Evaluation of A Better Start:

Baseline differences between families living in A Better Start and matched comparison areas

Technical report

Caroline Bryson and Susan Purdon

Bryson Purdon Social Research LLP

ABS Impact Evaluation

Contents

Executive Summary

The Big Lottery Fund's (BLF) A Better Start (ABS) aims to improve the life chances of babies and young children by delivering a significant increase in the use of preventative approaches from pregnancy and up to when a child is aged four in five local area partnerships working in deprived wards within Bradford, Blackpool, Lambeth, Nottingham and Southend-on-Sea. The ABS interventions are aimed at improving outcomes for children in three key development domains: social and emotional development; communication, speech and language development; and diet and nutrition. The evidence suggests that these three domains can have a significant impact on the long-term life chances of children.

This report describes the outcomes experienced by children and their families living in ABS areas across these three development domains *prior* to the full launch of ABS services. By collecting survey data about children aged one, two and three across the range of outcomes that ABS is aimed at improving, we provide a baseline against which to measure progress of children and families once ABS services are implemented. Progress will be measured by tracking a cohort of children born in 2019/20 from pregnancy to age five in a series of surveys starting when mothers are in their third pregnancy trimester.

Compared to the national profile of families with children aged three and under, children and their families living in ABS areas are significantly more deprived across a range of socio-demographic measures. Of particular note, relative to the national average, ABS mothers are:

- Younger (19 per cent aged 16-25 compared to 13 per cent for all England);
- More likely to be Asian or Black (19 per cent Asian and 14 per cent Black, compared to nine per cent and four per cent for all England). This is largely due to the ethnic profile in Bradford and Lambeth;
- More likely to be lone parents (35 per cent compared to 18 per cent);
- More likely to have no formal qualifications (19 per cent compared to 11 per cent) and less likely to have a degree (19 per cent compared to 36 per cent);
- Less likely to be an owner-occupier (26 per cent compared to 50 per cent, although note the comment in the paragraph above);
- Less likely to be in work (42 per cent compared to 59 per cent); but
- Less likely to report having a long-standing illness or disability (five per cent compared to 20 per cent);
- Twice as likely to have four or more children (15 per cent compared to eight per cent).

Given the higher level of sociodemographic deprivation, we would expect the baseline outcomes of children and their families living in ABS areas to be worse than the national average prior to the full launch of ABS services across the three key development areas. Unfortunately, for most of the outcome measures employed in the study there are no up-to-date national profile data. We have national data on breastfeeding and weaning and obesity rates at age three, but no data on the diet of two and three-year olds (*outcome domain: diet and nutrition*). We have national data on socio-emotional development at age 3 (*outcome domain: social and emotional development*). There are no comparable national profile data on children's communication, speech and language development or maternal health[1], with the exception of maternal smoking rates. Comparing with the available data, we find, as expected, that ABS families' outcomes are worse than the national average, in relation to children's weight at age three:

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[1] Having reviewed national profile data collected in the late 1990s we conclude that they do not provide a robust comparison, given that levels of investment in early years education is likely to have improved children's development nationally in the intervening period.

- ABS children are more likely than the national average to be at risk of developing mental health issues at age three, according to the SDQ (outcome domain: social and emotional development);
- ABS mothers are less likely than the national average to breastfeed their babies (outcome domain: diet and nutrition);
- ABS mothers are more likely than average to wean their babies earlier than national guidelines babies (outcome domain: diet and nutrition);
- Three-year olds in ABS areas are no more or less likely than average to be overweight (outcome domain: diet and nutrition).
- ABS mothers are more likely than the national average to smoke.

The impact of ABS will ultimately be measured by comparing the outcomes of a cohort of children born into ABS areas with those of matched children born into 15 comparison areas. So, in addition to the tracking of a cohort of ABS children from pregnancy to age five, we will also track children born into each of the 15 comparison areas. The matched comparison families are intended to represent what the outcomes for ABS families would be *in the absence of* ABS funding.

To check that our 15 comparison areas can provide good matches for the ABS families, the baseline survey also included families of children aged one, two and three living in the comparison areas. Overall, we find baseline outcomes for matched families in ABS and comparison areas to be broadly similar, with relatively few statistically significant differences in the baseline starting positions of children and families in the ABS and matched comparison groups.

When there are statistically significant baseline differences, families living in ABS areas tend to have worse outcomes than their counterparts in the matched comparison group, perhaps reflecting the fact that the BLF has chosen to fund the most deprived areas in England where there is a perceived need to improve services. The outcome domain where there is greatest disparity in the baseline outcomes of ABS and comparison area children is in their social and emotional development. In summary:

- **Social and emotional development**: ABS children appear to be behind their comparison group counterparts in terms of their social and emotional development, with statistically significant differences at ages one and three.
- **Communication, speech and language development**: ABS and matched comparison children appear to be at very similar levels of speech and language development. The only statistically significant difference between the two groups of children was at age three, where children's home learning environment was worse for ABS than for comparison group children.
- **Diet and nutrition**: ABS and matched comparison mothers appear to be relatively similar in terms of breastfeeding practices, but ABS mothers appear to wean their children earlier than mothers in the comparison group and to give their one-year olds fruit or vegetables.
- And in relation to maternal health, ABS and matched comparison mothers appear well matched. The only statistically significant differences are in mothers' reported levels of depression or anxiety (better in ABS areas) and drinking behaviours (worse in ABS areas).
- We will account for these differences in baseline outcomes in our later analyses of ABS impact using our post-ABS intervention cohort of children and families in ABS and comparison areas. For outcomes where ABS and comparison group families differed at baseline, we will measure how much each group *changes* from the baseline measure. This is a more robust measure of impact than simply comparing the outcomes of the ABS cohort with their matched comparators without taking into account their different starting points.[2]

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[2] In other words, we will employ a difference in differences (DiD) approach.

1.0 Introduction

1.1 Overview of the report

The aims of the baseline survey were two-fold:

1. To provide a baseline profile of children and their families living in the five ABS areas prior to the full launch of ABS services;

2. To collect parallel data from 15 matched comparison areas in order to measure how closely they mirror ABS areas in terms of baseline outcomes.

In line with the first aim, this report presents the socio-demographic profile of children and families in ABS areas, comparing them to the England population as a whole, and thereby providing valuable data for ABS areas on their target population. We also describe the outcomes experienced by children and their families living in ABS areas prior to the full launch of ABS services. The survey data about children aged one, two and three across the range of outcomes that ABS aims to improve provides a baseline against which to measure progress of children and families once ABS services are implemented.

In terms of the second aim, once ABS services are up and running, the impact of ABS will be measured by comparing the outcomes of a cohort of children born into ABS areas with those of matched children born into 15 comparison areas. The matched comparison families are intended to represent what the ABS families would have been like in the absence of BLF funding. In order to check that our 15 comparison areas provide good matches for the ABS families, in this report we compare the baseline outcomes of children and families in ABS areas with a matched comparison group drawn from comparison areas. **Overall, we find baseline outcomes for matched families in ABS and comparison areas to be broadly similar, with relatively few statistically significant differences in the baseline starting positions of children and families in the ABS and matched comparison groups.** When there are significant baseline differences, ABS areas are more often worse than the matched comparison group, perhaps reflecting the fact that BLF has chosen to fund the most deprived areas in England where there is a perceived need to improve services. We will account for these differences in baseline outcomes in our later analyses of ABS impact using our post-ABS intervention cohort of children and families in ABS and comparison areas. For outcomes where ABS and comparison group families differed at baseline, we will measure how much each group *changes* from the baseline measure. This is a more robust measure of impact than simply comparing the outcomes of the ABS cohort with their matched comparators without taking into account their different starting points.[3]

The rest of this Chapter briefly describes the ABS Programme (Section 1.2) and its evaluation design (Section 1.3). Section 1.4 talks through the purpose and design of the baseline survey and Section 1.5 explains how the data will be presented in each of the subsequent chapters which are outlined in Section 1.6. Section 1.7 explains how to interpret the tables in subsequent chapters.

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[3] A difference in differences (DiD) approach.

1.2 A Better Start

ABS aims to improve the life chances of babies and young children by delivering a significant increase in the use of preventative approaches from pregnancy up to when a child is aged four. The BLF has invested £215 million over 10 years in five local area partnerships within:

- Bradford
- Blackpool
- Lambeth
- Nottingham
- Southend-on-Sea

The ABS wards in these geographical areas have a high level of need in terms of deprivation, educational achievement and child health. Alongside government-funded and third-sector providers working collaboratively across health, education and social care, BLFs investment will allow these areas to make structural changes to the ways in which they identify and work with families at risk of poor outcomes, in addition to introducing a range of preventive interventions focusing on pregnancy and the first three years of life.

These interventions set out to improve outcomes for children in three key development domains of:

1. **Social and emotional development:** preventing harm before it happens (including abuse, neglect, perinatal mental health and domestic violence) as well as promoting good attunement and attachment;
2. **Communication, speech and language development**: developing skills in parents to talk, read and sing to, and particularly to praise their babies and toddlers and to ensure local childcare services emphasise language development;
3. **Diet and nutrition:** starting out by encouraging breastfeeding and promoting good nutritional practices.

The evidence suggests that these three domains can have a significant impact on the long-term life chances of children. BLF wishes to use the learning from this investment to inspire a shift in public policy, public funding and agency culture away from remedial services to greater investment in prevention in pregnancy and the first few years of life. Each ABS area will also need to address systems change across all children and families agencies. The systems changes should deliver less bureaucratic, more joined-up services; services that are prevention-focused; that are needs-led and demand-led; that work for the whole family; and that get it right for families from the start. ABS will fund interventions that directly improve the life chances of up to 60,000[4] babies and young children in the five investment areas over the life of the initiative.

1.3 Evaluation design

The evaluation of ABS comprises a mixed-methods design including impact, cost-effectiveness and process evaluation components. In other words, the evaluation aims to address questions about how ABS is being run and how it is experienced by families and practitioners, as well as measuring how effective it is being in improving children's and parents' outcomes and the costs involved in doing that. The main vehicle for measuring the impact of ABS is a study which will track a cohort of parents and children in the five ABS sites and 15 matched comparison areas. It will begin once the majority of ABS services are up and running in 2019, recruiting mothers during pregnancy and end in 2025 when the children are aged five

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[4] This provisional number is based on the anticipated birth cohort across the five areas during the lifetime of the Programme, based on statistics available at the time the awards were made.

(a longitudinal cohort study). A separate baseline survey was carried out in 2016/17 to collect data on outcomes prior to the launch of ABS, interviewing parents of one-, two- and three-year olds children in both ABS and comparison areas (a cross-sectional baseline survey).

The impact of ABS on parent and child outcomes will ultimately be measured by comparing outcomes collected in the cohort study in ABS areas with outcomes for a matched set of parents and children from the cohort study in the comparison areas. If ABS has a positive impact, the outcomes for the ABS families should be better, on average, than the outcomes for the matched comparison families. However, some difference in outcomes may reflect pre-existing differences between the ABS and comparison areas that cannot be accounted for by differences in family profile, and the baseline survey is designed to measure these. Where pre-existing differences are found, the measure of impact will be the difference between the ABS cohort survey families and their matched comparison families, minus the observed baseline differences.

1.3.1   The selection of the comparison sites

Three matched comparison areas have been selected per ABS intervention area (i.e. 15 comparison sites in total). In order to address the expectation that not all potential comparison sites approached would agree to take part, a total of ten comparison areas per ABS area was originally identified, with three 'preferred' areas and a reserve list of seven others. No comparison sites were drawn from the sites that were unsuccessful in their application to deliver the ABS intervention.

The National Foundation for Educational Research (NFER) Children's Services Statistical Neighbour Benchmarking Tool was used to identify the initial ten comparison sites per ABS area. This tool was designed so that Local Authorities (LAs) could compare themselves with other 'similar' LAs on their progress on Every Child Matters (ECM) outcomes. The variables used by NFER to generate the neighbours include a combination of relative deprivation, economic profile, urban/rural, and ethnicity.

The following indicators were used to identify the 'preferred comparison areas' from within the 10 statistical neighbours: percentage of babies of low birth weight; prevalence of maternal smoking; prevalence of breast feeding; percentage obesity at age five; percentage with good level of development at Early Years Foundation Stage; percentage of pupils achieving five or more GCSEs; percentage of children in care. An overall 'distance score'[5] was created between the ABS site and each of the potential comparison areas. The 10 potential comparison areas per ABS area were then sorted on this score and the three 'closest' approached first. Wherever a comparison site refused to take part they were replaced by the next in the sorted list.

Within each participating comparison site, a sub-set of wards were selected that are closest to the ABS wards in terms of deprivation. Level of deprivation was determined using ward level Office for National Statistics (ONS) statistics on the percentage of families with two or more (out of a possible four) dimensions of deprivation.[6] In most cases the most deprived wards per comparison site were selected.

Figure 1 (supported by Table 1.1) shows the final set of comparison sites per ABS area.

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[5] The distance score was based on a Manhattan distance metric and used standardised scores per indicator.
[6] These data were used in preference to the Index of Multiple Deprivation (IMD) as IMD was not then available on new wards. The percentage of families with two or more dimensions of poverty is highly correlated with IMD.

Figure 1: Comparison areas per ABS area
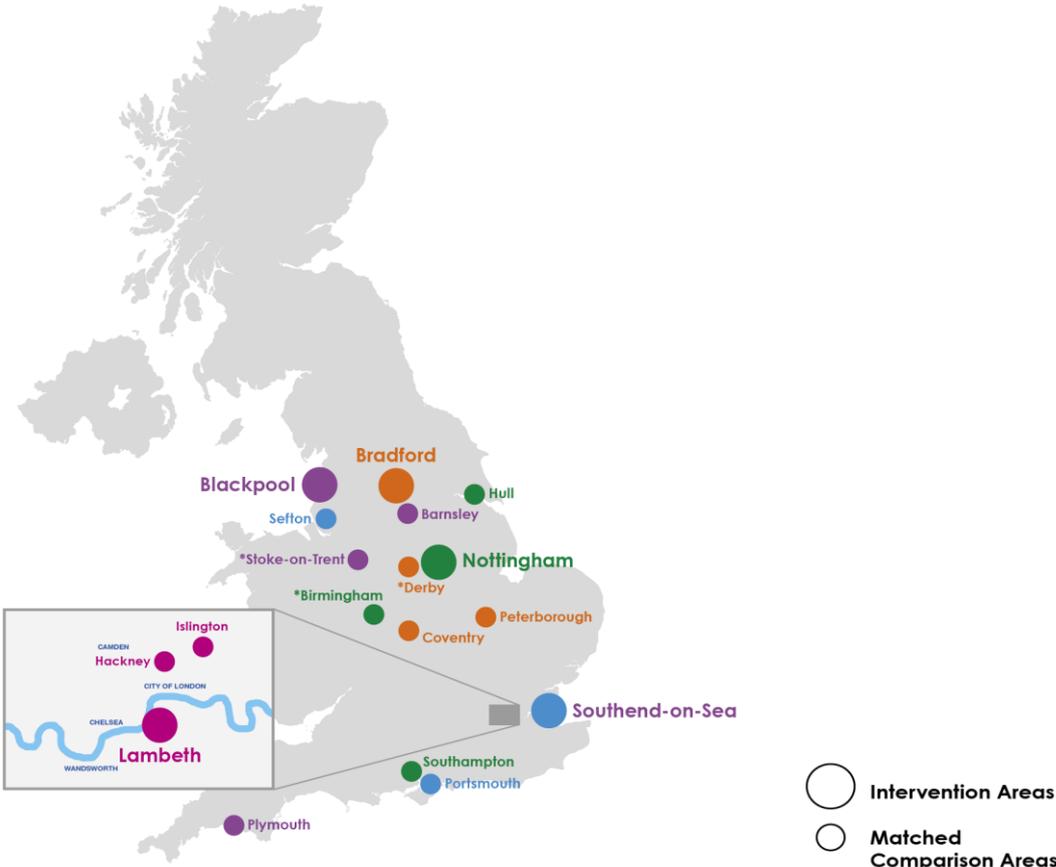
Table 1.1 Comparison areas per ABS area

ABS areas	Comparison sites
Blackpool	Stoke on Trent; Plymouth; Barnsley
Bradford	Derby; Coventry; Peterborough
Lambeth	Hammersmith and Fulham; Islington; Hackney
Nottingham	Birmingham; Kingston Upon Hull; Southampton
Southend	Sefton; East Kent; Portsmouth

1.4   The design of the baseline survey

The baseline survey, conducted in 2016/17, included mothers and the resident father/partner, with a child aged one, two or three, with the interviews per age-group taking place +/- 4 weeks either side of the child's

estimated/actual[7] birthday. This timing of the interviews around birthdays reflects that fact that the cohort interviews will also take place close to birthdays.

