

Evaluation Summary	
Age range	4 - 11
Number of pupils	c. 28,000 <sup>1</sup>
Number of schools	100
Design	Randomised control trial
Primary Outcome	KS1 and KS2 English and maths

## BACKGROUND

### *Significance*

It is critical to learn the precise impact of breakfast provision on pupils' learning and subsequent attainment, as there has been significant interest from the Department for Education in the relationship between nutrition and school attainment following publication of the School Food Plan (2013) and high-profile evaluation of the universal provision of free school meals in two pilot local authorities (Crawford et al, 2013). The Department for Education (DfE) will fund the delivery of breakfast clubs to 500 disadvantaged primary schools (where at least 35% of pupils are eligible for free school meals (FSM)) in England over the next two years; it is therefore crucial to determine now not only if the provision of breakfast clubs has a positive impact on pupil attainment, but which method of delivery is most beneficial and most cost-effective.

### *Intervention*

The Magic Breakfast intervention was originally composed of three separate models of school breakfast provision for relatively disadvantaged schools:

1. A universal free breakfast offer within the school morning (between registration and end of the morning break);
2. A free universal offer before the school day;
3. A breakfast club before the school day, with a charge but offering free breakfast to pupils eligible for free school meals.

However, the Magic Breakfast intervention changed because the number of schools eligible for the evaluation was lower than expected. Rather than continue with the three variations on school breakfast that are listed above, the intervention would include only the most popular and prevalent model of school breakfast provision: a free universal offer before the school day starts (model 2 in the list above). This choice was informed by previous anecdotal evidence by the project team and theoretical reasoning that this would be most appropriate for reaching disadvantaged pupils. For example, take-up by disadvantaged pupils might only be increased through universal provision by changing norms within the school and reducing social stigma. In support of this reasoning, the evaluation of the free school meal pilot commissioned by the Department for Education, found that extending the eligibility criteria for free school meals in secondary schools (rather than making it universal) had no impact on the attainment of eligible pupils, and that take-up was low amongst the

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<sup>1</sup> Based on an assumption of 200 schools, with an average of 40 pupils per year group and 7 year groups per school.

eligible group<sup>2</sup>. Universal provision may also have a positive impact on pupil attainment if there are complementarities between pupils (positive “spillovers” between pupils in the classroom).

Magic Breakfast will support schools allocated to the treatment group to establish the universal free breakfast club, and will deliver food to the school (free of charge, and as much as required). The control condition will be ‘business as usual’.

Schools allocated to the control group will be supported to establish the breakfast club the following academic year. Magic Breakfast will support the breakfast club for two academic years, rather than one year as for schools allocated to the treatment group. This incentive is to minimise the attrition rate of control schools.

Schools will be eligible for the project if they have at least 35% of pupils eligible for free school meals, and have no (or very limited “ad-hoc”) existing breakfast club provision. (In addition, schools must have agreed to the conditions of the project and evaluation by signing the Memorandum of Understanding.)

## RESEARCH PLAN

### *Research questions*

- What is the impact of free universal breakfast club delivery before the school day on teacher assessed levels of KS1 attainment in English (reading, writing and speaking and listening) and maths?
- What is the impact of breakfast club delivery on teacher assessed levels and test scores (and associated levels) of KS2 attainment in English and maths?
- What mechanisms are likely to explain any improvement in academic attainment?
  - Breakfast consumption
  - Classroom behaviour and concentration
  - Attendance at school
  - Health (proxied by measures of underweight, normal weight, and overweight)
- Does the impact of breakfast club delivery vary across groups of pupils and different types of schools?
  - Pupils eligible and not eligible for free school meals
  - Pupils with low prior attainment
  - Pupils that have and don’t have breakfast
  - Boys and girls
  - Schools with and without a high participation in the breakfast club
- What is the cost effectiveness of free universal breakfast club delivery before the school day?

