

Evaluation of Universal Infant Free School Meals

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Executive summary

In September 2014, the Universal Infant Free School Meals (UIFSM) policy was introduced, stipulating that all children in England's state funded schools in reception, year 1 and year 2 should be provided with a free school lunch. The aims of this study are to evaluate UIFSM's potential educational, social and health effects; assess how the national policy has been implemented in schools; obtain perceptions of its outcomes; and estimate the economic costs of the policy. This report is informed by a literature review and statistical analysis of administrative and survey data, carried out by the EPI. Fieldwork was also conducted, by CooperGibson Research, including case study visits to schools, stakeholder interviews, and surveys of school leaders, teachers, caterers, parents and carers. The total costs of delivering UIFSM were estimated using an economic modelling approach, taking into account the financial savings generated for the families of reception and Key Stage 1 pupils.

How UIFSM has been implemented

Research to date suggests that it can be difficult to separate the impact of interventions that change the uptake of school meals from wider changes in school contexts and approaches to food standards, physical activity, parental education, and school curricula. Qualitative research conducted for this report finds that:

- 53 per cent of senior and middle leaders surveyed reported that communications with school caterers had increased as a direct result of UIFSM, with engagement used to collect feedback for menu development and to deal with delivery issues.
- 18 per cent reported changing contractual agreements with caterers as a result of UIFSM.
- 47 per cent of school leaders also stated that that they had changed meal time arrangements as a result of UIFSM.
- For most schools visited, changes made included seating arrangements, timetables, staggering service, catering provision and ordering systems. 'Family service' was perceived by school leaders to be a more positive approach to mealtime, providing a calm dining environment. The social benefits of this approach were highlighted by school staff during the case study visits.
- 5 per cent of school leaders reported that their school had introduced a packed lunch policy aligned to the School Food Standards as a result of UIFSM, while 21 per cent said that their school had done so but would have with or without UIFSM, and 32 per cent said this was already in place.
- 39 per cent of school leaders said that they had started to promote lunches but would have done so regardless of UIFSM, while 29 per cent reported that they had promoted school meals due to UIFSM and 21 per cent said that their school was already promoting school lunches.

In the past, outcomes of relevant initiatives have depended on whether the changes are integrated in a coherent whole-school policy on food, encouraging healthy choices and physical activity. Engagement with parents may influence outcomes, and welcoming and efficient kitchen and dining facilities can also be important.

- Caterers responding to the online survey said that a range of approaches to learner engagement were implemented in schools due to UIFSM, most commonly, encouraging children to try new foods (93 per cent of 44) and ensuring children leave the serving counter with a balanced meal (89 per cent of 44).
- Almost all catering staff surveyed felt that the quality of the food produced for schools had either stayed the same or had improved due to UIFSM – 41 per cent of 49 catering staff surveyed believed the nutritional balance of meals had improved as a direct result of UIFSM, while 57 per cent thought it had stayed the same.
- All caterers surveyed said that hot meals were offered at their school (sometimes alongside cold options), and 44 per cent of 45 said that they were served more often due to UIFSM.
- 80 per cent of parents surveyed said that they were either very satisfied or satisfied with the school lunch service overall. Levels of satisfaction were generally high across a range of indicators, including dining facilities, quality of the food and information provided by schools about lunches.
- Parent satisfaction was lower with respect to the use of local suppliers (46 per cent), although levels of awareness about this were low.
- 45 per cent of parents surveyed agreed that their child enjoyed school lunches all of the time and 49 per cent agreed that their child enjoyed their school lunch some of the time, although some expressed concerns about the frequency of cakes or biscuits being available, a lack of variety in menu choices, or small portion sizes.

Although school leaders did not tend to think that specific policies had been introduced directly as a result of UIFSM, several suggested during the case study visits that the policy had encouraged their schools to raise awareness of healthy eating.

- 41 per cent of school leaders reported that the general profile of healthy eating across the school had improved as a direct result of the introduction of UIFSM.
- 12 per cent of said that they introduced policies to engage with parents specifically about healthy eating and school lunch provision as a result of the policy.
- Of 57 teachers surveyed, 19 and 21 per cent said that the issue of healthy food choices was discussed in class on a monthly and weekly basis respectively before UIFSM was introduced. This increased to 25 and 38 per cent after UIFSM was introduced. Teachers involved in case study visits felt that UIFSM had helped to raise awareness and provide a practical application of the topics they were covering in the classroom.

Take-up of school meals

Pilots of extending free school meals in England and Scotland have led to significant increases in take-up amongst primary-aged children. Increases in take-up among those who were previously eligible – and also for those who were entitled but not eligible (i.e. not registered) – suggests that stigma can affect take-up, or that associated changes in meal provision can have wider effects.

In schools visited for this research, UIFSM was perceived by all types of school staff to have led to an increase in take-up of school meals, particularly among Reception and Key Stage 1 pupils.

- Forty-eight caterers responding to the survey said that, on average, they provided around 227 meals per day in the schools they served; this was an increase from an average of 146 meals per day prior to UIFSM.

- Estimates based on the Living Costs and Food survey suggest that the proportion of infants, whose households were interviewed across the full financial year, taking a school meal over the previous week increased from 35 per cent in 2013-14 to 64 per cent in 2015-16. Accounting for the number of meals taken in each case, which also increased, and the fact that some of these interviews will have taken place during holidays, this is equivalent to an increase in take up on a given school day from 38 per cent to 80 per cent.
- The school leader survey suggested a modest increase in take-up in Key Stage 2 among those not entitled to FSM following the introduction of UIFSM, with a small decrease reported for those entitled to FSM. Schools participating in the visits sometimes reported small increases in Key Stage 2 take-up overall since the introduction of UIFSM, but there is no evidence of a substantial change in take-up among Key Stage 2 pupils in the Living Costs and Food survey.
- It is estimated that shortly before UIFSM was introduced, 80 per cent of recipients of free meals were from households in the bottom quartile of equivalised disposable income, and this decreased to 33 per cent afterwards. However, as today's infants are disproportionately from households with below-average incomes, more than half (an estimated 62 per cent) of infants recorded in the survey as receiving FSMs in the last week were from households with below-median equivalised incomes following the policy's implementation.
- Across the full calendar year, the estimated proportion of infants from the lowest quartile of household income receiving a free meal in the previous week increased from an estimated 25 per cent shortly before UIFSM's introduction (equivalent to 34 per cent in a given *school* week) to 62 per cent (equivalent to 84 per cent in a given *school* week) afterwards.

Consistent with this evidence, reported take-up in the January School Census – which is used to determine school funding – has been high compared to historic levels in all three years since the policy was introduced, reaching 86.1 per cent for infants overall in 2017. There has been little change in take-up between 2015 and 2017, and take-up rates are still slightly higher for those claiming FSM than for others. The National Pupil Database has been used to assess variations in take-up rates recorded in January 2017:

- There are only small differences in take-up between pupils in different year groups, between boys and girls, and between pupils living in areas with different levels of deprivation.
- In contrast, there are clearer differences between pupils of different ethnic backgrounds. Chinese pupils had the highest rate of take-up among major ethnic groups, at 93.4 per cent, compared with 85.5 per cent of white pupils, who have the lowest take-up rates.
- 98 per cent of schools reported take up of over 60 per cent across all infants, with 75 per cent reporting over 80 per cent and 44 per cent reporting over 90 per cent. The distribution is particularly skewed for FSM-claiming pupils, with 37 per cent of schools reporting 100 per cent take-up for this group compared to 6 per cent for non-FSM-registered pupils.
- All local authorities have take-up rates of over 72 per cent, but – consistent with patterns seen prior to UIFSM – authorities in the north of England and in London tend to have higher-than-average take-up.
- Whilst small, rural schools have previously reported facing challenges in delivering high-quality meals at low costs due to a lack of scale and transport difficulties (Dimpleby and Vincent, 2013), urban city and town schools actually have the lowest take-up rates, although differences are small (84.4 per cent for all pupils compared with 87.9 per cent in urban conurbations and 86.6 per cent in rural schools). Small schools have the highest take up

rates for all pupils (88.0 per cent) and schools with over 500 pupils have the lowest (85.7 per cent).

- Among mainstream schools, free schools had an average take up of 92.3 per cent, compared with the lowest rate seen of 82.9 per cent in sponsored academies, although this may be a result of free schools' concentration in London, and there are a relatively small number of these schools.
- Schools with a latest Ofsted inspection outcome of Outstanding had the highest take-up rates, at 88.3 per cent - 6.0 percentage points greater than that of schools judged Inadequate.
- There is little variation between schools with different proportions claiming FSMs for Pupil Premium purposes.

Outcomes for pupils and their families

Childhood obesity is a growing problem amongst children and young people, and it has implications for the likelihood of being obese in adolescence and adulthood. Evidence suggests schools have an important role to play not only in educating young people about the benefits of healthy eating and keeping active, but also by providing them and their parents with opportunities to eat healthily and take part in exercise. There is also strong evidence that increasing the take up of school meals improves the nutritional balance of food consumed during the school day, with only 1.6 per cent of primary children's packed lunches meeting the nutritional standards set for their classmates eating school lunches (Evans, 2016). Having school meals may also improve a child's willingness to try new foods both in and out of school. If this is encouraged early enough, this may lead to better nutrition later in life. However, school meal interventions by themselves have not been found to have substantial benefits for levels of obesity in the short term.

Evidence on the precise links between nutrition and cognitive outcomes is generally not conclusive, however the universal FSM pilots in England, taking place in Newham and Durham between 2009 and 2012, had a statistically significant association with Key Stage 1 and especially Key Stage 2 attainment scores: pupils in both of the universal FSM pilot areas made around two months' more progress than those in the control areas, with greater impacts for disadvantaged and low-attaining pupils. The mechanisms for this effect were not clear, and there was no clear evidence that extending FSMs improves school attendance (Kitchen et al., 2012). In the fieldwork conducted for this study:

- 29 per cent of school leaders identified an improvement in pupils' readiness for learning as a result of UIFSM, but teachers participating in the online survey were more likely to identify this (40 per cent of 57).
- Some teachers thought attainment/progress in class (39 per cent); ability to complete desk-based activities (36 per cent); and ability to concentrate, not getting distracted (36 per cent) had increased as a result of UIFSM, with none reporting a deterioration.
- 60 per cent of school leaders felt that there had been no change in overall pupil behaviour since the introduction of UIFSM, whilst 19 per cent felt that behaviour had improved, 2 per cent felt it had deteriorated and 19 per cent did not know.
- Overall, staff impressions reported in site visits were that UIFSM alone had not engendered a large range of specific educational impacts for learners. It was noted during most of the visits that the way that schools chose to embrace and implement UIFSM (often in tandem

with a wider focus on healthy lifestyles, or as part of a 'family' ethos) had a large contributing factor to its perceived effect on outcomes.

- The majority of parents responding to the online survey felt that educational outcomes had stayed the same since the introduction of UIFSM, but 22 per cent of parents responding to the survey noted that achievement at school, attention span and a child's ability to concentrate had all improved in the last three years. 31 per cent attributed such changes 'a great deal' to UIFSM and 38 per cent attributed the changes 'a little' to UIFSM.
- 35 per cent of parents responding to the online survey felt that their child's dining etiquette had improved since the introduction of UIFSM, and 26 per cent felt that behaviour at mealtimes was better. 31 per cent of parents attributed such changes 'a great deal' to free school meals and 38 per cent attributed the changes 'a little' to free school meals.
- 30 per cent of school leaders felt that pupils' overall health had improved as a result of UIFSM being implemented, while 54 per cent of 57 teachers surveyed felt that the policy had had a positive impact on the health of children eligible for FSM. This message was reinforced during the visits to schools, with several members of school and catering staff highlighting that for many children the lunch was the only hot meal of the day.
- 56 per cent of parents surveyed felt their child was more likely to try new foods following the introduction of UIFSM. 38 per cent said that their child was more likely to drink water with their meals (with 19 per cent saying that their child was less likely to drink soft drinks with meals), and 33 per cent said that their child was more likely to eat pieces of fruit or vegetables. Most parents attributed such changes 'a great deal' or 'a little' to UIFSM.

The introduction of UIFSM has meant that some parents no longer need to provide a packed lunch for their children. Parents who no longer had to make packed lunches reported a median weekly saving of £10. The cost saving experienced as a result of free school meals provision was highlighted by some parents as having been especially beneficial to their households, not only in removing 'stigma' in claiming free meals, but also assisting with household budgets. While responses may be prone to error, the median reported weekly time saving from not having to make school meals, where relevant, was 50 minutes. This was reported by parents to have allowed more time spent with families in the evening, completing homework or playing with children.

Previous survey evidence has suggested that some parents see the prospect of the loss of FSM as a disincentive to move into work, although whether UIFSM has affected work decisions was not tested in this study and may be affected by the introduction of Universal Credit.

School leaders reported changes in registration for free school meals for the purposes of Pupil Premium funding due to the introduction of UIFSM:

- 31 per cent of school leaders surveyed reported that take-up of FSM for pupil premium purposes had decreased, 15 per cent reported that it had increased and 38 per cent reported that it had stayed the same.
- Trends in the number of children of different ages recorded nationally as being eligible for FSMs also suggest there is likely to have been an impact, particularly affecting infants when they first join schools in reception. By January 2017, under-7 FSM rates were 1.0 percentage points, or 7.2 per cent, lower than they would have been had they followed the same trend as that of 7-10 year-olds in proportional terms, though economic and welfare policy factors may have played some role.

- 30 per cent of 308 school leaders reported that they had introduced a strategy to maintain/improve Pupil Premium take-up due to UIFSM, while 39 per cent would have done this anyway, 18 per cent were already doing it and 9 per cent have not.

Whilst the potential impact on total Pupil Premium spending is uncertain, and may have been mitigated by changes in the national funding rates applied by the Department for Education, this is likely to have redistributed funding – and possibly the targeting of interventions – away from infants and towards older pupils.

Delivery costs for schools

The changes in provision and increase in take-up of school meals have generated significant costs for schools and caterers, both in managing its implementation and in ongoing requirements.

- 54 per cent and 47 per cent of school leaders reported investment in new and refurbishment of old catering facilities respectively. For some schools, UIFSM represented an ‘opportunity’ to invest in improving the quality of lunch provision, but there were concerns in places about the adequacy of funding for capital improvements.
- Headteachers and school Business Managers highlighted during the case study visits that the ongoing maintenance of kitchen facilities was one of the largest costs to their schools in relation to the delivery of UIFSM.
- 35 per cent of school leaders surveyed reported an increase in investment in training staff for school lunch provision.
- 57 per cent of school leaders cited an increase in catering/supervisory staff numbers employed, and 51 per cent an increase in existing catering/supervisory staff hours.
- 20 per cent of school leaders reported an increase in the number of staff employed in the management and administration of free school meals, and 40 per cent reported an increase in the allocation of existing staff time to this.
- Overall, 8 per cent more school leaders reported a deficit for school meal provision when referring to the period after UIFSM had been introduced than when referring to the period beforehand, and there was no difference in the proportion reporting a profit. Of these, around half attributed the change solely to the introduction of UIFSM.
- Concerns were raised by some school leaders and by caterers that various resource demands would create sustainability issues in the future for UIFSM provision if the funding rate stayed at £2.30 per meal, due to the rising cost of food prices, ongoing maintenance costs of kitchens and remedial works to facilities.

UIFSM was felt to have had an impact on wider curriculum delivery. In several schools observed during the site visits, the dining room(s) was not a separate, dedicated space but a multi-purpose area required for assemblies and subject delivery including physical education. Where lunch service had increased and/or extended in duration, this therefore had a knock-on effect. Meanwhile:

- 35 per cent of school leaders reported an increase in senior leadership team time used for catering provision
- 38 per cent reported an increase in support staff time used.
- 20 per cent of school leaders thought teacher time used for catering provision had increased, and some teachers reported saying that UIFSM meant they shared their meals

more often with pupils, although an equal number of teachers had said that they spent more and less time on catering than before.

Whilst an increase in wider school staff involvement in lunch provision will have represented a burden for some schools, benefits for pupil socialisation and the identification of safeguarding issues were identified in case studies.

Aggregate costs and cost-effectiveness

The total costs of the policy have been estimated for the first 3 years of the policy, and projected forward to 2023-24 (covering a 10-year period), using published data and assumptions informed by the fieldwork reported here:

- In a central modelling scenario, the policy generates an increased real cost of producing school meals of £380m in 2017-18, adding up to a Net Present Value (NPV, with a base year of 2014-15) of £2.957bn over 10 years, in 2017-18 prices. Capital costs, other implementation spending, and ongoing use of school staff time are estimated to amount to an NPV of £562m.
- However, making assumptions about the extent to which families perceive the financial and time-saving benefits of free meal provision, the consumer benefits from UIFSM are estimated at £549m in 2017-18, or £4.407bn in NPV terms over the period, of which the majority are experienced by those who would not have been previously claiming FSMs.
- Subtracting these benefits from the economic costs of the policy leaves an estimated net economic benefit (on the narrow definition used here) of £887m across the period. Here, the increased costs to the education system of delivering school meals has been offset by benefits for households, assuming that there are economies of scale in the labour cost of providing meals.
- The net public sector cost, however, is an estimated £5.560bn across the period, including Government spending and the remaining burdens for schools, taking into account revenue loss. UIFSM creates a large transfer from taxpayers to households with infants who are not entitled to FSMs.
- In an alternative scenario where economies of scale are not realised, food price inflation is higher, and the assumed benefits experienced by households are lower, the net economic costs increase to total of £500m across the period, compared to a baseline without UIFSM.
- In a more optimistic scenario for these variables, with greater economies of scale and higher valuations for the benefits received by parents, the net economic benefit on these narrow terms is estimated to be as high as £1.618bn, though public sector costs are still £5.076bn.

The Department for Education has provided revenue funding for schools, at a rate equivalent to £2.30 per meal taken by newly-eligible pupils, amounting to almost £650m in 2016/17, and over the first two years of the policy gave an extra £32.5m to small schools. Around £180m of capital funding has also been provided.

- Given the implementation activity required, in the central modelling scenario it is estimated that UIFSM created an initial net cost to schools of around £125m across 2013-14 and 2014-15, taking into account DfE funding received. However, in 2015-16 schools are estimated to have on average received £38m more funding than the estimated revenue costs they faced as a result of the policy, consistent with reports that few schools have had an increase in

school catering deficits. With the revenue funding rate currently fixed at £2.30, schools have benefited from weak wage growth and food input price deflation in the past.

- Across the rest of the period and depending on inflation rates, it is forecast that if the revenue funding rate is held at £2.30, by 2023-24 the policy could be creating a net annual cost to schools of £109m in today's prices. Across the whole period, schools would have faced an NPV net cost of £433m in this scenario.

The Sutton Trust-EEF Toolkit can be used to compare the impacts and costs of educational interventions (on scales from 'very low', 'low', through 'moderate' to 'high' and 'very high'), with interventions that are more expensive to deliver only proving cost-effective if they come with higher educational impacts (Higgins et al., 2014):

- If UIFSM were to achieve a similar impact on Key Stage 1 attainment to that observed in the pilot, the 'effect size' would place it in the 'low impact' category on this scale.
- On the other hand, the economic costs estimated here in the central scenario are negative (with Government spending resulting in savings to households). The size of the economic cost would be categorised as 'very low' on the scale – in which case the policy would appear to be cost-effective as an educational intervention, if such educational impacts were achieved.
- However, the total public spending impacts are higher than the net economic cost, and would be categorised as a 'moderate' cost on the Toolkit scale, so the overall educational cost-effectiveness of the policy is weaker on this measure.

Conclusion

UIFSM led to a rapid increase in school meal take-up across the majority of schools. Schools and caterers have incurred significant costs and have made many revisions to the delivery of food, in order to implement UIFSM. There appears to be scope for schools to learn from others' experience, as many have found solutions to challenges that others have struggled with. Most parents are satisfied with the quality of school lunch provision. Schools with better Ofsted inspection outcomes have tended to have higher rates of take-up, and, despite initial concerns for the ability of small schools in particular to deliver higher levels of take-up, these have not been reflected in the rates reported by schools.

Parents have cited significant financial benefits as a result of UIFSM and have appreciated the time that has been saved from not having to make packed lunches. Some, though generally less than half, of the school and parent/carer respondents to surveys have perceived positive impacts in the short term on educational, social and health outcomes, but such effects have not been tested for statistically in this study. UIFSM has not, on its own, caused most schools to change their wider food policies but it has often supported, or been a catalyst for, wider efforts to improve the profile of healthy eating in a school, better engage parents and pupils, and develop the school food curriculum. Many school leaders believe UIFSM has improved the profile of healthy eating across their school, and many parents feel it has encouraged their children to try new foods and eat more fruit and vegetables. Further research may be required to establish whether similar impacts on education are likely to have occurred as were found in the FSM pilots, and whether the perceived benefits for dietary habits, dining etiquette and social skills noted by some respondents have had longer-term impacts.

In a central modelling scenario, the estimated economic resource costs of the policy are smaller than the value of financial and time savings for families, making UIFSM a potentially cost-effective educational intervention on these terms. This is dependent on seeing the impacts observed in the FSM pilots replicated, on achieving economies of scale in production, and on maintaining quality in school food provision. School leaders and caterers should reflect on the lessons from this study, and the examples of alternative delivery approaches from case studies, to make sure this happens.

However, under any scenario the public sector financial costs are substantial, and on these terms the policy's efficacy would rest on policymakers attaching a high value on improving the living standards of households with infants who were not already eligible for FSM, and on potentially generating health and social benefits.

So far, the funding of schools to deliver UIFSM appears to have been adequate on average, but a small proportion of schools have seen an increase in deficits in school meal provision, and on reasonable assumptions of future cost inflation the current funding rates applied by the Department for Education are likely to become insufficient. Under this scenario, the net costs to schools – and the existing impacts on wider curriculum delivery and school staff time – will be increased, potentially undermining wider benefits that might be realised. The policy has also affected Pupil Premium funding for infants, which may affect the same children in later years. The Department for Education should monitor the implications for funding and school accountability, and consider ways to make it easier for parents to be registered for the Pupil Premium under Universal Credit.

Introduction and methodology

Background

The School Food Plan, a wide-ranging review of school food provision completed in 2013, recommended that the Coalition Government extend free school meals (FSMs) to all pupils in primary schools (Dimbleby and Vincent, 2013). The report suggested it would lead to positive improvements in health, attainment and social cohesion, while helping families with the cost of living, and came after a pilot of extending eligibility was carried out in a small number of areas between 2009 and 2012. Partially accepting the recommendations, the government announced the policy of Universal Infant Free School Meals (UIFS) in September 2013.¹ Under the Children and Families Act 2014, all children in state funded schools in reception, year 1 and year 2 were to be provided a free school lunch from September 2014.²

UIFS was implemented alongside new food standards, which came into force from January 2015.³ Further actions, developed as part of the School Food Plan, were also put in place to support delivery of the policy for infants, to encourage schools to improve the quality of school lunches, and to increase the proportion of pupils taking them more generally. This included the Small Schools Taskforce launched to develop practical advice for small schools, and a targeted support service for schools, local authorities and caterers.⁴

Evaluation aims

UIFS was introduced across all state primary schools at the same time, has only been in place for three full years, and came at the same time as a range of other important reforms affecting schools, the measurement of pupil attainment, and school food provision. Given this, establishing statistically the impact on education or health outcomes of UIFS is not within the scope of this study, though it is hoped that the evidence generated here would be informative for the design of future studies with these aims. The best statistical evidence of such potential impacts remains that generated by the FSM pilots (Kitchen et al., 2012). The aims of this research are to:

- summarise the existing research evidence on the potential impacts of UIFS;
- evaluate how the national policy has been implemented and how it has affected schools.
- obtain perceptions of educational, health and social outcomes; and
- estimate the costs of the policy, and the potential cost-effectiveness of UIFS as an educational intervention.

Whilst representatives of the catering industry have been surveyed and interviewed, the focus of the research has been on assessing the implementation of the policy and its potential impacts for educational and social outcomes from schools' and parents' perspectives, rather than exploring in detail the supply-chain impacts in relation to school meal provision.

¹ <https://www.gov.uk/government/news/free-school-lunch-for-every-child-in-infant-school>

² <http://www.legislation.gov.uk/ukpga/2014/6/contents/enacted>

³ <http://www.schoolfoodplan.com/actions/school-food-standards/>

⁴ <http://www.schoolfoodplan.com/universal-free-school-meals/>

Methodology

The methodology for this study was informed by discussions with the project's advisory group, whose membership is listed in the acknowledgements.

A review of the research literature was carried out, to provide insights into the potential impacts of UIFSM and the aspects of delivery that would be important in determining these outcomes. This included evidence generated by recent pilots of extending FSM eligibility, and focused on the relationships between school meals, child nutrition, health outcomes and education.

This evidence informed the design of mixed-method fieldwork to evaluate the policy's implementation, carried out between May and July 2017, including:

- 10 case study visits to primary schools, including qualitative discussions with pupils, parents and parent governors, teachers and support staff, catering staff and midday supervisors, external catering managers, school leaders and business managers.
- A survey of school-based staff, with responses from 327 different schools, including 286 senior leaders and business managers, 21 middle leaders, 51 catering staff and meal supervisors, 62 teachers and teaching assistants/SENCOs, and 41 administrators and other staff.
- A survey of 508 parents.
- 17 qualitative interviews with suppliers, catering providers and school leaders.
- Cost proformas to collect quantitative information on take-up and costs from schools and caterers, with 22 received (the information from these was not in a format consistent enough to enable inclusion of findings in this report).

To complement the findings of this fieldwork, and validate some of the perceptions reported by its participants, statistical analyses were conducted using publicly available data. These were:

- an assessment of variations in school meal take-up across pupils and schools, as reported in school censuses since 2014/15 and included in the National Pupil Database;
- an estimation of longer-term trends in school lunch take-up for pupils from households of different levels of income, using the Office for National Statistics' (ONS) Living Costs and Food survey (LCF); and
- an assessment of changes in the proportion of children claiming FSMs for pupil premium purposes, using statistics published by the Department for Education.

Finally, relying heavily on assumptions based on previous research and the evidence provided by this study, the total costs of delivering UIFSM were estimated using a spreadsheet modelling approach. Given the substantial transfers generated by the policy (namely, the savings generated for the families of infants as a result of government spending on school food provision), this distinguishes between public expenditure effects and overall economic resource costs. The financial implications for schools are also estimated, taking into account Department for Education funding for UIFSM. This assessment produces a projection for total costs (on these various definitions) across a 10-year period. For illustration, and ignoring other potential social benefits, these costs are compared to the size of the estimated impact of the FSM pilots on educational attainment to estimate the potential cost-effectiveness of UIFSM as an educational intervention, were similar impacts to be generated by UIFSM.

