th, 40th, 60th, and 80th percentiles. Those respondents whose postcode falls into the first quintile are said to live in one of the 20% least deprived areas in Scotland. Those whose postcode falls into the fifth quintile are said to live in one of the 20% most deprived areas in Scotland. The variable is ALaSNim2.

A common SIMD comparison also made in Scottish Government research is that between households in the most deprived 15% of area and those in the remaining 85%. This classification is included in variable ALaLow15.

Further details on SIMD can be found on the Scottish Government Website:
<http://www.scotland.gov.uk/Topics/Statistics/SIMD/Overview>

3.3.3 Area-level variables: Carstairs Index

The Carstairs and Morris index was originally developed in the 1980s using 1981 census data. It is composed of four indicators at postcode sector level that were judged to represent material disadvantage in the population (Lack of car ownership, Registrar General Social Class, Overcrowded households and male unemployment). The index has also been calculated based on 1991 and 2001 census data. It is often used in health-related research.

The deprivation score is divided into seven separate categories, ranging from very high to very low deprivation. The variables the Carstairs classification of the child's home address is ALadepct.

Further information can be found on the website of the NHS Information Services Division here:
http://www.show.scot.nhs.uk/publications/isd/deprivation_and_health/background.HTM

3.3.4 Scottish Health Board indicator

To provide some geographic information which would allow comparison across the sweeps for the Birth Cohort, a Scottish Health Boards derived variable ‘ALaHBdBc’ has been added to the dataset. In order to reduce the risk of potential disclosure, only those Health Boards which had 250 cases or more at Sweep 1 were identified, the rest being aggregated into a single category called ‘Other’. The 9 Health Boards identified, out of the original 14 Scottish Health Boards, are listed in table 3.5 below.

Health Board	Identified or aggregated in the dataset
Ayrshire and Arran	Identified
Borders	Aggregated
Dumfries and Galloway	Aggregated
Fife	Identified
Forth Valley	Identified
Grampian	Identified
Greater Glasgow and Clyde	Identified
Highland	Identified
Lanarkshire	Identified
Lothian	Identified
Orkney	Aggregated
Shetland	Aggregated
Tayside	Identified
Western Isles	Aggregated

3.4 Topic measures and instruments

3.4.1 Parenting: Parenting beliefs

Traditional, authoritarian beliefs about parenting were measured using three items drawn from the Authoritarian Parental Beliefs Scale.⁴ Items invited respondents to indicate their agreement with three statements:

- “The most important thing to teach children is absolute obedience to whoever is in authority”
- “Children should always obey their parents”
- “Parents should teach their children that they should be doing something useful at all times”

Responses were coded on a 5-point scale (1) ‘strongly agree’, (2) ‘agree’, (3) ‘neither agree nor disagree’, (4) ‘disagree’, (5) ‘strongly disagree’.

⁴ Shears, J., Whiteside-Mansell, L., McKelvey, L. & Selig, J. (2008). Assessing mothers. and fathers. authoritarian attitudes: The psychometric properties of a brief survey. *Social Work Research*, 32(3), 179-184.

Table 3.6 Variables associated with Parental Modernity Scale	
Variable name	Description
MaPabs01	Ma Parents should teach children to do sthg useful at all times
MaPabs02	Ma Most important: teach absolute obedience to authority
MaPabs03	Ma Children should always obey parents

3.4.2 Parenting: Parenting stress

Stresses involved in parenting were measured using three items from the Parental Stress Scale⁵ asking respondents for agreement with the following statements:

- “Having a child leaves little time and flexibility in my life”
- “It is difficult to balance different responsibilities because of my child”
- “Having a child has meant having too few choices and too little control over my life”

Responses were on a 5-point scale from (1) ‘strongly agree’ to (5) ‘strongly disagree’.

Table 3.7 Variables associated with Parenting Stress Scale	
Variable name	Description
MaPstrs1	Ma Little time/flexibility in life with a child
MaPstrs2	Ma Hard to balance diffrt responsibilities because of child
MaPstrs3	Ma Agrees: less choices/control over life due to child

⁵ Berry, J. O. and W. H. Jones (1995). "The Parental Stress Scale: Initial Psychometric Evidence." *Journal of Social and Personal Relationships* 12(3): 463-472.