The number of interviews achieved by age group was as follows:

Table 1.2 Achieved sample sizes in baseline survey

Age of child	ABS areas	Matched comparison areas
1	392	232
2	325	363
3	200	208

Parents were selected for the baseline survey from a commercial sampling frame called 'Emma's Diary'. Emma's Diary is the largest database of mothers-to-be and of new-born babies in the UK and collects around 650,000 records each year. Sampled parents were written to and given the opportunity to opt out of being approached to take part in the study. Those who did not opt out were contacted directly by an interviewer from Ipsos MORI and those agreeing to take part were interviewed in their home. Forty-two per cent of mothers contacted[8] took part in the survey.

The interviews collected detailed background information about the mother, and partner where relevant, plus a wide range of parent and child outcomes across the three outcome domains of social and emotional development; communication, speech and language development; and diet and nutrition.

Full details of the survey can in found in Annex 3.

1.5   Analysis of the baseline survey

As outlined in Section 1.1, the baseline survey has two main purposes. First, it provides information on the starting position of the five ABS areas. Comparing outcomes from the baseline with outcomes from the cohort survey in these areas will give estimates of the change over time.

Second, and of most importance for the measurement of ABS impact, the baseline survey quantifies the extent of pre-existing differences in outcomes between the ABS families and similar, matched, families drawn from the comparison areas. If these pre-existing differences are close to zero, then any difference between the ABS families and matched comparison families that are seen in the cohort study can reasonably be attributed to the ABS programme. If, however, the pre-existing differences are not close to zero, the pre-existing differences will need to be subtracted from the cohort study difference to give the estimate of impact. That is, a difference-in-differences estimation approach will be needed.

Based on raw survey data, we expect outcomes to be different between ABS and comparison areas simply because the profile of mothers in the two groups of areas is not identical, with the ABS areas being, on average, slightly more disadvantaged. For example, 35 per cent of mothers in the baseline survey in ABS areas were single parents, compared to just 28 per cent in the comparison areas. Single parenthood is

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[7] The sampling frame included the babies due date. Birthdays were estimated based on that date and the mother approached about the survey close to that date.

[8] Excluding those for whom the address information was incorrect or could not be located.

correlated with a number of markers of disadvantage, including low income, reliance on means-tested benefits and fewer educational qualifications. Therefore, when comparing the outcomes between ABS areas and comparison areas, we need to control for any differences in the demographic or socio-economic backgrounds of the mothers in the two sets of areas. In essence, the comparison area sample of mothers is weighted so that it closely matches the profile of the mothers in the ABS sample. For the analysis presented in this report, these profile differences have been controlled for using propensity score matching, full details of which are included in Annex 2. The variables that the ABS and matched comparison families are statistically matched on include:

- Personal characteristics of mother: age; ethnic group; whether a single parent; qualifications; religion; whether actively religious;
- Characteristics of reference child: age; gender; whether main language used with child is English
- Household characteristics: number of children; whether any teenagers; tenure;
- Economic circumstances: employment status before pregnancy; summary of work history; whether in receipt of income related benefits; household income; whether managing financially;
- Partner characteristics/economic circumstances (where applicable): ethnic group; summary of work history;
- Health: whether mother has learning difficulties, a long-standing illness or disability; whether reference child has learning difficulties, a long-standing illness or disability; whether father has learning difficulties, a long-standing illness or disability; whether mother on disability-related benefits;
- Personal circumstances and history of mother: frequency of contact between reference child and grandparents; whether grandparents help financially; whether reference child has regular contact with biological father; whether the mother experience family break-up as a child; whether the mother experienced, or witnessed, abuse within the family as a child.

The implication is that when, in this report, we talk about there being, or not being, a difference at baseline on a particular outcome, we are talking about differences in outcomes between families in ABS and comparison areas *who have broadly the same profile of characteristics.* That is, after matching, a similar percentage in the ABS and matched comparison groups are single parents (35 per cent and 34 per cent respectively), a similar percentage have no formal qualifications (19 per cent and 17 per cent respectively), a similar percentage are social renters (36 per cent in both groups), and so on across all the matching variables listed above. Where there are baseline differences in outcomes between the ABS group and the matched group, it would suggest there are other factors at play, such as unobservable differences in the profile of the families or differences in local services.

1.6 Report structure

Chapter 2 describes the profile of the children and families surveyed in ABS areas. (A similar set of profile statistics for comparison areas can be found in the second data column of Table 2.1 of Annex 2.) Where possible we compare the ABS profile to the national profile, in order to illustrate how the areas differ to the national population.

Chapters 3 to 5 are organised into the three key developmental domains that ABS is aimed at improving: social and emotional development (Chapter 3); communication, speech and language (Chapter 4); and diet and nutrition (Chapter 5). In each chapter, we present the baseline (pre-ABS) outcomes within each development domain, comparing ABS families to the matched comparison group. Where the data are available, we comment on the extent to which the outcomes in ABS areas are similar or diverge from those

of the national population of that age group. Chapter 6 focuses on maternal health baseline outcomes across ABS and comparison areas.

The tables of Chapters 2 to 5 present on 'all ABS areas' combined. Tables showing the baseline profile and outcomes for each of the five individual ABS areas are presented in Annex 3. Note, the sample sizes per area are sometimes small, so the statistics from these tables should be treated with some caution.

In Chapter 7, we summarise the findings from earlier chapters and draw conclusions for the impact evaluation going forward.

1.7   Interpreting the outcome tables

Each of the tables in Chapters 3 to 6 shows the baseline outcome scores for the ABS mothers and children compared to those of the comparison area mothers and children matched on socio-demographics and background variables. Percentages are rounded to the nearest whole per cent and mean scores are shown to one or two decimal places. All means are shown with their standard deviations which show how far families' scores vary, on average, around the mean). The tables provide unweighted bases (that is, prior to applying the necessary weights for matching).

The p-value, shown for each outcome measures, is the indicator of statistical significance. It represents the probability that the differences that we observe between the two groups could have appeared just by chance[9]. The smaller the p-value, the more confident we are that the difference observed reflects a real world difference. In other words, the p-value tells us whether we can be confident that any differences we see in the baseline profile of the ABS and matched comparison families are real differences, rather than random differences that arose by chance in the two samples drawn. We have taken a p-value of 0.05 or less as a marker for 'statistical significance' – this being the default for most studies. For any impact with a p-value of 0.05 or less, we can be at least 95 per cent confident that the impact is genuinely different to zero **Differences with p-values of 0.05 or less are marked in the tables with an asterisk.** The p-values have been calculated in the complex samples module of SPSS and take into account the weights generated by the propensity score matching.

As the standardised measures that we are using vary in terms of whether a higher score denotes a more positive or a more negative profile**, the final column of each table flags whether the ABS mothers/children are doing 'better' or 'worse' than their matched comparison counterparts, where statistically significant differences are identified. Green denotes that the ABS families have a better baseline profile on a particular outcome measure and red denotes that their baseline profile is worse.**

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[9] If the two populations from which the samples were drawn were in fact equal.

2.0 A Better Start family profiles

In Chapters 3 to 6 we present the baseline outcomes of the ABS and matched comparison group. As context for that we include a summary here of the profile of the survey respondents in ABS areas in terms of mothers' personal and economic characteristics. (A similar set of profile statistics for the comparison areas can be found in the second data column of Table A2.1. This is the profile of families with children aged three and under living in ABS wards – so, the profile of those who will be eligible for ABS once ABS services are up and running. As time goes on, these data will be a valuable benchmark for ABS areas to assess the populations they reach within this eligible pool.

Here, and throughout this report, each of the five ABS areas contributes equally to the all-ABS total, at 20 per cent per area[10]. Where feasible we have included a comparison with the all-England profile of mothers with children aged up to three, derived from the 2015/16 wave of the UK Household Longitudinal Study (UKHLS).

The ABS baseline survey and the UKHLS are not strictly comparable on all the profile variables, with the questions sometimes being asked in slightly different ways. For instance, tenure in the ABS survey is asked from the mother's perspective, and includes 'living with parents' as a category, whereas the UKHLS tenure is a household level variable. In addition, the archived UKHLS data cannot be narrowed to children close to their first, second or third birthdays so a direct match to the ABS baseline survey[11] is not possible. Instead the UKHLS statistics cover all mothers with a child aged three or under. Therefore, the differences between the ABS survey and the UKHLS should be treated as indicative only. But showing the two profiles side by side demonstrates the level of disadvantage experienced by the ABS mothers relative to the national average.

Allowing for these caveats, in summary, relative to the national average, ABS mothers are:

- Younger (19 per cent aged 16-25 compared to 13 per cent for all England);
- More likely to be Asian or Black (19 per cent Asian and 14 per cent Black, compared to nine per cent and four per cent for all England). This is largely due to the ethnic profile in Bradford and Lambeth;
- More likely to be lone parents (35 per cent compared to 18 per cent);
- More likely to have no formal qualifications (19 per cent compared to 11 per cent) and less likely to have a degree (19 per cent compared to 36 per cent);
- Less likely to be an owner-occupier (26 per cent compared to 50 per cent, although note the comment in the paragraph above);
- Less likely to be in work (42 per cent compared to 59 per cent); but
- Less likely to report having a long-standing illness or disability (five per cent compared to 20 per cent);
- Twice as likely to have four or more children (15 per cent compared to eight per cent).

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[10] In addition, for the profile table, the data has been weighted so that three age-groups of children each represent a third of the total. This has not been done for the outcome tables because most outcomes are age-specific. Where they are not the statistics change only very marginally with the age weights, so the weights are excluded to maximise statistical power.

[11] The ABS baseline survey interviewed mothers close to their child's first, second, or third birthday.

Table 2.1 Profile of mothers in the ABS baseline survey, relative to all England profile (UKHLS)

Personal characteristics:	Mothers in the ABS baseline survey	Mothers of 0-3 year olds – England
Personal characteristics:	%	%
Age:		
16-25	19	13
26-34	54	48
35+	27	40
Ethnic group:		
White British	53	79
White other	9	6
Mixed	4	1
Asian	19	9
Black	14	4
Other	1	1
Religion:		
No religion	42	-
Christian	38	-
Muslim	19	-
Other	1	-
Lone parent:		
Yes	35	18
No	65	82
Formal qualifications:		
No qualifications	19	11
GCSE	18	32
A-level, vocational qualifications, diploma, other	44	21
Degree	19	36
Health:		
Mother has learning difficulties	2	-
Mother has long-standing illness or disability	5	20
Main language used with reference child:		
English	84	-
Other	16	-
Sample size	*917*	*1779*
Household characteristics:		
Number of children:		
1	36	33
2	33	44
3	17	15
4 or more	15	8

	Mothers in the ABS baseline survey	Mothers of 0-3 year olds – England
Tenure:		
Owner occupier	26	50
Social renter	36	25
Private renter	29	24
Living with parents	8	-
Other	1	1
Economic circumstances/benefits:		
Current employment status:		
Part-time work	27	31
Full-time work	15	29
Other	58	41
In receipt of:		
Child benefit	94	84
Child tax credit	66	44
Working tax credit	29	12
Income support	21	12
Housing benefit	31	19
Universal credit	2	1
Carer's allowance	5	3
Disability living allowance	6	4
Employment and Support allowance	3	3
How managing financially:		
Manage very well	9	-
Manage quite well	30	-
Get by alright	43	-
Don't manage very well	7	-
Have some financial difficulties	9	-
Are in deep financial trouble	2	-
Sample size	*917*	*1779*

Baseline Survey

3.0 Children's social and emotional development: baseline profile

3.1 Introduction

This chapter provides a baseline profile of children aged one, two and three living in ABS areas in terms of their social and emotional development, one of three key developmental domains that ABS is aimed at improving. We compare children in the ABS areas in terms of their social and emotional development with a matched comparison group of children. As described in Sections 1.5 and 1.7, the ABS and comparison children are matched across a wide range of socio-demographic and background measures. This means that any differences reported below in the social and emotional development profile of ABS and comparison children are *not* due to differences in their socio-demographic profile. Rather, we are observing these differences among children *with the same or very similar characteristics* in the ABS and comparison areas.

Different age-appropriate measures were used to measure children's social and emotional development at ages one, two and three, namely:

- Age one: the Brief Infant Toddler Social and Emotional Assessment (BITSEA);
- Age two: the Adaptive Social Behaviour Inventory (ASBI);
- Age three: the Strengths and Difficulties Questionnaire (SDQ).

All three measures relied on maternal report and the BITSEA and ASBI scales are included in Annex 1.[12]

Overall, ABS children appear to be behind their comparison group counterparts in terms of their social and emotional development, with statistically significant differences at ages one and three. We have national profile data for the measures used at age three. These show that three-year olds in ABS areas score as being behind the national average in their social and emotional development.

3.2 Age one: Brief Infant Toddler Social and Emotional Assessment (BITSEA)

The BITSEA is a tool for identifying children who may have socio-emotional or behavioural problems and/or delays or deficits in social-emotional competence. It covers externalising and internalising behaviours, problems of dysregulation, maladaptive and atypical behaviours. It is suitable for children aged between 12 and 36 months (Briggs-Owen and Carter, 2006). We used the 42-item Parent Form with the mothers of one-year olds to gather data on their perceptions of their child in relation to a range of social, emotional and behaviour problems. Each item asks about the frequency in the past month in which the child exhibits a particular feeling or behaviour, with mothers using a four-point scale from 'not true/rarely' (scoring 0) to 'very true/often' (scoring 2). Mothers completed the form as part of the self-completion element of the interview.

Eleven of the 42 items are used to measure children's social-emotional 'competence', addressing compliance with adult expectations and requests, attention, skills, mastery, motivation, imitation/play behaviour, prosocial interactions with peers and emerging empathy. By adding the scores of the 11 items,

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[12] Licensing agreements mean that the SDQ cannot be reproduced here.

a competence scale enables us to rate children from 0 (low competence) to 22 (high competence).[13] Scores of 12 or less identify children[14] as at risk of possible developmental deficit or delay.