Organisation of this report

Part 1 outlines the findings of the literature review, Part 2 reports the findings of fieldwork and statistical analyses by aspects of policy implementation and types of perceived outcomes, and Part 3 describes the analysis of costs and cost-effectiveness. The report concludes with a summary of the key messages provided by the research and their potential implications.

Annex A described each of the 10 case studies in more detail, Annex B gives further information on the fieldwork methodology and responses received, Annex C gives more detail on data sources for and the approach taken to statistical analyses, and Annex D provides references.

Part 1: Previous research evidence

1.1. Key policy reviews and recent developments in school food policy

The implementation of Universal Infant Free School Meals (UIFSM) was the culmination of a series of policy developments aimed at promoting healthier schools and lifestyles amongst school children. This stemmed in part from evidence showing poor nutrient and food intake amongst some school-aged children from the National Diet and Nutrition Survey (Ells et al., 2008, citing 2000 survey).

The Scottish Government set up an expert panel to look at free school meals in 2003 (Scottish Executive's Expert Panel on School Meals, 2003), and this was followed by a review in England in 2005 (School Meals Review Panel, 2005), and soon after in Wales (Department for Education, Lifelong Learning and Skills, 2006) and Northern Ireland (Department of Health, Social Services and Public Safety, 2006). These panels recommended the introduction of standards to ensure the quality of food provided in schools on the basis that it would have the potential to support children's nutrition, growth, and development; and informed by anecdotal evidence from teachers and parents on improvements in children's concentration, behaviour, learning, and academic performance when healthier school food is introduced (School Meals Review Panel, 2005).

These reviews have resulted in the introduction of a variety of food-based and nutrient-based standards for school food and other food and drink served in schools in the UK. All maintained schools in England, as well as most academies and free schools, are legally required to meet the regulations.⁵

Concern about children's diets has continued, as has belief in the significant role of schools in promoting healthy lifestyles and the importance of establishing good food habits early on. Policymakers have also identified further benefits of free school meals in terms of reducing stigma, building social cohesion, helping families with the cost of living, and improving educational outcomes. This led to Government-led pilot initiatives in Scotland (Her Majesty's Inspectorate of Education, 2008) and England (Kitchen et al., 2012, Rahim et al., 2012) to introduce or extend free school meals to various groups of school pupils (see Section 1.2). Several other, locally-led initiatives identified have either introduced free school meal provision for all primary pupils or a subset (sometimes following a pilot) or investigated the feasibility of doing so – these are summarised in Table 1.1.

⁵ Academies and free schools set up before September 2010 or after June 2014 are legally required to meet the standards. Academies created between September 2010 and June 2014 are also encouraged to use them.

Table 1.1: Locally-led FSM extension initiatives

Pilot/study	Location	Timing	Description	Published evaluation
Eat Well Do Well	Kingston-upon Hull	April 2004 to March 2007	Mixed provision: breakfasts, hot lunches/dinners, fruit and an afternoon snack/drink	Colquhoun, Wright, Pike, & Gatenby, 2008
Fuel for Kids (F4K)	North Tyneside	Pilot phase from September 2007. Modified initiative rolled out in September 2008	Mixed provision: school breakfast, mid-morning breakfast, lunch, mid-morning and mid-afternoon snack	Carr, Cook & Lhussier, 2008
Liverpool Feasibility Study	Liverpool	2009	Various option considered: Free breakfast, free lunch, free breakfast and lunch	
Islington Universal Primary School extension	London Borough of Islington	2010	Free school meals (lunch) provided to all primary school pupils	
Southwark Universal Primary School Extension	London Borough of Southwark	Piloted in early 2011, phased in over a 3-year period. All schools from September 2013	Free school meals (lunch) provided to all primary school pupils	
Tower Hamlets UIFSM	London Borough of Tower Hamlets	Since September 2013	Free school meals (lunch) provided to all primary pupils in Reception, Year 1 and Year 2	
Newham universal FSMs for primary pupils	London Borough of Newham	Extension of Government pilot from 2012	Free school meals provided to all primary pupils	

Another review of school food, The School Food Plan (Dimbleby and Vincent, 2013), was commissioned by the Coalition Government.⁶ That suggested that, whilst there had been improvements in the nutritional quality of school food in England, and positive developments in the integration of food and health issues in schools' curricula, this was not reflected in all schools. It also found that take-up remained too low to enable the economies of scale in provision that can reduce costs for schools, or to ensure enough pupils were receiving the nutritional benefits of a school lunch.

One recommendation of the School Food Plan was to simplify school food standards to make them easier to implement and enforce. The nutrient-based standards, introduced in between 2006 and 2009, were found to be complicated and expensive to enforce as well as placing restrictions on local flexibility and creativity. The standards were reformed, moving to a focus on final food standards (School Food Plan, 2015). Research conducted by the Children's Food Trust to test the revised food based standards with caterers found that 90 per cent of school cooks and 80 per cent of caterers thought the new standards were easier to understand and 80 per cent of cooks and caterers thought they would provide more flexibility (Mucavele, Nicholas, & Sharp, 2013). The Government has committed to update the standards in the light of new dietary recommendations on sugar and nutrition (HM Government, 2016).

Another recommendation of the School Food Plan was to extend FSMs to all primary school children, starting with the most deprived areas. The Government agreed to extend it in all state-funded schools, but only for infants. Following its announcement in September 2013, UIFSM was introduced in England in September 2014 via the Children and Families Act 2014, which stipulated that all children in state funded schools in reception, year 1 and year 2 should be provided a free school lunch, with revenue and capital funding provided to schools (see Part 3 for more details of UIFSM's funding).⁷ The Children's Food Trust (CFT) and the Lead Association for Catering in Education (LACA) were commissioned by the Department for Education (DfE) to provide a support service for schools, local authorities and caterers preparing to provide UIFSM.⁸ Several further actions announced along with the School Food Plan were also intended to support delivery of the policy and raise take-up of school meals more generally. This included a Small Schools Taskforce launched to develop practical advice for small schools.⁹ Scotland introduced a similar scheme in January 2015, using Barnett formula consequentials of the English funding allocation.¹⁰

The remainder of this literature review will consider the evidence for each of these potential impacts using relevant interventions with a particular emphasis given to the pilot evaluations in England and Scotland. It will conclude by summarising the evidence on impacts as a whole, identifying those factors which are likely to influence these and drawing out any particular lessons for the fieldwork element of the study.

⁶ <http://www.schoolfoodplan.com/the-plan/>

⁷ <http://www.legislation.gov.uk/ukpga/2014/6/contents/enacted>

⁸ <http://www.schoolfoodplan.com/report/kickstart-take-up-of-good-school-food/>

⁹ <http://www.schoolfoodplan.com/universal-free-school-meals/>

¹⁰ <http://www.gov.scot/Topics/Education/Schools/HLivi/schoolmeals/FreeSchoolMeals>

1.2. Evidence on take-up

Evidence from both the English and Scottish pilot studies showed substantial increase in take up of school meals for eligible pupils following introduction of free school meals.

FSM Trial – Scotland (Her Majesty's Inspectorate of Education, 2008)

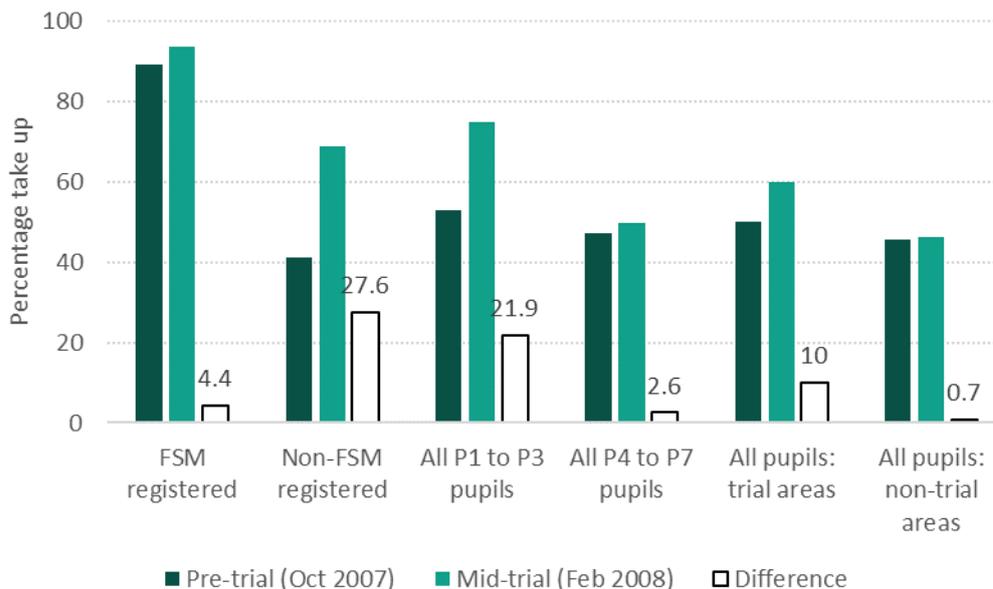
A 9-month trial commissioned by the Scottish Government, which took place between October 2007 and June 2008 in five local authorities in Scotland (East Ayrshire, Fife, Glasgow, Scottish Borders and West Dunbartonshire). These authorities were chosen to represent areas of deprivation and a mix of urban and small town/rural areas.

Free school meals were offered to all primary school pupils in the trial areas in P1 to P3 (broadly equivalent to Reception to Year 2 in England).

A mixed evaluation was carried out to examine to change in uptake; implementation issues; potential health and other benefits; costs of provision; and any barriers to national roll-out (Maclardie et al., 2008).

Figure 1.1 shows that, in Scotland, take up increased for pupils not registered for FSM (from 41 per cent to 69 per cent, an increase of 28 percentage points (ppts)) and for those previously registered for FSM (from 89 per cent to 94 per cent, an increase of 4.4ppts) (Maclardie et al., 2008). Overall, the uptake amongst all P1-P3 pupils increased from 53 per cent to 75 per cent (22ppts).¹¹ Uptake also increased marginally for older pupils who were not eligible for the pilot (from 47 per cent to 50 per cent).

Figure 1.1: Scottish Trial: Percentage take up of School Meals by FSM eligibility before and during trial. All data from trial survey apart from non-trial area data (School Meal Census). Maclardie et al. (2008).



¹¹ P1 to P3 is broadly equivalent to Year 1 to Year 3 in England

FSM Pilot – England (Rahim et al., 2012)

Two-year programme operating in three local authorities between the autumn of 2009 and summer of 2011. Two different approaches to extending FSM provision were tested – a ‘universal’ offer (Newham and Durham) where all primary school children were offered free school meals; and an extended entitlement offer in primary and secondary schools (Wolverhampton).

A joint initiative between the then Department for Children, Schools and Families (now the Department for Education) and the Department of Health, with matched funding from participating local authorities.

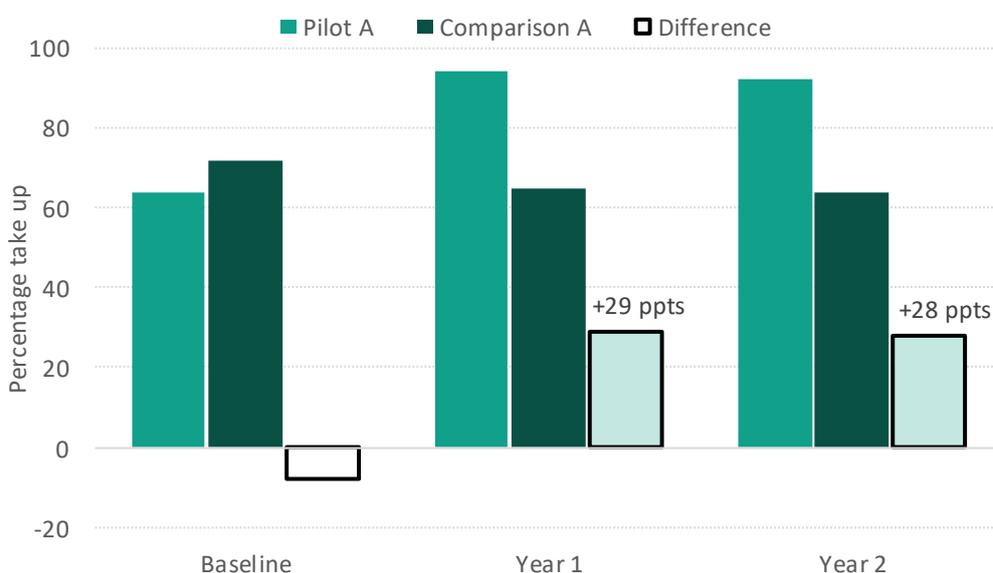
The pilot included a range of supporting activities in each area to encourage take-up and to increase parental awareness of the pilot such as talks and taster sessions.

Both an impact evaluation and implementation evaluation were carried out of the pilot. Evidence of impacts was sought on pupils’ eating habits at school and at home; pupils’ general health and wellbeing; pupils’ behaviour, absences and academic performance.

Newham council continued providing universal free school meals after the English pilot came to an end.

As shown in Figures 1.2 and 1.3, overall take-up in the English pilot for all pupils in Reception to year 4 increased by 28 ppts in area A¹² and by 29 ppts in area B¹³ compared to the comparison areas (Kitchen et al., 2012) by year 2.

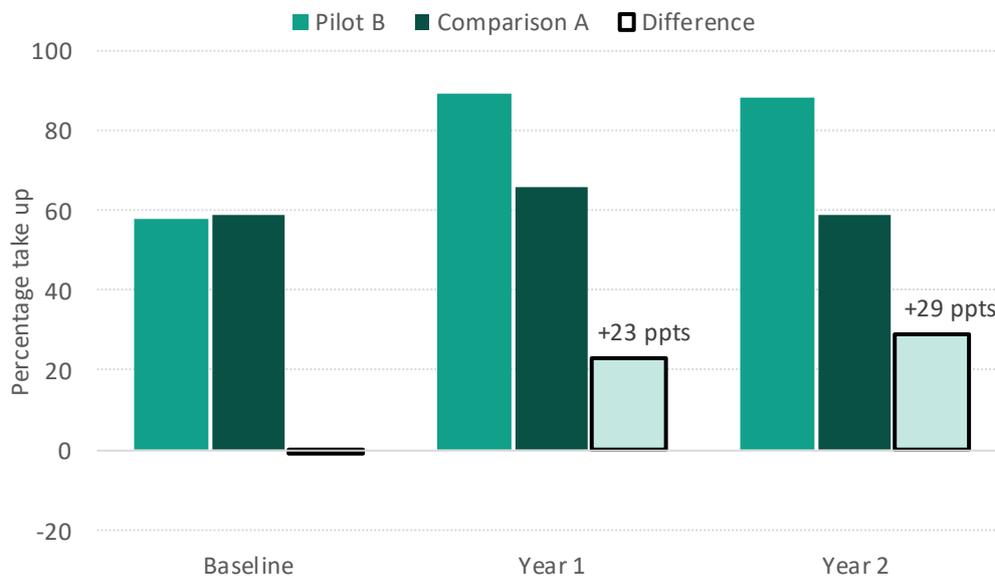
Figure 1.2: English Pilot impact on percentage take up in area A. Significant differences shaded light green. Kitchen et al. (2012).



¹² Newham

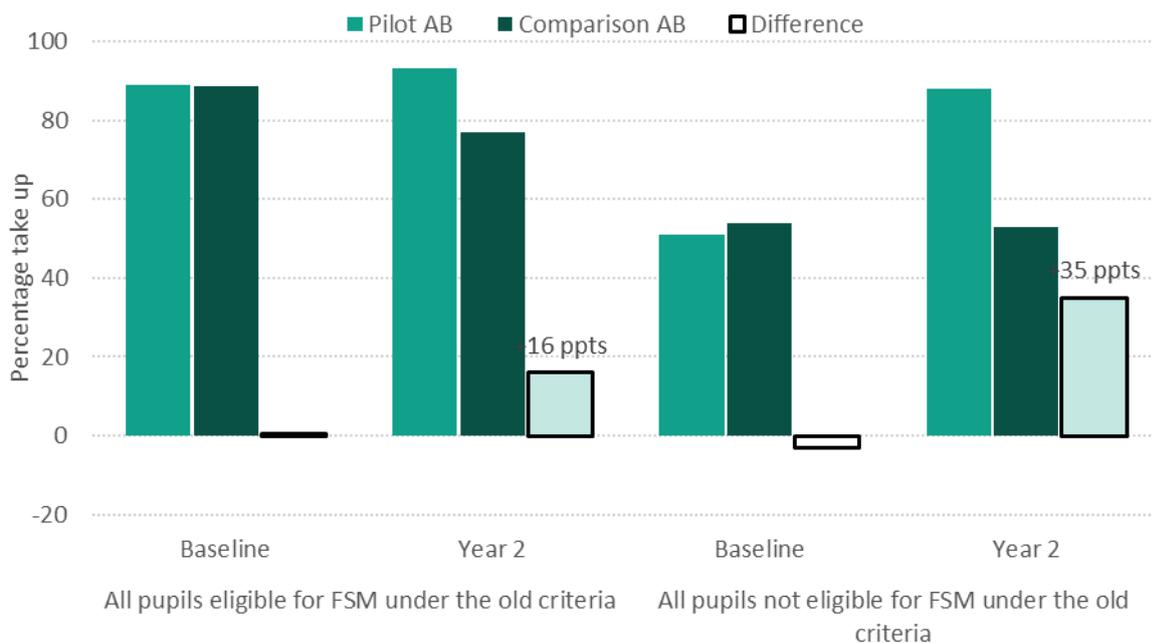
¹³ Durham

Figure 1.3: English Pilot impact on take-up in area B. Significant differences shaded light green. Kitchen et al. (2012).



Whilst most of this increase in take-up was driven by the substantial increase in take-up of school meals in the pilot areas, there was also evidence that the pilot helped to mitigate an observed fall in take-up of school meals by those taking school meals at the baseline in the comparison areas. The pilot was shown to have a positive and significant impact on take-up for pupils who were already eligible for FSM as well as for those who were not. For those who were eligible for FSM at the baseline, the pilot increased take-up by 16 ppts, compared to the comparison group. Amongst those pupils who were not eligible for FSM at the baseline, this effect was, unsurprisingly, higher at 35ppts (Figure 1.4).

Figure 1.4: English Pilot impact on take-up in areas A and B by FSM eligibility under the old criteria at baseline. Significant differences shaded light green. Kitchen et al. (2012).



These take-up figures are not strictly comparable with the Scottish figures as the pilot lasted two years in England, compared to one year in Scotland. The English evaluation also used differences between pilot areas and comparison areas to determine impact, whilst the Scottish study was a before and after analysis¹⁴. Nevertheless, it is interesting to note that in both pilots, take-up increased amongst those pupils previously eligible for FSM. This suggests that increased take-up amongst the most disadvantaged children, an aim of the current policy in England, had been realised.

Reducing stigma

Entitlement to FSM is dependent on parental receipt of certain benefits.¹⁵ For a child to be *eligible* for a FSM, a child's parent or guardian has to register with their child's school/local authority. Stigmatisation have been found to be a key barrier both to parents registering for FSM if entitled (claiming FSM), and taking the meals up (Harper & Wood, 2009). This is also likely to be worse where parents have bad memories of claiming FSM from their own time at school (MacLardie et al., 2008; P. Storey & Chamberlin, 2001; The Children's Society, 2016). There is sometimes a lack of awareness of entitlement (Woodward, Sahota, Pike, & Molinari, 2015). Other barriers may relate to the claiming process. In response to this, many schools now use an eligibility checking service which requires little documentation from parents (Long, 2017), and many have opted for payment systems that make it more difficult for children to identify who is in receipt of free meals. Research has suggested that around 11% of pupils entitled to FSM were not claiming them in 2013, with pupils living in less deprived areas; attending schools with a lower school FSM rate; families with higher status occupations or pupils living in a family with higher parental qualifications being less likely to claim (Iniesta-Martinez & Evans, 2012; Lord et al., 2013).

There is evidence from various pilots in the UK that universal provision of school lunches can improve take-up not only from those who are registered but also from those who are entitled but not registered.¹⁶ Findings from the Hull initiative suggest that 71 per cent of staff felt that there was less stigma attached to children on free school meals than before (Colquhoun et al., 2008). As noted above, the universal entitlement pilot in England and Scotland substantially increased the likelihood of those children entitled and eligible to have free school meals to take them. Interestingly, in England, it was also found that take-up also increased for those children who were entitled to free school meals but not eligible at the baseline – with 73 per cent having taken a school meal during the last week, compared to 34 per cent of similar pupils in comparison areas – only slightly lower than that for all non-takers of school meals in the pilot areas at the baseline (79 per cent) (Kitchen et al., 2012). This group covered 11 per cent of pupils in the universal pilot areas. The qualitative case studies (Rahim et al., 2012) indicated that the increased likelihood of taking up school meals among this group might be attributable to several factors including the removal of any stigma associated

¹⁴ The Scottish study did include data on non-trial areas from alternative sources which showed that take up over the same period had remained fairly static.

¹⁵ Income Support, income-based Jobseeker's Allowance, income-related Employment and Support Allowance, support under Part VI of the Immigration and Asylum Act 1999, the guaranteed element of Pension Credit, Child Tax Credit (provided they're not also entitled to Working Tax Credit and have an annual gross income of no more than £16,190), Working Tax Credit run-on, Universal Credit.

¹⁶ Children may be entitled but not eligible (i.e. not registered for FSM by their parent) not only due to stigma but for other reasons such as the parent(s) may not have been aware their child was entitled to free school meals or they may have had difficulties in filling in the relevant form.

with taking FSM, the fact that parents are no longer required to apply for free meals, that they were unaware they were entitled, or that they responded to the promotion of school meals during the pilot. In the Scottish trial, although the stigma attached to receiving FSM was not seen as a particular issue in primary schools, the trial was viewed positively in light of the fact that it eliminated the possibility of stigmatisation (MacLardie et al., 2008).

This suggests that providing a universal service is likely to increase take-up amongst disadvantaged groups, although it is likely that following the recommendation in the School Food Plan (Dimbleby and Vincent, 2013) to have a cashless payment system to shorten queuing times and prevent stigmatisation, that this source of stigma is becoming less of an issue.

1.3. Improving the quality of food eaten by children

There is clear evidence that the introduction of the school standards has improved children's nutrition in schools and some evidence of a positive impact of the introduction of school food standards in England on consumption both inside and outside school in primary school children aged 4-7 years (Adamson et al., 2013, citing Haroun et al. (2010) and Adamson et al. (2011)). There have also been improvements in packed lunches over the same period, although it is unclear whether this is due to schools introducing packed lunch policies in line with the standards (Pearce, Harper, Haroun, Wood, & Nelson, 2011).

One meta-analysis found that, compared to school meals, total energy intake was higher with packed lunches, but that higher levels of sugar, saturated fat and sodium made their nutritional quality poor (Evans, Cleghorn, Greenwood, & Cade, 2010).¹⁷ Another study found the energy intake from both packed lunches and school lunches to be low, given children's energy needs, perhaps reflecting portion size or waste (Pearce et al., 2011). This research also revealed, however, that those children having school lunch had total lunchtime dietary intakes more in line with dietary recommendations than those children having a packed lunch 6 to 8 months after the nutrient-based standards for school lunch became mandatory. Recent research suggested that only 1.6 per cent of primary children's packed lunches met the nutritional standards set for their classmates eating school lunches - up by 0.5 percentage points since the last study conducted 10 years previously (Evans and Cade., 2016).¹⁸ Few of the packed lunches met the standards for vitamin A (17 per cent), iron (26 per cent) or zinc (16 per cent), mostly due to the lack of fresh salad and vegetables and unprocessed meat or fish. Children having a school meal have been found to consume a healthier diet over the whole day compared with children who take a packed lunch to school (Evans et al., 2015).

Findings from the free school meal pilot in Hull showed that whilst a hot school lunch could theoretically provide a more nutritionally balanced meal than a packed lunch, the pattern of actual consumption meant that a packed lunch was more likely to provide an excess of calories at lunchtime, and a school dinner a shortage, but that the packed lunch was likely to provide more

¹⁷ A typical primary-school lunch would consist of two courses: a hot or cold main meal, a starchy accompaniment, a portion of vegetables/salad and a dessert/fruit. Water and bread would also be freely available. A packed lunch would typically contain a sandwich, a yoghurt, a chocolate biscuit, a piece of fruit and a bottle of squash (Pearce et al., 2011)..

¹⁸ https://www.leeds.ac.uk/news/article/3907/too_few_school_packed_lunches_meet_nutritional_standards. See Evans and Cade (2016) for analysis of 2006 data.

calories from fat, as well as more saturated fat, sodium and sugar (Colquhoun et al., 2008).¹⁹ The packed lunch also provided more micronutrients due to the volume of food consumed. Children in a school of high eligibility for FSM were likely to consume both the highest calorie intake from packed lunches (with implications for obesity) and low-calorie intakes from hot dinners (due to waste, with implications for hunger and lack of ability of a school lunch to make up for poor nutrition at other times).

Results from the national FSM pilot studies were positive in terms of improving the perception of quality of the food served. In Scotland, given the short term nature of the trial, the evaluation was not intended to provide a robust evaluation of the impact on pupils' nutritional intake, health, behaviour or educational attainment; rather, the evaluation considered the early perceptions of health and other benefits (MacLardie et al., 2008). The qualitative research found that school meals were viewed positively overall by pupils and parents: pupils generally enjoyed the meals and parents felt that they were healthy and of high quality. Even parents whose child did not take school meals were positive about them. However, these views were not held by all parents, particularly amongst those in the least deprived areas, with some feeling that the packed lunches they had given to their child had been healthier than the school lunches.