3.4.3 Parenting: Infant-maternal attachment - negative feelings about parenting

Negative feelings about parenting were measured via four items taken from the Condon Maternal Attachment Scale⁶ relating to feelings of incompetence, resentment, annoyance and impatience.

Variable name	Description
MaMfee01	Ma Resps annoyance/irritation when caring for child
MaMfee04	Ma Resps competence/confidence when caring for child
MaMfee05	Ma Resps patience when caring for child
MaMfee06	Ma Resps resentmt re what had to give up for child

3.4.4 Parenting: Home chaos

The questionnaire included a subset of three questions from the 15-item Confusion, Hubbub, and Order Scale (CHAOS), an instrument specifically designed to be administered to parents for assessing turmoil in the child's home.⁷ CHAOS is used to assess a child's home life and the GUS items ask parents how strongly they agree/disagree with questions about disorganisation, noise, having a calm atmosphere, and having a regular routine at home.

US research has shown household chaos to be associated with behaviour problems, inattention and cognitive development problems in children.^{8,9}

Variable name	Description
MaPcha01	Ma - Home really disorganised
MaPcha02	Ma - Can t hear yourself think at home
MaPcha03	Ma - Calm atmosphere at home

⁶ Condon, J.T. & Corkindale, C.J. (1998), 'The assessment of parent-to-infant attachment: development of a self-report questionnaire instrument' *Journal of Reproductive and Infant Psychology*, 16, 57-76

⁷ Matheny, J. A. P., T. D. Wachs, et al. (1995). "Bringing order out of chaos: Psychometric characteristics of the confusion, hubbub, and order scale." *Journal of Applied Developmental Psychology* 16(3): 429-444.

⁸ Deater-Deckard, K. (1998). "Parenting stress and child adjustment: Some old hypotheses and new questions." *Clinical Psychology-Science and Practice* 5(3): 314-332.

⁹ Dumas, J. E., J. Nissley, et al. (2005). "Home chaos: Sociodemographic, parenting, interactional, and child correlates." *Journal of Clinical Child and Adolescent Psychology* 34(1): 93-104.

3.4.5 Parenting: Parental knowledge of child development

This set of questions consisted of 6 items selected from a subset from the much larger Knowledge of Infant Development Inventory (KIDI) as used on the 9-month interview on the Early Childhood Longitudinal Study, Birth Cohort¹⁰. This instrument was designed to assess knowledge of parents' caregiving practices, their knowledge of developmental processes, and their knowledge of common infant norms of behaviour. Researchers on ECLS-B had used particular items that were relevant for children of the target age of the 9-month data collection. Given the similarity in target age of the GUS BC2 children, these items were deemed relevant for inclusion.

One of these items is simple in that it presents a statement about children's sleep that may be correct or incorrect. The respondent was asked to indicate agreement or disagreement with the statement. The remaining five items can be considered 'compound' in which the respondent first indicated agreement or disagreement with an initial statement and, in the case of disagreement, indicated whether it would be characteristic of a younger or older child.

Table 3.10 Constituent and derived variables associated with parental knowledge of child development

Variable name	Description
MaDkno01	Ma Agrees: all infants need same amount sleep
MaDkno02	Ma Agrees: one-year-old knows right from wrong
MaDkno2b	Ma Younger or older to know right from wrong
MaDkno03	Ma 12 month baby can remember hidden toys
MaDkno3b	Ma Younger or older to remember hidden toys
MaDkno04	Ma Agrees: one-year-olds often cooperate/share
MaDkno4b	Ma Younger or older to cooperate/share
MaDkno05	Ma Agrees: about 7 months old before baby can reach for thgs
MaDkno5b	Ma Younger or older to reach for/grab thgs
MaDkno06	Ma Agrees: a baby says 1st real word by age six mths
MaDkno6b	Ma Younger or older when says 1st real word
MaDkno01	Ma Agrees: all infants need same amount sleep

3.4.6 Parental Health: Medical Outcomes Study 12-Item Short Form (SF-12)

Health-related quality of life was measured by the Medical Outcomes Study 12-Item Short Form (SF-12). This has also been used in the Scottish Health Survey, and has previously been used in population surveys on many occasions (for example, the Health Survey for England and the National Survey of NHS Patients). The SF-12 is a

¹⁰ Nord, C. et al (2005) Early Childhood Longitudinal Study (ECLS- B): User's Manual for the ECLS-B Nine Month Public Use Data and Electronic Code Book. See <http://nces.ed.gov/pubs2005/2005013.pdf>

widely used self-reported generic measure of health status, yielding both a physical component (PCS) and a mental health component (MCS) summary scale score. It is tailored for use in large health surveys of general populations. Higher scores on both the physical and mental health component scales are indicative of better health-related quality of life, the indicator is based on informants' self-reports of their own physical and mental functioning and as such are subjective. This may lead to differential reporting between informants with equivalent status.