### *Design*

The overall impact of the Magic Breakfast intervention will be evaluated using quantitative techniques, with emphasis placed on the impact on pupil attainment and cost-effectiveness of the intervention. The primary outcomes of interest will be academic attainment at age 7 and age 11 as measured by KS1 and KS2 English and Maths. To understand the mechanisms through which the project influences academic attainment it is important to analyse four secondary outcomes: behaviour, concentration in class, absenteeism and health (as measured by BMI). These mechanisms are discussed further in relation to the theory of change model outlined in the process evaluation section. Data collection will be organised with the interests of the participating schools in mind; pupil-level results from national assessments and absenteeism will be collected through the National Pupil Database (NPD), a proxy for health through the National Child Measurement Programme (BMI) and

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<sup>2</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/184047/DFE-RR227.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/184047/DFE-RR227.pdf)

collection of pupil behaviour and concentration data from classroom teachers will be co-ordinated with the Magic Breakfast project team.

Schools will be randomly assigned to the treatment group and control group. Randomisation will be done using a random number generator using Stata 13 within strata (or sampling blocks). Strata will be defined according to the following characteristics:

- Infant school only
- Prior school-level average attainment (at KS1 for infant schools and KS2 for junior and primary schools)
- Pupil composition: percent of pupils eligible and registered for free school meals, or the percent of pupils with English as an additional language<sup>3</sup>.

All schools will complete pupil and classroom teacher surveys in September 2014 (before the breakfast club is established) and June 2015 (at the end of the evaluation). The head teacher survey will be completed before randomisation (June/July/August 2104) and again in June 2015. The questions in the pupil and classroom teacher survey will be repeated exactly at the end of the pilot (to the same pupils/teachers), while the second head teacher survey will focus on different issues. This data collection will inform the secondary outcomes (discussed in more detail below). Primary outcomes (academic attainment, also discussed in more detail below) will be collected from the National Pupil Database. Note that ideally the pupil and classroom teacher survey would also be completed before randomisation. This is not possible for two reasons, however: first, there is insufficient time between recruitment and randomisation at the end of the school term; second, ideally the same teacher would complete the classroom teacher survey.

The majority of outcomes will be analysed within cohort. For example, the impact of establishing a breakfast club (of a particular type) on KS2 attainment will be assessed by comparing the attainment of pupils in the relevant treatment group within pupils in the control group, accounting for their prior attainment and other relevant attributes. The evaluation of secondary outcomes will have the same design, to inform the mechanisms through which changes in attainment arise (based on the theory of change model discussed further below). The exception is health (BMI) data for which no prior pupil-level measures will be available, which may reduce the precision of the estimated impact on this secondary outcome.

Comparison of primary outcomes between the treatment group and the control group will inform whether the method of breakfast club delivery that is most popular with schools (free universal provision before the school day) has an impact on pupil attainment. Comparison of secondary outcomes between the treatment group and the control group will inform the mechanisms through which breakfast club delivery may affect pupil attainment.

To provide evidence on the cost-effectiveness of the chosen method of delivery, we will compute an estimate of the cost per unit of increase in attainment. This would follow the methodology used in the evaluation of the universal free school meals pilot, where the central estimate of the cost-effectiveness of universal provision at KS1 was £136 per pupil for every one percentage point increase in the proportion of pupils that reach the expected level of attainment in maths in Newham, for example, and £199 in Durham. Cost data will be provided by Magic Breakfast (for food and set-up costs), and through short surveys to head teachers.

## ***Participants***

Schools will be eligible for the evaluation if they have at least 35% of pupils eligible for free school meals and have no (or very limited “ad-hoc”) existing breakfast club provision. All pupils in schools assigned to the treatment group are considered to be treated: all pupils will be offered free breakfast

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<sup>3</sup> This choice will depend on the correlation between these two variables and school size in the final sample of schools. Choosing the variable with the largest correlation is likely to lead to the best balance between treatment and control schools according to all of these characteristics.

in schools with a universal offer. The attainment of all pupils in schools assigned to a treatment group may be positively affected by the behaviour and concentration of their peers.