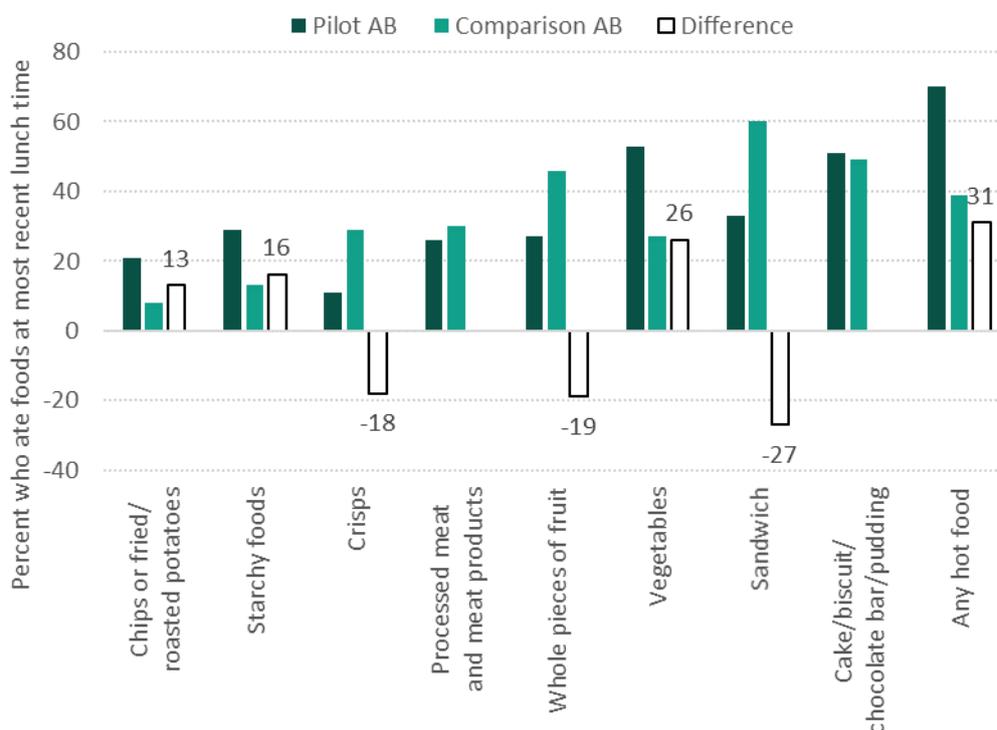
Evidence from the English pilot showed that the increased take-up of school meals led to a shift in the types of food that pupils ate at lunchtime, away from foods typically associated with packed lunches towards those associated with hot meals as, not surprisingly, pupils were more likely to have a hot meal in the universal areas (+32 percentage points (ppts)) (Kitchen et al., 2012). As shown in Figure 1.4, at lunchtime, pupils in the universal pilot areas were significantly more likely to eat vegetables (+26 ppts), chips or roasted/fried potatoes (+13ppts) and rice/pasta/potatoes not fried in oil (+16ppts) and to drink water (+20ppts) than in the comparison areas. Pupils were significantly less likely to eat whole pieces of fruit (-19ppts)²⁰ and crisps (-18ppts) and to drink soft drinks (-16ppts). The universal entitlement pilot also affected parent's perceptions of school meals and their children's eating habits, with parents in the universal areas much more likely to think that a school meal was better for their child's health than a packed lunch (Kitchen et al., 2012; Rahim et al., 2012).

As in Scotland, the universal pilot in England improved parental perceptions of school meals, compared to the comparison areas. Parents in the universal pilot areas were more likely to give positive ratings for the quality of school meals (+7ppts), how healthy school meals are (+7 ppts), dining facilities (+12 ppts) and time taken for pupils to be served (+9ppts), although parents in comparison areas were more likely to respond 'don't know' rather than give a negative rating to these aspects (Kitchen et al., 2012).

¹⁹ All primary and special school children in Hull were offered free school meals from April 2004 to March 2007. Schools were also encouraged to have free breakfast clubs which makes it difficult to attribute any findings specifically to the lunch service.

²⁰ There were some small differences for those children entitled but not eligible for a FSM or who had a less healthy diet who decided to take a school meal in the pilot areas in term of no impact on consumption of whole fruit at lunchtime. This perhaps reflected the fact that these children were less likely to have fruit in their packed lunch previously.

Figure 1.4: English pilot impact on consumption of foods at lunchtime: only differences significant at the 1% or 5% level are shown. Kitchen et al. (2012).



Given that school meals are generally a healthier option than packed lunches, and evidence that the introduction of food standards has improved the nutrition content of school lunches (Spence et al., 2013), increases in take-up of school meals will be critical to improving the intake of healthy food at lunchtime. Research has also shown that it is more expensive to consume a healthy diet than a less healthy one (Morris, Hulme, Clarke, Edwards, & Cade, 2014). Therefore, given the increases in take-up of school meals seen in the pilots detailed above, it seems likely that the presumed increased take up following UJFSM could have had a bigger impact in terms of improving nutrition intake – at least during school time – than any recent changes in the content of packed lunches, particularly for children from economically disadvantaged backgrounds.

1.4. Education, health and social impacts

Improving health in the short term

Weight status when children start primary school is an important predictor of health outcomes in later life. Across all countries of the UK, more than one in five children are overweight or obese during their first year of primary school and, by year 6, over one in three children are in one of these categories (Royal College of Paediatrics and Child Health, 2017). There has been little improvement in the proportion of children of healthy weight in any country over the last ten years, indeed there is evidence that younger generations are becoming obese at earlier ages and staying obese for longer (HM Government, 2016, citing Johnson et al (2015)). Those children living in deprived areas are much more likely to be overweight or obese and this is getting worse (HM Government, 2016, citing Health and Social Care Information Centre (2015)).

There have, however, been some improvements in the diets of school children in UK over the last decade in relation to saturated fat, sugar and contribution of fat to calorie intake, although fibre

intake remains low (Weichselbaum & Buttriss, 2014). This research also highlighted continued evidence of socio-economic inequalities, with children from higher income families tending to have higher intakes of fruits and vegetables compared to children from lower income families.

Tooth decay is almost entirely preventable, but in 2013 (the latest year for which data is available), nearly a third (31 per cent) of 5 year olds and nearly a half (46 per cent) of 8 year olds had obvious decay experience in their primary teeth. Children eligible for FSM are more likely to have oral disease than other children of the same age.²¹

One systematic review of European studies looked at the effectiveness of school-based programmes promoting a healthy diet on actual dietary intake and on BMI levels (Van Cauwenberghe et al., 2010; Katz, O'connell, Njike, Yeh, & Nawaz, 2008). This found that the strongest evidence was for multicomponent interventions that combine improved availability of fruit and vegetables (e.g. free or subscription) with a nutrition education curriculum delivered by the teacher and at least some parent involvement. A meta-analysis of school-based interventions to improve daily fruit and vegetable intake in children aged 5 to 12 showed that they can moderately improve fruit intake, but had a minimal impact on vegetable intake (Evans, Christian, Cleghorn, Greenwood, & Cade, 2012).

In terms of preventing obesity in particular, combined diet and physical activity interventions may be more effective than diet and physical interventions implemented separately (Brown & Summerbell, 2009). In its recent plan to tackle childhood obesity, the Government has said that this is likely to require a multi-faceted approach to tackle a number of causal factors related to environment, genetics, culture, and behaviour. The food offered in school and the adoption of 'whole school approaches' to food and healthy living are seen as key components in tackling this (HM Government, 2016).

The Scottish pilot evaluation did not explicitly measure any health outcomes in the pilot areas so there is no way of knowing if the pilot had any short-term impacts on the health of the children in these areas. The English pilot, using both survey and administrative data²² showed no significant impact on the likelihood of children being obese or overweight for any of the pilot models (including the universal pilot areas). The study authors suggested this may be due to the universal pilot areas not significantly changing calorie intake (as opposed to nutrient intake) or that the evaluation period was too short to see any changes.

Evidence from the National Child Measurement Programme (NCMP) also suggests that the pilots are unlikely to have significantly reduced obesity rates (Public Health England, 2017):

- The NCMP takes height and weight measurements of Children are in reception and year 6 each year, primarily in state-maintained schools in England. The programme was launched in the 2005/06 academic year and now holds eleven years of data. A recent analysis of NCMP data by Public Health England examined trends in Body Mass Index (BMI) measures between 2006/7 and 2015/16.
- The report showed that, across the period, rates of obesity have fallen for reception boys, with no significant trend for girls, whilst it has increased for both at year 6. The prevalence of underweight has reduced slightly for boys and girls at reception, and more significantly for

²¹ <http://content.digital.nhs.uk/catalogue/PUB17137/CDHS2013-Executive-Summary.pdf>

²² National Child Measurement Programme <http://content.digital.nhs.uk/ncmp>

girls at year 6. There has been an increase in inequality between areas with different levels of deprivation – increases in obesity have been faster in poorer parts of the country.

- The analysis calculated the extent to which trends in standardized BMI ('BMI z-score', which takes into account age and sex) in each local authority in England across the period diverged from that of the country as a whole, controlling for the age, ethnicity and the deprivation of pupils' area of residence (using the Index of Multiple Deprivation).
- The FSM pilots in Newham and Durham began 3 years into the 10-year period assessed, and Islington also began universal FSM in primary schools from 2010/11 (4 years in), with the implied period of 'treatment' for each cohort of year 6's increasing progressively from these points.²³ If these programmes had substantially affected child weights, it would be reasonable to expect it to lead to a divergence in the average rate of change across the period from that of the national trend.
- For year 6 boys, the results suggested that Islington had a trend similar to the national average, County Durham had a trend that was higher but not statistically significantly so, and Newham had a rate of increase across the period that was statistically significantly greater (but by a small amount - 0.01 of a standard deviation per year).
- For year 6 girls, Islington had a trend that was higher than the average but not statistically significantly so, County Durham had a trend similar to the national average, and Newham again had a statistically significantly greater increase (by 0.01 of a standard deviation per year).
- These data are therefore not consistent with extensions of FSMs in the recent past substantially reducing the average BMI of local children by the time they reach year 6, or at least by an amount great enough to offset other local factors. Whilst Newham appears to have seen an increase in average BMI greater than the national trend, the difference is small in magnitude. The analysis only controlled for the effect of deprivation on *levels* of BMI, not for the fact that over the period there was a greater *increase* in BMI for children in relatively deprived areas more generally – this would be especially likely to affect Newham, which had the 2nd greatest extent of deprivation recorded in the 2010 IMD scales²⁴.

There is limited evidence on the impact of school-based nutrition interventions on dental health, however self-reported dental health before and after the intervention was largely the same in Hull, although there was a reduction in extractions over the course of the pilot (Colquhoun et al., 2008).

Building healthier food habits for the long term

One of the key aims of the UIFSM policy is to improve diet and health in the long term through establishing good dietary habits early on. Research which observed over 400 children aged 24-26 months at lunchtime showed that breastfeeding and giving children a variety of solid foods at a

²³ In Newham, year-6s in 2009/10 would have experienced universal FSMs for at most 1 school year, whilst those of 2015/16 would have experienced it for up to 7 school years at the point of measurement. In Newham, year-6s in 2009/10 would have experienced universal FSMs for at most 1 school year, whilst those from the following year onwards would have experienced it for up to 2 school years, as the scheme was ended at the conclusion of the 2009-12 pilot. In Islington, year-6s in 2010/11 would have experienced universal FSMs for at most 1 year, whilst those of 2015/16 would have experienced it for up to 6 school years at the point of measurement.

²⁴ Communities and Local Government (2011). Here, 'Extent' is defined as the proportion of a local authority who live in one of the most deprived Lower Super Output Areas in the country.

young age influences their preference for food variety. These children were followed up when they were aged between 4 and 22 years old and a food choice questionnaire was used to establish their contemporary food variety. It was found that these early food experiences can ensure children are more likely to keep trying a variety of foods into older childhood, adolescence and early adulthood (Nicklaus, 2009; Nicklaus, Boggio, Chabanet, & Issanchou, 2004, 2005). This is beneficial, as eating a variety of foods is essential to achieve energy and nutrient needs (Krebs-Smith, Smiciklas-Wright, Guthrie, & Krebs-Smith, 1987) and contributes to the pleasure of eating (Rolls, 2000). The impact of this on the likelihood of obesity remains to be explored (Nicklaus, 2009).

Being obese in particular as a child has been found to increase the likelihood of obesity in adulthood. A recent systematic review of 15 cohort studies showed that obese children and adolescents were around five times more likely to be obese in adulthood than others (Simmonds, Llewellyn, Owen, & Woolacott, 2016). Those long term habits can have large consequences: in 2014-15, £5.9 billion was spent on poor diet-related ill health by the NHS in England and £0.9bn on physical inactivity (Scarborough et al., 2011).²⁵ These figures cover chronic conditions such as cardiovascular disease (CVD), cancer, diabetes and dental caries. Over £5bn was spent on overweight/obesity-related ill health, although this includes costs from poor diet and physical inactivity. This covers conditions such as ischaemic heart disease and stroke, breast cancer, colon/rectal cancer and osteoarthritis. Costs are also projected to rise in the future due to projected increases in the prevalence of overweight and obesity – with a £2bn increase in costs by 2030 representing 2 per cent of total health-care spending in 2009 in the UK (Wang et al., 2011).

In addition to escalating healthcare costs, obesity creates indirect costs through decreases in workforce productivity (Lehnert et al., 2013). Lost earnings due to sickness or early death are estimated at up to £2.6bn and the costs of lower employment as a result of obesity in terms of welfare costs and lost earnings may be as much as £16bn or more (McCormick & Stone, 2007).

In the English pilot, a longitudinal survey of pupils and parents showed that apart from pupils in the universal areas being significantly less likely to report eating crisps at least once a day (-13ppts), there were no other significant changes in the child's diet or drink on school days, despite the changes observed at lunchtime (Kitchen et al., 2012). There was also no impact on the likelihood of eating a hot meal in the evening, suggesting that parents did not see a hot meal at lunchtime as a substitute for a hot meal in the evening.²⁶ There were some differences for those children who had an unhealthy diet at the baseline.²⁷ Firstly, they were less likely to take a school meal than all pupils and, while there was no impact on the likelihood of eating cake, biscuits, chocolate bars or puddings among the pilot group as a whole, there was an impact of +23ppts among the pupils with a less healthy diet. There was no significant impact on the likelihood of eating crisps at least once a day among pupils with less healthy diets even though they had a decreased likelihood (-25ppts) of eating

²⁵ Costs have been adjusted for inflation with the assumption that England represents 85 per cent of UK cost and are based on obesity levels. No adjustment has been made for the slight changes in overweight and obesity rates over this period.

²⁶ Note that a hot meal is not necessarily more nutritious than a cold meal but depends on the contents of the meal.

²⁷ The definition of a less healthy diet was developed in consultation with the survey nutritionist. The group comprised those who reported eating crisps at least once a day, cake/biscuit/chocolate bars at least once a day and fruit less than twice a day. It covered 15 per cent of pupils in the universal pilot areas.

crisps at lunchtime. This suggests that these children were more than making up for the healthy food they were given at lunchtime (and possibly not eating) by filling up on unhealthy snacks during or after school.²⁸

The universal pilot had a positive impact on the proportion of parents who said they spoke to their child about what they had eaten in school²⁹ (+14ppts) and their perception of their child's willingness to try new food (+9ppts) (Kitchen et al, 2012). The latter finding was confirmed in the case studies (Rahim et al., 2012).

Evidence from the Scottish pilot qualitative and quantitative research also found that parents felt their child was more willing to try new foods since the introduction of the free school meals trial (45 per cent of all parents: 53 per cent of parents of children who have school meals more often and 36 per cent of parents of children who have school meals as often or less often) (Maclardie et al., 2008). This may be down to peer pressure or the different context of the school setting, or the fact that parents were more willing to risk their child not liking the food if they didn't have to pay for it. This view was also more prevalent amongst those in the most deprived areas (56 per cent) versus the least deprived (34 per cent) echoing the findings from the qualitative research that some parents, particularly from the least deprived areas, felt their children already had a varied and healthy diet at home.

However, even though children were willing to try a wider variety of foods and had an awareness of what a healthy diet was, children in the Scottish pilot usually ended up choosing what they knew they liked and simply left elements of the meal (often vegetables) which they did not (Maclardie et al., 2008). Parents felt that children were more likely to ask for healthier foods at home (34 per cent overall, 45 per cent in the most deprived areas), and to eat more healthily at home (36 per cent overall, 48 per cent in the most deprived areas). There were higher proportions (though still small) of parents in the most deprived areas reporting their children ate less healthily at home or asked for more junk food – this may be due to displacement effects akin to those identified for children with less healthy diets in the English pilots.

The Scottish pilot reported that parents felt they spoke more to their child about food (rather than just about what they had for lunch) – 49 per cent of all parents and 57 per cent of parents from the most deprived areas (Maclardie et al., 2008). The Scottish survey also found that parents felt they knew more about healthy foods after the pilot (45 per cent most deprived areas) and were more likely to buy healthier foods for the home (35 per cent). Interestingly, whilst parents felt less pressure to make their child eat healthy foods at home, this was strongly associated with their child eating more healthily, suggesting that a willingness to try new foods could have meant parents found it easier to get their children to eat healthily at home.

Raising attainment

Whilst brain development occurs rapidly in late pregnancy and up to the first two years of life (where the brain is around 80 per cent of the adult weight), it has become increasingly apparent that brain development continues through childhood and adolescence (Benton, 2008; Taki et al., 2010,

²⁸ The pilot did seem to reduce the likelihood of these pupils having these kinds of snacks on the way into school.

²⁹ Though this may simply reflect the fact that the parent would have previously known what the child ate as they would have prepared the packed lunch.

citing Gogtay et al. (2004)). This makes it reasonable to consider whether diet may influence the cognitive development of children. There are also potential shorter-term impacts on concentration and application which are also relevant to improving child development.

Research on the link between food insufficiency and cognitive development and functioning has mainly focused on the developing world, with limited value for the industrialised world, where instances of severe under-nutrition (as opposed to malnutrition due to bad diets) is rare and also the incidence of disease and the patterning of social and cultural conditions are very different (Taras, 2005). Indeed, a greater concern in the developed world is the increasing incidence of overweight and obesity mentioned above (Branca, Nikogosian, & Lobstein, 2007; World Health Organisation, 2003).

There is also emerging evidence that overweight and obese children generally do not achieve the same levels of school performance as their healthy peers (Sigfúsdóttir et al., 2007, citing Taras et al. (2005)). This may be due associated factors, such as higher rates of absenteeism, poorer mental health and lower self-esteem (Sorhaindo & Feinstein, 2006). There is some evidence that multicomponent interventions targeting physical activity and a healthy diet could benefit general school achievement for these children (Martin et al., 2014).

In developed countries, there is stronger evidence on the importance of meal composition, though research has often focused on breakfast. For example, a study in Japan on healthy children aged 5-18 years found that low GI³⁰ breakfasts are associated with higher grey matter ratios³¹ and higher IQ function (Taki et al., 2010). As well as potentially affecting brain architecture, nutrition could affect brain function and therefore cognitive performance and/or school performance in the short term. As children's brains use fuel or glucose at a higher rate than those of adults (Benton, 2008, citing Durnin (1981)), researchers have tried to establish whether the nature of the diet and the pattern of meal consumption may influence cognitive function of children in the hours after eating.

There is some emerging evidence that a low GL breakfast³² is associated with better memory, better sustained attention and spending more time on task (Benton, 2008, citing Benton et al (2007)). Also, a recent study using a RCT methodology has shown the potential of a low-GI and high-GL breakfast to improve learning as the former makes children more alert and happy (and less nervous and thirsty), whilst the latter causes children to feel more confident and less sluggish, hungry and thirsty (Micha, Rogers, & Nelson, 2011).³³

³⁰ GI – or glycaemic index is a measure of how fast food is digested and energy released. High GI foods are generally rapidly digested low-fibre high-carbohydrate foods which cause an initial peak in blood-glucose levels. Conversely low GI foods cause lower blood-glucose level peaks.

³¹ The grey matter of the frontal area of the brain is particularly involved in judgement, organisation and planning (Benton, 2008).

³² GL or glycaemic load, a measure which considers portion size, is calculated by multiplying the amount of available carbohydrate in a food item by the GI of the food and dividing this by 100.

³³ The effect on cognitive function of GI foods was found to be domain specific, however – with low-GI meals predicting better verbal memory and high-GI foods predicting better response times, better speed of processing and better attention/concentration. Some studies have also looked specifically at snacking. Consumption of 7-year olds of a sugary drink in the afternoon improved attention span and decreased frustration. Also consumption of a mid-morning snack can counteract the negative impact that consuming a small breakfast has on concentration as well as contributing to micronutrient intake, depending on the choice

Considering specific school-based interventions, most of these studies have focused on breakfast and on programmes in the US and conclusions are mixed due to the variety of interventions considered (Rampersaud, 2009). A recent RCT evaluation of the English 'Magic Breakfast' initiative, however, showed that a universal, free, before-school breakfast club established in relatively disadvantaged schools can improve attainment by around two months in year 2 in reading, writing and maths over the year.³⁴ Year 6 children had similar gains in English, but the effects on maths and science were smaller (Crawford et al., 2016).

An example of a school lunch intervention in the UK which was evaluated and which focused on nutritional quality is Jamie Oliver's 'Feed Me Better' campaign³⁵ which took place in 2004 – before the current school food standards came into force. The evaluators employed a difference-in-difference approach, finding significant impacts at Key Stage 2 on the percentage of pupils reaching level 4 in English (between +3 and 6 pts) and level 5 in Science (between +3 and +8 pts) after the reform, comparing with neighbouring local education authorities as a control group (Belot & James, 2011). However, they find the positive effect is attenuated or disappears completely when looking at those children entitled to FSM exclusively. They explain this as being due to this group being most likely to have been exposed to the previous 'unhealthy' meals and therefore eating very little of the new healthy options, which is potentially worse for cognitive outcomes than eating food of low nutritional value, but which provides the essential energy intake to prevent hunger. Analysis of impact on take-up is hampered by lack of data, however, and there is little evidence that simply improving the quality of school lunches leads to an increase in take-up amongst those entitled and eligible for FSM.

Evidence from the Hull study found there was little change in teacher perceptions of children's attention spans, whilst there was an increase in teachers who thought behaviour, memory, pupil performance and work quality had improved, even if these remained at low levels (Colquhoun et al., 2008). There was also a general improvement in reported 'readiness to learn' in the afternoon compared to the baseline.³⁶

The evaluation of the Free School Meals Pilot in England³⁷ found a range of statistically significant impacts on attainment (Figures 1.45-1.8) (Kitchen et al., 2012). The universal pilot had a significant impact on Key Stage 1 and 2 average attainment scores – with the estimates being larger in magnitude and more consistently significant at Key Stage 2.³⁸ Pupils in both of the universal pilot

of snack (Benton, 2008; Weichselbaum & Buttriss, 2014). It is also interesting to note in passing that a meta-analysis of robust studies found no relationship between consumption of sugar and the behaviour and cognitive performance of children, although a small effect on subsets of children could not be ruled out (Wolraich et al., 1995).

³⁴ This study – funded by the Education Endowment Foundation, the charity Magic Breakfast offered support to 53 schools to establish breakfast clubs for one year (2014/15) with as much food as required (free), a £300 grant for start-up costs and advice and guidance from a dedicated 'School Change Leader'.

³⁵ The campaign, implemented before the introduction of school food standards, resulted in drastic changes in meals offered in the schools of one London Borough (Greenwich), shifting from high fat, salt and sugar low-budget processed meals towards healthier options.

³⁶ This included measures of co-operation, communication, achievement and self-esteem.

³⁷ Impacts on cognitive outcomes were not considered as part of the Scottish pilot study.

³⁸ As well as reporting impacts on standardised average point scores, the impact evaluation reported proportions of students meeting expected levels in a range of curricular areas. While there is some evidence of

areas made around two months' more progress, on average, than similar pupils in the comparison areas.

Figure 1.5: Impact of pilot on attainment at KS1 in pilot area A - only differences significant at the 5% level or less are shaded light green. Kitchen et al. (2012).

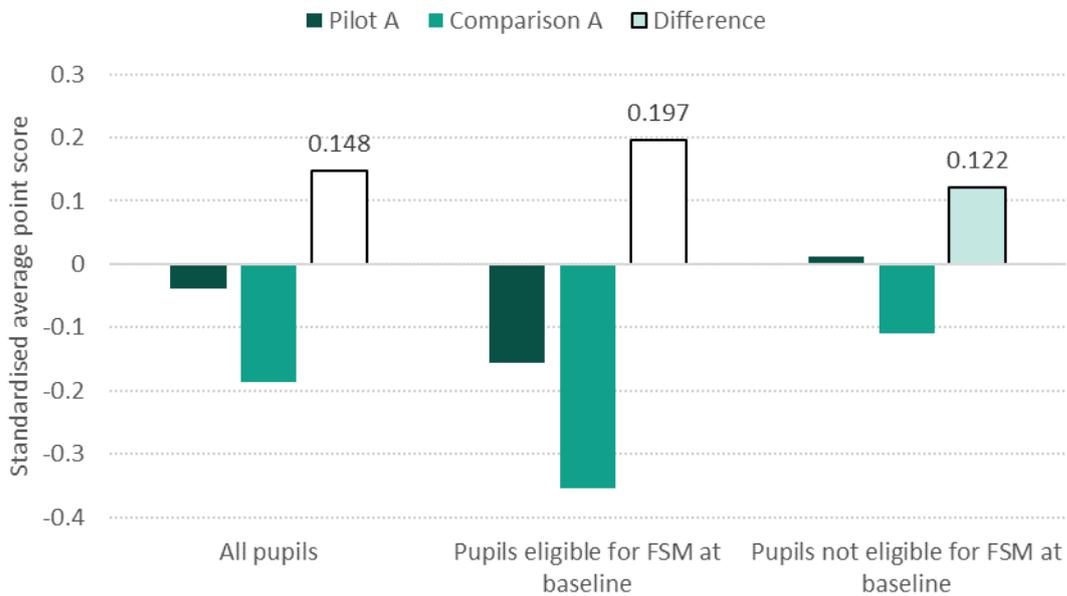
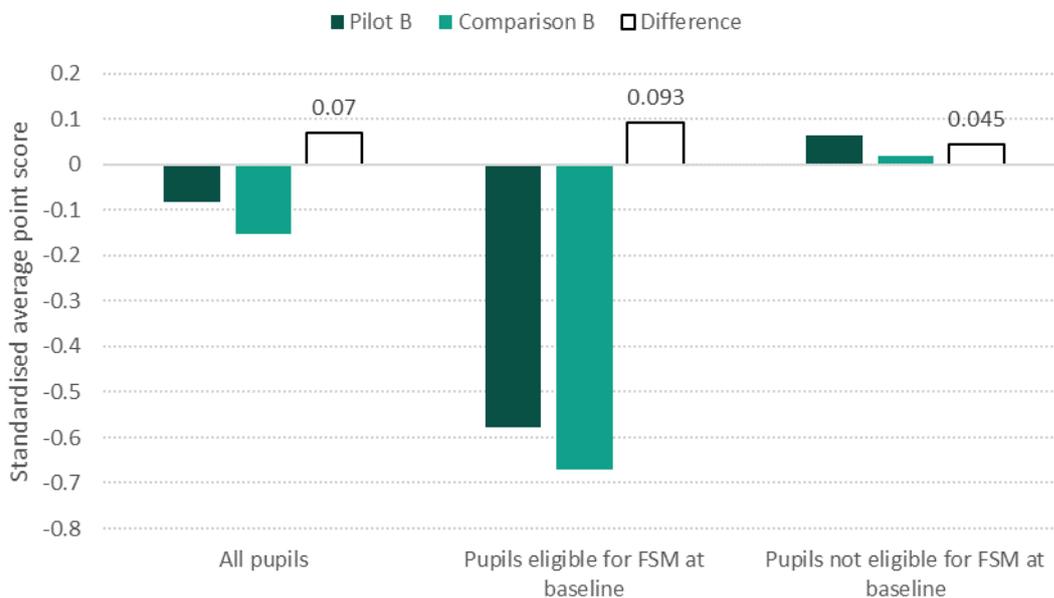


Figure 1.6: Impact of pilot on attainment at KS1 in pilot area B - only differences significant at the 5% level or less are shaded light green. Kitchen et al. (2012).



higher levels of statistical significance for the latter at Key Stage 1 in Durham and at Key Stage 2 in Newham, as a threshold measure, it offers less information on the overall impact of the policy than considering the average score impact focused on in the text and figures.