Table 3.11 Constituent and derived variables associated with SF-12

Variable name	Description
MaHpgn01	Ma - How is resp health in general
MaHlmt01	Ma - Resp health limits moderate activities
MaHlmt02	Ma - Resp health limits climbing stairs
MaHlmt03	Ma - Resp health limited accomplishments past 4 wks
MaHlmt04	Ma - Resp health limited reg activities past 4 wks
MaHlmt05	Ma - Resp mental health limited accomplishments past 4 wks
MaHlmt06	Ma - Resp mental health limited quality of work/activ past 4 wks
MaHlmt07	Ma - Resp physical pain limited normal work past 4 wks
MaHpgn02	Ma - Time resp felt calm in past 4 wks
MaHpgn03	Ma - Time resp felt energetic in past 4 wks
MaHpgn04	Ma - Time resp felt down in past 4 wks
MaHpgn05	Ma - Time resp health interfered socially in past 4 wks
DaSF12ph	Da - Physical PCS - 12 Scale
DaSF12mn	Da - Mental MCS - 12 Scale

3.4.7 Child Development: Communication and Symbolic Behaviour Scale – Infant/Toddler Checklist

Within the self-completion section of the interview, respondents had to complete questions which assessed their child's communication, emotional development, understanding and interaction with peers. Questions for parents in the birth cohort form the Infant/Toddler checklist of the Communication and Symbolic Behaviour (CSBS)¹¹.

The CSBS questions are grouped into categories called clusters. Each cluster assesses different aspects of the child's development. The items in each cluster can be summed to yield individual cluster scores. The BC2 questionnaire contained all items from the 'Gestures' and 'Understanding' clusters as well as selected items from the 'Emotion and Eye Gaze' and 'Communication' clusters..

As well as containing the constituent items, the dataset also includes a set of derived variables including the two full cluster scores. Details of these variables are included in Table 3.12. Corresponding syntax is detailed in the derived variable documentation which accompanies this User Guide.

¹¹ Wetherby, A. & Prizant, B. (2001). Communication and Symbolic Behavior Scales Developmental Profile- Preliminary Normed Edition. Baltimore, MD: Paul H. Brookes Publishing Co.

Table 3.12 Constituent and derived variables associated with CSBS Infant/Toddler Checklist	
Variable name	Description
<i>Emotion and Eye Gaze</i>	
MaCSBS04	Ma - Child looks at toy resp points to
<i>Communication</i>	
MaCSBS05	Ma - Child lets resp know if needs help
MaCSBS07	Ma - Child does things so resp laughs
MaCSBS08	Ma - Child gets resp to notice things
<i>Gestures</i>	
MaCSBS09	Ma - Child gives things to resp
MaCSBS10	Ma - Child shows things to resp
MaCSBS11	Ma - Child waves to greet people
MaCSBS12	Ma - Child points to objects
<i>Understanding</i>	
MaCSBS13	Ma - Child nods for yes
MaCSBS19	Ma - Child responds to own name
MaCSBS20	Ma - Nbr of words/phrases child understands
<i>Derived variables</i>	
DaDcsc03	Da CSBS Cluster 3: Gestures
DaDcsc06	Da CSBS Cluster 6: Understanding

Further details on the CSBS can be found at:

<http://www.brookespublishing.com/store/books/wetherby-csbsd/index.htm#checklist>

3.4.8 Material deprivation

In the last decade, governments in the UK have increasingly adopted multiple ways of measuring poverty, moving away from a reliance on income alone. One of these alternative methods is consideration of the extent to which a family has been deprived of certain 'essential' items or activities. An index of material deprivation was first developed by the Department for Work and Pensions and has been incorporated into Government measures of child poverty.