The other 31 items are used to identify problem behaviours. These include behaviours that are part of typical development (e.g. aggression, sadness or fear) which become problematic when they are more frequent or intense than would be expected. They also include behaviours that are never developmentally appropriate. By adding the scores of the 31 items, a problems scale enables us to rate children from 0 (no problems) to 62 (most problems).[15] Scores of 13 or less identify children as at risk of possible developmental problems.

Table 3.1 shows the mean score on each of the two scales for the ABS and comparison group children, together with the percentage identified as at risk of possible developmental deficit, delay or problems. While there are no statistically significant differences between the ABS and comparison group children in terms of identified problems, ABS children score statistically worse when it comes to socio-emotional competence. They have a mean score of 15.1, compared to 16.1 in the matched comparison group, and are twice as likely (18 per cent compared to nine per cent) to be at risk of developmental deficit or delay.

While we have no nationally representative data against which to compare the ABS one-year olds, the BITSEA manual (Briggs-Gowan and Carter, 2006) cites US data for a sample of 12 to 17-month olds. These indicate that ABS one-year olds are more likely than the US average to exhibit 'problems' (with a mean score of 10.1 compared with 8.0 in the US sample). They score very similarly in terms of the 'competence' rating (mean score 15.1 compared with 15.6 in the US sample).

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[13] Scale scores are calculated for all children where the mother provides score for at least 10 items.
[14] The identification score depends on the age of the child. Our sample were all under 17 months, with an identification score of 12.
[15] Scale scores are calculated for all children where the mother provides score for at least 27 items.

Table 3.1 BITSEA baseline profile by ABS and comparison areas
Table A3.2 in Annex 3 provides a breakdown by ABS area

	ABS children	Matched comparison children	p-value	ABS group significantly better (green) or worse (red)?
Competence				
Mean score (higher score positive)	15.1 (sd 3.31)	16.1 (sd 2.78)	0.001*	
% possible deficit/delay	18	9	0.002*	
Problems				
Mean score (higher score negative)	10.1 (sd 6.21)	10.5 (sd 6.48)	0.520	
% possible problem	27	27	0.911	
Unweighted base: parents of one-year olds answering self-completion	*383*	*225*		

Baseline survey

3.3 Age two: Adaptive Social Behaviour Inventory (ASBI)

We used the ASBI to measure social and emotional development among the sample of two-year olds, administered as part of the self-completion element of the interview. The 30-item scale was developed in the United States by Hogan et al (1992). When replicated in a UK context (Sammons et al, 1999; Smith et al, 2009), factor analysis of the items identified five factors, each measuring different elements of a child's social and emotional development:

- Sociability/empathy;
- Compliance/conformity;
- Confidence/independence;
- Anti-social behaviour;
- Anxiety.

Using the items included in each of these five factors, we created sub-scales based on the mothers' rating of their child.[16] For each item, mothers were asked to say how often their child exhibited the behaviour, from 'rarely or never' (code 1) to 'almost always' (code 3). For each sub-scale, we created a scale from 1 to 3 based on the child's mean score across the items included in the sub-scale[17], the mean scores for which are shown in Table 3.2. For the first three sub-scales, a higher mean score denotes a more positive rating of their behaviour, while a higher score is worse on the fourth and fifth scale.

At baseline, there were no statistically significant differences between the social and emotional development scores of two-year olds in the ABS or matched comparison groups.

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[16] 26 of the 30 items are used across the five scales (see Annex 1).

[17] Provided mothers had answered at least half of the items, missing items were imputed using the mean of the completed answers.

Table 3.2 ASBI baseline profile by ABS and comparison areas

Table A3.3 in Annex 3 provides a breakdown by ABS area

	ABS children	Matched comparison children	p-value	ABS group significantly better (green) or worse (red)?
Mean scores				
Sociability/empathy (higher score positive)	2.4 (sd 0.35)	2.4 (sd 0.41)	0.417	
Compliance/conformity (higher score positive)	2.3 (sd 0.42)	2.2 (sd 0.42)	0.269	
Confidence/independence (higher score positive)	2.7 (sd 0.30)	2.7 (sd 0.38)	0.735	
Anti-social (higher score negative)	1.4 (sd 0.37)	1.4 (sd 0.28)	0.368	
Anxiety (higher score negative)	1.9 (sd 0.64)	2.0 (sd 0.69)	0.217	
Unweighted base: parents of two-year olds answering self-completion	*308*	*332*		

Baseline survey

3.4 Age three: Strengths and Difficulties Questionnaire (SDQ)

The SDQ is a behavioural screening questionnaire with versions suitable for children aged three and over. We used the version suitable for parental self-completion report to measure the socio-emotional development of the three-year olds in the sample. The questionnaire includes 25 items asking about a range of positive and negative behaviours (Goodman et al, 1997). For each item, mothers were asked to consider their child's behaviour in the past six months and report whether each item was 'not true' (code 0) to certainly true (code 3). The 25 items form five sub-scales, each including five items, measuring:

- Prosocial behaviour;
- Peer relationship problems;
- Conduct problems;
- Hyperactivity and inattention;
- Emotional symptoms.

For each sub-scale, the score is a sum of the responses to the five items running from 0 to 10.[18] While a higher score on the prosocial sub-scale denotes more positive behaviour, a higher score on the other four sub-scales denotes worse behaviours. All but the prosocial sub-scale are also used to create an aggregate

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[18] Provided mothers had answered at least three of the five items, missing items were imputed using the mean of the completed answers.

SDQ scale for which, again, a higher score denotes more negative behaviours (with the scale running from 0 to 40).

As shown in Table 3.3, the ABS three-year olds scored statistically significantly worse than their counterparts in the matched comparison group in terms of conduct problems, hyperactivity and inattention, and emotional symptoms. As a result, the overall SDQ scale shows ABS three-year olds as having more socio-emotional issues than three-year olds in the matched comparison group (mean score of 10.7 out of 40 compared to 8.6). The ABS three-year olds also score worse than the average UK three-year old. Millennium Cohort Study fielded the SDQ among the cohort when they were within a few months of their third birthday (i.e. a very close comparison to the baseline survey) in 2003/4, the mean score was 9.3 which is statistically significantly better than the ABS mean score of 10.7.

The SDQ scores can also be used to categorise children in terms of their risk of developing a mental health disorder. The categories are based on a UK community sample of children aged four to 17[19], in which scoring 13 or less out of 40 is deemed as being 'close to average' on the basis that 80 per cent of children score within this range. The remaining scores are split into 'slightly raised' (10 per cent of the UK sample, scores 14 to 16); high (five per cent of the UK sample, scores 17 to 19); and very high (five per cent of the UK sample, scores 20 to 40). The proportion of the ABS three-year olds in each category is shown in the second half of Table 3.3. A quarter (27 per cent) of ABS three-year olds do not fall 'close to average', compared to 20 per cent in the national profile. Thirteen per cent are categorised as at 'very high' or 'high' risk, compared to 10 per cent of the national population of children aged four to 17. They are significantly more likely to be at risk than three-year olds in the comparison group, of which 88 per cent scored as being 'close to average'.

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[19] http://www.ehcap.co.uk/content/sites/ehcap/uploads/NewsDocuments/236/SDQEnglishUK4-17scoring-1.PDF. The categorisations are based on the SDQ measure designed for 4 to 17 year olds, which has three different items to the 2 to 4 year olds measures fielded in the ABS baseline survey. As we are not aware of an equivalent exercise for the younger children's measures, we are using these with the caveat that not all the measures are exactly the same.

Table 3.3 Strengths and Difficulties Questionnaire baseline profile by ABS and comparison areas

Table A3.4 in Annex 3 provides a breakdown by ABS area

	ABS children	Matched comparison children	p-value	ABS group significantly better (green) or worse (red)?
Mean scores (higher score negative, except for prosocial where higher score positive)				
Prosocial	7.6 (sd 1.99)	8.0 (sd 1.87)	0.136	🟩
Peer relationship problems	1.8 (sd 1.62)	1.7 (sd 1.57)	0.467	🟩
Conduct problem scale	2.9 (sd 1.87)	2.4 (sd 1.69)	0.043*	🟥
Hyperactivity and inattention	4.4 (sd 2.33)	3.4 (sd 1.96)	0.001*	🟥
Emotional symptoms	1.7 (sd 1.71)	1.1 (sd 1.11)	0.005*	🟥
SDQ scale	10.7 (SD 5.49)	8.6 (sd 4.44)	0.001*	🟥
Risk categories				
Close to average	73	88	0.002*	🟥
Slightly raised risk	15	7		
High risk	6	4		
Very high risk	6	1		
Unweighted base: parents of three-year olds answering self-completion	*191*	*190*		

Baseline survey

4.0 Communication, speech and language development: baseline profile

4.1 Introduction

This chapter provides a baseline profile of children aged one, two and three living in ABS areas in terms of their communication, speech and language development, the second of three key development domains in which ABS aspires to improve children's outcomes. Again, we compare children in the ABS areas with children in a matched comparison group. Having matched the ABS and comparison group children on a wide range of socio-demographic and background measures (see Section 1.5), any differences identified in the communication, speech and language profile of ABS and comparison children are *not* due to observed differences in their socio-demographic profile.

Again, different age-appropriate measures were used to measure children's communication, speech and language development:

The children's learning environments were measured using:

- Ages one and two: the Toddler Home Learning Environment (THLE) scale and a range of measures from the Home Short Form (HSF);
- Age three: the Home Learning Environment scale (HLE);
- Ages two and three: eligibility for and take-up of early years education.

Speech and language development were measured using:

- Age two: the Sure Start Language Measure (SSLM);
- Age three: the British Ability Scales (BAS) II vocabulary and picture similarities tests.

All measures relied on maternal report except for the two BAS tests which were administered by the survey interviewer directly with the three-year old children.

Overall, ABS and matched comparison children appear to be at very similar levels of speech and language development. The only statistically significant difference between the two groups of children was at age three, where children's home learning environment was worse for ABS than for comparison group children.

The best available national profile data were collected among three-year olds in 1997. Developments in the intervening period about early years provision, including advice to parents on the home learning environment, mean that we are concerned about their comparability. However, we cite them where available, with the necessary caveats.

The home learning environment and SSLM measures are included in Annex 1.[20]

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[20] The BAS measures are not easily presentable in a static document form.

4.2 Learning environment

4.2.1 Home Learning environment

The home learning environment measures employed here have been used in a number of studies in slightly varying forms (e.g. the Millennium Cohort Study; the national evaluations of Sure Start and Children's Centres). The Toddler Home Learning Environment (THLE) and Home Learning Environment (HLE) scales ask age-appropriate questions of parents about the frequency of activities that they do with their children. The THLE also asks about the number of baby and toddler books in the home. The HSF also asks about the range of toys at home as well as some attitudinal questions about how much time a parent should spend teaching their children. The THLE for children aged one and two are identical, except for one additional question asked with regards two-year olds. The full range of questions for each scale are in Annex 1.

In Table 4.1, we report on the Age one and Age two mean scores for the THLE and then, for each age group, on the mean score for the THLE combined with the Home Short Form. Each of the THLE items has a frequency response scale running from 0 (least frequently) to 6 (most frequently). As a result, one-year olds can score between 0 (poorest home learning environment) to 54 (best home learning environment) from the nine-item scale, with the ten-item scale for two-year olds running from 0 to 60. The frequency response scales for the five[21] HSF vary in length. In order to provide equal weight to each of items when combined with the THLE in a summed score, we recoded each of the HSF scales to run from 0 (least frequently/worse) to 6 (most frequently/better). As a result, children can score between 0 (poorest home learning environment) to 84 (best home learning environment) in the Age one THLE/HSF, and from 0 to 90 at age two.

Table 4.1 also shows the HLE mean scores for three-year olds. This, again, is based on summing the frequencies of the seven[22] HLE items. Five of the HLE items run from 0 to 7. To provide equal weight to the two items with shorter response scales when combined to make an HLE summed score, we recoded these two items to run from 0 to 7. The HLE scale therefore run from 0 (poor home learning environment) to 49 (best home learning environment).

Overall, children in the ABS and matched comparison groups are experiencing very similar home learning environments at ages one and two. However, at age three, there is evidence that the home learning environment in the ABS households is statistically significantly worse than in matched comparison households (mean score of 28.1 out of 49 compared to 30.8).

The Effective Pre-school, Primary and Secondary Education Project (EPPSE) measured the home learning environment of three-year olds in 1997. At that time, the mean HLE score was 23.3. However, we suspect that the higher scores among the ABS and comparison families is due to improvements in advice to parents on the home learning environment, rather than suggesting that they are ahead of the national average.

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[21] Frequency of meals with parents is excluded from the scale, due to ambiguity in how to code single parent families.
[22] In line with other studies, frequency of sport and outdoor activities are excluded from the scale.

Table 4.1 Home Learning Environment baseline profile by ABS and comparison areas

Table A3.5 in Annex 3 provides a breakdown by ABS area

	ABS children	Matched comparison children	p-value	ABS group significantly better (green) or worse (red)?
Mean scores (higher score positive)				
Age 1 Toddler Home Learning Environment	30.5 (sd 6.3)	30.7 (sd 6.5)	0.761	
Age 1 Toddler Home Learning Environment and Short Home Scale	51.1 (sd 8.0)	51.6 (sd 8.0)	0.535	
Unweighted base: parents of one-year olds	*392*	*232*		
Age 2 Toddler Home Learning Environment	39.0 (sd 7.2)	39.5 (sd 6.5)	0.353	
Age 2 Toddler Home Learning Environment and Short Home Scale	60.9 (sd 9.3)	61.2 (sd 8.8)	0.705	
Unweighted base: parents of two-year olds	*325*	*363*		
Age 3 Home Learning Environment (score 0 to 49)	28.1 (sd 10.6)	30.8 (sd 9.1)	0.036*	🟥
Unweighted base: parents of three-year olds	*200*	*208*		

Baseline survey

4.2.2   Take up of early years education

All children are eligible for free early years provision starting the term after their third birthday. Disadvantaged children (defined largely by benefit receipt and/low income) are eligible earlier, able to take up a place in the term after their second birthday. At the time of the baseline survey, children were either coming up to or had recently had their birthday. In other words, many would have become eligible only after the baseline interview. This is reflected in the relatively low take-up levels shown in Table 4.2. Only one in ten two-year olds (12 per cent of ABS children and nine per cent of comparison group children) were in early years provision. Even by age three (when nationally, 93 per cent of eligible children take up their free provision (DfE, 2017[23]), only half (53 per cent) were in early years provision. Many of these are likely to be those eligible for a free place at age two.

Rather than the absolute percentages, what is of interest here is that there are no statistically significant differences in levels of early years take-up between children in the ABS and matched comparison groups.

[23]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/669857/SFR73_2017_Text.pdf

Table 4.2 Take up of early years education baseline profile by ABS and comparison areas

Table A3.6 in Annex 3 provides a breakdown by ABS area

	ABS children	Matched comparison children	p-value	ABS group significantly better (green) or worse (red)?
	%	%		
Age 2				
Eligible and uses	12	9	0.188	
Eligible and does not use	24	18		
Not eligible	64	73		
Unweighted base: parents of two-year olds	*325*	*363*		
Age 3			0.916	
Eligible and uses	53	52		
Eligible and does not use	17	19		
Not eligible	30	28		
Unweighted base: parents of three-year olds	*200*	*208*		

Baseline survey

4.3   Age two: Sure Start Language Measure (SSLM)

The SSLM is a parental report measure of early language development. It measures vocabulary knowledge based on a list of 100 words, alongside a question asking whether the child is putting words together. For each of the 100 words, parents are asked to report whether their child can say the word, with rules provided about which alternatives or variants are permissible in the coding. The full word list is provided in Annex 1.