Figure 1.7: Impact of pilot on attainment at KS2 in pilot area A - only differences significant at the 5% level or less are shaded light green. Kitchen et al., 2012.

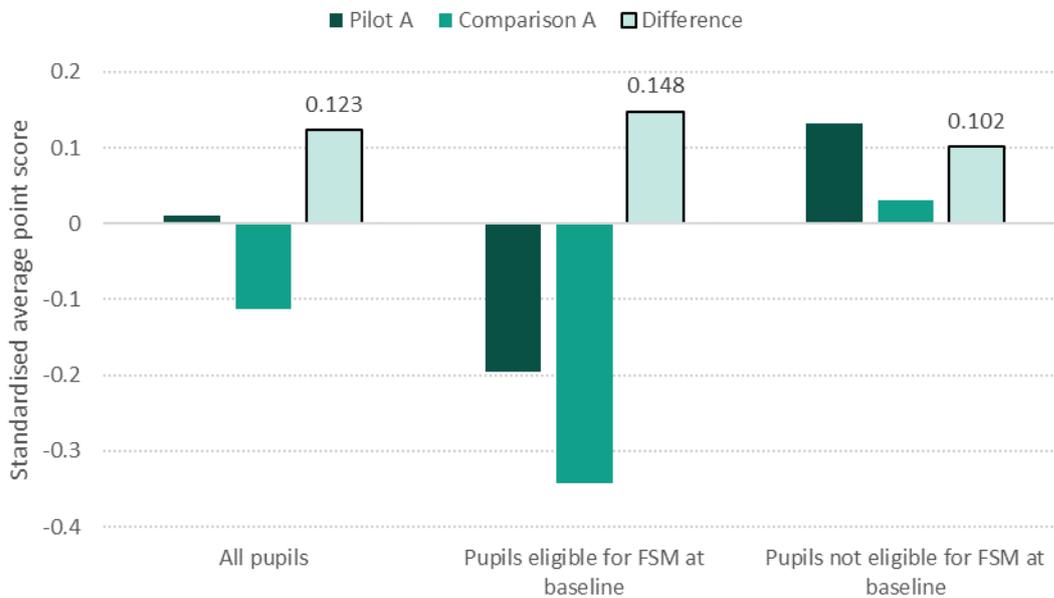
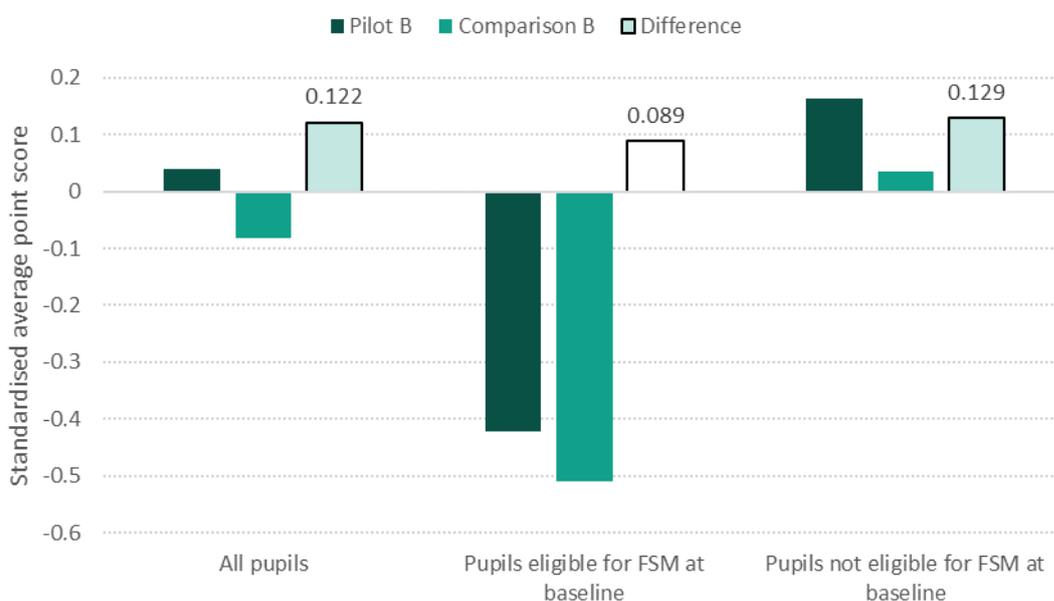


Figure 1.8: Impact of pilot on attainment at KS2 in pilot area B - only differences significant at the 5% level or less are shaded light green. Kitchen et al., 2012.



The universal entitlement pilot appeared to improve attainment more for children from less affluent families (pupils eligible for FSM) and by more for those pupils with lower levels of prior attainment – though some of these differences between pupil types are not statistically significant. By contrast, there was little evidence of any significant effect of the extended entitlement pilot on the attainment of pupils in that area, even amongst those who were predicted to be newly entitled to free school meals.

The evaluation did not determine the explanation for the association found between the implementation of the pilots and pupils' attainment in the relevant areas (Kitchen et al., 2012). If the trends observed were related to school meal provision, previous research suggests it may be related to the benefits of having a more nutritious or simply larger meal at lunchtime. If that was the case, the stronger impact on less affluent families would be consistent with a 'levelling effect', with greater improvements in nutrition for this group. This is because school meals are more likely to have replaced a relatively poorer nutritionally based packed lunch for those that didn't previously take a school meal. The stronger impact on children with lower prior attainment may also be related to the fact that the comparative measure was 'achievement of expected level' rather than a value-added measure. Some respondents to qualitative fieldwork highlighted social benefits of children sitting down and eating a meal together, and potentially more positive relationships between the parents and the school (Rahim et al., 2012).

Overall therefore, there is suggestive evidence that the universal pilot may have contributed to a reduction in education inequalities, although as explained in the accompanying sections on other school-related outcomes, the pilot did not provide clear evidence on which mechanism was driving the effect. This effect contrasts with that found with the Magic Breakfast intervention, which seemed to be more effective at raising the attainment of pupils from less disadvantaged backgrounds, even though relatively disadvantaged students were more likely to attend (Crawford et al., 2016). Much of the literature suggests that good regular dietary habits are the best way to ensure optimal mental and behavioural performance (Bellisle, 2004).

Absenteeism

Research has found that nutrition has an impact of physical development, as poor diet and nutrition are associated with greater susceptibility to illness, which in turn leads to an increase in absence and a decrease in teacher contact hours (Sorhaindo & Feinstein, 2006). The 'Feed Me Better' campaign referred to above found a decrease in authorised absence of 15 per cent after the campaign. Controlling for authorised absence at the school level does not alter the impacts on attainment much (i.e. the improvement in attainment at the school level was not simply due to the pupils attending more on average), however this study was not able to separately identify potential differences in impact at the individual level for those children whose absenteeism does change (Belot & James, 2011).

The Magic Breakfast intervention resulted in reduced pupil absences of almost one half-day per year though it was unclear whether this was due to improved health or simply the incentive effect of having a free breakfast (Crawford et al., 2016).

In the Hull FSM study, there was little change in teacher opinions on absence or punctuality (Colquhoun et al., 2008). Similarly, the English FSM pilot found no significant impact on authorised, unauthorised and overall absence rate (Kitchen et al., 2012). Overall therefore, there is little evidence to suggest UFSM will have had a significant impact on absenteeism, at least in the short term, unless it significantly affects children's overall nutrition.

Behaviour and building socialisation amongst pupils

Nutrition, particularly in the short-term, is believed to impact upon individual behaviour. These behaviours could affect performance at schools and interactions with classmates, and could

compromise self-esteem (Sorhaindo & Feinstein, 2006). There is also evidence that participation in breakfast programmes in particular can have a beneficial impact on behaviour in children at nutritional risk³⁹ (Kleinman et al., 2002) or from low income families (Murphy et al., 1998).

There is some evidence from the UK that a school food and dining room intervention can positively impact on pupil's alertness and lead to improvement in pupil-teacher interactions (Golley et al., 2010). However, a deterioration in pupil-pupil interactions was also observed in this case - suggesting that if collaborative activities in the afternoon are poorly designed, this increased alertness could result in increased off-task behaviour.

In Hull's Eat Well Do Well initiative, some teachers were asked whether they had noticed any differences in specific aspects of children's behaviour since the introduction of the scheme in 2005.⁴⁰ The proportion who noticed no difference since the start of the scheme fell from 2005 (55 per cent) to 2007 (42 per cent). In terms of changes that teachers did notice by the end of the pilot, the most popular responses were that children had more energy (42%), were less tired (31%) and had a longer attention span (25%) as a result of the scheme compared with how they felt about the same aspects due to the scheme at the baseline (16%, 20% and 18% respectively) (Colquhoun et al., 2008). 27% of teachers felt that there were fewer behavioural problems over the lunchtime period as a result of the scheme.

Behaviour and concentration in the classroom improved substantially as a result of the Magic Breakfast club provision, which suggests that a better classroom environment is an important mechanism through which a nutritional intervention may improve attainment (Crawford et al., 2016).

The FSM pilot impact report (Kitchen et al., 2012) found that a larger proportion of parents in the universal entitlement areas observed that it was 'certainly true' that their child was *definitely* 'generally obedient' at home compared to the control areas, however if both positive responses were combined ('certainly true' and 'somewhat true') there were no differences between the pilot and comparison groups. The case studies found both staff and pupils reporting better concentration of children during afternoon lessons, which was attributed to pupils having a healthier, more substantial lunch beforehand. Teachers in the Scottish pilot did not report any behavioural changes in pupils at lunchtime or in afternoon classes, though a small proportion of parents had noticed an improvement of behaviour after school (15%) and at meal times (23%) – with higher percentages for parents of children in the most deprived areas. The authors of the evaluation noted that this latter difference may reflect over-reporting in order to influence continuation of the pilot.

In the English pilot implementation evaluation (Rahim et al., 2012), the social benefits that school meals were felt to bring in terms of sitting down together and eating the same food were important experiences that parents highly valued and wanted for their children. They also hoped that, through observing peers and the influence of staff, children would learn social skills including table manners and dining etiquette. However, there was a view, amongst pupils who took a packed lunch and their

³⁹ Defined in the (US) study as students who has total energy intakes <50 per cent of recommended daily allowance (RDA) and/or 2 or more micronutrients of <50 per cent of RDA.

⁴⁰ All primary and special school children in Hull were offered free school meals from April 2004 to March 2007.

parents, of a risk of alienation, particularly if the seating arrangements are different for those pupils, as they would be now more likely to be in the minority.

Summary on educational outcomes

Overall, there is an increasing range of evidence showing a positive link between diet and dietary change on educational outcomes, however it has proven difficult to isolate the transmission mechanism through which this operates. A systematic review (Ells et al., 2008) found little conclusive evidence of the impact of supplementation (e.g. vitamins and fish oils), specific nutrients (e.g. sugar) and complex meals (for example, consumption and nutritional composition of breakfasts and school meals). This was at least partly due to the limitations on the quality of the studies which generally failed to use robust, systematic and repeatable methodologies and to study the subjects over a sufficient time period (Storey et al., 2011). However, evidence from the ALSPAC longitudinal study reported a negative association between a 'junk food diet' at age 3 and school attainment, but a more recent review of the wider evidence failed to change the conclusions reached by Ells et al. (2008) (Levy, 2013).

This is perhaps not surprising: the effects of nutrition on educational outcomes are intrinsically interwoven with complex factors such as family and community context, poverty, disease and individual maturation and neurodevelopment paths (Sorhaindo & Feinstein, 2006). A sophisticated study is taking place to evaluate the health, cognitive and behavioural impact of school meal provision in a Nordic setting, which may yield useful insights (Waling et al., 2016). Whilst the precise relationships between diet and educational outcomes remain to be clearly established, the evidence for promotion of physical activity and a diet low in fat, salt and sugar but high in fruits, vegetables and complex carbohydrates remains unequivocal in terms of health outcomes for all schoolchildren. In addition, the potential for deficiencies prior to school entry to affect cognitive abilities, the particular susceptibility of nutritionally at risk children and the need to maintain adequate glucose levels for brain function remain compelling (Sorhaindo & Feinstein, 2006). Consistent with this, whilst the results from the English pilot study highlighted the potential importance of school lunch provision for educational attainment, the authors were not able to separate the effects of the provision of free school meals from the wider package of activities which accompanied the pilot (Kitchen et al., 2012).

1.5. Helping families with the cost of living

The FSM pilot implementation report suggests that many parents, as expected, appreciated a reduction in financial costs as well as a reduction in the time spent making packed lunches (Rahim et al., 2012). A 2011-12 School Food Trust survey suggested that the average price charged for a school lunch among the local authorities providing detailed information was £1.84 (Nelson et al, 2012). In comparison, in a more recent survey of parents the average price paid for a packed lunch in summer 2014 was £1.42 (Ensaff & Mahoney, 2014).

Some respondents in the pilot evaluation also thought their children were able to access a balanced meal more easily (Rahim et al., 2012). However, these benefits varied across families, with others reporting concerns about school meal quality, control over their children's food intake and the

choice available, consistent with wider research.⁴¹ In some cases a child switching to school meals may be worse off in terms of immediate satisfaction with food consumed, but the family overall will still have gained due to the financial saving.

1.6. Improving work incentives

Under UIFSM, low-wage workers will be able to receive FSMs for their infants together with Working Tax Credit as they increase their hours, instead of having free school meals for all of their infant children removed once their hours and benefit entitlements reach critical thresholds. The relevance of UIFSM to work incentives may be different under Universal Credit, where the lack of a distinct Working Tax Credit will give less importance to the 16-hour threshold in determining the gains from work, but in general there will still be many instances where UIFSM allows parents to gain more from work without putting the benefit of free school meals at risk.

A survey of parents before the introduction of UIFSM indicated that the prospect of the loss of FSM was a major work disincentive for them. Nearly half (45%) of parents in families in receipt of FSM were worried 'a lot' about the financial implications of the loss of FSM on moving into work or taking on additional hours. Six out of ten felt that this had an impact on their decisions about moving into work or taking on additional hours (Royston et al., 2012).

1.7. Estimating the costs of school meal provision

Obtaining reliable information on the costs of school meal provision is complicated by the range of types of provision, including in-house or through external caterers. Costs can include variable costs such as food, staff, and energy costs, but also periodic or one-off capital costs. In many cases, there has been an element of subsidisation in the per meal fee charged to the school, and previous surveys suggest that the prices charged to parents are lower than the average costs of school meal delivery (Nelson et al., 2012). It is likely that the cost of provision in small schools is likely to be higher than in larger schools as the latter allows fixed costs to be spread out over a larger number of meals (Dimpleby and Vincent, 2013).

Costs⁴²

A 2011-12 School Food Trust survey found average meal production costs across the country in 2011/12 to be £2.30 per meal in primary schools (in the prices of the day), including labour costs, overheads (including premises costs) and ingredients (Nelson et al., 2012). The Government's revenue funding rate for newly-eligible FSM meals is equal to this value multiplied by 190 teaching days in the year - £437.

In England's FSM pilot, the total running cost per newly eligible pupil (those not previously eligible for FSM) was estimated at between £316 and £364 (Kitchen et al., 2012). Fixed costs were difficult to estimate with accuracy; but authors stated it was clear they were small compared to the on-going running costs. They estimated these to be around £2500 per school to upgrade kitchen/dining facilities and around £150k per authority to promote and support the pilot. Fixed costs varied significantly between the two primary pilot authorities with full entitlement reflecting, perhaps, past

⁴¹ In a 2011 survey, almost half of parents with a child in primary school eating packed lunches said they opted for a packed lunch because they knew that their child would eat the food (School Food Trust, 2011).

⁴² All costs in this section have been converted to 2016 prices unless otherwise stated.

differences in securing on-going investment in kitchen facilities. In practice, it can be difficult to differentiate existing investment plans from expenditure specifically related to provision of UIFSM.

In the Scottish FSM trial, each trial area was asked to estimate the additional costs (beyond what would normally be spent on school meals) incurred as a direct result of the trial and the associated increase in uptake (Maclardie et al., 2008). Costs, both capital and revenue costs, were provided under the broad headings of food, staffing, equipment and marketing/publicity. To minimise the research burden on LAs, the researchers did not provide a template or detailed instructions on how costs were to be recorded, but asked them to provide a summary of the financial information they were recording anyway. Therefore, potential inconsistencies in how costs were recorded means that costs were used as a broad guide rather than a precise measure. Cost per meal tended to be higher where there was a big increase in take up (e.g. rural local authorities with no history of providing a hot meal) and lower where total number of additional meals supplied was larger where, presumably, economies of scale in food provision could be exploited. The estimated costs of the trial (fixed and variable costs) varied widely from £2.03 per additional meal in Fife to £5.26 in the Scottish Borders. Cost per pupil per year (estimated from costs in paper) ranged from £385 to £1000 in 2016 prices. The Scottish figures include all upfront capital costs in these estimates so are likely to overstate the long-run cost of extending entitlement.

Both studies found that variable costs (food costs, staffing costs etc.) made up the vast majority of costs of implementing the policy compared to fixed costs – despite fixed costs being difficult to estimate accurately.

Deadweight costs and value for money

There is likely to be significant ‘deadweight’ associated with a policy to extend entitlement to free school meals – this is because there are a significant number of parents who would have paid for the meals in the absence of a universal FSM policy. By multiplying the number of parents paying at the baseline by what they paid for the meals at that time, the English pilot evaluation authors estimated that this deadweight cost is equivalent to between 32 per cent and 46 per cent of the total running costs (Kitchen et al., 2012). The level of deadweight depends on how much is charged per meal to parents and the proportion of children entitled to FSM before the introduction of a policy compared to the total take-up afterwards.

The English pilot evaluation calculated the cost per percentage point impact on take-up and attainment (Kitchen et al., 2012). However, given that the figures were based on impact estimates which themselves subject to statistical uncertainty, the VfM estimates were also uncertain; this was particularly so for Key Stage 1 (which are most relevant for UIFSM as the pilot was evaluated too early to estimate any impacts of infant provision on Key Stage 2 scores later on). The study compared the cost-effectiveness of delivering attainment impacts through the scheme with that of other interventions for which there was comparable evaluation evidence. The ‘Feed Me Better’ campaign and the Literacy Hour initiative were said to have provided better value for money based on the findings on attainment, costing £17.56 and £15.37⁴³ per pupil to obtain a 1 percentage point increase in Key Stage 2 English attainment, compared to £123 for the universal FSM pilots. Moreover, the same impact on numeracy attainment at Key Stage 2 cost £89 for the FSM pilot but

⁴³ £16 and £14 in 2010 prices uprated for inflation using the ONS GDP deflator series.

£16.46 for the 'Feed Me Better' scheme.⁴⁴ However, the universal FSM pilot appeared to provide better value for money in these simple terms than the 'Every Child a Reader' initiative, which had a cost of £324 for a 1 percentage point impact in Key Stage 1 Literacy attainment compared with £258⁴⁵ in the FSM pilots (Kitchen et al., 2012). It is important to note, however, that the focus on the FSM pilot study was on immediate, rather than longer-term benefits and no attempt was made to decompose the costs of the pilot into the costs relating to different benefits. The former may lead to an underestimate of cost-effectiveness whereas the latter risks overstating the costs of the pilot in relation to any single outcome (e.g. attainment).

1.8. Conclusions

Key potential impacts identified in the literature

Reflecting the wide-ranging aims of the policy of UIFSM and given the discussion above, there are several potential impacts of a policy of providing free school meals to all infant children. The clearest impact is on helping parents with the cost of living as they no longer have to pay for a packed lunch and benefit from the associated time savings. These can be viewed as a simple transfer from the taxpayer to the parent, rather than a net benefit to the economy. Other potential impacts identified in the literature are:

- Improved nutrition during the school day – particularly for those at nutritional risk which tend to be children from more disadvantaged families;
- Improved nutrition over the course of the whole day and establishing longer term healthy food habits;
- Improved school outcomes – attainment, absence, behaviour and socialisation;
- Reduced levels of stigma associated with claiming free school meals; and
- Improved work incentives for parents of children entitled to FSM.

There may be other unintended impacts of the policy – including the likely negative impact on rates of registration for free school meals amongst parents of infant children who are entitled thereby reducing pupil premium funding for the school.

The importance of both adequate amounts of food and the nutritional content of food for the long-term health and development of children over the life course and beyond has long been recognised (World Health Organisation, 2003). However, repeated systematic reviews of nutrition interventions in schools have failed to conclude that these factors have reliable and predictable impacts on educational outcomes. There is evidence suggesting a link between food provision, health and education, but it is likely that this is interlinked with other environmental aspects both in school (such as food standards) and outside school (e.g. parental education programmes and physical activity). This suggests that in order to assess the likely effects of UIFSM, account needs to be taken of the changes made in the school context in a wider sense that may have taken place at the same time as the introduction of UIFSM. It is difficult to separate individual contributions, but as the major change in food provision for infants in recent years, UIFSM will have played an important role as a catalyst in triggering a variety of changes in schools.

⁴⁴ £81 and £15 in 2010 prices

⁴⁵ £295 and £235 respectively

However, it is clear that good nutrition, particularly early on, improves health and development in the short term and influences behaviours and development in the long term. Healthy children are more likely to attend school, have normal cognitive development and have fewer behavioural problems. Interventions which improve the amount of food consumed up to recommended levels, improve the nutrient content of food and lead to a more constant supply of glucose to the brain, are likely to lead to improved alertness/attention in the short term and potentially attainment in the long-term (Sorhaindo & Feinstein, 2006).

Based on evidence from the English and Scottish pilot studies (Rahim et al., 2012; Maclardie et al., 2008) we could also tentatively conclude that there are potential impacts on socialisation, associated with the children sitting down together to eat the same food. Given that both studies showed increases in take-up among those children who were eligible for FSM (and in England it was shown for those who were entitled but not eligible/registered) it is also possible that such schemes successfully address the stigma associated with claiming free school meals as it becomes a universal entitlement. There is also evidence from the English pilot that providing universal free school meals has a beneficial impact on attainment across the school as a whole.

However, the English pilot study also suggests that whilst providing free school meals to all children improves the nutritional content of food consumed at lunchtime in school, it may not on its own change their overall consumption patterns substantially, reduce absenteeism, improve behaviour and or health – at least in the short term. The pilot failed to identify the mechanism through which attainment improved, which limits the generalisability of the findings.

The pilot evaluation compared the cost-effectiveness of delivering attainment impacts through the scheme with that of other interventions for which there was comparable evaluation evidence – this suggested that the attainment impacts of universal FSM were achieved at lower cost compared with some interventions assessed (non-food based interventions), but at a higher cost than others (other food-based interventions).

What factors are likely to determine the impacts of UIFSM's implementation according to previous evidence?

Determining the impact of a food-based intervention in schools is complicated by the fact that the school context is continually evolving and such interventions rarely happen in isolation. For example, in England, the introduction of compulsory food standards for primary schools from 2008 for the majority of publicly-funded schools has had a clear impact on the quality of food offered. Whilst this complicates the potential to identify the separate impact of UIFSM, it also highlights the potential for its impact to be longer term in terms of diet choices throughout the day and beyond year 2, if it forms part of whole-school policies on food and healthy choices and physical activity.

The School Food Plan (Dimbleby and Vincent, 2013) published a checklist for headteachers who want to improve take-up and food culture in their schools – much of which has been shown to work in previous research (Harper & Wood, 2009; P. Storey & Chamberlin, 2001). Many of the recommendations cover factors which would determine the impact of UIFSM's implementation since so many of these may lead to an increased level of take-up, improvements in the quality of the food served, the importance that healthy-eating is given in the school and the practicalities of the actual lunch service.

Within this context, and given compelling evidence that packed lunches continue to struggle to achieve the nutritional content of a balanced school meal, increasing take-up of school meals is likely to lead to an overall improvement in nutrition in school. Hence a policy/strategy to increase take-up, particularly amongst disadvantaged groups, along with compliance with the food standards is a key factor in determining the impact of UIFSM. Maintaining take-up when entitlement ends in Year 3 is also likely to be important. Key to targeting the disadvantaged group would be ensuring that children who are entitled/eligible for FSM are not identifiable by others which should be easier when FSM is universal (Harper & Wood, 2009). As some children will continue to take a packed lunch, having a packed lunch policy aligned to the food standards or even a packed lunch ban is likely to improve the impact on nutrition intake in schools.

According to the authors of the School Food Plan, take-up is likely to be high where there is a commitment from senior management, the governors and the catering staff to achieve this – also when the dining hall experience is pleasant (Dimpleby and Vincent, 2013). Therefore, investing in the facilities to make them welcoming and efficient and potentially staggering lunch breaks and having special arrangements for reception children when they first start taking school meals can help.