Material deprivation in GUS is measured using eight items derived from the various, longer DWP scales which have been developed and used in a number of surveys, including previous sweeps of GUS, over the last 10 years. The items are detailed below:

Table 3.13 Constituent and derived variables associated with material deprivation

Variable name	Description
MaEmd01	Ma - Holiday away from home one week+/yr
MaEmdb01	Ma - Celebrations at special occasions
MaEmdb02	Ma - Night out once a month
MaEmdb03	Ma - Family car or van
MaEmd04	Ma - Enough money for house decoration
MaEmd05	Ma - Household contents insurance
MaEmd06	Ma - Regular savings of £10+ / month
MaEmd11	Ma - Accommodation warm enough in winter
Daemdtot	Da Material Deprivation Count (of items said cannot afford)
Daemdtot2	Da Mat Dep Count Banded - Four Groups
Daemdtot3	Da Mat Dep Count Banded - Three Groups

To create a score of material deprivation, on the first seven items the response ‘we would like to do this but cannot afford it’ was given the value of one. All other responses were coded zero. On the last item, the answer ‘no’ was given the value of one, and ‘yes’ was coded as zero. The score was a sum of all responses coded as one, with a maximum of eight and a minimum of zero.

3.5 Interviewer observations

In other studies of child development, observation measures have been demonstrated as a reliable and useful method of reporting on child and parent behaviour and local neighbourhood during the course of a home visit. The set of observation items included in sweep 1 with BC2 were a highly efficient means of gaining further data about the child’s home environment. The observational data strengthens other sources of data in GUS, providing further objective information on the relationship between child characteristics, the family environment and child outcomes. They are designed to be used in combination with related items from the main carer interview rather than standalone items.

Observations were completed after the interviewer finished the interview and left the respondent’s home. The observations can be classified into two distinct areas:

- Parent-child interactions and child behaviour
- Accommodation and local neighbourhood

Items on parent-child interactions and child behaviour could only be completed if the child was present during the interview. Guidance provided to interviewers can be found in the ‘Interviewer Instructions’ in the accompanying documentation.

3.5.1 Parent-child interactions and child behaviour

Parental responsiveness (warmth)

This item forms part of the HOME (Home Observation for the Measurement of the Environment) Inventory¹² observational measures of maternal responsiveness (there are 6 items in total) and has been included as a single item measure in the National Evaluation of Sure Start (NESS), Millenium Cohort Study (MCS) and Growing Up in Australia (GUA).

Table 3.14 Observation item on parental responsiveness (warmth)

Variable name	MaObs1
	Respondent spontaneously praises child's qualities or behaviour at least twice during the visit.
	<i>Interviewer: The key word here is 'spontaneous', but since most parents enjoy talking about and are proud of their children, this is not hard to observe. Frequently a parent will tell you how well her child throws a ball or runs and will brag about how well he/she dresses himself/herself or can get his/her own drink. Question refers to parent speaking about or to the child.</i>
	(1) Yes (at least twice) (2) No (3) Can't tell – including does not speak English

Parental acceptance

This item also originates from the HOME ('Caregiver does not scold or criticize child during visit') and was adapted for NESS and MCS (response scale as below). To simplify the instructions, the word 'derogate' (NESS and MCS) was replaced with 'belittle' in GUA. The item as used by GUA is adopted here.

Table 3.15 Observation item on parental acceptance

Variable name	MaObs2
	Respondent scolded, shouted at or belittled the child
	<i>Interviewer: The reprimand must be made directly to the child, e.g. not simply tell the interviewer that the child is bad.</i>
	(1) Not at all (2) Once (3) 2 or more times (4) Can't tell – including does not speak English

¹² Caldwell, B. M., & Bradley, R. H. (2003). Home Observation for Measurement of the Environment: Administration Manual. Tempe, AZ: Family & Human Dynamics Research Institute, Arizona State University.

Positive affect

This item (and the following on 'negative affect') were included in both NESS, MCS and GUA (using identical rating scales). The word 'mood' replaced 'affect' (NESS) and 'reaction' (MCS) for interviewer intelligibility. These mood/affect measures were developed from a single bi-polar question rating 'happiness' in the Infant Behaviour Record from the Bayley Scales for Infant Development (BSID-IBR). Positive and negative affect are recorded separately in NESS, MCS and GUA to allow for the possibility of high positive and negative emotionality co-occurring, and for greater clarity and simplicity in scoring. This approach was replicated in GUS.