The SSLM score is a mean score of the number of words that a parent reports their child as being able to say. Table 4.3 shows that there were no statistically significant differences between the ABS and comparison group children in their mean number of 23 words, out of the 100 asked about. Likewise, the percentage of children reported as sometimes or often putting words together did not differ significantly between the two groups (79 per cent of ABS two-year olds and 80 per cent in the matched comparison group).

For 16 per cent of children across ABS and matched comparison families, English was not the main language they speak at home. Removing these children from the analysis slightly increased the mean scores but, still, there were no significant differences between ABS and comparison group children.

Table 4.3 Sure Start Language Measure baseline profile by ABS and comparison areas

Table A3.7 in Annex 3 provides a breakdown by ABS area

	ABS children	Matched comparison children	p-value	ABS group significantly better (green) or worse (red)?
All two-year olds				
Mean words (higher is positive, out of 100)	22.8 (sd 13.79)	23.1 (sd 13.29)	0.831	
% sometimes or often putting words together	79	80	0.772	
All two-year olds speaking English at home				
Mean words (higher is positive, out of 100)	23.33 (sd 14.17)	24.22 (sd 13.20)	0.512	
% sometimes or often putting words together	81	81	0.944	
Unweighted base: parents of two-year olds	*325*	*363*		

Baseline survey

4.4 Age three: British Ability Scales (BAS-II)

The BAS-II is an educational psychology tool that provides a reliable measure of children's cognitive functioning. It has been adapted for use by survey interviewers in a number of studies (e.g. the Millennium Cohort Study; the evaluation of the two-year olds early education pilot). We fielded two subscales of the BAS assessments in the baseline survey: 'naming vocabulary' and 'picture similarity', the first being a measure of vocabulary and the second being a measure of non-verbal reasoning ability. Where mothers gave permission and children were happy to take part, the interviewer administered the tests directly with the three-year olds.

4.4.1 Naming vocabulary

Children are shown a series of pictures and asked to say what each picture is. Like the SSLM, interviewers are permitted to accept as correct a number of alternatives or variants to the word. With up to 30 pictures (and therefore correct responses), children continue through the test for at least 16 pictures. If at that point they have given at least 14 correct answers, they continue through to the thirtieth picture. The words get increasingly difficult as the test continues. Their score is calculated based on the number of correct answers given. Because children are shown different items, their raw score is converted to an ability score which reflects both the raw score and the difficulty of the items being administered. The minimum ability score is 10 and the maximum is 141.

Among the three-year olds in the baseline survey, there was no statistically significant difference in the mean ability score of children in ABS or matched comparison families (61 compared to 58).

The EPPSE study and the MCS both fielded this measure (in 1997 and 2002/3 respectively), with mean scores substantially lower than found here (e.g. the EPPSE mean score was 45.12). We suspect that the way in which it was administered has affected the results.[24] So, while the data are valid for comparing ABS and comparison group families (as the measure was administered consistently across areas), we cannot compare to other national data.

Table 4.4 BAS naming vocabulary baseline profile by ABS and comparison areas

Table A3.8 in Annex 3 provides a breakdown by ABS area

	ABS children	Matched comparison children	p-value	ABS group significantly better (green) or worse (red)?
Vocabulary score (higher is positive)	61.3 (sd 23.5)	58.2 (sd 21.3)	0.365	
Unweighted base: three-year olds completing measure	*181*	*166*		

Baseline survey

4.4.2   Picture similarities

In the picture similarities test, children are shown a row of pictures and an additional card. They are asked to place the card alongside the picture which is similar or related in some way. With up to 28 pictures (and therefore correct responses), children continue to picture 23, stopping earlier only if they have six consecutive failures for eight consecutive pictures. If by picture 23 they have given at least 21 correct answers, they continue through to the twenty-eighth picture. Their score is calculated based on the number of correct answers given. Again, like the vocabulary test, because children are shown different items, their raw score is converted to an ability score which reflects both the raw score and the difficulty of the items being administered. The minimum ability score is 10 and the maximum is 104.

Among the three-year olds in the baseline survey, there was no statistically significant difference in the mean ability score of children in ABS areas or matched comparison children (45 compared to 43). Three-year olds in EPPSE scored a mean of 45.64, which is not statistically different to the mean score for the ABS children. However, as stated above, we would expect mean scores to have risen since the EPPSE data were collected in 1997. If correct, this would mean that the ABS children score lower than the current national average.

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[24] This issue will be further investigated prior to the fielding of these measures in the cohort study.

Table 4.5 BAS picture similarities baseline profile by ABS and comparison areas

Table A3.9 in Annex 3 provides a breakdown by ABS area

	ABS children	Matched comparison children	p-value	ABS group significantly better (green) or worse (red)?
Picture similarities score (higher is positive)	44.7 (sd 18.9)	43.1 (sd 19.1)	0.563	
Unweighted base: three-year olds completing measure	*181*	*166*		

Baseline survey

5.0 Children's diet and nutrition: baseline profile

5.1 Introduction

This chapter provides a baseline profile of children aged one, two and three living in ABS areas in terms of their diet and nutrition, the third of three key development domains in which ABS aspires to improve children's outcomes. Again, we compare children in the ABS areas with children from a matched comparison group. Having matched the ABS and comparison group children on a wide range of socio-demographic and background measures (see Section 1.5), any differences identified in the diet and nutrition profile of ABS and comparison children are *not* due to differences in their socio-demographic profile.

At age one, mothers were asked about:

- Breastfeeding practices at birth and in the subsequent months;
- First food and age of weaning.

At ages two and three, mothers completed the Child Dietary Questionnaire (CDQ). This report includes two key measures from this scale: the proportion of children eating fresh fruit or cooked vegetables in the previous day. We also collected height and weight for the calculation of children's body mass index (BMI).

Overall, ABS and matched comparison mothers appear to be relatively similar in terms of breastfeeding practices, but ABS mothers appear to wean their children earlier than mothers in the comparison group and to give their one-year olds fruit or vegetables. Compared to the national average, ABS mothers are less likely to breastfeed and more likely to wean their children early. At age three, ABS children are no more or less likely to be overweight that the national average.

5.2 Breast feeding and weaning

5.2.1 Breastfeeding

Mothers of one-year olds were asked whether they breastfed at birth, either exclusively or alongside formula. Those who breastfed at all were asked for how long they had done so. Around two thirds of mothers reported having breastfed at birth, with no statistically significant differences between mothers in ABS (67 per cent) and comparison (62 per cent) areas. Half of mothers (52 per cent in ABS areas and 48 per cent in the matched comparison group) had breastfed exclusively at birth, with a further one in seven (15 per cent) breastfeeding alongside formula.

The proportions of mothers who breastfed in both the ABS and matched comparison groups are lower than the national average. The 2010 Infant Feeding Survey (McAndrews et al, 2012) reported 81 per cent of mothers breastfeeding at birth, 71 per cent exclusively.

In terms of the length of time mothers reported breastfeeding their babies, the picture is mixed. Mothers in ABS areas were more likely than those in the matched comparison group to have breastfed for at least a month (55 per cent compared to 49 per cent) but less likely to have breastfed beyond seven months (28 per cent compared to 34 per cent).

Table 5.1 Breastfeeding baseline profile by ABS and comparison areas

Table A3.10 in Annex 3 provides a breakdown by ABS area

	ABS children	Matched comparison children	p-value	ABS group significantly better (green) or worse (red)?
	%	%		
Breastfed at birth (exclusively or alongside formula)	67	62	0.288	
Breastfed exclusively at birth	52	48	0.549	
Breastfed plus formula	15	15		
Did not breastfeed	33	38		
Breastfed for 7 months or more	28	34	0.008*	(red)
Breastfed for 1 to 6 months	27	15		
Did not breastfeed or for less than a month	45	51		(green)
Unweighted base: parents of one-year olds	*392*	*232*		

Baseline survey

5.2.2   Weaning

Current government guidelines state that babies should not be given solid food before the age of 26 weeks. However, in the 2010 infant feeding survey (McAndrews et al, 2012), 75 per cent of mothers reported giving their babies solid food before this point. The proportions in ABS areas and the matched comparison group were even higher than this national average: 89 per cent of mothers of one-year olds in ABS areas and 78 per cent in the matched comparison group reported having given their babies solid food earlier than 26 weeks.

ABS mothers were statistically significantly more likely than comparison group mothers to have given their babies food earlier than 13 weeks (44 per cent compared to 31 per cent). This is five times the national average reported by the Infant Feeding Survey in 2010, in which nine per cent of mothers reported giving solid food to their babies before 13 weeks. ABS mothers were less likely than comparison group mothers to have waited until after 26 weeks (11 per cent compared to 22 per cent). This is reflected in the mean number of weeks at which they report giving their baby solid food (15 weeks in ABS areas and 18 weeks in the matched comparison group).

In terms of the food they reported feeding their one-year old in the previous day, mothers in ABS areas were statistically more likely than those in the matched comparison group to report giving their child fruit or vegetables (69 per cent compared to 54 per cent). There were no statistically significant differences reported in terms of consuming homemade food, or in terms of eating at least three meals.

Table 5.2 Weaning baseline profile by ABS and comparison areas

Table A3.11 in Annex 3 provides a breakdown by ABS area

	ABS children	Matched comparison children	p-value	ABS group significantly better (green) or worse (red)?
	%	%		
First solid food given				
Later than 26 weeks	11	22	0.003*	🟥
13 to 26 weeks	44	47		
Earlier than 13 weeks	44	31		
Mean (weeks)	15	18	0.002*	🟥
Ate homemade food in previous day	86	83	0.388	
Ate fruit or vegetables in previous day	69	54	0.002*	🟩
Ate three or more meals in previous day	84	84	0.954	
Unweighted base: parents of one-year olds	*392*	*232*		

Baseline survey

5.3   Diet and nutrition

Mothers of two- and three-year olds were asked about the range of food that their child had eaten in the past seven days and, in particular, in the past 24 hours. The list of food presented to them covered different 'healthy' and 'unhealthy' food types, drawn from the Children's Dietary Questionnaire. Here, we focus on two measures of health eating: consumption of fresh fruit and cooked vegetable in the past 24 hours. On both measures, the percentage of two- and three-year olds were not statistically significantly different. While there are no directly comparable national data to report here, the Health Survey for England shows that 17 per cent of five to seven-year olds eat five or more portions of fruit and vegetables per day.[25]

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[25] http://healthsurvey.hscic.gov.uk/data-visualisation/data-visualisation/explore-the-trends/fruit-vegetables.aspx?type=child

Table 5.2 Diet and nutrition baseline profile by ABS and comparison areas

Table A3.12 in Annex 3 provides a breakdown by ABS area

	ABS children	Matched comparison children	p-value	ABS group significantly better (green) or worse (red)?
	%	%		
Eaten two or more portions of fresh fruit in past 24 hours	55	62	0.102	
Eaten cooked vegetables in past 24 hours	62	65	0.451	
Unweighted base: parents of two- and three-year olds	*525*	*571*		

Baseline survey

5.4 Body Mass Index

Table 5.3 shows the proportion of three-year olds in ABS areas whose body mass index (BMI) categorises them as not overweight, overweight or obese. While eight in ten (80 per cent) of ABS three-year olds are not overweight, 14 per cent are overweight and five per cent are obese. This is not statistically significant to the comparison group. These proportions are close to the national average. In 2002/3, 77 per cent of the Millennium Cohort three-year olds were not overweight, 18 per cent were overweight and five per cent were obese.

Table 5.3 Body Mass Index baseline profile by ABS and comparison areas

Table A3.13 in Annex 3 provides a breakdown by ABS area

	ABS children	Matched comparison children	p-value	ABS group significantly better (green) or worse (red)?
	%	%		
Not overweight	80	87	0.260	
Overweight	14	8		
Obese	5	5		
Unweighted base: parents of three-year olds	*175*	*178*		

Baseline survey

6.0 Maternal outcomes: baseline profile

6.1 Introduction

Key to enhancing children's development is ensuring that mothers have the requisite mental and physical health to give their children the best start. This is therefore an integral part of ABS. This chapter provides a baseline profile of mothers of children aged one, two and three living in ABS areas in terms of their mental and physical health and of their health behaviours. Again, we compare mothers in the ABS areas with mothers in a matched comparison group. Having matched the ABS and comparison group children on a wide range of socio-demographic and background measures (see Section 1.5), any differences identified in the health profile of ABS and comparison mothers are *not* due to observed differences in their socio-demographic profile.

This section reports on:

- Mothers' scores on the Edinburgh Postnatal Depression Scale (EPDS)
- Mothers' scores on the EQ5D-5L measure of health status;
- Mothers' smoking, drinking and drug behaviours at the time of interview and during pregnancy.

Overall, ABS and matched comparison mothers appear well matched. The only statistically significant differences are in mothers' reported levels of depression or anxiety (better in ABS areas) and drinking behaviours (worse in ABS areas).

There are no directly comparable no national profile data on which to draw.

The EPDS and EQ5D-5L scales are included in Annex 1.

6.2 Edinburgh Postnatal Depression Scale (EPDS)

The EPDS is a 10-item scale designed to identify postnatal depression (Cox et al, 1997). Each question asks about how the mother has felt in the past week, with a range of negative and positive feelings. For each item, a mother scores how she has been feeling on four-point scale from 0 to 3, where a negative feeling scores more highly than a positive one, providing a summed score of 0 (no depression) to 30 (high depression). A score of 13 or more identifies a mother as at risk of depression. Although we have no national EPDS data against which to compare, this is in line with a range of data suggesting that around 13 per cent of women experience post-natal depression (O'Hara et al (1996).

As shown in Table 6.1, there are no statistically significant differences in either the mean scores of mothers in the ABS and matched comparison groups or the risk of depression.

Table 6.1 Edinburgh Postnatal Depression Scale (EPDS) baseline profile by ABS and comparison areas

Table A3.14 in Annex 3 provides a breakdown by ABS area

	ABS mothers	Matched comparison mothers	p-value	ABS group significantly better (green) or worse (red)?
	%	%		
At risk of depression (score 13+)	13	17	0.115	
Overall EPDS score (higher score denotes higher depression score)	5.97 (sd 5.55)	5.92 (sd 5.99)	0.898	
Unweighted base: all mothers answering the self-completion questionnaire[26]	*836*	*706*		

Baseline survey

6.3 EQ5D-5L Health status

The EQ5D-5L is a standardised measure of health status. It comprises five questions, each of which asks about a different aspect of someone's health, as shown in Table 6.2. Focusing on how they feel today, people are asked to use a five-point scale to rate themselves as having no problems or issues (1) to it being debilitating (5). As well as reporting on the percentage of mothers with any problems (codes 2 to 5) regarding each health element, we report on the mean of an overall EQ5D score based on the mean scores across all five health elements adjusted to take into account the value that the public places on each health attribute (Devlin et al., 2017).

Mothers in ABS areas were less likely to report anxiety or depression than mothers in the matched comparison group (23 per cent compared to 29 per cent), achieving a better EQ5D score overall.