### *Outcome Measures*

- Primary:
  - KS1 teacher assessment of English and maths
  - KS2 test points and level in English and maths
- Secondary (mechanisms):
  - KS2 teacher assessment level in English and maths
  - Breakfast consumption
  - Attendance at school
  - Underweight
  - Overweight
  - Classroom behaviour
  - Classroom concentration

### *Sample size calculations*

The project will support 50 primary schools setting up breakfast provision where at least 35% of pupils are eligible for FSM (and where the school has no or limited “ad-hoc” existing breakfast club provision). A control group of 50 schools will provide the “business as usual” counterfactual.

Given the number of schools that will receive the treatment, we have calculated the effect size (in standard deviations) that could be detected under various assumptions of the correlation in outcomes between pupils at the same school (the intra cluster correlation of outcomes). Model 1 reports the detectable effect size when the variance of the outcome unexplained by attributes of the pupils (including prior attainment) is 60% (which is similar to that found in The LIT Programme evaluation). Model 2 reports a less optimistic scenario (70% unexplained), whilst Model 3 is more optimistic (50% unexplained).

	Intra class correlation					
	<b>0</b>	<b>0.05</b>	<b>0.1</b>	<b>0.15</b>	<b>0.2</b>	<b>0.25</b>
Detectable Effect Size (Model 1)	0.069	0.118	0.152	0.180	0.204	0.225
Detectable Effect Size (Model 2)	0.074	0.127	0.164	0.194	0.220	0.243
Detectable Effect Size (Model 3)	0.063	0.108	0.139	0.164	0.186	0.205

Note: these calculations represent the effect size that will be possible to detect using a two-sided hypothesis test with significance level of 5%, and with power against an alternative hypothesis of 80%. We have assumed 40 pupils per cohort (based on publicly available school-level data for schools with more than 35% of pupils eligible for free school meals) for 50 treatment and 50 control schools.

With a realistic level of intra class correlation (around 0.1), we would be able to detect an effect size of around 0.15 standard deviations.<sup>4</sup> This is roughly similar to the impact of the universal provision of free school meals on KS1 and KS2 test scores<sup>5</sup>; standardised scores increased by around 0.15 standard deviations, varying slightly across sub-groups and areas.

### *Analysis plan*

The Institute for Fiscal Studies (IFS) is responsible for the quantitative impact evaluation.

<sup>4</sup> The value of 0.1 is roughly the ICC observed in data gained from the IFS evaluation of The LIT Programme, for the sub-sample of schools with at least 35% of pupils eligible for free school meals.

<sup>5</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/184047/DFE-RR227.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/184047/DFE-RR227.pdf)

As with all randomised control trials, assuming that the treatment and control groups are well-balanced (i.e. statistically indistinguishable and, given the small sample sizes involved, quantitatively similar) at baseline, it should be possible to obtain unbiased estimates of the impact of the intervention by simply comparing the average outcomes of pupils in the treatment and control groups after the intervention. However, given the relatively small sample sizes involved, together with the need to maximise the variation in test scores that we can explain (to maximise the power of statistical tests), we will use OLS regression in order to be able to account for baseline characteristics of both individuals and schools. To do so we will use individual and school information from the National Pupil Database (NPD) and baseline information from the bespoke surveys<sup>6</sup>. The exception is health (BMI) data, for which pupil-level baseline data will not be available. We will instead account for past school-level measures of health to increase the precision of the estimated impact, under the assumption that the health of pupils in adjacent cohorts within schools is positively correlated.

Our analysis will use intention to treat, where all pupils in schools recruited to the evaluation will be included in the analysis. For example, even if a school withdraws from the intervention all data on the primary outcomes for these pupils will be included in the analyses through the NPD.

Standard errors will be adjusted for the method of randomisation (controlling for the stratification variables) and the intra cluster correlation of outcomes between pupils in the same school.

The impact estimate will be relative to the “business-as-usual” case, where schools are free to establish their own breakfast club; the counterfactual is *not* exclusion from breakfast club, but the probability of establishing a large scale provision (given that all schools recruited to the evaluation have no existing provision) is low.