Given that exposing children to a variety of foods can improve the willingness to try new foods in the long term and that peer pressure may help in this regard having a variety of food available on menus, instituting food-themed days or other promotional activity or simply putting vegetables on every child's plate can help, as can sitting all children (including those who continue to take packed lunches) together – also a key factor in allowing any socialisation and dining etiquette impacts to take place (Andersen et al., 2016). As what is put on the plate is not necessarily what ends up getting eaten by children, encouraging children to finish what's on their plate and making food look more appealing is likely to ensure school meals actually provide enough energy and the appropriate nutritional content to children taking them.

Policies to encourage continued registration for FSM by parents so that school continue to receive their entitlement to Pupil Premium are likely to mitigate against any disincentive effects from universal entitlement in the infant stages. Indeed, communication with parents about what is on offer is likely to both improve take up so promotional activity including parent tastings, catering for special dietary requirements as well as educating parents about healthy eating might help, particularly as evidence shows parents are poor at determining which foods are healthy or not (Children's Food Trust, 2016).

Part 2: The implementation and perceived impacts of UIFSM

This chapter outlines the findings of the project's fieldwork, conducted between May and July 2017, including: surveys of school leaders, catering staff and teachers (a combination of telephone interviews and online surveys) from a range of schools; a survey of parents; and case studies based around single schools using mealtime observation, interviews and/or focus groups with staff, parents, pupils and external school food providers. Ten case study descriptions of UIFSM delivery can be found at Annex A, whilst further information on the fieldwork methodology can be found at Annex B.

This chapter also provides statistical analysis of school lunch take-up and FSM registration, using the National Pupil Database and the ONS's Living Cost and Food Survey.

The analysis is organised into the following sections:

- 2.1. Implementing UIFSM
- 2.2. The nature of school meal provision
- 2.3. Take-up of school meals
- 2.4. Resourcing UIFSM
- 2.5. Educational outcomes
- 2.6. Social and behavioural outcomes
- 2.7. Health outcomes
- 2.8. Household savings

Throughout this chapter, survey findings are presented as percentages. Where sample numbers are low and therefore we can have less confidence in results, (e.g. for teachers and catering staff, where there were only 57 and 51 responses analysed respectively), the base is also provided. The sampling of parents (with 508 respondents) was not systematic, so in these cases the responses cannot be assumed to be representative – associated findings should be treated with caution. Throughout the report, where the term 'caterer' is used, this refers to all types of catering staff unless specified otherwise.

School leader survey findings are presented as a distinct group. However, in some cases, more than one school leader responded to the survey from a particular school (with 286 senior leaders and business managers, and 21 middle leaders, responding from 327 different schools). The proportions presented are therefore percentages of school leaders rather than percentages of schools. Analysis was performed to identify whether there would be any difference in results according to reporting senior leader responses or schools' responses. Only slight differences were found of one or two percentage points and it was decided therefore to report on all school leader responses.

There were a small number of schools where more than one teacher responded. Given that the teacher response rate was low overall and that typically if more than one teacher per school responded, there would be two teachers, filtering analysis to school level was not deemed appropriate. The teacher sample is not a representative sample and caution is therefore advised in interpreting the relevant findings in this report. Similarly, response from catering staff was also low and as such cannot be representative.

2.1. Implementing UIFSM

This chapter presents findings related to the management and delivery of school meals in relation to UIFSM. It summarises the different models of provision that have been implemented in primary schools, including examples from the case study visits. Survey data are also discussed, relating to changes introduced following UIFSM, contractual arrangements with caterers, school food policies, meeting the School Food Standards and curriculum delivery.

Current models of school meal provision

Three broad delivery models for school meals were observed across primary schools during the case study visits:

1. Catering managed by external providers: delivered hot or regenerated on-site⁴⁶
2. Catering managed by external providers: freshly prepared on-site
3. Catering managed solely by internal school staff

Arrangements with external caterers were commonly referenced among 416 school survey respondents: most (41%) said that they worked in a school that provided meals through a local authority contract, or private catering contractors (30%). Nearly one-quarter (23%) said that their school had in-house catering services.⁴⁷

Within each model there was variation, and the same caterer could be working to a range of models in the same area. The models that were adopted by schools tended to depend on different considerations, such as geographical needs, (e.g. rurality or proximity of schools to central production or regeneration kitchens); the size of school and meal numbers required; or the level of facilities, equipment and expertise available at the school (e.g. capacity to store ingredients, cook meals from scratch). Catering teams tended to tailor provision where possible to meet the specific needs and circumstances of each school.

The following summaries provide a basic overview of the catering models that were observed during this study, and the key features of each. A summary of provision in each of the ten schools visited can be found in Annex A.

Catering managed by external providers: delivered hot or regenerated on-site

Here, all meals are produced by an external catering provider, which tends to be a private contractor or local authority (some schools have arrangements with third sector organisations). In these arrangements, the external organisation is responsible for menu development, adherence to Food Standards, ordering supplies and managing quantities in relation to school/parent orders, meal preparation and delivery. External caterers often also provide some kitchen or serving staff. In one school, the caterer rented the kitchen space but was responsible for the provision and maintenance of all equipment. Meals can be prepared off-site, either at a central production kitchen, and then

⁴⁶ Regeneration refers to pre-prepared food that has been, for example, chilled or frozen and requires a cooking process to return it to an edible state.

⁴⁷ Twenty-one respondents (5%) did not know and four (1%) said that 'other' arrangements were used – for example meals being provided by a local pub.

delivered cold/frozen for regeneration, or ready-made and delivered hot to the school and ready to serve.

Four of the schools visited during the case study had external caterers that either delivered the food hot, or regenerated the food on-site. All were part of Multi-Academy Trusts (MATs), with three receiving catering services via a MAT-agreed contract. The fourth was looking to bring catering provision in-house once the current contract had expired and new kitchen facilities were ready at the school. The experiences of these schools were varied – some had less space than others, and this was clearly a concern - although staff in all of them suggested that food quality had improved since the initial introduction of UIFSM (for example, after liaison with caterers).

‘Our challenges are associated with the environment and the amount of children. Children eat good food but we do not have enough room’. (Vice Principal, school with external caterers)

Catering managed by external contractors: freshly prepared on-site

Although an external central hub or office will manage menu development, meeting nutritional standards and logistical issues, the food itself is prepared from scratch (rather than regenerated) on the school premises each day. A local authority caterer taking part in the telephone interviews described how every school in its area has its own kitchen, with food freshly made on-site on a daily basis. The menus are developed centrally by the local authority, and each of 70 schools have the same menu (excepting special schools), but the catering teams based within the school are responsible for preparing and serving the food. Catering staff and midday supervisors delivering this model can be employed by either the caterers or the school.

Three of the schools participating in the case study visits had external caterers who prepared meals from scratch within the school’s kitchens. These three schools also suggested that they were moving towards this model prior to the implementation of UIFSM, and these schools seemed most likely to report fewer changes overall as a result of the policy being implemented.

‘[Provision is] not really different since UIFSM...Investment hasn’t been much, just an extra table. We had to ensure the kitchen would cope, which they could. We have a kitchen on site. All food is prepared from scratch...Kitchen equipment is owned by [the caterer] and they deal with any equipment repair or replacement issues’. (Business Manager, school with external caterers)

Catering managed solely by internal school staff

Meals are designed, prepared and served by staff employed by the school. They are responsible for adhering to the Food Standards, for recipe development, provision and maintenance of all facilities and equipment, ordering of supplies and the cooking and serving of each meal.

In schools that participated in visits or interviews where catering was managed internally, the Head Cook/Chef or kitchen manager plus a member of school management (such as the Business Manager) were responsible for checking menus against nutritional requirements and that they meet the Food Standards.

Three of the schools visited during the fieldwork delivered school meal provision internally, and had all moved to doing so from using external contractors (both private and local authority) either before or as a result of the introduction of UIFSM. All three were located in urban areas with low or average

proportions of learners eligible for Free School Meals/Pupil Premium. They had developed new kitchen facilities and all used local suppliers for the produce they used.

'[UIFSM] had huge implications, extra kitchen staff, transport between sites, extra lunch supervisors, split lunch time...Stock control and ordering are important, as storage is an issue'.

(Headteacher/Business Manager, school with internal caterers)

All three schools were generally positive about the experience of creating and managing internal provision. Senior leaders had concerns about the costs and responsibility of maintaining kitchen facilities, particularly in relation to budgetary constraints and ensuring adherence to Health and Safety and Environmental Health requirements. However, teachers, catering staff and senior leaders reported using UIFSM as a motivation to develop a new approach and ethos towards food and healthy eating across the schools more generally. In one school for example, the school made the decision to move catering in-house, which then led to a change in kitchen and dining facilities.

'Before UIFSM... We didn't interact with the children as much...Dinners were very hectic and there wasn't much uptake in hot meals. Sometimes the deliveries were late, or there were too few meals. The food was delivered in the morning and had to sit in a hot box for a couple of hours. When UIFSMs were introduced and the kitchen and dining hall built, it made a big difference. Dinners are calmer and it flows better. Staff can interact with the kids and they enjoy the environment more. As the staff are more relaxed, the kids are more relaxed'. (Lead Midday Supervisor, school with internal caterers)

Delivery models from the perspective of external caterers

In addition to the models of provision adopted in schools, external caterers also reported during the telephone interviews and they adopt a range of approaches to production and management of school lunches, for instance:

- Meals are produced at a central unit and then sent cold/frozen to regeneration kitchens in local areas. From here they are prepared and distributed to schools.
- Meal components are produced at a central unit and then sent cold/frozen to schools with regeneration kitchens. They are then prepared and served by staff in school.
- Meals are produced in a hub kitchen and sent by hot delivery service, direct to school whose staff then serve them.
- Meals are prepared in schools and also served to pupils by the private caterer.

Some caterers offer the range of approaches and *'work with each school to determine what arrangement will suit them best'*, whilst others market a *'concept'* of the type of service that they provide for schools. Those in the latter category will offer a fairly standard approach to the preparation and delivery of meals, even if arrangements around service within schools remain flexible.

Implementing UIFSM meant that some schools had changed contractual agreements with caterers – this was reported by 18% of 309 school leaders; another 17% did so and said that they would have done it regardless of UIFSM. However, more than half of school leaders (53% of 309) said that that they had not changed contractual agreements for school meal provision. The remainder did not know or said that this question was not applicable.

Change of contractual arrangements due to UIFSM directly was more common among school leaders with either internal or private catering teams (27% of 59, and 30% of 104 respectively), rather than those with LA contracted arrangements (5% of 138).

Ordering systems

One of the key aspects in terms of managing delivery of school meals is the administration of lunch orders. During the case study visits, the range of arrangements in place for meal ordering were observed as:

- lunch choices ordered online by parents/learners in advance – ranging from up to 9am of the day of service, to a term in advance;
- learners choosing their lunch on the day as they queued or sat at their tables waiting to be served; and
- learners choosing their lunch electronically on the day – e.g. during morning registration, with meals colour-coded and this information then being relayed to the kitchen.

In the schools where children make their choices electronically on the day, this information is often also accessible by parents through a portal that they log into. During the online survey, the majority of caterers (60% of 48) reported that meals are booked on the day, a further 38% said that they were booked in advance; the remainder did not know. The online software system ParentPay was commonly mentioned across respondent types and during case study visits as being the tool that schools and caterers used for managing online ordering.

'ParentPay is the most popular. Parents can order a specific meal at home. In other schools, the children will place their order in the classroom on the day. Yet in other schools there is a banded system – each menu option has a colour band attached to it. The children chose, pick up the right colour band and take that to the counter'. (Private caterer – telephone interview)

However, the type of system used appears to vary by school preference or requirements, and different schools who use the same private caterer can have very different systems in place. There were some challenges associated with the different ordering systems, that school staff commonly highlighted during the case study visits as:

- not all parents having access to the internet and therefore having to visit school regularly to make the meal choices;
- in homes where the parent makes the order without the child present, children complain at school about the orders that the parents are placing – where learners were involved in the choice, they appeared to be happier with the meals served;
- when orders are made online a long time in advance, children don't remember what they have chosen or change their mind on the day; and
- some schools still having problems with – and having to put staff time into – getting parents to place the orders – if this is not done at home, staff will have to spend time in the morning in class making the order.

Lunchtime service

The practicalities of lunch service itself varied widely across the schools visited and highlighted a range of issues, including: layout of dining halls, use of classrooms, staggered sittings, role of midday

supervisors/ teaching staff, food quality and wastage and waiting times. These are discussed in more detail in section 2.2.

Engagement with caterers

Most schools participating in the case study visits reported that there were clear communications between senior leaders and catering staff (both internal and external). Furthermore, around half (53%) of 309 school leaders responding to the online survey reported that communications with school caterers had increased as a direct result of UIFSM.

This finding remained consistent across schools of different size. However, in terms of type of provision, senior leaders of schools that had catering arrangements with private contractors were most likely to say that communications with caterers had increased as a result of UIFSM (65% of 104, compared to 40% of 58 senior leaders of schools with internal catering provision).

A similar proportion of (49% of 47) caterers reported during the online survey that they had noted increased communications in relation to school lunch provision/ healthy eating policies.

During the case study visits, school staff described a range of feedback mechanisms that were in place for working with external caterers. This included catering staff reporting feedback to central offices, or being visited by representatives from the catering company to talk through any issues with the menu, food quality and service. In some schools with external catering providers, the kitchen staff would refer feedback to regional managers rather than dealing with issues directly in-school. Where there were negative responses to certain foods among learners or parents, or particular meals were identified by a school as having a high proportion of wastage, then school leaders and catering staff said during the visits that these items on the menu would be altered quickly (rather than waiting until the next change of menu).

'We have changed supplier. Some [food] the kids say they don't like. Sometimes they will say they liked the old one better (like the custard). So I sit with the area manager and I say...we want another version. [The area manager] then negotiates with head office what we can have for the school.'
(Kitchen Manager, school with external caterer)

In schools visited that had internal catering provision the Head Cooks or kitchen managers would speak to children during lunchtimes, at assemblies or during class-based activities to gather their feedback on what they liked or disliked about lunches. They were also – like external caterers – available at parents' evenings and other events so as to liaise with parents particularly over issues such as 'fussy' eaters or allergies/dietary requirements.

'We funnel feedback to the chef so that menus can be adapted or altered. We have a spreadsheet so that if there are any concerns about what a child is eating, or a child is not wanting to try something new. We will fill out the form in as much detail as possible from speaking to the child and then pass it to the chef on Fridays. The chef will then follow up with the child and phone or email the parents.'
(Midday supervisor, school with internal caterer)

It was also clear during the telephone interviews that several external caterers had changed the way that they worked with schools as a result of UIFSM, particularly in the areas of communications/building working relationships; working with local suppliers and menu development.

Communications

This included regular updates with school personnel and establishing clear feedback mechanisms for schools and parents. One private caterer had area managers that visited every school once per week to speak with kitchen staff and collect paperwork, but also to liaise with school staff and deal with any issues that arise. They also had a policy that all emails from schools are responded to within 24 hours.

*'Schools have fed back to us that they appreciate this aspect of our service a lot. They have said that a lot of caterers are not in touch very often. Schools appreciate regular communications that are personalised, including the visits and the attempt to meet the specific needs of that institution'.
(Private caterer – telephone interview)*

Suppliers

Caterers noted that working with local suppliers as much as possible was a positive way to engage with schools who were interested in promoting their local area. For example, one caterer working with 60 primary schools had all fresh produce supplied by local businesses, including eight local butchers. This created its own challenges, as not all suppliers will agree to the same costs and so these tended to vary across a region.

Menu development

Both in-house school cooks and external caterers talked about engaging learners with the process of menu development. This involved meeting with members of the School Council or other groups of learners during the school year to ask them about menu preferences, to try ideas for new recipes and to gather young peoples' ideas about what they would like to see on the menu.

Parents are able to communicate directly with caterers (both internal and external), with schools noting during the case study visits that there were different ways that this could take place, including: social media feeds managed by internal catering staff; space made available on external caterer websites for feedback; catering staff attending parent evenings at the school (particularly at the start of a new school year), and caterers or kitchen staff liaising directly with parents over specific issues such as dietary requirements, allergies and other medical issues, or concerns about fussy eating.

Many school leaders and caterers mentioned during interviews and visits that the schools ran taster sessions, particularly for the parents of new reception intake who may have questions or concerns about lunch provision.

'At information evenings for parent of new school starters, we will open the school kitchen and have food from the current menu on display, inviting parents to taste it. They see directly what the children will be receiving...There is also a chance for parents to raise dietary issues with kitchen managers...This helps to put parents' minds at rest that whatever the circumstances, the child will have food to eat'. (Private caterer – telephone interview)

Some caterers will also be present at additional school events such as sports days:

'We had a lot of parents talk to the catering staff and ask how they cook certain things that the child will eat at school but not at home'. (Head Cook, school with internal caterer).

Engagement with learners

In terms of engaging with learners at mealtimes, levels of participation of kitchen staff in wider school activities was observed to vary during the site visits: some were actively involved in curriculum delivery and additional activities (see below), whilst others remained in the kitchen and did not appear to have much engagement with young people (e.g. delivering theme days or food-based activities in the classrooms), or with menu development.

‘[Healthy eating policies] come from the school. We purely do hot meals and the menus are already done for us. We are not asked to go in the classroom. We are pretty much a separate thing. We have no responsibility for Food Standards – we do all our ordering from one company with codes all listed for us. Nutrition is all done outside, it is laid out for us’. (Head Cook, school with external caterer)

Consequently, in these schools there was less sense that learners were continuously encouraged to try new foods – *‘There is no change [in food preferences], they know what they like, the odd child will try it, a lot of the time they eat with their eyes’* (Head Cook, school with external caterer).

Aside from the provision of school lunches, caterers work with schools in a range of ways to engage young people with wider issues of healthy eating. This can be through supporting curriculum delivery and maintaining positive relationships with school communities. Caterers responding to the online survey said that a range of approaches to learner engagement were implemented in schools as a result of UIFSM – most commonly, encouraging children to try new foods and ensuring children leave the serving counter with a balanced meal (Table 2.1). They also acknowledged an increased range of additional activities taking place – including displaying menus prominently in school, themed events and taster sessions.

Table 2.1: Has your school introduced or increased activity in any of the following as a result of providing free school meals to all infants? CGR UIFSM Caterers survey data, 2017.

Activities as a result of UIFSM	Proportion of respondents
Catering staff encouraging children to try new foods	93%
Catering staff ensure children leave the counter with a balanced meal	89%
Displaying menus around the school	82%
Making menus available to parents/pupils on the internet	82%
Sending menus home to parents	77%
Staff adding vegetables/salad to all children’s plates	77%
Holding food themed events	68%
Giving out stickers/badges/verbal praise for pupils (e.g. for finishing a meal, good behaviour in the dining hall)	68%
Taster sessions for pupils and/or parents	66%
Pupil involvement in menu choice (e.g. via school council meetings)	50%
Changing menus more frequently	39%

(Base: 44)

Examples of these activities were also identified during the interviews and as part of the case study visits (Table 2.2). It was felt by both school staff and caterers during all aspects of the fieldwork that these not only promoted school lunches and helped to support take-up. They were perceived by

research participants to also encourage engagement among learners, parents and staff members with the wider issues of healthy eating, and helped maintain positive working relationships between school leaders and caterers.

Table 2.2: Example activities undertaken by caterers in relation to school meals and healthy eating. CCGR case study visits and telephone interview data, 2017.

<p>Engaging young people with healthy eating</p>	<p>Presenting workshops to young learners on the different food groups, including making smoothies and fruit kebabs, or making yoghurt</p> <p>Developing a social enterprise in a primary school, where children are given £5 with which they need to choose and buy ingredients, cook a recipe and then sell the food at the school fair. Any money raised is then donated to a charity nominated by the school – <i>‘Learners see how far they can make £5 go, [and] learn to prepare a simple recipe using fresh ingredients’</i></p> <p>Running competitions related to school house systems – e.g. pupils receiving house points for making healthy choices at lunchtime</p> <p>A healthy eating ‘mascot’ will visit the schools in a character costume and have photographs taken in different contexts (e.g. in the hub kitchen, preparing food, serving). <i>‘The children can see how the food is made, how it is delivered to the school – it is a photo story and can engage children with the different elements of lunch and where food came from’</i> (Private caterer – interview)</p>
<p>Supporting curriculum delivery</p>	<p>Providing seeds and grow bags to schools for young learners to grow their own vegetables</p> <p>Supporting delivery of nutrition education (e.g. during science week) and in food technology lessons</p> <p>Creating meals to reflect curriculum themes such as Greek Day or World War Two Day</p> <p>‘Touch and feel’ sessions with young learners exploring fruit and vegetables – encouraging learners to try new foods</p>
<p>Encouraging healthy eating and development of catering approaches</p>	<p>Competitions for school kitchen staff – the possibility to win places on training courses and develop new skills</p> <p>Catering for free or at a reduced cost for extra-curricular events such as sports days, with profits being returned to the school for investment in school kitchen facilities</p> <p>Running ‘Cook and Eat’ sessions – showing parents how to make balanced, healthy and cost-effective meals</p> <p>Running taster sessions for parents, particularly new intake reception classes</p>

Impacts on caterers

All of the 17 caterers or school leaders taking part in the telephone interviews said that demand had increased for school meals as a result of UIFSM. For some caterers, take-up increased so significantly that they had subsequently needed to recruit more staff and move to much larger premises.

Examples included:

- One private contractor reported an increase in catering contracts from 4 primary schools in September 2014, to 62 by the end of summer 2016; this had necessitated an increase from two permanent full-time members of staff to 180, from chefs and serving staff to support workers and management personnel. The increase in demand has added 5,000 meals per day onto their numbers.
- A large national contractor saw a 'sudden increase' in demand, from an average of 46% to 60% take-up nationally, with Key Stage 1 increasing to an average of 85%.
- A facilities management company has grown 'to be the biggest provider of school meals' in their region, requiring a new central production unit and employing 30 new members of staff.
- A private contractor has seen its primary schools market 'double in size'; as a result, it has moved premises twice in two years and now has a 5,000 square foot kitchen, has increased from 16 to 38 members of staff (including cooks, packers and logistics managers), delivering 2,300 meals per day.

These increases in take-up subsequently '*required a lot of planning, investment, time, communications and marketing to support the initiative*' (External catering contractor – interview). Caterers generally highlighted during the interviews this as being the key challenge in the delivery of UIFSM – the necessary work was generated very quickly by a sudden increase in demand.

'[Implications of UIFSM included] staff numbers such as chefs in kitchens, recruitment challenges to find and employ staff – larger LAs needed to recruit hundreds of new personnel; schools needed to find the space for kitchen and dining halls; they needed to re-jig the time required to serve dinners to larger numbers; planning issues; compliance with menus, nutritional standards and wanting to move towards scratch cooking – the major challenge was how did schools manage this within the staffing and equipment constraints that they were facing'. (Caterer supplier – telephone interview)

To support local authorities and schools with these challenges, several of the caterers interviewed had adopted new working practices, or developed communications strategies to remain in contact with schools.

In addition, a range of software and tools were used by caterers to support their menu development and to check the nutritional balance of meals. Twenty-nine percent of caterers responding to the online survey said that they accessed the Children's Food Trust website for support on a termly basis; 8% monthly, 6% annually and 2% weekly.⁴⁸ Other resources mentioned during the telephone interviews were CRISP and Saffron. However, private catering contractors said that they commonly

⁴⁸ Over half of caterers responding to the survey (54% of 48) reported that they never accessed the Children's Food Trust website for support, or they did not perceive a need to do so because their menu was provided centrally (38% of 48).

employ their own expert in-house managers to review nutritional requirements and ensure that meals meet standards for schools (and to check any changes made to school menus throughout the year). This may explain why most responding to the online survey said that they did not access such external resources regularly.

Caterers emphasised during the telephone interviews that the key challenge in implementing UIFSM was to ensure schools had appropriate levels of resources, including equipment and staffing, which meant for some 'a lot of adjustment' in terms of understanding the requirements for each school kitchen. One private catering contractor reported an investment of £60,000 during the first year of UIFSM for light equipment.

'There was a lot of additional equipment to bring in and that was the biggest challenge – light equipment, cooking facilities. Plus the need for additional hours for staffing and kitchen management. We did not realise at the time how much additional resource would be required, we underestimated it. That meant a lot of adjustment in terms of how the staff needed to work in the kitchen. For example, all the preparation doubled in quantity, staggered lunch services were introduced but were ok for some schools...The challenges around equipment and staffing have settled down now'. (LA Caterer – telephone interview)

The contrasting experiences of two suppliers

The two catering suppliers interviewed for this work had very different experiences of UIFSM.

One produces fully finished meals that can be reconstituted or reheated onsite, distributing them frozen or chilled through wholesalers or via contracts with local authorities or external catering providers. They also supply free kitchen equipment such as bain-maries (water baths) or saucepans alongside the cases of meals ordered. The company had regarded its place in the market as a 'short term solution' when UIFSM was initially introduced, particularly for smaller schools that did not have kitchen facilities for delivery in September 2014. Since then, it has seen its sales to primary caterers decline as larger contractors with regional hubs have taken over, plus its meals would not help to support Food for Life aims. However, in the future the supplier intends to work again with local authorities, changing its product range and engaging young people with healthy eating.

The second supplier had taken a different approach to UIFSM. Rather than a 'short term' opportunity, the policy had made this company review its offer and it changed the way it worked in a range of ways as a result:

- Reviewing product ranges to reduce fat content, and to create products that could be used in from-scratch cooking
- Achieving Food for Life accreditation so that they could offer products to a wider range of schools
- Adapting recipe ideas to cater for schools experiencing a sudden large increase in up-take, so that meals could be cooked for much larger numbers but quickly; this included consideration of pressures small school kitchens faced (lack of space, lack of staff to prepare and serve food, lack of equipment) – for example, it was intended that the processes required to prepare the meals could be carried out by one member of kitchen staff rather than requiring several
- Developing a range of free administrative tools and menu templates for schools to use, including materials relating to theme days; they have found demand for these increase in recent months as schools want to keep menus fresh, and maintain learners' interest in the foods they are eating

This activity has led to an 8% increase in delivery to primary schools, with a related increase in the product range they have developed for this market.

During the interviews, caterers cited the main ongoing challenges as the rise in food prices and the need to balance these against the £2.30 per meal funding available through UIFSM.