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[26] Excluding those with one or more missing values on the scale.

Table 6.2 EQ5D-5L health status baseline profile by ABS and comparison areas

Table A3.15 in Annex 3 provides a breakdown by ABS area

	ABS mothers	Matched comparison mothers	p-value	ABS group significantly better (green) or worse (red)?
	%	%		
Mobility problems	5	8	0.078	
Self-care problems	2	3	0.101	
Problems doing usual activities	5	7	0.097	
Pain or discomfort	22	24	0.423	
Anxiety or depression	23	29	0.037*	🟩
Mean EQ5D-5L score (lower score denotes fewer problems)	0.94 (sd 0.11)	0.93 (sd 0.13)	0.034*	🟩
Unweighted base: all mothers	*917*	*803*		

Baseline survey

6.4 Alcohol, smoking cigarettes and drug use

Mothers were asked about alcohol consumption, smoking and drugs both at the time of interview and during pregnancy. While very few mothers reported currently drinking alcohol every day or several days a week, the propensity to do so was significantly higher among mothers in ABS areas (four per cent compared to two per cent in the matched comparison group). (Nationally, three per cent of mothers drink five or more times per week, (ONS 2017)[27].) Conversely, ABS mothers were significantly less likely to take drugs (three per cent currently did so compared to seven per cent in the matched comparison group). While the proportion of ABS and comparison group mothers currently smoking is higher than the national average (16 per cent of parents living with dependent children smoke (ONS 2016[28])), there were no significant differences between mothers in ABS and the matched comparison group.

Likewise, there were no significant differences in the behaviours of ABS and comparison group mothers during pregnancy. The percentages drinking alcohol in pregnancy were lower than the national average, with the Infant Feeding Survey reporting 40 per cent of mothers drinking some alcohol during pregnancy (but only three per cent drinking an average of two or more units per week). The national figures on smoking during pregnancy are not directly comparable with the ABS survey questions: 26 per cent of mothers smoked before or during pregnancy; and 12 per cent smoked throughout pregnancy.

[27]https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/drugusealcoholandsmoking/datasets/adultdrinkinghabitsinengland

[28]Figures include both mothers and fathers:
https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/datasets/adultsmokinghabitsinengland

Table 6.3 Alcohol, smoking and drug-taking baseline profile by ABS and comparison areas

Table A3.16 in Annex 3 provides a breakdown by ABS area

	ABS mothers	Matched comparison mothers	p-value	ABS group significantly better (green) or worse (red)?
	%	%		
Drinks alcohol every or several days a week	4	2	0.037**	
Ever smokes	29	30	0.743	
Ever takes drugs	3	7	0.002**	
Unweighted base: all parents answering self-completion	*882*	*747*		
Ever drank alcohol in pregnancy	9	7	0.394	
Ever smoked in pregnancy	16	20	0.317	
Ever took drugs in pregnancy	3	4	0.595	
Unweighted base: parents of one-year olds answering self-completion	*383*	*225*		

Baseline survey

7.0 Key findings and concluding comments

Compared to the national profile of families with children aged three and under, children and their families living in ABS areas are significantly more deprived across a range of socio-demographic measures. Of particular note, relative to the national average, ABS mothers are:

- Younger (19 per cent aged 16-25 compared to 13 per cent for all England);
- More likely to be Asian or Black (19 per cent Asian and 14 per cent Black, compared to nine per cent and four per cent for all England). This is largely due to the ethnic composition in Bradford and Lambeth;
- More likely to be lone parents (35 per cent compared to 18 per cent);
- More likely to have no formal qualifications (19 per cent compared to 11 per cent) and less likely to have a degree (19 per cent compared to 36 per cent);
- Less likely to be an owner-occupier (26 per cent compared to 50 per cent, although note the comment in the paragraph above);
- Less likely to be in work (42 per cent compared to 59 per cent); but
- Less likely to report having a long-standing illness or disability (five per cent compared to 20 per cent);
- Twice as likely to have four or more children (15 per cent compared to eight per cent).

In turn, for the few outcomes where national data are available, ABS families' (pre-ABS) baseline outcomes appear to be worse than the national average:

- ABS children are more likely than the national average to be at risk of developing mental health issues at age three, according to the SDQ *(outcome domain: social and emotional development)*;
- ABS mothers are less likely than the national average to breastfeed their babies *(outcome domain: diet and nutrition)*;
- ABS mothers are more likely than average to wean their babies earlier than national guidelines *(outcome domain: diet and nutrition)*;
- ABS mothers are more likely than the national average to smoke.

However, three-year olds in ABS areas are no more or less likely than average to be overweight (*outcome domain: diet and nutrition*).

The ABS families are well-matched to their comparison group counterparts in terms of their baseline outcomes, with relatively few statistically significant differences in the baseline starting positions of children and families in the ABS and matched comparison groups. However, when there *are* significant baseline differences, ABS families tend to be worse than the matched comparison group. The outcome domain where there is greatest disparity in the baseline outcomes of ABS and comparison area children is in their social and emotional development. In summary:

- **Social and emotional development**: ABS children appear to be behind their comparison group counterparts in terms of their social and emotional development, with statistically significant differences at ages one and three.
- **Communication, speech and language development**: ABS and matched comparison children appear to be at very similar levels of speech and language development. The only statistically significant difference between the two groups of children was at age three, where children's home learning environment was worse for ABS than for comparison group children.

- **Diet and nutrition**: ABS and matched comparison mothers appear to be relatively similar in terms of breastfeeding practices, but ABS mothers appear to wean their children earlier than mothers in the comparison group and to give their one-year olds fruit or vegetables.
- And in relation to maternal health, ABS and matched comparison mothers appear well matched. The only statistically significant differences are in mothers' reported levels of depression or anxiety (better in ABS areas) and drinking behaviours (worse in ABS areas).

The baseline differences identified in this report will be used in the final assessment of impact once the cohort study is complete. That analysis will take into account our finding that, on some outcomes, ABS areas start with slightly worse outcomes than are seen in similar families from comparison areas. On these outcomes, for us to conclude that ABS has a positive impact we will need to find, at least, that cohort families have caught up with matched comparison families, but preferably are ahead. The default analysis method will be matched difference-in-differences. That is, differences in outcomes between ABS and comparison areas at baseline will be subtracted from the differences in outcomes between ABS and comparison areas from the cohort study, *after* controlling for any profile differences using propensity score matching (as we have done in this report.

Annex 1: Outcome measures

Brief Infant Toddler Social and Emotional Assessment (asked at age one)

This next set of statements also describe things that <name of reference child> may or may not do. Many statements describe normal feelings and behaviours, but some describe feelings and behaviours that may be problems. Please do your best to respond to every item honestly.

Please select the response that describes <name of reference child>'s behaviour in the LAST MONTH.

1. Not true/rarely
2. Somewhat true/sometimes
3. Very true/often
4. Prefer not to say
5. Inappropriate to continue self-completion section

Note, this is not the order in which the items were asked: they have been reordered into the five sub-scales. The original order is denoted by the question numbering.

Competence scale
BT1. Shows pleasure when he or she succeeds (for example, claps for self).
BT5. Follows rules.
BT10. Looks for you (or other parent) when upset.
BT13. Looks right at you when you say his or her name.
BT15. Is affectionate with loved ones.
BT19. Plays well with other children (not including brother/sister).
BT20. Can pay attention for a long time (other than when watching TV).
BT22. Tries to help when someone is hurt (for example, gives a toy).
BT25. Imitates playful sounds when you ask him or her to.
BT29. Points to show you something far away.
BT31. Hugs or feeds dolls or stuffed animals.

Problems scale
BT2. Gets hurt so often that you can't take your eyes off him or her.
BT3. Seems nervous, tense or fearful.
BT4. Is restless and can't sit still.
BT6. Wakes up at night and needs help to fall asleep again.
BT7. Cries or has a tantrum until he or she is exhausted.
BT8. Is afraid of certain places, animals or things.
BT9. Has less fun than other children.
BT11. Cries or hangs onto you when you try to leave.
BT12. Worries a lot or is very serious.
BT14. Does not react when hurt.

BT16. Won't touch some objects because of how they feel.
BT17. Has trouble falling asleep or staying asleep.
BT18. Runs away in public places.
BT21. Has trouble adjusting to changes.
BT23. Often gets very upset.
BT24. Gags or chokes on food.
BT26. Refuses to eat.
BT27. Hits, shoves, kicks, or bites children (not including brother/sister).
BT28. Is destructive. Breaks or ruins things on purpose.
BT30. Hits, bites or kicks you (or other parent).
BT32. Seems very unhappy, sad, depressed, or withdrawn.
BT33. Purposely tries to hurt you (or other parent).
BT34. When upset, gets very still, freezes, or doesn't move.

The following statements describe feelings and behaviours that can be problems for young children. Some of the descriptions may be a bit hard to understand, especially if you have not seen the behaviour in a child. **Please do your best to respond to all statements**.

BT35. Puts things in a special order over and over and gets upset if he or she is interrupted.
BT36. Repeats the same action or phrase over and over without enjoyment.
BT37. Repeats a particular movement over and over (like rocking, spinning).
BT38. Spaces out. Is totally unaware of what's happening around him or her.
BT39. Does not make eye contact.
BT40. Avoids physical contact.
BT41. Hurts self on purpose (for example, bangs his or her head).
BT42. Eats or drinks things that are not edible (like paper or paint).

Adaptive Social Behaviour Inventory (asked at age two)

This next set of statements also describe things that <name of reference child> may or may not do. Many statements describe normal feelings and behaviours, but some describe feelings and behaviours that may be problems. Please do your best to respond to every item honestly.

For each question please select the response that best describes how often <name of reference child> does this.

1. Rarely or never
2. Sometimes
3. Almost always
4. Prefer not to say
5. Inappropriate to continue self-completion section

Note, this is not the order in which the items were asked: they have been reordered into the five sub-scales. The original order is denoted by the question numbering.

Prosocial
AS1. Understands others' feelings, like when they are happy, sad or mad.
AS2. Is helpful to other children.
AS7. Is sympathetic toward other children's distress, tries to comfort others when they are upset.
AS11. Can easily get other children to pay attention to him/her.
AS12. Says nice or friendly things to others, or is friendly towards others.
AS13. Will join a group of children playing.
AS14. In social activities, tends to just watch others. (REVERSE CODED IN THE SCALE CONSTRUCTION)
AS17. Asks or wants to go play with other children.
AS19. Plays games and talks with other children

Competence
AS3. Is obedient and compliant.
AS5. Follows rules in games.
AS8. Waits his/her turn in games or other activities.
AS10. Co-operates with your requests.
AS15. Follows household or pre-school centre rules.
AS18. Is calm and easy-going
AS20. Shares toys or possessions

Confidence
AS9. Is open and direct about what he/she wants.
AS22. Is confident with other people
AS24. Tends to be proud of things she/he does

AS27. Is interested in many and different things
AS30. Enjoys talking with you

Antisocial
AS21. Teases other children, calls them names
AS23. Prevents other children from carrying out routines
AS26. Bullies other children
AS29. Is bossy, needs to have his/her way

Anxiety
AS6. Gets upset when you don't pay enough attention.

Not included in the five sub-scales
AS4. When you give him/her an idea for playing, he/she frowns, shrugs shoulders, pouts or stamps foot.
AS16. Says "please" and "thank you" when reminded.
AS25. Accepts changes without fighting against them or becoming upset
AS28. Is worried about not getting enough (where enough might include attention access to toys, food/drink etc)

Toddler Home Learning Environment (asked at ages one and two)

I'm now going to talk to you about some of the things parents might do with their children. We know that some children do these activities in nursery or pre-school, but we are interested in what you as a parent, or people in your household, do with <name of reference child>. Please do not worry if you have not done some of these things with <name of reference child> yet - we are just interested in what you or members of your household are currently doing.

THLE1. How often does someone at home take <name of reference child> out of the house, for example visiting family or friends, or going to the park?

0.   A - Very rarely
1.   B - Once a week
2.   C - Twice a week
3.   D - Three times a week
4.   E - Four to six times a week
5.   F - Everyday
6.   G - More than once a day

THLE2. How often does someone at home draw <name of reference child>'s attention to the names of things during their day-to-day activities?

THLE3. How often does someone use blocks or shape sorting toys with <name of reference child>?

Asked at age two only

THLE4. How often does someone at home talk about, or try to teach <name of reference child> the names of colours and shapes?

THLE5 How often does someone at home sing songs or nursery rhymes to or with <name of reference child>?

0.   A - Never/ not yet
1.   B - Have done this once or twice
2.   C - Less than once a week
3.   D - Once a week
4.   E - Several times a week (e.g. about 3 times a week)
5.   F - Every day
6.   G - More than once a day

THLE13. How much time does <name of reference child> spend watching TV or DVDs with you at home?

THLE14. How much time does <name of reference child> spend watching TV or DVDs on their own, whilst you are busy doing other things at home?

0.   A - None
1.   B - Less than 30 minutes per day
2.   C - 30 minutes –1 hour per day
3.   D - 1-2 hours per day
4.   E - 2-3 hours per day
5.   F - 3-4 hours per day

6.   G - More than 4 hours per day

THLE15. How often does <name of reference child> get a chance to play in a messy way, for example using play dough, paints, or sand?

THLE16. Although <name of reference child> is very young, some children do enjoy being read to or handling books designed for babies. How often does someone at home read to (child)?

0.   A - Never/ not yet
1.   B - Have done this once or twice
2.   C - Less than once a week
3.   D - Once a week
4.   E - Several times a week (e.g. about 3 times a week)
5.   F - Every day
6.   G - More than once a day

THLE17. How many books written especially for babies or toddlers does <name of reference child> have?

0.   A - No books
1.   B - 1-2 books
2.   C - 3-4 books
3.   D - 5-10 books
4.   E - 11-15 books
5.   F - 16-20 books
6.   G - 21 or more books

Home Short Form (asked at ages one and two)

THLE18. About how many, if any, soft, cuddly or role-playing toys (like a doll) does <name of reference child> have? These may be shared with sister or brother.

THLE19. About how many, if any, push or pull toys does <name of reference child> have? These may be shared with a sister or brother.

0.   A - None
1.   B - 1-2
2.   C - 3-4
3.   D - 5-10
4.   E - 11-15
5.   F - 16-20
6.   G - 21 or more

THLE20. About how often do you take <name of reference child> to a food shop or supermarket?

0   A - Hardly ever
0   B - I prefer to go alone
2   C - Once a month
4   D - Once a week
6   E - Twice a week or more

THLE21. Some parents spend time teaching their children new skills while other parents believe children learn best on their own. Which most closely describes your attitude?

6.   A - Parents should <u>always spend time teaching</u> their children
4.   B - Parents should <u>usually spend time teaching</u> their children
2.   C - Parents should <u>usually allow</u> their children to learn on their own
0.   D - Parents should <u>always allow</u> their children to learn on their own

THLE22. Children seem to demand attention when their parents are busy, doing housework, for example. How often do you talk to <name of reference child> while you are working?

6.   A - Always talk to child when I'm working
4.   B - Often talk to child when I'm working
3.   C - Sometimes talk to child when I'm working
1.   D - Rarely talk to child when I'm working
0.   E - Never talk to child when I'm working

Home Learning Environment (asked at age three)

THLE6. How does someone at home read to <name of reference child>?