We will analyse the impact of the intervention for subgroups of pupils, in particular those eligible for free school meals in 2013/2014 (as contemporaneous eligibility in 2014/2015 may be affected by the new arrangements for free school meals at KS1 as parents have less incentive to inform the school of eligibility). We will also examine whether there is a larger impact for boys or girls, those with lower prior attainment, and those with a change in breakfast consumption. Although we might expect the largest gains to be for those that now have breakfast, those that don't change breakfast consumption may also have improved attainment if the classroom learning environment is less disrupted as a result of the provision (positive “spillovers” between pupils). We will also compare the impact for schools with and without high take up of the breakfast club.

The reliability of the estimates from OLS regression will be assessed by comparing the results to results derived from propensity score matching, which informs whether the balance of pupil characteristics across treatment and control schools is reasonable.

### ***Process evaluation***

The National Children's Bureau (NCB) is responsible for the process evaluation, with support from IFS.

The process evaluation will have two main purposes: (i) to understand feasibility and implementation issues relating to the delivery of universal breakfast provision before school, and (ii) to work alongside impact evaluation work to help understand the nature of and reasons for effectiveness or otherwise of the model, from the point of view of stakeholders (for example, perceived impact on attainment, behaviour and concentration).

This element will help to inform optimum approaches for any potential expansion of the most cost-effective method of delivery in the future.

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<sup>6</sup> The impact will first be estimated using the same control variables that were used in the sample size calculations shown above. The impact will then be estimated using variables that were collected in the baseline head teacher surveys, and any additional variables that are unbalanced between treatment and control groups despite the randomisation.

Note that fidelity to the pilot in treatment schools and breakfast club provision in control schools will be monitored by Magic Breakfast and the head teacher survey, and are not covered by the activities described here.

### **Theory of change**

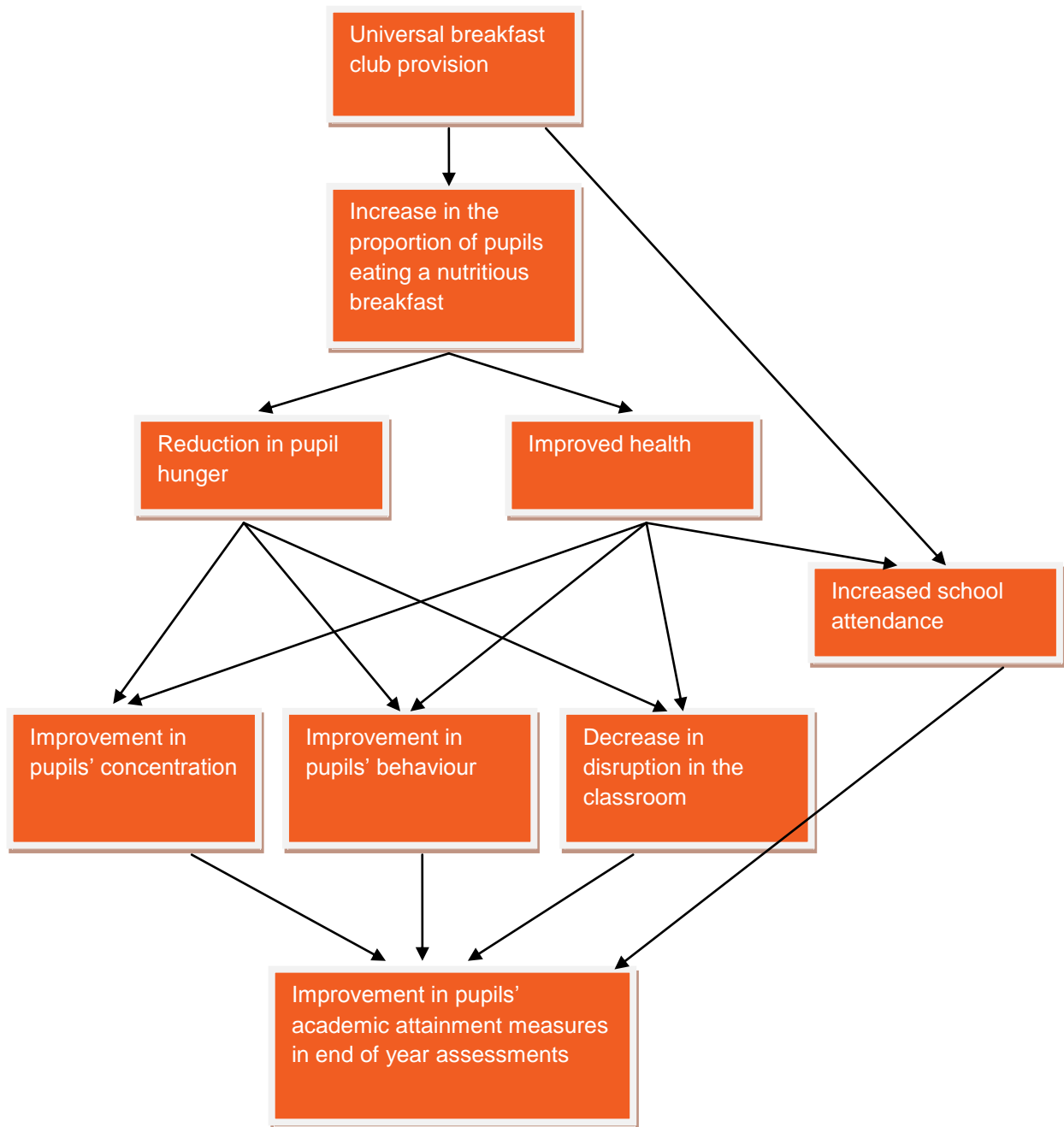
The process evaluation research questions and quantitative evaluation of secondary outcomes are based on the theory of change model outlined in Figure 1. The first expected mechanism is that the provision of a free universal breakfast club in relatively disadvantaged schools leads to an increase in the proportion of pupils that eat a nutritious breakfast. This change will be measured through the pupil surveys in September 2014 and June 2015 which will capture whether any breakfast was consumed (but not exact consumption), and through monitoring data collected by Magic Breakfast. The process evaluation will explore some of the barriers to universal provision, particularly for disadvantaged pupils.