'The costs to the business are a challenge – costs in terms of labour, and food costs have increased. We have needed to balance this against meeting Food Standard and compiling innovative menus that can still meet price points'. (Caterer supplier – telephone interview)

Some followed this up by noting that the £2.30 allowance per meal under UIFSM was 'not index-linked' and coinciding with the introduction of the living wage, *'it squeezes everything and we are now at a pinch – we have to retain high volumes of take-up to ensure the business is cost-effective and remains within [budget]'*. (Private caterer – telephone interview).

As part of the online survey, catering leads were asked what it currently costs to provide a school lunch and what it cost to provide a school lunch prior to UIFSM being introduced. Note that this is what it cost the school to either provide the school meal in-house or what was charged by caterers to the school, and not what the school charged to parents.

Across the small number of caterers able to provide detailed cost information in their survey responses, the average current cost of providing a school meal was reported as £1.52 (median £1.30), a slight rise of nine pence compared to before the policy was introduced in September 2014 (average of £1.43 prior to UIFSM, median of £1.03).⁴⁹ During the in-depth telephone interviews, caterers reported that they charged schools between £2.10 and £2.50 per meal including service charges.

To work around the funding constraints one caterer interviewed had imposed *'a minimum number of meals required before we can arrange a contract with a school...This supports the viability of the offer. In rural areas or for very small schools, we allow neighbouring schools to become part of the same 'run'...they contract together so that they can meet the minimum number of meals required'*. (Private caterer – telephone interview)

Some school leaders also noted during the site visits that the costs they paid to external caterers were continuing to increase, or – agreeing with feedback from caterers – that rising food prices were creating challenges in delivering lunches on budget.

School meal policies and awards

'The school was already part of the healthy break snacks initiative. We had rules in place for packed lunch boxes, no chocolates or sweets. We already delivered lessons on healthy eating as part of the curriculum. Food policies have not changed since UIFSM was introduced'. (Business Manager, school with external caterer)

Feedback from across the different strands of fieldwork indicated that UIFSM did not directly instigate the development of specific policies related to healthy eating in schools. These tended to have been either in place already or participants said that the policies would have been implemented anyway. Indeed, during the online survey very few school leaders stated that their school had implemented specific food-related policies in school as a result of UIFSM (Table 2.3).

An area in which UIFSM appeared to have had a great influence was the introduction of policies to engage with *parents* specifically about healthy eating and school lunch provision – as Table 2.3 shows, 12% of school leaders responding to the survey said that they did this as a result of UIFSM. Strategies to engage with parents included information in newsletters about school meals, leaflets with menus enclosed, and taster sessions run by the caterer.

⁴⁹ Base 31 and 25, note that those responding zero and high outliers were removed from the analysis – leaving 11 respondents across both questions

Table 2.3: Can you tell us if your school has done any of the following? CGR UIFSM School Leaders survey data, 2017.

	Not done this	No change – doing prior to UIFSM	Yes – would have done this anyway	Yes – have done this due to UIFSM	Don't know / N/A
Introduced strategy to improve school's approach to healthy eating (Base: 306)	10%	36%	45%	7%	2%
Introduced policy for older children to support/help younger children at lunch time (Base: 308)	47%	24%	19%	6%	4%
Introduced policy on food permitted at break time (Base: 310)	20%	45%	28%	3%	5%
Introduced policies to engage parents in healthy eating/ school lunch provision (Base: 309)	26%	29%	31%	12%	2%

Although school leaders did not often think that specific policies had been introduced directly as a result of UIFSM, several suggested during the case study visits that the introduction of free school meals for all infants had encouraged their schools to raise awareness of healthy eating.

For example, one school visited said that an *'ethos of healthy eating'* had been developing within the school alongside the implementation of UIFSM and that *'there is a link'* between the introduction of the policy and changes to their own approach to food and wellbeing. In this school teaching staff reported having more interaction with kitchen staff, with a school-wide competition to name the kitchen, and providing more focus on talking to learners about making healthy choices. Furthermore, some schools were taking a 'whole school approach' to food and healthy eating and this tended to include 'family style' lunch sittings (see section 4) and themed events such as 'healthy eating week', assemblies and workshops on the topic. However, this approach was generally not attributed to UIFSM directly, but as a combination of factors of which UIFSM was one.

Conversely, several of the headteachers in schools visited did not have much engagement with policies relating to school meal provision and had delegated this responsibility to caterers or other members of the school management/leadership team. This included ensuring that meals adhere to Food Standards.

'We moved from LA provision to in-house with the support from a consultant. When dealing with environmental health matters, food plans, balanced nutrition, allergens testing – I needed to know

someone was here to do that. As a Head, I am involved in learning, school meals was one step too far. I don't have to worry about it, I know it is nutritionally balanced'. (Headteacher, school with internal caterer)

Meeting the School Food Standards

During the online survey, nearly half (47%) of school caterers reported during the online survey an improvement in school food to meet the School Food Standards, and 40% reported actively monitoring against the Standards (Table 2.4).

However, the majority of school leaders said during the online survey that their school had not achieved Food for Life or the Children's Food Trust (CFT) Award (68% of 309 and 74% of 307 respectively).

A total of four school leaders reported that their school had achieved the Food for Life School Award as a result of UIFSM (thirty had done so regardless of UIFSM). The catering arrangements varied between the four that had achieved the Food for Life School Award as a result of UIFSM: two had lunch provision arrangements via a local authority contract; one delivered provision internally and one had a private caterer.⁵⁰ No schools reported achieving the CFT Award as a result of UIFSM (eleven had done so regardless of UIFSM).

Table 2.4: Has your school introduced any of the following as a direct result of needing to provide free school meals to all infants? CGR UIFSM Caterers survey data, 2017.

Changes as a result of UIFSM	Proportion of respondents
Improved food to meet Food Standards	47%
Increased frequency of hot meals served	44%
Used local/seasonal food suppliers	44%
Now actively monitor Food Standards	40%

(Base: 45)

Likewise, most caterers responding to the survey (45% of 47) had not achieved a Food for Life Catering Award (bronze, silver or gold); although an additional 32% had done so and the remainder did not know or said that this was not applicable.

For schools visited with in-house provision, adherence to Food Standards was an additional consideration that they were having to manage alongside the production and service of meals. In one, Food Standards were overseen by the Kitchen Manager and checked by the School Manager 'as a priority' – the school used Children's Food Trust resources to support them with this activity.

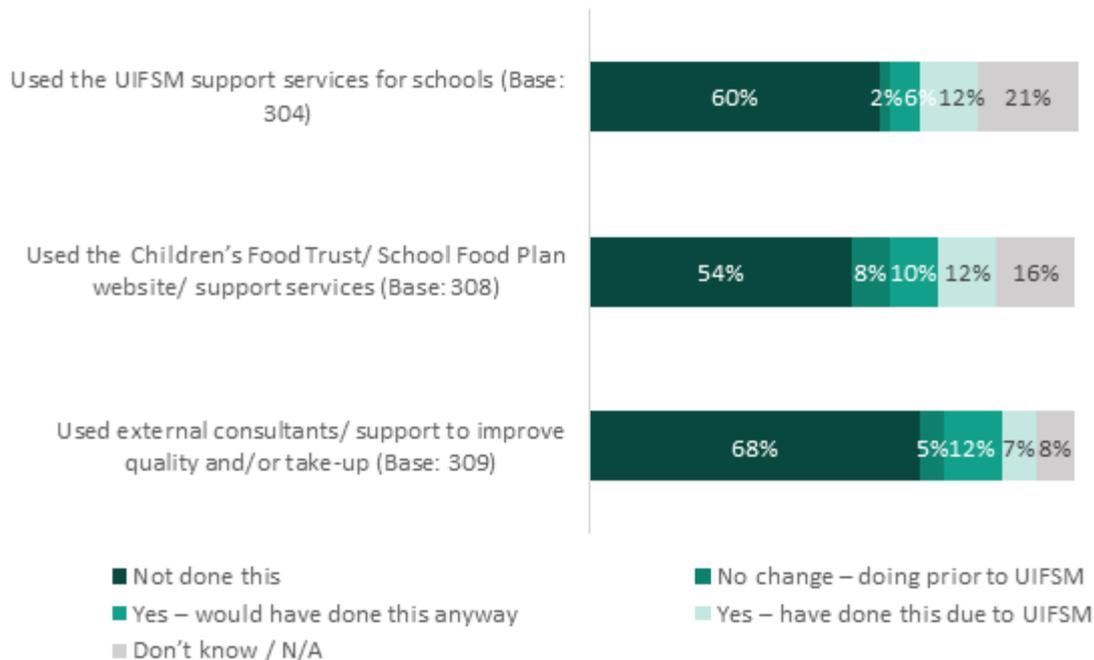
'The Food Standards booklet helped us to do things properly and was used for set up. All staff have training in Food Standards'. (School Manager, school with external caterer).

Another bought in specialist advisory services from the local authority 'to check our menus before they are published to make sure they meet the Food Standards; we do that on a termly basis or when the menus change' (Business Manager). They had found adhering to the Food Standards a 'huge

⁵⁰ This result was similar among the thirty that had achieved the Food for Life School Award regardless of UIFSM: sixteen (53%) had a local authority contract, eight (27%) a private contractor and six (20%) had internal catering provision.

undertaking for a school that had staffing constraints and was delivering its lunch provision in-house. Despite this, the use of support services was reported to be low among school leaders during the online survey (Figure 2.1).

Figure 2.1: Can you tell us if your school has done any of the following? CGR UIFSM School Leaders survey data, 2017.



Although a small proportion of school leaders reported the use of external consultants to improve quality and take-up during the survey (7%), the telephone interviews with caterers and visits to schools identified several instances of the use of external consultants particularly in the early months of first implementing UIFSM. These however tended not to be commissioned or requested by the school directly, but introduced to schools via third parties such as catering managers. For example, one caterer interviewed found that external support had helped to *'get the message across to schools'* about the type of service available to them via private providers, and how practicalities could be managed and challenges overcome. This consultant had been commissioned by the Children's Food Trust, likely through its UIFSM support service.

'[The consultant was] introduced to our schools, to show them how they could have an easy system for serving, how to work out the logistics with schools of actual serving time, give them ideas such as splitting year groups, serving at different times, showing schools how lunchtime can be a nice occasion. Schools tended to take a lot more of this on board when it came from the consultant rather than the [caterer] directly – it has really helped support schools in the practical delivery of UIFSM.' (Private caterer – telephone interview).

Changes to the curriculum

In the schools visited, healthy eating, nutrition and food groups/choices all tended to be included in the curriculum prior to the introduction of UIFSM. However, some teaching staff did report that they talked to learners *'more about food groups and choices, what is good and not, and the impact'* as a

result of UIFSM. Where healthy food was on the curriculum already, two reception teachers in one school did feel that their teaching of the subject was approached *‘in a slightly different way’* since the implementation of UIFSM. For example, their lessons contained a more general discussion on healthy food and drink, growing vegetables, and foods that are good for teeth, rather than methodically grouping foods according to their carbohydrate, protein or fat content.

Learners involved in the case study visits were all able to talk about making healthy food choices and could identify foods that were more or less healthy/nutritious, and the reason for this. They reported that they talked in class and at home about making healthy choices. Learners of all age groups generally spoke clearly about the types of food that they liked and disliked, and their awareness that sometimes the food they liked most (such as chips or chocolate) were not the healthiest options and that they should not eat these regularly.

‘We learn about healthy eating in school, we are doing it at the moment. We’ve done an assembly. You always have to drink water, it makes you more healthy and gives you more energy. Some challenges were set in assembly – one was to try something new, one was to try a new fruit every day, one was to get active’. (Learner focus group)

Indeed, feedback received during the online survey of teachers suggested that there had been an increase in the frequency with which related topics are covered in the class that they usually teach. Subjects such as nutrition and healthy eating and healthy food choices were now likely to be addressed more often than they were prior to UIFSM (for example an increase in topics covered weekly or monthly, with a corresponding decrease in topics being covered termly or annually) – see Table 2.5.

Table 2.5: For the class you mainly teach, how often were the following addressed before and after UIFSM was introduced? CGR UIFSM Teachers survey data, 2017.

	Nutrition and healthy eating		Understanding food and where it comes from		Discussing healthy food choices	
	Pre UIFSM	Post UIFSM	Pre UIFSM	Post UIFSM	Pre UIFSM	Post UIFSM
Weekly	4%	9%	2%	5%	21%	38%
Monthly	5%	16%	2%	14%	19%	25%
Termly	44%	48%	35%	42%	28%	20%
Annually	26%	20%	42%	28%	14%	11%
Never	0%	0%	2%	0%	0%	0%
Don’t know	21%	7%	18%	11%	18%	7%

(Base: 57)

It was generally felt by teachers that these changes were made mainly due to concurrent changes in the curriculum, although UIFSM had helped to raise awareness and provide a practical application for the topics they were covering in the classroom.

‘There is more focus in lessons on healthy eating now with changes in the curriculum. The school tries to give the understanding behind healthy eating to children. For instance, explaining different types of food groups – why they shouldn’t eat too much sugar and what can replace it. So the curriculum is an influence’. (Head of KS1, school with external caterer)

Few school leaders reported during the online survey that they had implemented changes in the school curriculum as a result of UIFSM (Table 2.6). Most already had provision for healthy eating/nutrition in the curriculum, and practical cooking lessons – or they said they would have included these regardless of UIFSM.

Table 2.6: Can you tell us if your school has done any of the following? CGR UIFSM School Leaders survey data, 2017.

	Not done this	No change – doing prior to UIFSM	Yes – would have done this anyway	Yes – have done this due to UIFSM	Don't know / N/A
Included healthy eating/nutrition in the curriculum/ school activities (Base: 309)	2%	47%	42%	6%	3%
Introduced practical cooking lessons for pupils (Base: 309)	14%	42%	37%	4%	3%

In the instances where they had made changes to the curriculum, this was more common among school leaders in Academies and Free schools compared to LA Maintained institutions. Ten percent of 125 school leaders in Academies/Free schools said that they had included healthy eating/nutrition/understanding food in the curriculum or school activities due to UIFSM, compared with 3% of school leaders in LA Maintained schools.

Despite the low level of change in curriculum delivery, 41% of 299 school leaders felt that the general profile of healthy eating across the school had improved as a direct result of the introduction of UIFSM (a further 45% felt there had been no change; 14% did not know and 1% felt that the profile of healthy eating had deteriorated across the school). This was most commonly a change noted by school leaders in schools with a high proportion of learners eligible for benefits-based Free School Meals – in these schools, 51% of 103 school leaders felt that the profile of healthy eating across the school had improved as a result of UIFSM.⁵¹

Logistical issues

For some senior leaders, UIFSM was felt to have impacted on curriculum delivery in terms of how the practical logistics of delivery affected the school's facilities and timetabling, rather than the topics covered in its teaching and learning.

For example, in several schools observed during the site visits the dining room(s) was not a separate, dedicated space but a multi-purpose area. Thus, it was also used for assemblies and for subject delivery such as indoor physical education lessons. Where lunch service had increased and/or

⁵¹ This compared with 34% of 133 school leaders where there were low proportions and 39% of 65 school leaders where there were average proportions of learners eligible for benefits-based Free School Meals.

extended in duration, this therefore had a knock-on effect on curriculum delivery in terms of the availability of these spaces for timetabled lessons.

‘The initiative had an adverse impact on the delivery of indoor PE. Our only small hall is also the dining hall and with increased numbers of children taking a meal, the lunch break has to be staggered to accommodate all children. We have lost an hour of hall time each day so not all classes now have a timetabled indoor PE lesson in our school hall each week’. (Senior leader – online survey)

Likewise, some schools use classrooms at lunchtime to ensure all children can be served in the time available (e.g. children with packed lunches, or the very youngest children ate their meals in classrooms). The need to clear, clean and set-up classrooms ready for afternoon lessons created a pressure for school staff in these circumstances that they identified during the site visits.

‘Lunch in the classrooms leaves a mess. The supervisors clean up, but staff can’t go in their classroom for example to do planning or marking over lunch. It’s preparation time for staff that’s wasted’. (Business Manager, school with external caterer)

2.2. The nature of school meal provision

This section gives an account of how school meal provision works in practice. It explores the range of lunchtime arrangements implemented by schools, and the changes in these to meet demand, options for meal choices, issues around food quality and packed lunch policy.

Lunchtime service

‘Different schools have different set-ups across the areas... We’ve tried various different ways of serving and sittings but it really is dependent on the school and the space that they have for seating everybody. We cannot say generally what works better in terms of the way that service works’. (LA Caterer – telephone interview)

During the case study visits, a range of observations were made about different aspects of lunchtime service. Please note that these summaries offer a snapshot of provision on the specific day on which the visit took place, and where lunchtime arrangements were observed directly by the researcher (in nine of ten visits). This does not mean that this was the full picture of provision for each school every day, but provides a summary observation of the types of provision that were possible to be observed by the researcher during the time spent in the dining hall.

Table 2.7: Summary of lunchtime service arrangements. CGR case study data, 2017.

Seating arrangements	<ul style="list-style-type: none"> ▪ Two schools used round/rectangular tables with approximately eight seated to each, seven schools used long tables ▪ Two schools used a ‘family service’ approach, where children sit together to share the same meal and serve themselves from platters placed in the middle of the table ▪ Two schools set tables with cutlery, serviettes, water jugs and glasses ▪ In three schools the children used plates ▪ In seven schools, meals were served on trays – all food at once, except in one school where children have to finish their main meal before they can ask permission to go for dessert
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Meal choices	<ul style="list-style-type: none"> ▪ Two, three or four meal choices per day (meat and vegetarian) – with two or three options being most common ▪ Jacket potato option – five schools ▪ Yoghurt and fruit – four schools ▪ Dessert – three school ▪ Bread, salad bar – three schools
Packed lunches	<ul style="list-style-type: none"> ▪ In 4 schools, children with packed lunches sat together with those taking school lunches. In 2 schools, children with packed lunches ate in a separate classroom, in 2 others they sat at different tables. ▪ Two schools identified seating places for children with packed lunches by colour coding the place ▪ Contents of packed lunches observed in all schools commonly included: <ul style="list-style-type: none"> ▪ Sandwiches and wraps ▪ Crisps ▪ Cake and biscuits ▪ Chocolate and sweets ▪ Fruit ▪ Cheese and yoghurt
Arrangements for younger classes	<ul style="list-style-type: none"> ▪ In seven schools there were staggered sittings, with the youngest children eating first. In two others, there did not appear to be special arrangements for reception classes. ▪ In a school with family service, the youngest children are helped to serve themselves, taught how to do it and gradually do this more independently.
Behaviour	<ul style="list-style-type: none"> ▪ Behaviour was generally good within the schools and midday supervisors would stop children running or being too boisterous. In two schools there was a noise monitoring strategy – if the room becomes too noisy, staff and children raise their hands and the room goes quieter again. ▪ In one school, children threw food on the floor if they did not want to eat it, and school staff reported that parents were also observed doing this during a taster session
Staff participation	<ul style="list-style-type: none"> ▪ In one school, alongside midday supervisors and kitchen staff, teachers and teaching assistants were expected to spend 15 minutes at lunchtime at the table, eating lunch with the children (this was in a ‘family sitting’ arrangement). ▪ Generally, midday supervisors and teaching assistants were available to clear up, help children, monitor behaviour and encourage children to eat. In two schools, no teaching staff were present at lunchtime.

Reward strategies / minimising waste	<ul style="list-style-type: none"> ▪ Staff in seven schools were seen to generally encourage children to try new things, with praise given when they ate most or all of their food ▪ Stickers were given to children who ate all their lunch in seven schools
Efficiency of operation	<ul style="list-style-type: none"> ▪ In two schools, children were served their meals at the table/served themselves, meaning that there were no queues. Generally, however, waiting times were between 5 and 10 minutes.

Lunchtime arrangements

For most schools visited, UIFSM had necessitated changes to be made to various aspects of lunch provision, from the seating arrangements, to timetabling adjustments, staggered service, catering provision or implementing new ordering systems. Nearly half of 308 school leaders responding to the online survey (47%) also stated that that they had changed meal time arrangements as a result of UIFSM. A further 23% had not changed arrangements (the remainder either already had but would have done anyway (11%), or did not know/said this was not applicable – 4%).⁵²

These changes were most commonly reported by school leaders in schools with average or low proportions of learners eligible for Free School Meals (52% and 51% respectively) compared with those with high proportions of children eligible for Free Schools (38%) indicating that the latter schools already had manageable systems in place for dealing with school meals provision and reflecting the bigger potential for increasing take-up in schools with fewer children already eligible before UIFSM.

From the survey of caterers, the most common change reported was the introduction of new arrangements for reception children (Table 2.8). These were in evidence during the site visits, including staggered sittings that ensured that younger classes were served first, having additional assistance from midday supervisors, the youngest children eating in a separate smaller room, and the provision of lunchtime ‘buddies’ (children from older years helping them).

Table 2.8: Has your school introduced any of the following as a direct result of needing to provide free school meals to all infants? CGR UIFSM Caterers survey data, 2017.

Lunchtime changes as a result of UIFSM	Proportion of respondents
Introduced lunchtime arrangements tailored for new reception children	53%
Introduced new procedures for meal time arrangements (e.g. extended/staggered lunch breaks)	49%
Introduced a menu system where school meals are chosen in advance.	31%

(Base: 45)

Several schools participating in the visits had altered their timetabling to accommodate the increase in demand for school lunches. This included classes coming into the hall one at a time, or service

⁵² Some primary schools received transitional funding to support the installation and/or redevelopment of catering and dining facilities, which will have affected the extent of changes made in some institutions. However, the impact of transitional funding arrangements was outside the remit of this research.

being broken down into specific time slots. The order in which different year groups went into lunch tended to be rotated so that the same groups of learners were not always waiting the longest; however, in some schools, the oldest year groups always waited until the final sitting.

The staggered service appeared to work well and efficiently for the schools visited – children did not tend to queue for more than 5 minutes for their lunches. According to the majority of caterers responding to the survey (59% of 49), the waiting time for lunch service had not changed since the introduction of UIFSM; 18% felt that the waiting had increased, 16% felt that it had decreased, the remainder did not know.

- Among the 9 caterers responding to the survey who felt that waiting time had increased, this was by an average (mean) of 8 minutes (with a minimum of 3 and a maximum of 15).
- Among the 8 caterers responding to the survey who felt that waiting time had decreased, this was by an average of 11 minutes (with a minimum of 3 and a maximum of 20).

Where lunch breaks had been extended to account for the increase in demand, examples gathered from the site visits varied from lunch service beginning at 11.30a.m. and running until after 1p.m, to schools adding an additional 15 minutes onto service. However, this time extension had added pressure in terms of timetabling and provision of hall space for other lessons (see section 3.5). As a result, one school was reducing lunch service back to one hour as senior leaders and teaching staff both reported an adverse impact on the time available to cover the necessary work in afternoon lessons.

School capacity was a concern in some schools that did not have adequate facilities to be able to seat all children together in the same room. Three-quarters of caterers participating in the survey (78% of 49) said that children who have packed lunches and school meals sit together and this had always been the case (16% said they did not sit together, and 6% said that they had started to sit together since the introduction of UIFSM). In the schools visited, most allowed children to sit together, although in one school children with packed lunches were on a separate table, and others employed the use of classrooms for those with packed lunches.

'To accommodate all infants the school is trying to improve the dining room experience. It is very hectic in there. They serve 400 covers plus packed lunches in 1 hour 15 minutes. It's a production line in there and not a great experience currently. Lessons start at 1.15pm and some are in the same space as the dining room. Some children are only getting 10 minutes to finish food. The school needs more space...but would need more staff and the external caterer won't provide more staff...[The school] would like to get rid of the long tables in the dining room and have smaller round tables which would be cosier but cost is an issue...We could do a split lunch, but the external caterer would increase the charge'. (Food and Wellbeing Advisor, school with LA Caterer)

Family service

As part of their changes to school lunch provision following the introduction of UIFSM, two of the schools visited (both with internal catering) had chosen to move away from the use of meal trays to plates and bowls – they felt that this made children *'feel more grown up'*.

This approach was also adopted as part of *'family service'*, which was perceived by schools implementing it to be a more positive approach to mealtime, with a *'calmer'* environment and less of what a Headteacher referred to as *'conveyor belt lunchtime service'*. Family service involved

children and teaching staff sitting together and sharing mealtime, with staff members assigned to each table. Learners would serve themselves from sharing platters and water jugs, would not be served dessert until they had eaten their main meal and ask permission to leave the table once they had finished eating (although the latter also occurred in schools without family service).

'The family dining system was introduced after I had visited another school operating this way. All children sit throughout the meal with no moving around. Dinner time is much calmer. Children have longer to eat as there is no need to queue. There are less problems because children don't have to move around carrying hot food on trays. The dinner ladies are not needed to serve food from a hatch, so are freed up to interact with the children. Good manners are reinforced and children are greatly encouraged to try something new/finish their meals'. (Chef, school with internal caterer)

The social benefit of 'family sittings' were especially highlighted by staff in these schools during the visits (for further details see section 7.2, and Case Studies 1, 2 and 10). Learners were perceived to develop social skills such as dining etiquette as well as the ability to judge portion control and serve themselves.

'There was a lot of spillage to start with but not now. It is a life skill. In the beginning they don't know how to sit at the table, how not to talk with their mouth full, or how to use a knife and fork'. (Early Years Lead, school with external caterer)

Two of the three schools operating a family-style service were small schools and may have found this system easier to implement as they had the dining hall capacity to be able to seat all learners together at the same time. However, similar arrangement do appear to be workable in some other settings. A third school visited with 'family' service was a large school that had implemented staggered sittings; these still involved learners and teachers sharing their meals together. This school approached lunch service as a 'restaurant', and the Headteacher regarded meals as a '*good shared experience*' as a result (see Case Study 10).

Meal choices

School menus tend to be on rotation to some extent in all schools, but a three-week rotation appeared to be a common approach among caterers and schools participating in this study. The three-week menus are changed three or four times per year. In some schools visited, children were able to decide each day whether they wish to have a school meal or a packed lunch, in others they were asked to book specific days of the week, or to sit for a full week of one or the other.

Where meals have to be ordered for the full three weeks in advance, a caterer reported during the interviews that '*some parents don't take up UIFSM because there will be one day in the three weeks where there is not an option that their child will like. They are not prepared to risk the child going hungry one day in three weeks*'. (Private caterer – telephone interview).