0.   A - Never
1.   B - Occasionally or less than once a week
2.   C - Once a week
3.   D - Several times a week (recode to 4)
4.   E - Once a day (recode to 7)
5.   F - More than once a day (recode to 7)

THLE7. How often does someone at home take <name of reference child> to the library?

0.   A - Never
1.   B - On special occasions (recode to 3)
2.   C - Once a month (recode to 5)
3.   D - Once a fortnight (recode to 6)
4.   E - Once a week (recode to 7)

THLE8. How often does <name of reference child> play with letters at home?

THLE9. How often does someone at home help <name of reference child> to learn the ABC or the alphabet?

THLE10. How often does someone at home help <name of reference child> to learn numbers or counting?

THLE11. How often does someone help <name of reference child> to learn songs, poems or nursery rhymes?

THLE12 How often does <name of reference child> paint or draw at home?

0.   A - Never
1.   B - Occasionally or less than once a week
2.   C - 1 or 2 days a week
3.   D - 3 times a week
4.   E - 4 times a week
5.   F - 5 times a week
6.   G - 6 times a week
7.   H - 7 times a week / constantly

Sure Start Language Measure (asked at age two)

All children develop at different rates. I'd like to ask you some questions about the words that <name of reference child> may or may not have started saying yet.

SSL1. Children can understand words before they start to speak. We are interested in the words your child can SAY. This list does not have all the possible words children use, just some of those words. I'm going to read out a list of words and for each one please tell me if <name of reference child> can say this word. If s/he says the word differently, for example they say 'tar' instead of 'car', then say yes, they *can* say this word.
INTERVIEWER READ FULL LIST AND CODE ALL RESPONDENT SAYS HER CHILD CAN SAY

1. Mummy/ mum
2. Bye /bye bye
3. No
4. Ball
5. Juice
6. Ouch
7. Cat
8. Thank you
9. Cold
10. Hug / cuddle
11. Aeroplane
12. Car
13. Book
14. Milk
15. Hat
16. Shoe
17. Leg
18. Pillow
19. Rubbish
20. Plate
21. Towel
22. Bed
23. Settee /sofa
24. School
25. Friend
26. Person
27. Hello / hi
28. Shopping
29. Carry
30. Finish
31. Fit
32. Like
33. Rip /tear
34. Shake
35. Think
36. Gentle
37. Fast
38. Happy

39. Last
40. Tiny
41. Wet
42. After
43. Day
44. This
45. Our
46. Where
47. All
48. Much
49. Need to
50. If

SSL7. Has <name of reference child> started to put words together yet, such as 'more juice' or 'there doggie'?

1. A - Often
2. B - Sometimes
3. C - Not at all

EQ5D-5L

I am now going to ask you some simple questions about your health TODAY. Please remember that there are no right or wrong answers. Each question has a choice of five answers. Please tell me which one answer best describes your health TODAY.

EQ1. First I'd like to ask you about mobility. Would you say that you have:
IF NECESSARY SAY: Please read out the letter that applies

1. A - No problems in walking about?
2. B- Slight problems in walking about?
3. C - Moderate problems in walking about?
4. D - Severe problems in walking about?
5. E - You are unable to walk about?

EQ2. Next I'd like to ask you about self-care. Would you say that you have:
IF NECESSARY SAY: Please read out the letter that applies

1. A - No problems washing or dressing yourself?
2. B - Slight problems washing or dressing yourself?
3. C - Moderate problems washing or dressing yourself?
4. D - Severe problems washing or dressing yourself?
5. E - You are unable to wash or dress yourself?

EQ3. Next I'd like to ask you about usual activities, for example work, study, housework, family or leisure activities. Would you say that you have:
IF NECESSARY SAY: Please read out the letter that applies

1. A - No problems doing your usual activities?
2. B - Slight problems doing your usual activities?
3. C - Moderate problems doing your usual activities?
4. D - Severe problems doing your usual activities?
5. E - You are unable to do your usual activities?

EQ4. Next I'd like to ask you about pain or discomfort. Would you say that you have:
IF NECESSARY SAY: Please read out the letter that applies

1. A - No pain or discomfort?
2. B - Slight pain or discomfort?
3. C - Moderate pain or discomfort?
4. D - Severe pain or discomfort?
5. E - Extreme pain or discomfort?

EQ5. Finally, I'd like to ask you about anxiety or depression. Would you say that you are:
IF NECESSARY SAY: Please read out the letter that applies

1. A - Not anxious or depressed?
2. B - Slightly anxious or depressed?
3. C - Moderately anxious or depressed?
4. D - Severely anxious or depressed?
5. E - Extremely anxious or depressed?

Edinburgh Postnatal Depression Scale

This set of questions asks about how **you** have felt during the past week. For each question please choose just one statement that best describes how you have felt during the past week.

EP1. During the past week I have been able to laugh and see the funny side of things…

1. As much as I always could
2. Not quite so much now
3. Definitely not so much now
4. Not at all
5. Prefer not to say

EP2. During the past week I have looked forward with enjoyment to things…

1. As much as I ever did
2. Rather less than I used to
3. Definitely less than I used to
4. Hardly at all
5. Prefer not to say

EP3. During the past week I have blamed myself unnecessarily when things went wrong…

1. Yes, most of the time
2. Yes, some of the time
3. Not very often
4. No, never
5. Prefer not to say

EP4. During the past week I have been anxious or worried for no good reason…

1. No, not at all
2. Hardly ever
3. Yes, sometimes
4. Yes, very often
5. Prefer not to say

EP5. During the past week I have felt scared or panicky for no very good reason…

1. Yes, quite a lot
2. Yes, sometimes
3. No, not much
4. No, not at all
5. Prefer not to say

EP6. During the past week things have been getting on top of me…

1. Yes, most of the time I haven't been able to cope at all
2. Yes, sometimes I haven't been coping as well as usual
3. No, most of the time I have coped quite well
4. No, I have been coping as well as ever
5. Prefer not to say

EP7. During the past week I have been so unhappy that I have had difficulty sleeping…

1. Yes, most of the time
2. Yes, sometimes

3. Not very often
4. No, not at all
5. Prefer not to say

EP8. During the past week I have felt sad or miserable…

1. Yes, most of the time
2. Yes, quite often
3. Not very often
4. No, not at all
5. Prefer not to say

EP9. During the past week I have been so unhappy that I have been crying…

1. Yes, most of the time
2. Yes, quite often
3. Only occasionally
4. No, never
5. Prefer not to say

EP10. During the past week the thought of harming myself has occurred to me…

1. Yes, quite often
2. Sometimes
3. Hardly ever
4. Never
5. Prefer not to say

Annex 2: Matching of the ABS and comparison area survey samples

The two groups of survey respondents, ABS area mothers and comparison area mothers, have been matched to control for any observable profile differences between the two groups. The matching method used was 'inverse propensity score weighting', the main steps of which were:

- The probability (or propensity (p)) of an individual being in the ABS group (rather than the comparison group) was estimated from a logistic regression model of the data. The binary outcome variable in the model is the group (1=ABS; 0=comparison), and the predictors are all the variables for which matching is desired.
- Each member of the comparison sample was then weighted by a factor equal to p/(1-p). This generates a comparison sample with the same distribution of propensity scores as the ABS sample.
- Extreme weights were trimmed to avoid excessive variance and standard error inflation
- 29.

The matching was undertaken separately for each of the three age-groups of children. Separate matching was not done per ABS area. Instead 'area group' was included as a matching variable in line with all other matching variables (where, for example, group 1 is Blackpool and its three comparison areas, and group 2 is Bradford and its three comparison areas, and so on).

The matching variables included in the propensity score models were:

- Personal characteristics of mother: age; ethnic group; whether a single parent; qualifications; religion; whether actively religious;
- Characteristics of reference child: age; gender; whether main language used with child is English
- Household characteristics: number of children; whether any teenagers; tenure;
- Economic circumstances: employment status before pregnancy; summary of work history; whether in receipt of income related benefits; household income; whether managing financially;
- Partner characteristics/economic circumstances (where applicable): ethnic group; summary of work history;
- Health: whether mother has learning difficulties, a long-standing illness or disability; whether reference child has learning difficulties, a long-standing illness or disability; whether father has learning difficulties, a long-standing illness or disability; whether mother on disability-related benefits;
- Personal circumstances and history of mother: frequency of contact between reference child and grandparents; whether grandparents help financially; whether reference child has regular contact with biological father; whether the mother experience family break-up as a child; whether the mother experienced, or witnessed, abuse within the family as a child;
- Area group.

If the propensity score matching works well the profile of the ABS and comparison groups should be very similar. The table below show the profiles of the samples before and after matching. The matching is judged to have been successful if the first and data final columns are very close (which is the case here): after

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[29] Weights below the second, or above, the 98th percentile per age-group were trimmed.

matching there are no statistically significant differences between the two groups on any of the matching variables.

Note that the second data column (comparison areas before matching) shows the profile of the comparison areas in the raw survey data. The set of three comparison areas for each ABS area have each been set (using weights) to 20% for this profile.

Table A2.1 ABS and comparison areas before and after matching

	ABS areas	Comparison areas (before matching)	Matched comparison sample
	%	%	%
AREA GROUP (set to 20% per area):			
Blackpool	20	20	19
Bradford	20	20	20
Lambeth	20	20	22
Nottingham	20	20	20
Southend	20	20	19
PERSONAL CHARACTERISTICS:			
Age:			
16-25	19	19	21
26-34/missing	55	53	52
35+	26	27	27
Ethnic group:			
White British	53	60	56
White other	9	11	10
Mixed	4	3	3
Asian/other	20	18	17
Black	14	8	14
Religion:			
No religion	43	46	41
Christian	38	33	39
Muslim/other	20	21	19
Frequency of church attendance:			
Attend at least once every six months	27	29	29
Less frequent or never	73	71	71
Lone parent:			
Yes	35	28	34
No	65	72	66
Formal qualifications:			
No qualifications	19	15	17
GCSE/missing	19	21	18
A-level, vocational qualifications, diploma, other	44	42	44

	ABS areas	Comparison areas (before matching)	Matched comparison sample
Degree	19	22	22
CHARACTERISTICS OF REFERENCE CHILD:			
Gender:			
Boy	52	52	50
Girl	48	48	50
Age of reference child:			
1	41	29	40
2	34	45	33
3	26	26	27
Main language used with reference child:			
English	84	84	84
Other	16	16	16
HOUSEHOLD CHARACTERISTICS:			
Number of children:			
1	37	36	36
2	33	33	32
3	16	19	19
4 or more	14	12	13
Any teenagers:			
Yes	16	15	16
No	84	85	84
Tenure:			
Owner occupier	25	33	27
Social renter	36	38	36
Private renter	29	24	29
Other	9	5	8
ECONOMIC CIRCUMSTANCES/BENEFITS:			
Employment status before pregnancy:			
Unemployed	16	15	16
Part-time work	22	23	20
Full-time work	36	35	35
Other	26	26	30
Summary of work history:			
Never worked	10	10	10
Mostly out of work/missing	22	18	22

	ABS areas	Comparison areas (before matching)	Matched comparison sample
Mix	18	14	17
Mostly working	50	57	50
In receipt of income-related benefits:			
No	59	64	60
Yes	41	36	40
Household income below median for the sample:			
No	53	60	54
Yes	47	40	48
Have financial difficulties:			
Yes	11	10	10
No	89	90	90
PARTNER DETAILS:			
Ethnic group:			
No partner	35	27	34
White British	33	41	34
White other	6	10	7
Mixed/Asian/Black/Other	27	22	25
Summary of work history:			
No partner	35	27	34
Periods out of work/missing	10	9	10
Mostly working	55	63	56
HEALTH:			
Mother has learning difficulties, a long-standing illness or disability	6	7	7
Reference child has learning difficulties, a long-standing illness or disability	4	3	3
Father has learning difficulties, a long-standing illness or disability	8	5	7
In receipt of disability-related benefits:			
No	90	90	90
Yes	10	10	10
PERSONAL CIRCUMSTANCES AND HISTORY OF MOTHER:			
Frequency of contact between reference child and grandparents:			
Weekly	72	73	71

	ABS areas	Comparison areas (before matching)	Matched comparison sample

	ABS areas	Comparison areas (before matching)	Matched comparison sample
Monthly	7	7	6
Less frequently but some contact	15	14	15
No contact	7	5	7
Grandparents help financially:			
No	29	27	27
Yes	71	73	73
Reference child has regular contact with biological father:			
No	9	6	8
Yes	91	94	92
Mother experienced family break-down as a child:			
No	76	77	76
Yes	24	23	24
Mother experienced, or witnessed, abuse within the family as a child:			
No	89	89	89
Yes	11	11	11
Unweighted base	*917*	*803*	*803*

Baseline Survey

	ABS areas	Comparison areas (before matching)	Matched comparison sample

Annex 3: ABS area tables

This Annex breaks down the ABS data into each of the five ABS areas.

Firstly (Table A3.1), it provides the socio-demographic profile of mothers in each of the ABS areas, alongside the 'all ABS mothers'[1] figures used in the main report (penultimate column) and the national profile of mothers of children aged up to three taken from the UKHLS (final column). The latter two columns appear in Table 2.1 of the main report.

Tables A3.2 to A3.16 provide the baseline outcomes of mothers and children in each of the ABS areas, alongside the 'all ABS children/mothers' figures used in the main report (penultimate column) and their counterparts in the matched comparison group (final column). The latter two columns replicate the data included in Chapters 3 to 6.

Readers must be mindful of the small sample sizes in some ABS areas, especially when looking at data from a single age group. Seemingly large differences between areas could be due to small numbers or – in relation to the outcomes - due to differences in the socio-demographic profile of different ABS areas. We have not tested for statistical significances across ABS areas but, rather, include the full data here for interest by different ABS areas.

That said, we pick out the following as being of note:

- In terms of mothers' socio-demographic profiles, the most notable differences are in ethnicity (and, in association, religion and speaking English at home); lone parenthood; and tenure. While the majority of Blackpool's, Southend's and Nottingham's mothers were white, the mothers interviewed in Bradford were predominantly Asian and half the mothers in Lambeth were Black. Close to half of mothers in Lambeth and Nottingham were lone parents, compared to one in five in Bradford. Lambeth had a very high proportion of mothers in social renting, followed by Nottingham, while owner occupation was more common among the mothers in Bradford and Southend.
- The vast majority of mothers in Lambeth breastfed their children at birth, compared to around half of mothers in Blackpool and Nottingham. However, they were also, on average, giving their children solid food earlier than other areas: along with Nottingham, the mean number of weeks at which they gave solid food was fewer than other areas.
- More mothers in Blackpool and Nottingham smoked, with the lowest proportions in Lambeth and Bradford.

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[1] The 'all ABS' data are weighted to give equal weight to each of the five ABS areas (that is, the data area adjusted to take account of the varying sample sizes in each area).