We hypothesise that an increase in the proportion of pupils eating a nutritious breakfast will reduce the level of pupil hunger (especially in the morning classes) and increase overall pupil health. These mechanisms will be captured through the pupil survey (which will ask about hunger in the first lesson of the day) and through administrative data on BMI for Year 6 pupils. The improvement in pupil health may increase the attendance at school (through reduced sickness), but the provision of the free universal breakfast may also increase punctuality as the club informally acts as childcare before the school day. The process evaluation will explore stakeholders' views of how and why the intervention does or does not impact on pupil hunger, attendance and punctuality.

Any increase in attendance or punctuality may directly increase attainment as these pupils will have more hours of teaching and learning. There may also be "spillovers" between pupils through an increase in punctuality, if latecomers are disruptive to the classroom.

We hypothesise that an improvement in pupil health and reduction in pupil hunger will improve pupil concentration and behaviour, and the learning environment in the classroom, therefore increasing the productivity of learning time. These mechanisms (pupil concentration, pupil behaviour, and disruption in the classroom) will be captured through the teacher survey. Again stakeholders' views of how and why the intervention does or does not impact on pupils' concentration and behaviour in the classroom, the quality of the learning environment and productivity of learning time will be explored with stakeholders in the process evaluation.

Figure 1: Theory of change model



## Process evaluation research questions

- **How attractive is the free breakfast provision model to schools?** What are their aims in developing provision? What are their potential concerns, and how can they be overcome?
- **What does planning, design and set-up involve?** What are the main activities/aspects that need to be developed? What and who has been involved, when and how? What are the challenges and success factors?
  - Space, facilities and equipment (for food preparation, storage, dining and clearing up)
  - Staffing for delivery: number/profile/expertise (kitchen/dining/cleaning)
  - Developing appropriate menus (what, how, who and when involved)
  - Food/other supplier contract arrangements/logistics
  - Legal/health and safety aspects
  - How school breakfasts fit into the school (ethos/aims, and practically)
  - Funding for set up and delivery
- **What approaches of delivery have schools developed. What are the challenges and success factors?**
  - Engaging children and parents, raising awareness, securing take-up and monitoring demand (any target groups, what mechanisms and materials)
  - Sourcing of food and other supplies, and matching supply with demand (how identify and manage suppliers and ordering arrangements)
  - Food storage and preparation (and what kitchen facilities, equipment, staffing arrangements)
  - Dining arrangements (and what space, furniture and equipment, logistical arrangements/staffing)
  - Clearing up (what equipment, logistical arrangements/staffing)
  - Governance, management and monitoring
- **How well has delivery worked in practice?** What have staff, children and parents' experiences been of all aspects of the process? What are the challenges and success factors?
- **What do schools, children and families perceive the impact of free breakfasts to be?** Positive/negative/anticipated/unanticipated impacts on schools, children and families? Based on stakeholder feedback, what aspects of delivery have been important for determining outcomes (positive and negative) and how can the design and delivery be optimised to ensure the most positive benefits? For example, relating to pupil hunger, punctuality, attendance, concentration and behaviour in the classroom, and productivity of learning time,
- **What are the schools' plans/expectations for future provision of school breakfasts when support from Magic Breakfast ends?** What is important for effective sustainable provision for the future? Are schools planning to continue provision? How can this be funded, managed and the food sourced etc after Magic Breakfast support ends? How might desirability and feasibility be affected by changes in wider context (e.g. Schools Food Plan, food price trends)? What are the challenges and success factors for sustainable delivery? What changes or improvements would schools suggest for other schools delivering provision in the future?
- **How do all the above factors vary for different types of school in different contexts?** According to size; delivery model (for example whether the provision is offered one hour before school starts or 15-30 minutes, and whether it is offered as part of wider before school childcare provision, or stand alone); type of location (urban/rural); community profile (e.g. cultural and ethnic mix).

## Process evaluation methodology

NCB will conduct in-depth qualitative research in case study schools to provide a detailed picture of the ways in which different schools have developed and implemented free universal breakfast delivery, key challenges and success factors, and perceived outcomes.



Although primarily designed to capture impact assessment data, the baseline survey among head teachers, and the follow-up surveys among pupils, and head teachers, will also capture a limited amount of information among the full sample of schools involved in the pilot, via pre-coded questions, to support greater generalisation when forming conclusions regarding implementation issues. Note that these questions will focus on capturing stakeholders perceptions of implementation rather than factual information about approaches, although factual information relevant to estimation of costs will be captured to support economic evaluation. For example:

- **Pupil follow up survey:** One question rating school breakfasts overall
- **Baseline head teacher survey:** Around five variables covering aims, perceived feasibility/preferences
- **Follow up head teacher survey:** Around 25 variables covering (i) overall ratings of perceived effectiveness of different aspects of delivery in the schools (ii) key challenges (iii), likelihood/feasibility of continuing provision after Magic Breakfast support ends; (iv) areas where they suggest schools would most benefit from advice or support going forwards to set-up/deliver effective, impactful and sustainable provision.

Magic breakfast monitoring data and the head teacher and pupil surveys will also be used by IFS to assess fidelity and take-up rates.

#### *Number and profile of case study schools*

Four case study schools will be included and purposively sampled to ensure a mix in terms of school size, delivery approach (for example, whether the provision is offered one hour before school starts or 15-30 minutes, and whether it is offered as part of wider before school childcare provision, or stand alone), area type, and ethnic profile. This will ensure the research captures a range of experiences according to the key factors most likely to differentiate implementation experiences and challenges.