This was confirmed by parents during the survey, and by learners who participated in focus group discussions during the visits. Several learners commented that they did not have hot meals every day because '*I don't like the menu*' or because they were becoming '*bored*' of the menu, or that '*it's always the same dinner*'. These learners said that they preferred packed lunches because '*you can't exactly bring what you want, but you can bring what you like...different things...school dinners are all the same*' (Learner focus group).

Learners tended to say that they enjoy days when pizza, fish and chips and pasta were available on the menu, and in schools where learners could choose each day whether to have a school meal or not, these were the days that they would choose. As the menus tended to follow a formulaic pattern, learners were able to select easily the days that would have their preferred foods on the menu – ‘Like on Wednesday, I bet it’s going to be curry or something’ (Learner focus group).

On a typical day, most caterers (65% of 49) said that they offered at least 3 meal choices, with the majority (51%) offering a mix of hot and cold meals (Table 2.9).

Table 2.9: Choice of meals on a typical day. CGR UIFSM Caterers survey data, 2017.

Number of main meal choices per day	
Single choice	2%
Choice of 2	33%
Choice of 3	43%
Choice of 4 or more	22%
Hot and cold meals per day	
Hot meals only	49%
Cold meals only	0%
Mixture of hot and cold meals	51%

(Base: 49)

Meal choices described by caterers and school staff during the telephone interviews and visits generally indicated a choice of two or three main meals options (for example, a meat dish, a fish dish and a vegetarian option). The addition of cold choices, salad bars and bread varied across providers/schools.

Jacket potatoes were commonly a standalone option on every menu every day (and was observed during five case study visits). However, some caterers refused to permit this.

‘One of the key lessons learned is the need to educate teachers, too, about what to say or not to say about food and eating to learners, or the things to accept or not accept. [Fussiness] is not to be accepted, but finding ways to encourage them to try new things. Some schools will ask for there to be a jacket potato option available at every lunchtime because most of the fussy eaters will at least eat that and they have met the hot lunch requirement. We refuse to do this as it is a good option for perhaps once or twice a week but not if children are going to choose it every single day’. (Private caterer – telephone interview)

Some schools and caterers were trying to move away from offering the jacket potato option to encourage take-up of other choices. In contrast, one caterer said during the telephone interviews that they were finding schools adding it to the menu every day from September 2017 ‘so that there is at least something that the children will always eat’. This was partly being introduced to help encourage take-up of lunches across Key Stage 2.

In the schools visited, yoghurt and fruit were often available as dessert options every day. Some schools offered an additional dessert choice daily, in others, desserts were only offered on specific days of the week. A private catering company that delivered to over 30 schools felt that adopting a single menu for all schools was a decision that they got ‘horribly wrong’ in the first week of implementing UIFSM.

'We realised that every school has got different culture, likes and dislikes, priorities...a single menu would not work for all'. (Private caterer – telephone interview).

This caterer had set up several local hub kitchens, so as to ensure they could achieve their policy of 'no longer than a 15-minute drive time' for food delivery – *'it should be fresh when served to the children'*.

Parents adding free text commentary to their online survey responses provided a mix of conflicting feedback in relation to the meal choices available to their children:

- **Variety:** whilst some parents appreciated the variety of different options available for young learners, others felt that the menus remaining the same for three-week rotations over the course of a term created a lack of choice overall. As a result, they felt that their children either became bored by the meals or less likely to try new foods because they would stick with familiar choices. Menus also tend to remain fixed in terms of the types of food that are served on each day (e.g. roast dinner on a Thursday lunchtime, fish on a Friday lunchtime). Where children had school lunches only on specific days, some parents felt that this meant their child did not always have the opportunity to eat a range of foods or make different choices as the meal type would always be the same each week.

They need to change the menu more and not the same food every four weeks...I wish they would listen to the children...Why can't they give a suggestion letter out to parents so we can give them feedback [on] some of the healthy options we [would] like to see on our school menu'. (Parent – online survey)

In many schools, ensuring a variety of meals was as much about maintaining the engagement of learners as it was the standard of provision. One local authority caterer produced a menu specifically for Year 6 learners: *'we try to make this a bit more grown up and attractive to this age group. So this will include a lot more things that are street-food style'*.

- **Desserts:** the choice of desserts available as part of school meals appeared to be a difficult issue among some parents, with several suggesting that desserts should not be offered every day or they should not be offered at all.
- **Meeting dietary needs:** a small number of parents gave additional feedback during the online survey that their child's specific dietary requirements (such as nut-free meals) could not be catered for through school meals provision, with one noting that this made their child 'different' and another reporting that 'whilst the other kids eat free lunches, [my child] is stuck on [their] own eating a packed lunch'. It should be noted however that all caterers interviewed, and those participating in the case study visits, emphasised the time that they took to liaise with parents of children with specific dietary needs in order to understand the requirements and ensure that all learners could be provided with a meal. It was not clear from the feedback provided by parents whether they had liaised to any extent with caterers about these issues raised.

Food quality

There was a wide range of views given in relation to the quality of the food served in schools since the implementation of UIFSM. Caterers almost all felt that the quality of the food produced for

schools had either stayed the same, or had improved since September 2014. No caterer reported through the survey that the quality of the food had deteriorated (Table 2.10).

Table 2.10: Has there been a change in the food provided at school as a direct result of free school meals for all infants being introduced? CGR UIFSM Caterers survey data, 2017.

	Improved	Stayed the same	Don't know
Quality of ingredients	45%	53%	2%
Nutritional balance of meals	41%	57%	2%
Range of options on menu	41%	59%	
Catering for children with a wide range of food preferences	35%	63%	2%

(Base: 49)

Senior leaders, teachers, parents and learners offered a range of views about the quality of meals served in schools. This included feedback within the survey free text responses that food quality had improved in the years since UIFSM was introduced, where initial teething problems had been resolved and both caterers and schools became more familiar with the logistics and overall arrangements for lunchtime provision.

'To implement UIFSM we had to buy a lot of equipment. We couldn't extend the pod so [the caterer] bought another oven. We needed to buy cutlery, serving trays, more crockery. The first term with [the caterer] was a shock to the system as the choice of meals just wasn't there. It has improved over time'. (Business Manager, school with external caterer)

However, there were concerns raised by some senior leaders responding to the school survey. Concerns most commonly highlighted by senior leaders during the survey and site visits were:

- Carbohydrate-heavy meals (e.g. learners being able to choose pasta alongside potato, with a biscuit for dessert); this was felt to lead to increased tiredness among learners in the afternoons
- Reduction in overall quality of the meals; for example, that meals served were not as appetising as those presented to parents during taster sessions
- Increased wastage, with children throwing food away when they do not like the menu choices
- Concerns around the size of portions, and queries whether meals were always served to the accurate size/weight nutritionally; schools also appeared to take very different approaches to providing second helpings - from refusing completely, through to providing second helpings to the last sitting of the lunchtime, or making them available as standard if children were hungry; some midday supervisors would offer a piece of fruit, rather than a second helping of a main meal

'Sometimes children want seconds and there is food left, but the caterer is not allowed to give it to the children as that is their [company] policy'. (Midday supervisor, school with external caterer)

The quality of meals gathered a range of responses from parents during the visits; some noted how meals cooked freshly on-site were very high quality, whereas others thought that their children were being fed 'preheated, cheap' meals that they did not think were as appealing or nutritious.

'There are strange combinations on offer. For example, cauliflower and sweetcorn with pizza, in an attempt to get the balance of vegetables'. (Parent Governor, school with external caterer)

During the school visits, levels of wastage were variable - although in schools where meal orders had been taken in advance of the day, there was generally less wastage. This was likely attributable to two factors: 1) kitchen staff have a clear idea of the level of demand for each product/meal (or software has calculated the amount required when electronic orders were logged) thus reducing the risk of overproduction, and 2) learners being aware of their choice and therefore reducing the likelihood of being served a meal they dislike or do not want to eat.

Food waste was dealt with in different ways during the site visits: in some, schools bins were in the dining space and children were required to scrape their leftover food into these bins (learners in focus groups said that they did not enjoy this). There was a varying degree to which the amount of food being thrown away was monitored by midday supervisors, although generally there was encouragement to eat the food served.

'We try to make eating fun to encourage children to eat, so for example we call the broccoli, "trees"'. (Midday supervisor, school with external caterer)

Learners participating in focus group discussions said that they enjoyed some school meals more than others – particularly the days when choices such as pizza, sausages and burgers were available. They were less enthusiastic about the vegetables that were served (some reporting these as 'soggy' or not the sort of vegetables that they would eat), and this did not tend to differ according to age group. However, when asked what they would change about school lunch provision learners' general views tended not to be concerned with the quality of the food itself, but with other aspects of mealtimes:

- **Variety/range:** there were comments raised about the frequency with which meals or meal types were served during lunches – learners did not always find this appealing and were able to select days of the week when to have/not to have packed lunches based on the menu format

'I just pick out the days that I like the food to stay for school lunch...I wouldn't have fish every Friday'. (Learner focus group)

'There's only two types of vegetables and if there's one you really don't like you can ask but you have to have one type of vegetable'. (Learner focus group)

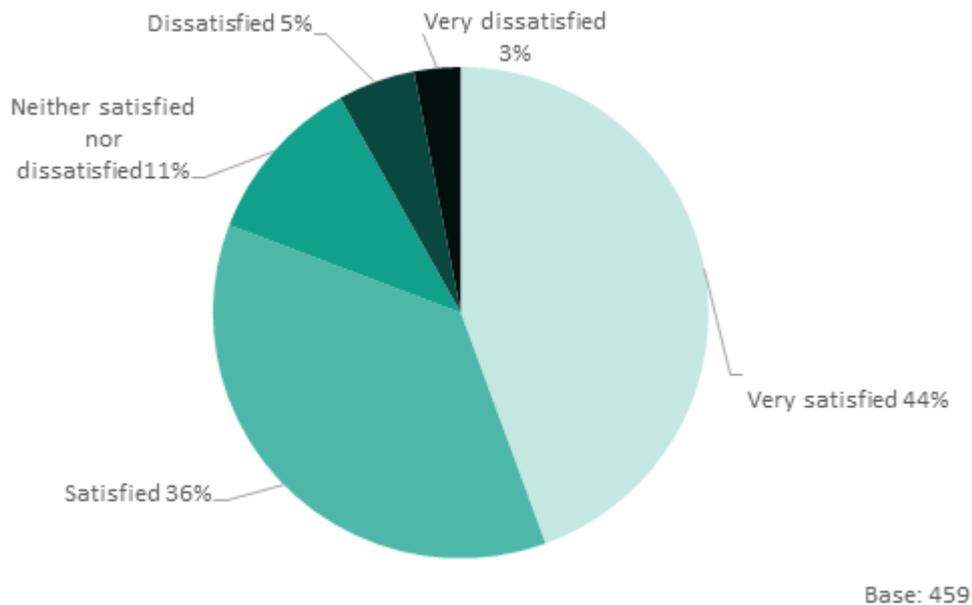
- **Waiting time:** some learners were frustrated with the time it took to queue for their food or wait to go into the hall for lunch. This impacted on the time that they had to play – those eating packed lunches reported this option was preferred because they were able to go outside more quickly than those eating hot meals. In addition, in schools where learners made their meal choice on the day, they could be disappointed when quantities ran out and their own meal preference was no longer available
- **Environment:** some learners said that they found lunchtimes too noisy, or the space in which they ate 'very cramped'; others did not like the amount of mess created particularly if they went in for later sittings (examples were given such as food on the floor or dirty tables)

'There's loads of people in the hall and only a bit of space. You want to sit with your friends but can't, you don't want to sit in a place because there is dirt or food on the table'. (Learner focus group)

Parents' satisfaction with school lunch provision

Overall, levels of parent satisfaction with school lunch provision were high. The large majority of parents reported during the online survey that they were either very satisfied or satisfied with the school lunch service overall (80% of 459 respondents) – Figure 2.2.

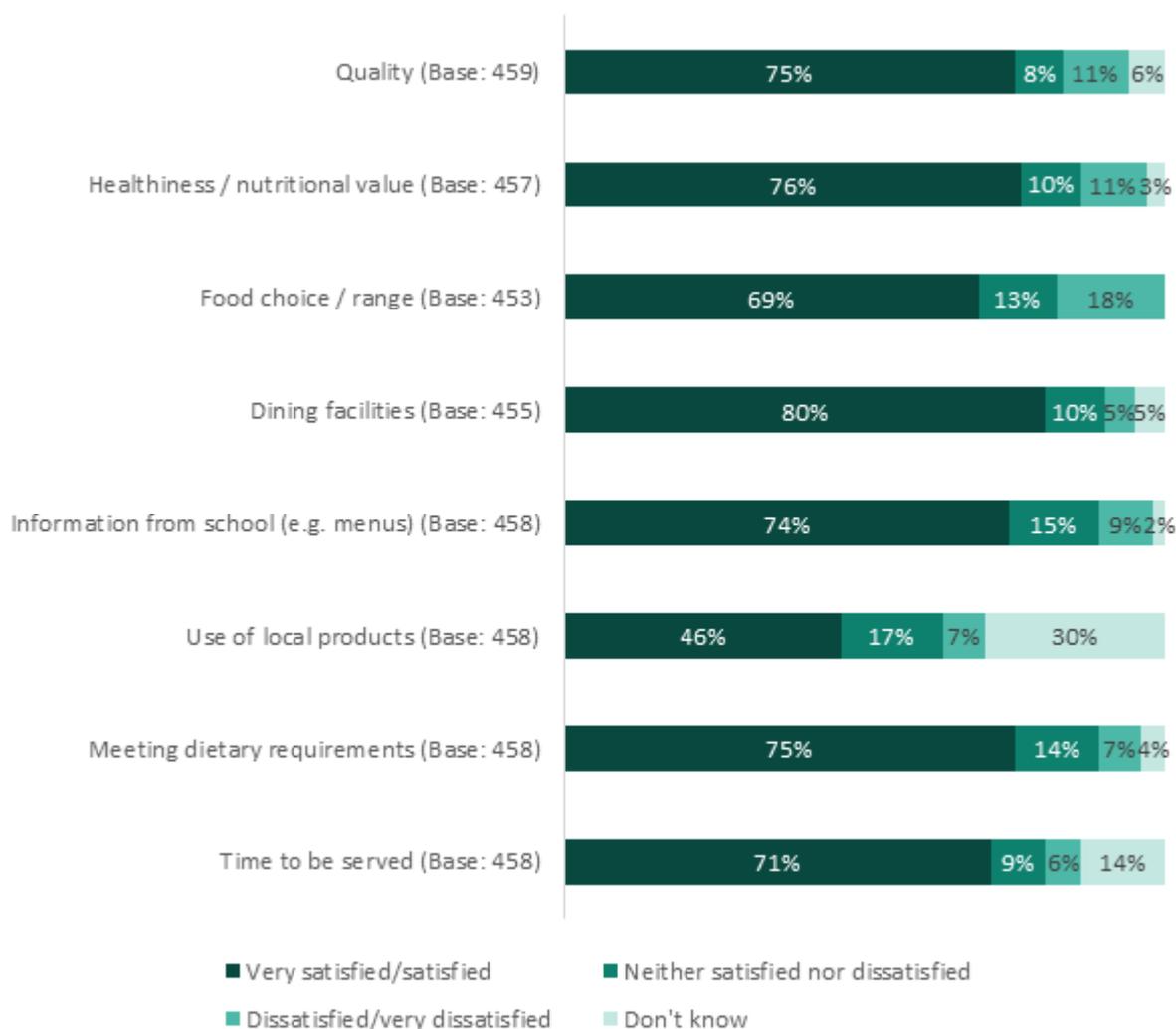
Figure 1.2: If your child does have school lunches, how satisfied are you with the service overall? CGR UIFSM Parent survey data, 2017.



Levels satisfaction were generally higher among parents with learners in reception or Key Stage 1 classes, although there were more parents in this category responding to the survey (85% of 391 were satisfied or very satisfied with provision compared to 56% of 68 parents of Key Stage 2 learners).

Levels of satisfaction were generally high across a range of indicators that parents were asked to rate (Figure 2.3). These included dining facilities, quality of the food and information provided by schools about lunches. Levels of satisfaction were comparatively low among parents in relation to the use of local suppliers (although levels of awareness about this area appeared to be low, rather than dissatisfaction being higher).

Figure 2.3: When thinking about school lunches, how satisfied are you with the following? CGR UIFSM Parent survey data, 2017.



Nearly half (45%) of 460 parents agreed that their child enjoyed school lunches all of the time; an additional 49% agreed that their child enjoyed their school lunch some of the time.⁵³ Levels of enjoyment remained fairly similar across parents of Key Stage 1 and Key Stage 2 learners. They were particularly pleased that learners were receiving a nutritional, balanced meal at lunchtime.

Some concerns were raised among parents where gave more feedback in free text responses. Most commonly these were:

- The frequency with which cakes or biscuits were available to children at lunchtime was felt to be too high (particularly in schools where the whole meal including dessert is served at the same time)
- There was a perceived lack of variety in menu choices or perceived lack of quality of the food itself, specifically small sizes of portions or portion sizes not correlating to age (e.g. same amount for the oldest learners as served to younger classes)

⁵³ Of the remainder, 5% said that their child did not enjoy their school lunch, and 1% did not know

Packed lunches

There were reportedly few changes to packed lunch policies made in schools due to UIFSM, according to school leaders responding to the online survey (Table 2.11). One school involved in the case study visits had made it necessary for parents of new reception intake to opt-out of school dinners rather than opt-in. Overall, schools reported during the visits a decrease in the numbers of learners having packed lunches.

‘We have grown as a school – prior to UIFSM we had 50% bringing in packed lunches, Pupil Premium children in the past had school lunches. New parents are now pleased with UIFSM’. (Vice Principal, school with external caterer)

The number of learners taking packed lunches was higher among Key Stage 2 classes. This was attributed by school staff during the case study visits to a range of reasons including:

- The cost of school meals;
- Older learners being hungrier and requiring a larger meal than that provided by caterers;
- The preference for older learners to have the foods they like at home; and
- Older learners wanting to be outside for longer at break time, rather than waiting or sitting in the dining hall.

Table 2.11: Can you tell us if your school has done any of the following? CGR UIFSM School Leaders survey data, 2017.

	Not done this	No change – doing prior to UIFSM	Yes – would have done this anyway	Yes – have done this due to UIFSM	Don’t know / N/A
Introduced a packed lunch policy aligned to the Food Standards (Base: 308)	36%	32%	21%	5%	6%
Introduced a packed lunch ban (Base: 310)	91%	1%	1%	1%	6%
Introduced monitoring of packed lunches according to Food Standards (Base: 309)	48%	27%	18%	3%	4%

Schools participating in the visits tended to monitor the contents of packed lunches and liaise with parents when these were frequently deemed to be inappropriate or unhealthy; one had considered implementing a packed lunch ban if the standard of contents did not improve.

‘Leaflets are sent out to parents on healthy packed lunches. Midday supervisors have a quiet word with the class teacher when lunch boxes are not appropriately filled, and a leaflet is sent home’. (School Manager, school with external caterer)

A range of items were observed in packed lunches during the school visits. Sandwiches, crisps and fruit were commonly noted, along with dairy products (yoghurt/cheese). Fizzy or Fruit Shoot-style drinks were sometimes included but generally children with packed lunches tended to be drinking water or fruit juice with their packed lunches. This correlated with the responses parents gave in the online survey about what packed lunches would normally include, with the most common items again being sandwiches, fruit/vegetables and cheese/yoghurt (Table 2.12).

Table 2.12: If you provide your child with a packed lunch, what does it normally include? CGR UIFSM Parent survey data, 2017.

Packed lunch contents	Proportion of respondents
Sandwiches	96%
Whole fruit/vegetables	89%
Cheese/yoghurt	76%
Water	71%
Crisps	52%
Biscuits/cake	30%
Cereal bars	26%
Fruit Shoot/similar drink	22%
Pasties/sausage rolls	12%
Chocolate/sweets	12%
Other	11%
Dips	8%

(Base: 286)

Other items that parents said that they commonly included in packed lunches were:

- Sugar free juice drinks, fruit juice/squash, smoothies
- Salad, cucumber slices, raisins, fruit salad
- Seeds and pulses
- Pasta, rice, quinoa, noodles
- Wraps, crackers, breadsticks
- Dried fruit products, e.g. snack bars
- Jelly, popcorn

Learners taking packed lunches indicated that they preferred doing so for a range of reasons, but mainly they liked being able to eat what they were familiar with, or because '*I get to choose*' what they contain. Where children ate packed lunches on specific days of the week, this was because they did not like the food being served on those days.

Price charged for school meals

The average (mean) charge to parents for school meals at Key Stage 2 reported by school leaders was £2.14 per meal (with a maximum of £3.10 per meal). This is higher than the average charged to parents prior to the introduction of UIFSM: £1.97 per meal (although still with a maximum of £3.10 per meal). Where prices charged to parents had changed, nearly half of school leaders (47% of 301) said that this was not as a direct result of UIFSM being introduced; 8% said that the change was a result of UIFSM (the remainder did not know or said the question was not applicable). Overall,

school leaders reported the charge per meal from private caterers as being slightly higher than in-house or LA provision (Table 2.13).

Table 2.13: Charge per meal at Key Stage 2. CGR UIFSM School Leaders survey data, 2017.

	Current charge per meal for Key Stage 2	Charge pre-UIFSM
ALL	Mean: £2.14 Median: £2.20 (Base: 241)	Mean: £1.97 Median: 2.05 (Base: 234)
TYPE OF PROVISION		
In-house caterer	Mean: £2.14 Median: £2.20 (Base: 96)	Mean: £1.93 Median: 2.05 (Base: 96)
LA caterer	Mean: £2.10 Median: £2.20 (Base: 169)	Mean: £1.95 Median: 2.05 (Base: 169)
Private caterer	Mean: £2.21 Median: £2.20 (Base: 126)	Mean: £2.01 Median: 2.02 (Base: 126)

2.3. Take-up of school meals

Take-up of UIFSM reported in fieldwork

This section of the report reports on feedback from fieldwork participants rather than administrative data. The online survey defined ‘take-up’ as the number of learners that have a school meal on average more than three days a week.

Current levels of take-up

In schools visited, UIFSM was perceived by all types of school staff to have led to an increase in take-up of school meals, particularly among reception and Key Stage 1.

This increase – particularly among learners not entitled to FSM - was also reflected in the results of the online survey (table 2.14 – note that these figures are based on the information provided by school leaders, they include best estimates rather than full data).

Average take-up levels reported by senior leaders across the year groups and according to FSM quintile, rural/urban location, and type of provision remained broadly reflective of those overall.

Table 2.14: Percentage of children taking school meals – current school year compared with 2013/2014. CGR UIFSM School Leaders survey data, 2017.

	Take-up (current school year)	Take-up (2013/2014)
Reception/Key Stage 1 – those entitled to FSM	Mean: 66% Median: 90% (Base: 233)	Mean: 64% Median: 80% (Base: 198)
Reception/Key Stage 1 – those not entitled to FSM	Mean: 78% Median: 85% (Base: 225)	Mean: 52% Median: 50% (Base: 196)
Key Stage 2 – those entitled to FSM	Mean: 59% Median: 70% (Base: 196)	Mean: 62% Median: 80% (Base: 168)
Key Stage 2 – those not entitled to FSM	Mean: 50% Median: 50% (Base: 196)	Mean: 43% Median: 40% (Base: 168)

Increases in take-up were also noted by caterers. Forty-eight caterers responding to the survey said that on average they provided a mean of 227 meals per day (with a minimum of 38 and a maximum of 500). This was an increase from an average of 146 meals per day prior to UIFSM (with a minimum of 0 and a maximum of 400).

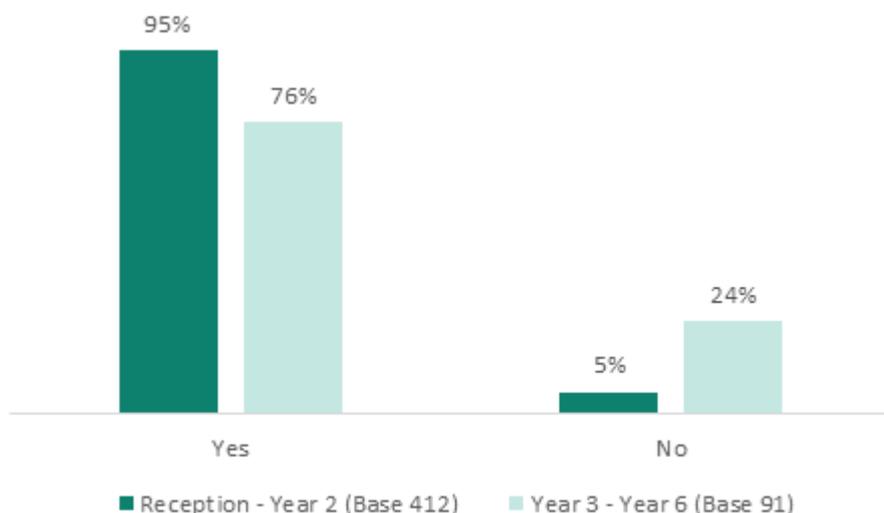
‘There were additional service points installed in two schools because the increase in numbers was so high. Every year take-up improves. And also what the children eat improves too, so wastage decreases each year’. (LA Caterer – telephone interview)

Around half of caterers responding to the survey (51% of 47) reported that they had increased schools’ in-house catering services to enable them to provide for all infants. Furthermore, 30% of school catering leads had asked their existing providers to increase provision for all infants; only one had introduced on-site catering services where previously there were none and one had changed to a new provider.