Table 3.16 Observation item on positive affect

Variable name	MaObs3
Degree of child's positive mood in response to you or Respondent.	
<i>Interviewer: Positive mood includes smiling, laughing, or sounded excited, happy or pleased. The ratings refer to both duration and intensity. Ignore a brief display if there were intense or prolonged displays.</i>	
(1) None displayed	
(2) 1-2 brief displays	
(3) 3 or more brief displays	
(4) 1-2 intense, heightened or prolonged displays	
(5) 3 or more intense, heightened or prolonged displays	
(6) Child unwell	

Negative affect

This item is drawn from NESS and MCS and was developed from a single scale in the BSID-IBR (as discussed in 3).

Table 3.17 Observation item on positive affect

Variable name	MaObs4
Degree of child's negative mood in response to you or Parent 1.	
<i>Interviewer: Negative mood includes fussing, pouting, whining, crying and vocal or physical expression of anger. The ratings refer to both duration and intensity. Ignore a brief display if there were intense or prolonged displays.</i>	
(1) None displayed	
(2) 1-2 brief displays	
(3) 3 or more brief displays	
(4) 1-2 intense, heightened or prolonged displays	
(5) 3 or more intense, heightened or prolonged displays	
(6) Child unwell	

Fearfulness

This item appears (as a statement rather than a question, but otherwise with same wording and scale) in both NESS and MCS, and as replicated here in GUA. The

statement is developed from the BSID-IBR measure of fearfulness, although the response scale was modified from listing types of behaviours to number of instances.

Table 3.18 Observation item on fearfulness

Variable name	MaObs4
How shy or anxious was the child when you first met him/her?	
(1)	Not at all shy or anxious (very sociable and friendly)
(2)	Only a little shy or anxious (quite sociable and friendly)
(3)	Average – a bit shy/anxious (a bit sociable/friendly)
(4)	Moderately shy, quiet or withdrawn (only a little sociable/friendly)
(5)	Extremely shy, quiet or withdrawn (not sociable/friendly)
(6)	Unable to assess

3.5.2 Accommodation and local neighbourhood

A series of additional observations were made by the interviewer of the interior and exterior spaces of the family’s accommodation and the surrounding area. The variables and a short description are summarised in Table 3.19

Table 3.19 Observation items on family’s accommodation and surrounding area

Variable name	Description
<i>Accommodation</i>	
MaObs9	Condition of house compared with others
MaObs11	Unkempt garden
MaObs12	Evidence of smoking
<i>Surrounding area</i>	
MaObs8	Condition of properties in area
MaObs101	Boarded houses etc in area
MaObs102	Trash, litter etc in area
MaObs103	Graffiti in area
MaObs104	None of these in area

4 More about GUS

4.1 The GUS BC2 Sweep 1 Report

Further information about the GUS BC2 sweep 1 data is available in:

Bradshaw, P., Bromley, C., Hill, T., Mabelis, J., Parkes, A., Smith, K., Sweeting, H., Warner, P. and Wight, D. *Growing Up in Scotland: Birth Cohort 2 – Results from the first year*, Edinburgh: Scottish Government, 2013.

The full report is available on the web at:

<http://www.scotland.gov.uk/Publications/2013/02/3280/0>

Users might also be interested in viewing the rest of the GUS website:

<http://www.growingupinScotland.org.uk>

This contains a large amount of useful information including the background to the study, and a wide range of publications using existing data.

4.2 Data workshops

The Growing Up in Scotland team deliver workshops designed to provide an overview of and introduction to the study and available data. Information on forthcoming workshops is made available via the study website.

Users may find the slides and handouts from previous workshops useful when approaching analysis of GUS data. These are available from the 'Using GUS data' section of the website:

<http://growingupinScotland.org.uk/about-gus/using-gus-data/data-workshops/>

ScotCen Social Research
73 Lothian Road
Edinburgh EH3 9AW
T 0131 228 2167
www.scotcen.org.uk

A company Limited by Guarantee
Registered in England No.4392418
A Charity registered in England and Wales (1091768) and Scotland (SC038454)