#### *Research in each case study school:*

- Informal observation of at least one school breakfast time
- 1 x interview with the Magic Breakfast support contact
- 1 x interview with school leader who has overall responsibility for school breakfasts
- 1 x pair/triad/ or mini group discussion with catering staff/dining supervisors
- 1 x mini-group discussion with class room teachers/teaching assistant/learning mentor/ and/or attendance officer
- 2 x friendship pair/triad/mini group discussions with children (one aged 6/7 and one aged 10/11)
- A short two page self completion form for parents. This will be available for parents to complete when they drop off or pick up their child, or at parents evenings. This will provide indicative measures of awareness, take-up and views of breakfast provision among parents.

In addition, there will be a minimum level of light touch research among non-users in just two of the schools (we would focus on the two facing most challenges with engagement issues), in order to allow us to explore more of the mechanisms by which take up is or is not achieved. We will conduct one child pair/triad with non-user children aged 10/11 and **three-four telephone interviews with parents to explore engagement issues** in these schools: users (one) and non-users (two-three).

The **fieldwork will take place during the period January – June 2015** after delivery is well established.

#### *Analysis:*

A research framework based on the theory of change model will map the detailed issues to be explored, and how evidence on each aspect is collected (i.e. from which audience/from which tool).

Analysis will be informed by the framework. For each research question we will triangulate data from across all sources available to ensure conclusions are valid taking into account the range of data and viewpoints.

We will carry out basic descriptive analyses of data from the implementation-related questions in the head teacher and pupil surveys.

Qualitative analysis will be carried out using the “Framework” approach which involves the accounts of different participants, or groups of participants being systematically recorded into a research framework, for thematic analysis and analysis by audience type. We will carry out within case studies as well as across case studies analyses. The former will provide an in-depth understanding of the features and effectiveness of different localised approaches to implementing the school breakfast model, while the latter will help to identify defining features of good practice and effective implementation that may apply across different types of schools and local circumstances.

Further information about NCB’s research practice, ethics and quality assurance is provided in the NCB quality plan in Appendix B.

## PERSONNEL

Ellen Greaves	Institute for Fiscal Studies	Overall evaluation manager and head of impact evaluation
Claire Crawford	Institute for Fiscal Studies	Academic oversight of the impact evaluation
Research economist	Institute for Fiscal Studies	Working on the impact evaluation
Emma Wallace	National Children's Bureau	Overall lead on process evaluation
Puja Joshi	National Children's Bureau	Working on the process evaluation
Vanessa Greene	National Children's Bureau	Working on the process evaluation

## TIMELINE

	Task	Responsibility		
		First	Second	Third
May to June 2014	Recruit schools	Magic Breakfast	IFS (evaluation materials)	
May to June 2014	Collect contact details for Year 2 and Year 6 classroom teachers and head teachers of all schools, to be transferred to IFS	Magic Breakfast		
June – August 2014	Deliver baseline head teacher survey through email	IFS	Magic Breakfast	
Early-August 2014	Randomisation	IFS		
Early-August 2014	Inform schools about randomisation outcome	Magic Breakfast	IFS	
August to September 2014	Co-ordinate breakfast club implementation	Magic Breakfast		
September 2014	Ensure baseline pupil survey of breakfast and lunch consumption is delivered to schools and completed	Magic Breakfast		
September 2014	Deliver baseline classroom survey to Year 2 and Year 6 teachers through email	IFS	Magic Breakfast	
September 2014 to July 2015	Maintain support for schools	Magic Breakfast		
September 2014 to July 2015	Maintain record of costs of food and delivery associated with each breakfast club	Magic Breakfast		
September 2014 to July 2015	Maintain record of cost of equipment provided by Magic Breakfast to each breakfast club	Magic Breakfast		
Oct – Dec 2014	School sampling, recruitment and scoping work for the process evaluation	NCB	IFS	
Jan – July 2015	Main stage of process evaluation fieldwork and analysis	NCB	IFS	
August 2015	Process evaluation summary report for	NCB	IFS	