Table A3.1 Profile of mothers in the ABS baseline survey, relative to all England profile (UKHLS)

	Blackpool	Bradford	Lambeth	Nottingham	Southend	Mothers in the ABS baseline survey	Mothers of 0-3 year olds – England
Personal characteristics:	%	%	%	%	%	%	%
Age:							
16-25	25	14	15	26	15	19	13
26-34	51	61	49	53	57	54	48
35+	24	25	35	21	27	27	40
Ethnic group:							
White British	89	18	16	61	83	53	79
White other	10	8	15	12	3	9	6
Mixed	0	3	7	8	1	4	1
Asian	1	70	6	9	9	19	9
Black	0	2	52	10	4	14	4
Other	1	1	5	1	0	1	1
Religion:							
No religion	57	15	20	63	56	42	-
Christian	42	13	68	28	39	38	-
Muslim	1	72	11	8	3	19	-
Other	1	1	1	2	3	1	-
Lone parent:							
Yes	35	19	51	45	25	35	18
No	65	81	49	55	75	65	82
Formal qualifications:	%	%	%	%	%	%	%
No qualifications	17	28	13	30	8	19	11
GCSE	20	22	10	16	21	18	32

	Blackpool	Bradford	Lambeth	Nottingham	Southend	Mothers in the ABS baseline survey	Mothers of 0-3 year olds – England
A-level, vocational qualifications, diploma, other	52	33	44	45	48	44	21
Degree	11	16	33	9	23	19	36
Health:							
Mother has learning difficulties	5	0	1	3	2	2	-
Mother has long-standing illness or disability	7	4	4	3	7	5	20
Main language used with reference child:							
English	93	69	73	91	95	84	-
Other	7	31	27	9	5	16	-
Household characteristics:							
Number of children:							
1	38	24	36	30	52	36	33
2	31	34	37	32	31	33	44
3	15	20	16	20	11	17	15
4 or more	16	21	11	18	5	15	8
Tenure:	%	%	%	%	%	%	%
Owner occupier	27	40	6	16	40	26	50
Social renter	20	19	75	51	16	36	25
Private renter	45	28	9	28	36	29	24
Living with parents	6	10	10	5	8	8	-
Other	2	3	0	0	0	1	1

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	Blackpool	Bradford	Lambeth	Nottingham	Southend	Mothers in the ABS baseline survey	Mothers of 0-3 year olds – England
Economic circumstances/benefits:							
Current employment status:							
Part-time work	25	15	27	25	43	27	31
Full-time work	15	8	25	11	16	15	29
Other	60	78	48	64	41	58	41
In receipt of:							
Child benefit	97	97	87	96	91	94	84
Child tax credit	71	74	60	76	47	66	44
Working tax credit	23	42	27	34	20	29	12
Income support	24	18	15	32	15	21	12
Housing benefit	38	20	33	40	25	31	19
Universal credit	8	1	0	1	0	2	1
Carer's allowance	5	7	2	7	6	5	3
Disability living allowance	7	8	2	6	7	6	4
Employment and Support allowance	7	2	1	2	2	3	3
How managing financially:	%	%	%	%	%	%	%
Manage very well	7	9	4	11	15	9	-
Manage quite well	23	44	23	28	32	30	-
Get by alright	49	37	45	48	36	43	-
Don't manage very well	4	6	16	4	6	7	-
Have some financial difficulties	15	3	10	7	10	9	-
Are in deep financial trouble	2	1	2	2	2	2	-
Unweighted base	*114*	*317*	*97*	*249*	*140*	*917*	*1779*

Baseline Survey

Table A3.2 BITSEA baseline profile by ABS and comparison areas

	Blackpool	Bradford	Lambeth	Nottingham	Southend	ABS children	Matched Comparison children
Competence							
Mean score (higher score positive)	15.5 (sd 2.97)	14.6 (sd 3.34)	14.7 (sd 3.09)	14.8 (sd 3.95)	15.9 (sd 2.98)	15.1 (sd 3.31)	16.1 (sd 2.78)
% possible deficit/delay	15	21	24	22	10	18	9
Problems							
Mean score (higher score negative)	9.7 (sd 5.33)	10.4 (sd 6.23)	11.2 (sd 7.04)	9.8 (sd 6.07)	9.6 (sd 6.43)	10.1 (sd 6.21)	10.5 (sd 6.48)
% possible problem	25	23	29	30	28	27	27
Unweighted base: parents of one-year olds answering self-completion	*57*	*89*	*40*	*98*	*69*	*383*	*225*

Baseline survey

Table A3.3 ASBI baseline profile by ABS and comparison areas

	Blackpool	Bradford	Lambeth	Nottingham	Southend	ABS children	Matched Comparison children
Mean scores							
Sociability/empathy (higher score positive)	2.3 (sd 0.41)	2.3 (sd 0.38)	2.4 (sd 0.32)	2.4 (sd 0.35)	2.4 (sd 0.28)	2.4 (sd 0.35)	2.4 (sd 0.41)
Compliance/conformity (higher score positive)	2.2 (sd 0.45)	2.1 (sd 0.45)	2.4 (sd 0.31)	2.2 (sd 0.45)	2.3 (sd 0.34)	2.3 (sd 0.42)	2.2 (sd 0.42)
Confidence/independence (higher score positive)	2.7 (sd 0.29)	2.6 (sd 0.35)	2.7 (sd 0.23)	2.6 (sd 0.35)	2.8 (sd 0.2)	2.7 (sd 0.30)	2.7 (sd 0.38)
Anti-social (higher score negative)	1.4 (sd 0.45)	1.4 (sd 0.35)	1.4 (sd 0.27)	1.4 (sd 0.43)	1.3 (sd 0.27)	1.4 (sd 0.37)	1.4 (sd 0.28)
Anxiety (higher score negative)	1.6 (sd 0.59)	2.0 (sd 0.66)	2.1 (sd 0.52)	1.7 (sd 0.64)	2.0 (sd 0.65)	1.9 (sd 0.64)	2.0 (sd 0.69)
Unweighted base: parents of two-year olds answering self-completion	*34*	*120*	*22*	*94*	*36*	*308*	*332*

Baseline survey

Table A3.4 Strengths and Difficulties Questionnaire baseline profile by ABS and comparison areas

	Blackpool	Bradford	Lambeth	Nottingham	Southend	ABS children	Matched Comparison children
Mean scores (higher score negative, except for prosocial where higher score positive)							
Prosocial	7.8 (sd 1.92)	7.2 (sd 1.93)	7.9 (sd 1.63)	7.1 (sd 2.41)	8.1 (sd 1.82)	7.6 (sd 1.99)	8.0 (sd 1.87)
Peer relationship problems	1.5 (sd 1.52)	1.8 (sd 1.54)	1.8 (sd 1.82)	2.3 (sd 1.86)	1.8 (sd 1.3)	1.8 (sd 1.62)	1.7 (sd 1.57)
Conduct problem scale	3.2 (sd 1.65)	2.1 (sd 1.74)	2.8 (sd 1.42)	3.3 (sd 2.15)	2.9 (sd 2.05)	2.9 (sd 1.87)	2.4 (sd 1.69)
Hyperactivity and inattention	4.5 (sd 2.23)	3.6 (sd 2.08)	4.1 (sd 2.44)	4.8 (sd 2.12)	4.8 (sd 2.62)	4.4 (sd 2.33)	3.4 (sd 1.96)
Emotional symptoms	2.0 (sd 1.39)	1.2 (sd 1.54)	2.0 (sd 2.07)	1.8 (sd 1.81)	1.3 (sd 1.61)	1.7 (sd 1.71)	1.1 (sd 1.11)
SDQ scale	11.2 (sd 4.84)	8.7 (sd 5.1)	10.7 (sd 5.55)	12.2 (sd 5.81)	10.7 (sd 5.71)	10.7 (sd 5.49)	8.6 (sd 4.44)
SDQ categories	%	%	%	%	%	%	%
Close to average	80	77	66	66	72	72	88
Slightly raised	4	17	17	13	13	13	7
High	11	4	17	9	4	8	4
Very high	4	2	0	13	11	7	1
Unweighted base: parents of three-year olds answering self-completion	*19*	*80*	*12*	*46*	*29*	*191*	*190*

Baseline survey

Table A3.5 Home Learning Environment baseline profile by ABS and comparison areas

	Blackpool	Bradford	Lambeth	Nottingham	Southend	ABS children	Matched Comparison children
Mean scores (higher score positive)							
Age 1 Toddler Home Learning Environment	31.9 (sd 6.28)	28.1 (sd 6.7)	28.9 (sd 5.84)	30.3 (sd 6.03)	33.4 (sd 5.16)	30.5 (sd 6.3)	30.7 (sd 6.5)
Age 1 Toddler Home Learning Environment and Short Home Scale	53.0 (sd 7.22)	47.9 (sd 8.38)	48.3 (sd 7.93)	51.5 (sd 8.04)	54.6 (sd 6.53)	51.1 (sd 8.0)	51.6 (sd 8.0)
Unweighted base: parents of one-year olds	*59*	*108*	*49*	*104*	*72*	*392*	*232*
Age 2 Toddler Home Learning Environment	40.4 (sd 7.08)	34.1 (sd 6.84)	38.8 (sd 6.54)	38.0 (sd 7.16)	43.5 (sd 4.81)	39.0 (sd 7.2)	39.5 (sd 6.5)
Age 2 Toddler Home Learning Environment and Short Home Scale	63.4 (sd 9.41)	55 (sd 8.71)	60.2 (sd 8.36)	59.5 (sd 9.53)	66.2 (sd 6.57)	60.9 (sd 9.3)	61.2 (sd 8.8)
Unweighted base: parents of two-year olds	*33*	*124*	*33*	*95*	*37*	*325*	*363*
Age 3 Home Learning Environment (score 0 to 49)	28.2 (sd 8.3)	26.9 (sd 11.04)	26.6 (sd 12.35)	26.7 (sd 9.56)	32.2 (sd 10.4)	28.1 (sd 10.6)	30.8 (sd 9.1)
Unweighted base: parents of three-year olds	*21*	*85*	*15*	*48*	*31*	*200*	*208*

Baseline survey

Table A3.6 Take up of early years education baseline profile by ABS and comparison areas

	Blackpool	Bradford	Lambeth	Nottingham	Southend	ABS children	Matched Comparison children
	%	%	%	%	%	%	%
Age 2							
Eligible and uses	6	6	12	20	14	12	9
Eligible and does not use	35	26	28	18	14	24	18
Not eligible	58	68	60	62	72	64	73
Unweighted base: parents of two-year olds	34	124	33	97	37	*325*	*363*
Age 3							
Eligible and uses	80	48	34	62	42	53	52
Eligible and does not use	10	24	26	8	16	17	19
Not eligible	10	28	40	30	42	30	28
Unweighted base: parents of three-year olds	21	85	15	48	31	*200*	*208*

Baseline survey

Table A3.7 Sure Start Language Measure baseline profile by ABS and comparison areas

	Blackpool	Bradford	Lambeth	Nottingham	Southend	ABS children	Matched Comparison children
All two-year olds							
Mean words (higher is positive)	21.3 (sd 12.01)	19.8 (sd 12.37)	26.5 (sd 14.44)	17.3 (sd 13.3)	28.9 (sd 13.63)	22.8 (sd 13.79)	23.1 (sd 13.29)
% sometimes or often putting words together	77	61	88	80	89	79	80
All two-year olds speaking English at home							
Mean words (higher is positive)	21.2 (sd 12.18)	20.8 (sd 13.52)	28.3 (sd 14.43)	17.2 (sd 13.7)	29.3 (sd 13.71)	23.33 (sd 14.17)	24.22 (sd 13.20)
% sometimes or often putting words together	76	64	87	84	92	81	81
Unweighted base: parents of two-year olds	*34*	*123*	*33*	*97*	*37*	*325*	*363*

Baseline survey

Table A3.8 BAS naming vocabulary baseline profile by ABS and comparison areas

	Blackpool	Bradford	Lambeth	Nottingham	Southend	ABS children	Matched Comparison children
Vocabulary score (higher is positive)	48.9 (sd 25.89)	56.3 (sd 23.77)	61.5 (sd 19.89)	65.4 (sd 24.92)	72.1 (sd 16.07)	61.3 (sd 23.5)	58.2 (sd 21.3)
Unweighted base: three-year olds completing measure	*16*	*83*	*10*	*42*	*30*	*181*	*166*

Baseline survey

Table A3.9 BAS picture similarities baseline profile by ABS and comparison areas

	Blackpool	Bradford	Lambeth	Nottingham	Southend	ABS children	Matched Comparison children
Picture similarities score (higher is positive)	46.1 (sd 18.11)	42.1 (sd 18.64)	54.4 (sd 11.4)	31.2 (sd 22.19)	51.3 (sd 12.62)	44.7 (sd 18.9)	43.1 (sd 19.1)
Unweighted base: three-year olds completing measure	16	*83*	10	42	*30*	*181*	*166*

Baseline survey

Table A3.10 Breastfeeding baseline profile by ABS and comparison areas

	Blackpool	Bradford	Lambeth	Nottingham	Southend	ABS children	Matched Comparison children
	%	%	%	%	%	%	%
Breastfed at birth (exclusively or alongside formula)	51	68	92	56	69	67	62
Breastfed exclusively at birth	34	53	68	48	59	52	48
Breastfed plus formula	16	15	24	9	10	15	15
Did not breastfeed	49	32	8	43	30	33	38
Breastfed for 7 months or more	16	29	38	23	32	28	34
Breastfed for 1 to 6 months	24	22	45	19	27	27	15
Did not breastfeed or for less than a month	59	49	17	58	42	45	51
Unweighted base: parents of one-year olds	59	108	49	104	72	392	232

Baseline survey

Table A3.11 Weaning baseline profile by ABS and comparison areas

	Blackpool	Bradford	Lambeth	Nottingham	Southend	ABS children	Matched Comparison children
	%	%	%	%	%	%	%
First solid food given							
Later than 26 weeks	16	29	3	1	10	11	22
13 to 26 weeks	63	52	4	37	63	44	47
Earlier than 13 weeks	21	19	93	62	27	44	31
Mean (weeks)	19	20	7	11	18	15	18
Ate homemade food in previous day	83	75	90	91	89	86	83
Ate fruit or vegetables in previous day	63	77	77	38	87	69	54
Ate three or more meals in previous day	81	79	76	87	95	84	84
Unweighted base: parents of one-year olds	*59*	*108*	*49*	*104*	*72*	*392*	*232*

Baseline survey

Table A3.12 Diet and nutrition baseline profile by ABS and comparison areas

	Blackpool	Bradford	Lambeth	Nottingham	Southend	ABS children	Matched Comparison children
	%	%	%	%	%	%	%
Eaten two or more portions of fresh fruit in past 24 hours	57	44	50	68	57	55	62
Eaten cooked vegetables in past 24 hours	63	52	62	67	64	62	65
Unweighted base: parents of two- and three-year olds	*55*	*209*	*48*	*145*	*68*	*525*	*571*

Baseline survey

Table A3.13 BMI categories by ABS and comparison areas

	Blackpool	Bradford	Lambeth	Nottingham	Southend	Better Start areas	Comparison areas
	%	%	%	%	%	%	%
Not overweight	68	87	100	78	71	81	87
Overweight	26	11	0	13	23	14	8
Obese	5	2	0	10	7	5	5
Unweighted base: parents of three-year olds completing measure	*16*	*81*	*12*	*39*	*27*	*175*	*178*

Baseline survey

Table A3.14 Edinburgh Postnatal Depression Scale (EPDS) baseline profile by ABS and comparison areas

	Blackpool	Bradford	Lambeth	Nottingham	Southend	ABS children	Matched Comparison children
	%	%	%	%	%	%	%
At risk of depression (score 13+)	16	8	14	16	11	13	17
Overall EPDS score (higher score denotes higher depression score)	7.2 (sd 5.83)	5.0 (sd 5.14)	6.0 (sd 5.67)	6.4 (sd 5.72)	5.2 (sd 5.15)	5.97 (sd 5.55)	5.92 (sd 5.99)
Unweighted base: all mothers answering the self-completion questionnaire[31]	*109*	*292*	*71*	*228*	*136*	*836*	*706*

Baseline survey

[31] Excluding those with one or more missing values on the scale.