	"Business as normal" schools			
June 2015	Collect information about costs of additional food items provided by the school	Magic Breakfast	IFS	
June 2015	Collect information about equipment (including cost if possible) used by the schools but not provided by Magic Breakfast	Magic Breakfast		
June 2015	Collect information about other activities associated with breakfast clubs (for example games)	Magic Breakfast	IFS	
June 2015	Ensure final pupil survey of breakfast and lunch consumption is delivered to schools and completed	Magic Breakfast		
June 2015	Deliver final classroom survey to Year 2 and Year 6 teachers through email	IFS	Magic Breakfast	
June 2015	Deliver head teacher survey through email	IFS	Magic Breakfast	
August to September 2015	Co-ordinate breakfast club provision for control schools	Magic Breakfast		
September 2015	Apply for access to NPD for KS1 and KS2 results (that took place in May 2015), and absence data for September 2014 to July 2015	IFS		
September 2015	Apply for access to National Child Measurement Programme BMI data	IFS		
October 2015 to January 2016	Analysis of impact	IFS		
January 2016	Final report	IFS	NCB	Magic Breakfast

## RISKS

IFS is registered under the Data Protection Act 1998 (registration number Z5758698) and complies with all its obligations. IFS also ensures that its staff and anyone else involved in its work abide by its Data Security Policy which details the measures that are in place to protect data and to ensure compliance with any legal requirements. NCB are also registered under the Data Protection Act 1998, and complies with all its obligations, as well as Social Research Association ethical guidelines. A copy of the NCB Research Centre's quality plan has been provided in appendix B.

<b>Risk</b>	<b>Likelihood</b>	<b>Impact</b>	<b>Mitigation and contingency plan</b>
<b>Attrition of control schools</b>	Medium	Medium	We expect some attrition of control schools, reducing potential sample sizes. To mitigate this risk, control schools will be offered the most suitable method of delivery for 18 months (supported by Magic Breakfast) at the end of the evaluation. Finally, analysis of attainment will use administrative data, which will allow us to track all schools.
<b>Imperfect randomisation</b>	Low	High	IFS will seek to balance the treatment and control groups according to factors that could determine the likely impact of the programme through stratification of the sample of schools that sign up. If it is not possible to balance the characteristics of the treatment and control groups through stratification, we would use a variety of non-experimental techniques during the impact analysis to make it as robust as possible (as outlined above).
<b>Sample sizes too small to detect significant impacts</b>	Medium	High	Given the current sample sizes, our power calculations show we would be able to detect small effect sizes if there is no intra class correlation (ICC). However, if the ICC were 0.1 or higher (very plausible), we would be able to detect effect sizes of 0.14 or higher. If results are insignificant, we will report the estimated effect, p-value and confidence interval.
<b>Control schools establish breakfast club</b>	Medium	Medium	As outlined above, schools would be free to establish their own breakfast club if allocated to the control group, which may reduce the estimated impact of the project. We believe this risk is relatively low, however, as all schools recruited to the evaluation will have no or limited current provision and the treatment will increase this provision significantly.
<b>Unavailability of staff during project</b>	Low	Low	IFS and National Children's Bureau each have a pool of researchers on hand with expertise in programme evaluation, education policy and qualitative research methods. Systems and procedures will be adequately documented to ensure handover can occur smoothly if necessary.
<b>Difficulty in recruiting and engaging schools, teachers and stakeholders for the process evaluation</b>	Medium	High	All schools will be required to sign a Memorandum of Understanding prior to randomisation to treatment and control group which clearly states the requirements of schools involved in the evaluation. National Children's Bureau has much experience in the continued engagement of organisations such as schools.
<b>Delay in access to data</b>	Low	Medium	We have planned for un-amended KS1 and KS2 results to be made available in the January 2016 (as is currently the case). This could change over time as DfE review their arrangements. In the event of a delay IFS would contact EEF as soon as possible to arrange alternative publication dates.
<b>Loss of or damage to data</b>	Low	High	Both IFS and National Children's Bureau have high levels of IT security in place. All members of the evaluation team have extensive experience of working with data, and are very aware of the importance of keeping data safe and of using the necessary security procedures. Back-ups are located off-site and can be retrieved within one working day. EEF and the project team will be immediately notified if data is accidentally damaged or stolen; contingency plans specified in our security policies (available on request) can then be put into place.