Table A3.15 EQ5D-5L health status baseline profile by ABS and comparison areas

	Blackpool	Bradford	Lambeth	Nottingham	Southend	ABS children	Matched Comparison children
	%	%	%	%	%	%	%
Mobility problems	7	5	5	4	7	5	8
Self-care problems	2	2	1	2	2	2	3
Problems doing usual activities	6	4	6	4	5	5	7
Pain or discomfort	26	22	24	16	19	22	24
Anxiety or depression	31	20	14	20	31	23	29
Mean EQ5D-5L score (lower score denotes fewer problems)	0.92 (0.13)	0.95 (0.10)	0.96 (0.09)	0.95 (0.12)	0.94 (0.11)	0.94 (0.11)	0.93 (0.13)
Unweighted base: all mothers	*114*	*317*	*97*	*249*	*140*	*917*	*803*

Baseline survey

Table A3.16 Alcohol, smoking and drug-taking baseline profile by ABS and comparison areas

	Blackpool	Bradford	Lambeth	Nottingham	Southend	ABS children	Matched Comparison children
	%	%	%	%	%	%	%
Drinks alcohol every or several days a week	5	1	10	3	4	4	2
Ever smokes	41	13	21	39	29	29	30
Ever takes drugs	4	2	5	4	1	3	7
Unweighted base: all parents answering self-completion	*112*	*307*	*74*	*241*	*136*	*882*	*747*
Ever drank alcohol in pregnancy	15	1	15	3	12	9	7
Ever smoked in pregnancy	32	5	8	19	12	16	20
Ever took drugs in pregnancy	1	1	7	3	0	3	4
Unweighted base: parents of one-year olds answering self-completion	*59*	*106*	*41*	*102*	*70*	*383*	*225*

Baseline survey

Annex 4: Baseline survey data collection

This Annex provides additional information on the baseline survey data collection carried out by Ipsos MORI.

7.1 Sampling

7.1.1 Population definition

There were three specific populations of interest in the baseline survey:

- Children aged between 11 and 13 months old: the 'Age 1' sample.
- Children aged between 23 and 25 months old: the 'Age 2' sample.
- Children aged between 35 and 37 months old: the 'Age 3' sample.

For the baseline study a sample was drawn from each of these three populations.

Each of the three samples was drawn from five local authority districts in England which were the intervention areas, and 12 local authority districts which were the comparison areas. Within both intervention and comparison areas, samples were drawn from specific wards within the local authority districts.

7.1.2 Sample frame

The Consortium used Emma's Diary as the sampling frame for the baseline survey. Emma's Diary has been used as a sampling frame for other studies, including research into pregnancy discrimination at work for the Equal Opportunities Commission and an evaluation conducted by BPSR with the NSPCC.

7.1.3 Sample design

It was important that we minimised the variation in the age of the sampled children within each of the three sample groups, as children develop rapidly at a young age. It was also important to replicate the approach in the main cohort, where children will be interviewed around their birthday. This had two implications:

- We had to sample children in a narrow age window: two months around their birthday. For example, for Age 1 sample children we did not sample children aged between 12 and 23 months old (who would be aged 1) but instead sampled children between 11 and 13 months old so they were as close to their birthday as possible.
- This approach meant that in any given sampling month the number of children available to sample was low given they had to have been born in specific months.

We issued the sample in monthly batches based on the child's expected date of birth, as provided by Emma's Diary. So, for example, the children in the sample issued in August 2016 were expected to be born in either August 2015, August 2014 or August 2013 – making the sampled child around 1, 2 or 3 years old at the time of sampling, and interview, respectively. It was expected that, nonetheless, there would be

differences in the age of the sampled child, even within each of the three sample groups, as there would be differences between the expected due date and the actual date of birth.

It was agreed that monthly samples would be issued from September 2016 until July 2017. Following a decision to extend the baseline fieldwork period, further monthly samples were issued in September 2017 and October 2017.

To minimise the variation in the age of the sampled children about whom data were collected within each of the three sample groups, fieldwork cut-offs were imposed for each monthly sample. Interviewers were given a date when interviewing could start for a sample month (to allow for the two-week opt-out period) and a deadline by which each address needed to have been fully worked (8 weeks after the start date).

7.2 Baseline pilot study

The baseline survey began with a small-scale pilot study in January 2016. This was carried out in two intervention areas: Lambeth and Southend. As with the main study, the sample was provided by Emma's Diary. A total of 58 mothers were interviewed using a mixture of Computer Assisted Personal Interviewing (CAPI) and Computer Assisted Self-Completion Interviewing (CASI). We also received 12 postal partner questionnaires, which had been left with the household.

7.3 The interview

The mother questionnaire contained both interviewer administered (CAPI) and self-completion sections (CASI). The questions asked of the mother varied depending on the age of her child (1, 2 or 3 years old). Physical measurements were also taken of the child and in households with a child aged 3 activities taken from the British Ability Scales assessment were carried out.

If the mother had a partner living in the household, interviewers placed a paper questionnaire which could be completed during the visit. If this was not possible, a freepost envelope was provided along with the questionnaire so the partner could return the questionnaire. We estimated this questionnaire took 5-10 minutes to complete.

The Consortium developed the questionnaires with subject-matter experts advising on the most appropriate outcomes per domain and the best standardised and validated measurement tools to use. Ipsos MORI advised on the questionnaire order and question wording.

7.3.1 Mother interview

Questionnaires were designed to include validated and validated measures where possible, but with some bespoke questions where necessary. There were questionnaire variations for the mother depending on the age of her child (1, 2 or 3 years old). Below is a summary of the sections included in the questionnaire.

The first sections of the questionnaire were interviewer administered and asked respondents a range of demographic questions, including the composition of their household, whether they had any disabilities, their education and work status, and about their childcare arrangements.

If the child was aged 1, mothers were also asked about gestation, birth weight and method, feeding and weaning. Mothers with children aged 2 were asked about their child's diet. Questions on the child's learning environment and behaviour were tailored depending on the age of the child.

The final section, on resource-use, covered contact a mother and her child had had with health services.

The more sensitive topics of the questionnaire were administered using a self-completion module. Mothers could refuse to answer any questions in this section if they did not feel comfortable doing so, or could at any time terminate the self-completion section prior to completion. Interviewers could also terminate the self-completion questionnaire if they deemed it inappropriate to continue. This section covered the following topics:

- Relationship with the biological father, the contact he had with the child and demographic information.
- Social support.
- Post-natal depression.
- Child behaviour (questions asked to mothers varied depending on child age).
- Alcohol, smoking and substance misuse - currently and during pregnancy.
- Social care use.
- Domestic violence.

7.3.2   British Ability Scales

As part of the interview with mothers of a child aged 3 years old, with parental consent, the child was asked to take part in two activities from the British Ability Scales II (BAS II): the Picture Similarities assessment and the Naming Vocabulary task. Picture Similarities assesses non-verbal reasoning and Naming Vocabulary assesses expressive verbal ability.

In the Picture Similarities task, the child was shown a row of four pictures and were given a card with a fifth picture to match to the picture that it best 'goes with'.

In the Naming Vocabulary activity, the child was shown a picture of an object and asked to say its name.

7.3.3   Physical measurements

During the interview, mothers were asked if they were happy for interviewers to take height and weight measurements of their child.

If verbal consent was obtained, interviewers measured the child. If the child became unwilling or distressed in any way, they stopped.

Interviewers could use two pieces of equipment to measure the height of children:

- The HM-250P Marsden Leicester Height Measure (if the child could stand unaided).
- The SECA 210 Measuring mat for babies & infants (if the child could fit on the measuring mat).

Children were weighed using Salter 9037 digital scales. The child could either stand or sit on the scales or their parent could assist them if necessary.

If the child's height or weight could not be measured, the mother's permission was sought to use their child's last recorded measurement in their NHS provided 'Red Book' and to enter this into CAPI instead, along with the date of the measurement.

7.3.4 Data linkage

During the interview respondents were asked if they consented to linking their and/or their child's records held by the Department for Education, Department for Work and Pensions and NHS Digital with their survey answers using their NHS numbers.

Interviewers gave an information leaflet to respondents to help explain what was being asked of them and to reassure them about the data linkage process. The leaflet also detailed how respondents could withdraw permission at a later date should they wish to do so.

Separate written consent was required for linking to the mother's records and for linking to the child's health records.

7.3.5 Partner questionnaire

The paper partner self-completion questionnaire asked about the mother's partner's' involvement with their child (for example, how often they looked after them, played with them, dressed them and got them ready for bed) and how close they felt to the child. It also asked about their overall health (for example, their mobility, self-care, experience of pain or anxiety).

7.4 Fieldwork

7.4.1 Advance letter and leaflet

A personalised advance letter and leaflet was sent to the person registered on the Emma's Diary database at each issued address 2-3 weeks before an interviewer made contact.

The advance letter explained the nature and aims of the study and why mothers are being invited to take part. The letter also explained that an interviewer would contact them shortly in person to discuss the study further, and to ask if they wished to take part.

This mailing also included an opt-out form that could be returned in a pre-paid envelope to request that no further contact about the study be made, rather than having to call or email and/or feeling that they had to provide any explanation. A period of two weeks was allowed for these returns to be received and processed.

7.4.2 Selection procedure

Interviewers first had to check that the selected child lived at the address provided by Emma's Diary. Given that child names were not available in the sample, interviewers used the estimated or actual date of birth

of the child to identify them.[32] Interviewers could only interview at the address once they confirmed that the selected child was living there.

If the selected child was one of a multiple birth on that date (i.e. twins/triplets), interviewers randomly selected one of the children by choosing the child with the name that comes first in alphabetical order.

Interviewers interviewed the biological mother of the selected child, only if they lived in the same household as the selected child and were aged 16 and above.

7.4.3 Interviewing in languages other than English

If required, interviews could be conducted in another language by a bilingual Ipsos MORI interviewer. Household interpreters were not permitted, due to the sensitive nature of many of the questions.

All interviews that were conducted in a language other than English were conducted by a qualified translator.

There were two sections within the questionnaire which were not included in interviews conducted in a foreign language: the Sure Start Language Measure (SSLM) and the British Ability Scales (BAS). Translation is not appropriate for the SSLM as it is a test of English vocabulary, and the BAS can only be conducted in English.

7.4.4 Interviewer briefings

Nine face-to-face briefings were carried out in different locations across England. In total, 66 interviewers were briefed to carry out the survey.

7.4.5 Fieldwork dates and fieldwork management

Fieldwork was conducted between 5 September 2016 and 26 November 2017 in 17 geographical areas. The Consortium agreed not to carry out fieldwork in three of the comparison areas - Derby, Southampton and East Kent, because the number of available Emma's diary records was low in these areas.

Ipsos MORI's standard quality control procedures were used. Ten per cent of the target interviews were validated, initially by telephone but then further by post if a telephone number was not obtained during the interview. The number of interviewers validated was 38, with 375 telephone validations and 88 postal validations attempted, and 171 telephone validations and 7 postal validations achieved.

For quality assurance purposes, 7 interviewer accompaniments/supervisions took place. No concerns or quality assurance issues were reported.

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[32] Emma's Diary held either the child's expected due date or their actual date of birth. Interviewers allowed +/- 4 weeks either side of the estimated date of birth.

7.4.6   Maximising response

As an incentive to participate in the interview, the mother received a £10 high street shopping voucher. There was no incentive given to the partner for completing the self-completion questionnaire. Children were offered a sticker after the physical measurements and/or the BAS activities.

Interviewers were required to make a minimum of 6 calls at each occupied address, with at least one call in the evening, at least one call at the weekend and a further call in the evening or at the weekend. Naturally, interviewers based their calling patterns on their knowledge about the best time to call given that the households contained young children.

7.4.7   Fieldwork outcomes

The table below shows the sample outcomes. There were 7,552 issued addresses in total, so 1,778 achieved interviews gives an unadjusted response rate of 24%. When the response rate is adjusted to exclude 3,329 addresses that were ineligible this gives an adjusted response rate, or co-operation rate, of 42%. The ineligible rate was therefore higher than hoped (at 42%).

Table A4.1 Sample Outcomes

Outcome	N	%
Productive outcome	**1,778**	**24**
Full interview with biological mother	1,778	24
Eligibility unknown	**122**	**2**
Unable to locate address	65	1
Unable to confirm whether selected child is living at address	57	1
Ineligible address	**3,207**	**42**
Property demolished/derelict	10	*
Property vacant/empty	161	2
Address inaccessible	24	*
Non-residential address	19	*
Biological mother has moved	1,542	20
Selected child has moved	1,057	14
Biological mother has died	1	*
Selected child has died	42	*
Child date of birth outside of 4-week window	351	5
Non-contact	**1,123**	**15**
No contact with anyone after 6+ calls	451	6
No contact with biological mother after 6+ calls	503	7
Broken appointment – no re-contact	169	2
Refusal	**1,058**	**14**
Office refusal	142	1
Refusal before screening	85	1
Proxy refusal	99	1
Refusal by biological mother	732	10
Unable to respond	**115**	**1**
Away/in hospital for fieldwork period	42	1
Ill at home during survey period	6	*
Physically or mentally unable to respond	3	*
Language difficulties	64	1
Other	**149**	**2**
Other outcome	149	2
Total in sample	**7,552**	**100**

7.4.8 Interview length

The average length of time spent in households across all ages was 55 minutes. The shortest interview took 30 minutes, and the longest interview was 129 minutes.

Table A4.2: Average Length of Interviews

	Age 1 sample	Age 2 sample	Age 3 sample
Average interview length	50 minutes	54 minutes	61 minutes

7.4.9 *Partner questionnaires*

There were 1,234 households that recorded that they had a partner living in the household. A total of 365 valid partner questionnaires were completed and returned to Ipsos MORI: 61% of all questionnaires were completed while the interviewer was in the household and given to the interviewer to return; interviewers left the questionnaire to be completed and returned at 909 eligible households, giving a response rate of 40%[33] within households that took part.

7.5 Data processing and quality checking

Thorough checks were carried out on the data exports at points in fieldwork to monitor that the survey was working correctly, as well as on the final SPSS file. We checked all the data, questions and question response options had been included, that the routing of the questionnaire was correct, and that question labels were clear and easy to understand.

A number of data edits were made. There were some cases that needed to be removed from the data; two interviews with the same address ID and a blank entry. There were some cases where interviewers had highlighted that they had accidentally coded the incorrect response at a question and we amended these, and also cases where a respondent agreed to data linkage then telephoned later to revoke consent. Responses were amended accordingly.

We did not carry out any edits on the height and weight data, as we did not want to make assumptions about what should be considered out of the normal range.

We anonymised the dataset, removed open text responses and removed variables that were not necessary for analysis purposes but were required by the computer programme. Additionally, we added in some information from the sample file – sample month issued, area, age from the sample, and type of area (intervention / comparison).

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[33] Partner questionnaires were not left in households with partners if they refused, the biological mother refused on the partner's behalf, or the partner was unable to complete the questionnaire.

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