Take-up at Key Stage 2

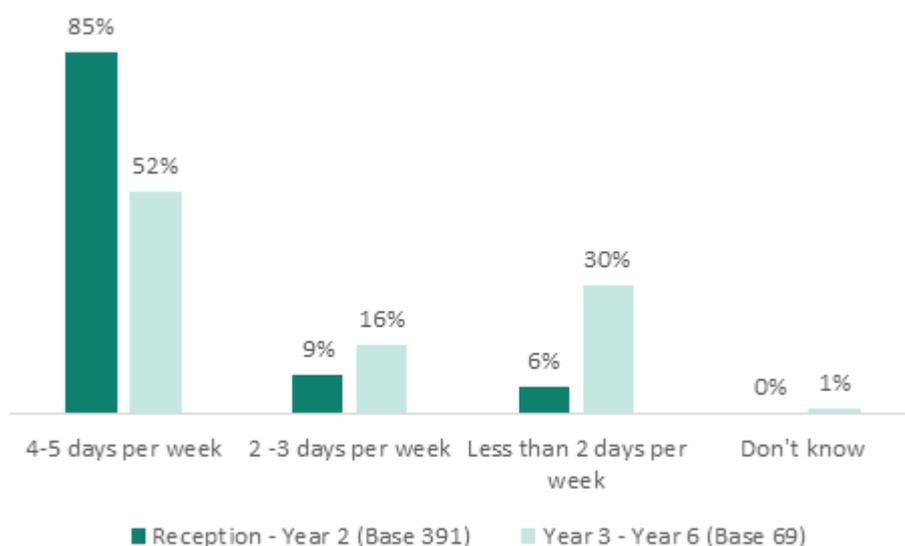
When asked whether their child ever has school meals, the majority of parents with children of primary school age answered positively, with a greater proportion doing so for those responding with reference to infant children (Figure 2.4).

Figure 2.4: Does your child ever have school meals? CGR UIFSM Parent survey data, 2017.



Among the parents that reported that their child has school meals, most said that this happened 4-5 days per week (Figure 2.5).

Figure 2.5: On average, how often does your child have school meals? CGR UIFSM Parent survey data, 2017.



The survey results show an increase in take-up in Key Stage 2 among those not entitled to FSM following the introduction of UIFSM (Table 25). Schools participating in the visits did sometimes report small increases in Key Stage 2 take-up since the introduction of UIFSM, but this was not seen everywhere, and there was a small decrease in average take-up reported at Key Stage 2 by school leaders with respect to pupils entitled to FSMs (Table 2.14).

‘There is a drop off of those taking school lunches at Key Stage 2 – it falls away to half but we have clubs at lunchtime so the children bring sandwiches which works better timewise’. (Business Manager, school with external caterer)

‘Uptake in meals for juniors is about the same as pre-UIFSM. Children tend to mix and match in juniors, but on favourite day such as roast dinner, uptake is between 70 – 90%’. (Business Manager, school with external caterer).

Parents answering the online survey in reference to a child in Key Stage 2 (Year 3 or 4) were asked whether their child had swapped from packed lunches to school meals when UIFSM was introduced (as their child was in Year 1 or 2 at the time).

Of the 64 parents responding to this question, just over half (52%) stated that their child had swapped from packed lunches to school meals at the introduction of UIFSM (Table 2.15).

Table 2.15: When your child was in year 1 or 2 and free school meals were introduced for all infants (UIFSM), did your child switch from packed lunches to school meals? CGR UIFSM Parent survey data, 2017.

Changing between packed lunch and school meals	Proportion of respondents
Yes, swapped from packed lunches	52%
No, still had packed lunches	14%
No, was already having school meals	33%
Don't know	2%

(Base: 64)

Trends in take-up reported in the Living Costs and Food Survey (LCF)

Ten years of data from the LCF and its predecessor survey have been pooled to assess trends in school meal take up. The LCF provides a consistent measure of school food take-up over time, as most of the relevant questions have remained constant across annual cycles and the response rate is higher than that of recent school surveys including that reported in this report (which may reduce the likelihood of bias). However, as it is a large survey that does not have a focus on school food, some responses will be affected by misunderstandings on the part of respondents – some may misclassify the education sector of children or confuse school lunches with other food consumption. The survey only collects information about school food take-up over the previous week (with some respondents answering during school holidays), so it does not reveal an individual's take-up over the whole year. It only provides information on children's ages and current education setting – distinguishing primary state schools from other settings – so 7-year-olds present could either be infants or juniors. In this analysis, therefore, 'infants' denote 4- to 6-year-olds in primary state schools, and 'juniors' 8- to 11-year-olds in similar schools.

In most years assessed there is take-up information for around 300 state primary school infants in England (the vast majority of all the infants in surveyed households), so annual take-up estimates are prone to sampling error and can be expected to fluctuate to some extent year-to-year regardless of the underlying national trend. Annex C has more detail on the LCF, the methodology used here, and its limitations.

Based on reports by lead household respondents, Figure 2.6 depicts the estimated proportion of all children taking at least one school lunch in the last week in each financial year between 2006-07 and 2015-16, among infants in England attending state schools, distinguishing between free and paid-for meals. The survey does not show who is registered for FSMs, so the figures show the proportion of all infants who are taking a free or paid-for meal in each case. This shows that, whilst there were some noticeable year-on-year deviations, the estimated proportion of infants taking paid-for meals did not substantially increase or decrease across the period 2006-7 to 2013-14. It decreased from 24% in 2013-14 – the year before UIFSM was introduced – to 8% in 2015-16. 2014-15 data will include observations from before and after the start of the 2014/15 academic year. In contrast, the

estimated proportion receiving a free meal in the previous week rose from 12% in 2013-14 to 56% in 2015-16. The 8% of households seemingly with infant children in state primary schools having school lunches paid for in 2015-16 – after UIFSM’s introduction – could be a result of errors in classifying the nature of meals taken or the school sector of children. Whatever the cause, this highlights the weakness of the LCF for precise estimates of take-up.

As Figure 2.7 shows, in addition to a large proportion of children taking free meals instead of having lunches paid for, the estimated proportion of infants taking at least one school lunch in the last week increased from 35% in 2013-14 to 64% in 2015-16. There is no indication that the introduction of UIFSM has yet caused a change in take-up for juniors, though it is important to note that these comparisons exclude 7-year-olds, some of whom would have been directly affected by the policy as infants prior to 2015-16. In contrast, there is little change over the period in junior take-up rates. The figures suggest a gradual decline in take-up for secondary school pupils across the period, from 32% in 2006-07 to 23% in 2015-16 – though in a given year these changes have not been statistically significant – and this group of pupils have tended to have the lowest rates of take-up throughout the period.

Figure 2.6: Estimated proportion of infants (only 4-6 year olds) in England attending state schools taking at least one free or paid-for school lunch in the last week. Upper and lower estimates refer to 99% confidence intervals. Living Costs and Food survey.

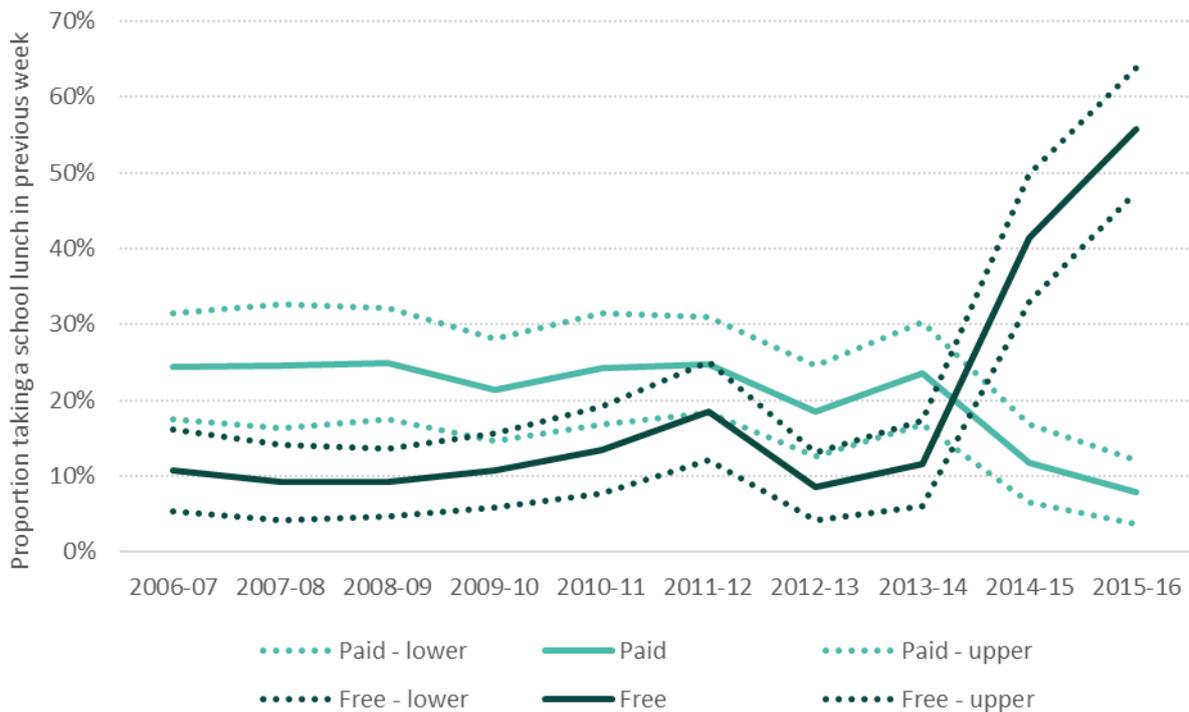
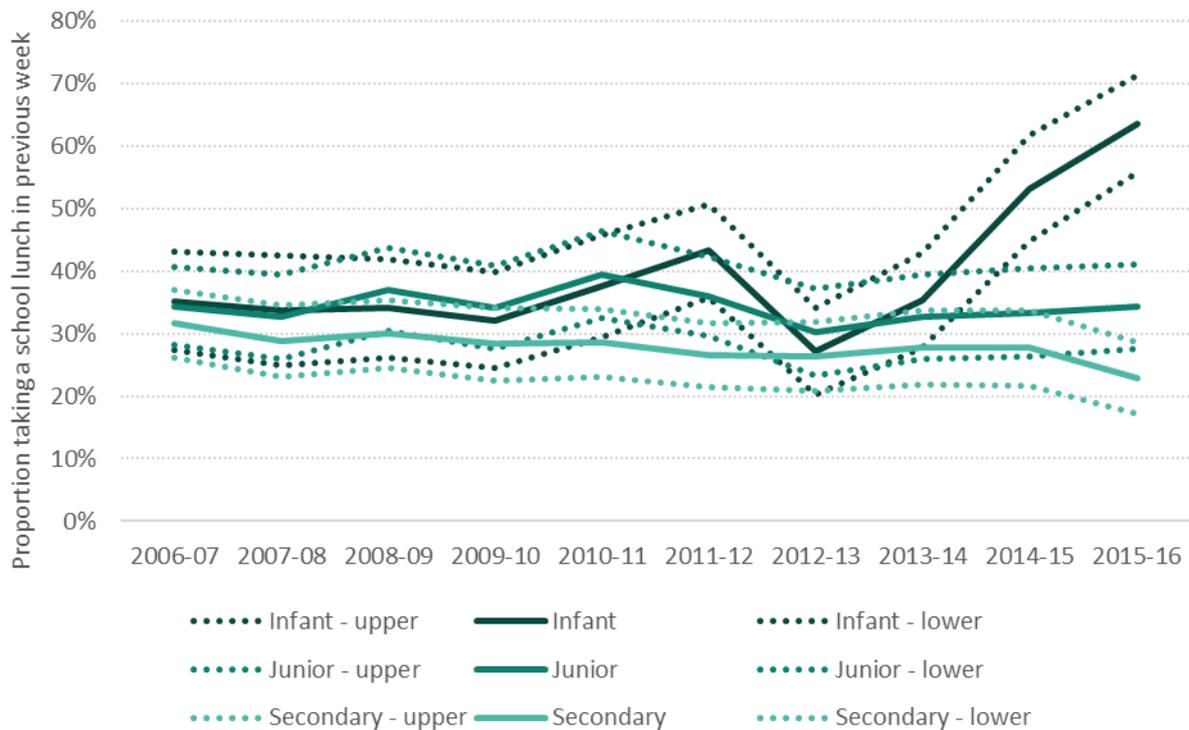


Figure 2.7: Estimated proportion of children in England attending state schools taking at least one school lunch in the last week. Upper and lower estimates refer to 99% confidence intervals. Living Costs and Food survey.



Not all children taking school lunches do so on every day. Table 2.16 shows that the average number of meals taken in the last week by infants in England attending state schools followed a similar trend to that in the proportion taking any meals, rising from 1.40 in 2013-14 to 2.91 in 2015-16 (more pupils took a meal and those who did took more during the week concerned). Making a simple adjustment to take into account that these results are based on a survey carried out across the full financial year (multiplying the average meals-per-week by 52 and dividing by 190 possible term-time meals), the implied annual within-term take up rate was 38% of all possible meals in 2013-14, rising to 80% in 2015-16. This has a range of between 69% and 90% implied by the confidence interval on the underlying estimate.

Table 2.16: Estimated average (mean) school lunches taken by children in England attending state schools in the last week. Upper and lower estimates refer to 99% confidence intervals. Living Costs and Food survey.

	Meals per week			Equivalent annual take-up rate		
	Lower	Mean	Upper	Lower	Mean	Upper
2006-07	1.10	1.45	1.81	30%	40%	50%
2007-08	0.91	1.29	1.66	25%	35%	45%
2008-09	1.03	1.38	1.74	28%	38%	48%
2009-10	0.97	1.31	1.65	27%	36%	45%
2010-11	1.01	1.34	1.67	28%	37%	46%
2011-12	1.38	1.72	2.05	38%	47%	56%
2012-13	0.76	1.06	1.36	21%	29%	37%
2013-14	1.06	1.40	1.75	29%	38%	48%
2014-15	2.01	2.42	2.84	55%	66%	78%
2015-16	2.53	2.91	3.29	69%	80%	90%

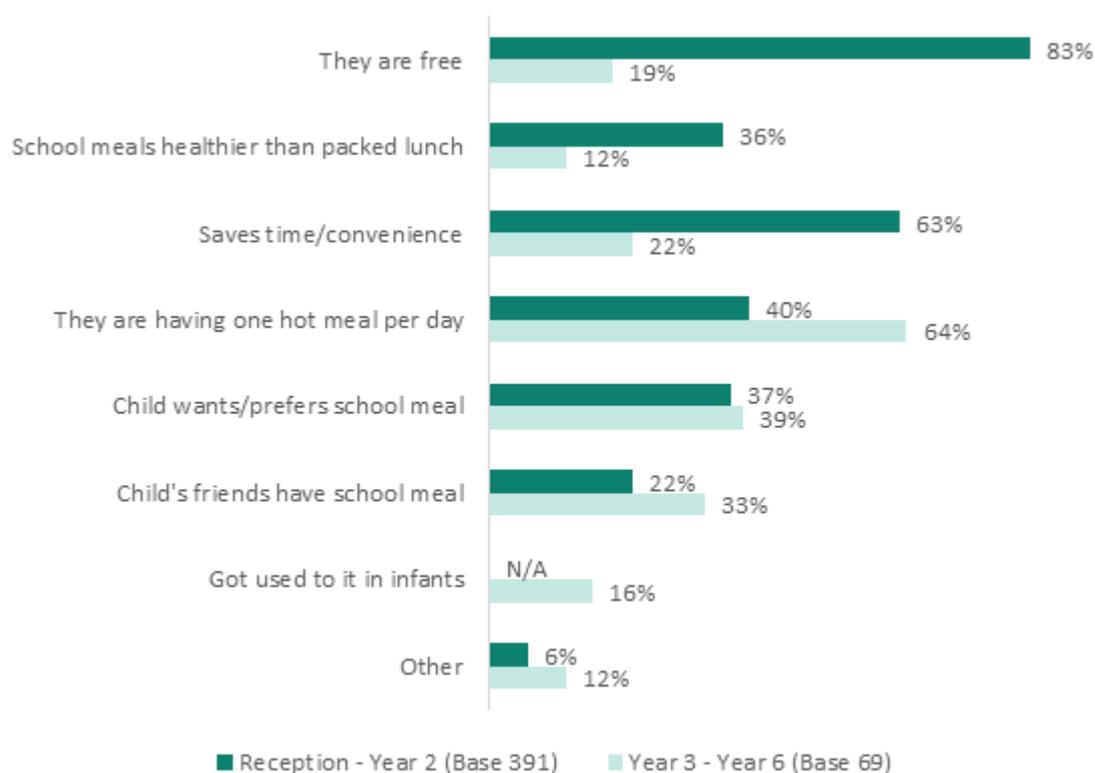
Reasons for taking up school meals

‘The school meals are of high quality, have great variety and offer a balanced diet with lots of vegetables. I know that my child will not be hungry after a school lunch’. (Parent – online survey)

Parents gave a range of reasons during the survey for taking up school meals. Those with children aged up to the end of Year 2 said that the main reasons they had school meals were that lunch provision was free, and it was also a convenient option for them. For those with children in Years 3 to 6, the main reason was that children could have one hot meal per day (Figure 2.8 - note that parents were able to select multiple responses and therefore percentages will total more than 100%). Other reasons included:

- **Variety:** wanting to encourage children to try a variety of new foods, or that school meals provided more variety than a packed lunch, ‘which will mostly be a sandwich’.
- **More sustaining:** school meals providing more energy so that a child can concentrate better in the afternoons, or go to clubs/activities after school without being hungry.
- **Social benefits:** encouraging children to learn to share a meal with others and that the ‘example of what constitutes a good healthy meal’ is communicated to them at school as well as at home.

Figure 2.8: Why does your child have school meals? CGR UIFSM Parent survey data, 2017.



When giving free text responses, some parents added further detail in terms of seeing an improvement in their child’s food choices and eating habits as a result of taking up free school meals and they wished to encourage this by continuing them; in particular, issues such as fussy eating had improved with young children becoming ‘more open to trying new foods’.

‘My daughter was a very fussy eater and only ate plain rice or pasta. When the free meals were introduced many of her school friends were having them, so she wanted them too...it allowed her the opportunity to eat foods she wouldn’t have tried at home. And now she enjoys a wide range of food that had she had not had the school meals she wouldn’t eat now’. (Parent – online survey)

Reasons for not taking up school meals

Where parents had said that their child took school meals less than 2-3 times per week, common reasons (up to Year 2) were poor quality food (58%), children not liking the food/is a fussy eater (42%) and children only liking the food on certain days (35%). For older age groups (Years 3 to 6), common reasons for not having school meals were because parents felt that packed lunches were cheaper (42%) and poor quality food (35%) – see Table 2.17.

Table 2.17: Why doesn't your child have school meals regularly? CGR UIFSM Parent survey data, 2017.

	Reception – Year 2 (Base: 43)	Year 3 – Year 6 (Base: 43)
Poor quality food	58%	35%
School meals are unhealthy	14%	9%
Portions are too small	16%	21%
Child doesn't like the food / is fussy	42%	21%
Limited menu choice	28%	21%
Child only likes certain foods on certain days	35%	19%
They do not meet special dietary needs	21%	2%
Takes too long to get served	7%	19%
You can't decide on the day/lack of flexibility at school	7%	14%
Packed lunch is cheaper	N/A	42%
Child's friends/siblings don't have a school meal	0%	7%
They have a hot meal at home in the evening	28%	30%
I like to have control over what my child eats	12%	5%
Other	7%	14%

Please note that parents were able to select multiple responses and therefore percentages will total more than 100%.

Where they gave additional feedback, parents reiterated concerns with the quality of school meals, or the suitability of some menu choices for very young learners – *'it's not children being fussy, it's just not targeted at younger palates'*. (Parent – online survey)

One LA caterer noted during the interviews that in schools where UIFSM take-up is below 87%, audits will be carried out in the school to identify potential reasons for this and to implement changes that will support an increase in take-up.

Barriers to increasing take-up

When school leaders were asked to identify the key barriers to increasing take-up of school lunches, those responding reflected parent feedback in terms of offering menu choices that children like (Table 2.18). Other common barriers for school leaders were:

- Affordability of school meals for parents (51%)
- Getting parents to apply for FSM at Key Stage 2 (48%)

Table 2.18: What are the key barriers to increasing take-up of school lunches – by school size? CGR UIFSM School Leaders survey data, 2017.

	ALL	Small (0 – 200 pupils)	Medium (201 – 300 pupils)	Large (over 300 pupils)
Offering menu choices that children like	56%	57%	60%	52%
Affordability of school meals for parents	51%	55%	54%	48%
Getting parents to apply for FSM at Key Stage 2	48%	36%	47%	55%
Difficulty in engaging parents	35%	29%	36%	37%
Lack of space/room for facilities	23%	20%	18%	27%
Small dining areas	21%	20%	15%	25%
Staffing costs/access to funding	19%	15%	22%	20%
Costs of installing/refurbishing facilities	18%	16%	17%	19%
Queue length – off-putting, managing behaviour	17%	11%	21%	18%
Meeting special dietary requirements	12%	15%	11%	12%
Impact on staffing rotas	11%	7%	13%	12%
Other	7%	11%	4%	6%
Dealing with large in-take in reception	5%	4%	4%	6%
Keeping parents informed	5%	3%	6%	6%
Meeting standards for healthy/balanced meals	3%	7%	3%	1%
Staff skills gaps	1%	0%	3%	0%

(Base: 292; please note that school leaders were able to select multiple responses and therefore percentages will total more than 100%).

Parental engagement and applications for Pupil Premium were particular barriers noted by school leaders in schools with a high proportion of learners eligible for Free School Meals:

- Difficulty engaging parents was a particular challenge for school leaders in schools with a high proportion of learners eligible for Free School Meals (45% of 104).⁵⁴
- School leaders in schools with average or high proportions of learners eligible for Free School Meals most commonly reported difficulty with getting parents to apply for Free School Meals at Key Stage 2 (53% of 61, and 60% of 104 respectively, compared with 36% of 127 in schools with a low proportion of eligible learners)

For further detail on engaging parents with Pupil Premium applications, see section 2.4. Additional qualitative responses to the school leader survey also identified other barriers to take-up. These included:

- Personal preference for packed lunches, among parents and learners
- Costs (to the school) of delivering free school meals
- Meal choices – for example, parents not wanting their child to be able to choose a dessert every day, or to eat bread with their main meal every day

⁵⁴ Compared with 31% with average proportions, and 28% with low proportions of children eligible for Free School Meals

- Time restrictions meaning that serving a large number of children creates challenges for the school.

During the visits, the lack of dining space meant that increasing take-up was a challenge in some schools; the preferences of parents and learners were also a consideration – school staff acknowledged that individuals cannot be compelled to take or eat meals that they do not wish to have (or for their children to have).

‘There are four children who have permanent packed lunches. We have tried to persuade the parents to change to UIFSM but these few won’t budge. For this group, it is the parents who are resistant to change’. (Chef, school with internal caterer)

These parents are perceived by the school to prefer to be able to monitor and know for themselves what their child is eating, are concerned about a child being ‘fussy’ and not having anything to eat, or need to cater to specific dietary requirements of the child (for example, medical or cultural considerations).

Promotional strategies

A variety of strategies are employed by schools to encourage take-up of school meals. These were noted during the visits and interviews as including:

- printed materials being distributed to learners and parents (e.g. leaflets, information in school newsletters);
- taster sessions at parents’ evenings, information sessions and event days; and
- extra-curricular input from catering staff.

Where schools use external caterers, these will often supply promotional materials and information leaflets that can be distributed to parents and learners to make them aware of the school lunches available. During the online survey, school leaders were asked whether they had used promotional activity or strategies to improve take-up of school meals. Of the 310 that responded:

- 39% of school leaders said that they had promoted lunches and would have done so regardless of UIFSM;
- 29% reported that they had promoted school meals due to UIFSM;
- 21% said that there was no change - they were already promoting school meals prior to UIFSM; and
- 7% had not promoted school meals to improve take-up (the remainder either did not know or felt this was not applicable to them).

School leaders in Academies/Free schools were more likely to have adopted promotional strategies to improve take-up than those in LA Maintained schools (36% compared to 25%). This was also more common among school leaders in schools with a private catering contractor (42%) compared to internal caterers (34%) or LA caterers (20%).

One school visited with an internal catering team had taken the approach to inform parents *‘that children should have a hot meal and new parents have to opt out rather than opt in’* to school lunches. This meant that *‘hot dinners have become the norm’*. There is now an *‘occasional packed lunch’* but generally all infants take school meals (an increase from 50% take-up prior to UIFSM).

A Head Cook in another school with internal catering provision managed their own social media accounts that parents were able to follow, enabling them to see what was being eaten and recipe ideas that they were producing.

'I have a wooden banana outside the kitchen/dining hall, with photos and descriptions of the week's food choices on, so that children and parents can see what the food is going to be'. (Head Cook, school with internal caterer)

They also distributed menu development templates that children could fill in with their parents at home, and feed back to the school ideas of what they would like to eat.

'The menus are always evolving and I try new things with the children. Yesterday I cooked an indoor buffet for the first time. The children had crudités, home-made sausage rolls and dips [e.g. hummus]...I go into the dining hall during lunch and sit and talk to the children'. (Head Cook, school with internal caterer)

Variation in take-up across pupils

Since the introduction of UIFSM, its main revenue funding for each academic year has been provided to schools according to the number of pupils in reception, year 1 or year 2 (or aged 4-6 if year groups are not recorded) that were reported to have taken a school lunch on the school census days in October and January who were not claiming FSMs at the time.⁵⁵ The National Pupil Database has been used to assess the variation in recorded take-up based on January census information for 2015 to 2017, comparing take-up rates for those eligible for and claiming FSMs (for the purposes of the pupil premium) to others. Compared to the LCF as a source of information on take-up, the NPD has the advantage of providing census information rather than being based on a small sample, allowing more detailed subgroup analyses. However, with funding attached to the reported levels of take-up, schools will have had a financial incentive to ensure take-up was especially high on census days (see section 2.4), creating a bigger risk of bias when extrapolating results to a full year of meal provision. More information on the methodology can be found at Annex C.

As Table 2.19 shows, reported take-up in January across FSM-claimants and others has been high compared to historic levels in all three years since the policy was introduced, reaching 86.1% overall in 2017. This is near the top of the range in annual take up implied by the 99% confidence interval around the estimated mean number of meals taken in the last week by infants based on the LCF (Table 2.16). That might suggest that schools are indeed basing their census returns on relatively high levels of take up, although January will tend to have higher levels of school meal take up than those of spring or summer months.

There has been little change in take-up between 2015 and 2017, and take-up rates are slightly higher for those claiming FSMs than for others – with a difference of 2.6ppts, 2.2ppts and 1.6ppts in 2015, 2016 and 2017 respectively. There are only small differences, of less than 2ppts in all cases, between

⁵⁵ <https://www.gov.uk/government/publications/universal-infant-free-school-meals-uifsm-funding-allocations-2017-to-2018/universal-infant-free-school-meals-uifsm-conditions-of-grant-2017-to-2018> . Dual-registered pupils are counted at the school in which they are observed taking a meal. For reception pupils, the greater of the average number of pupils taking a meal across the two census days and the number in January is taken. Meals are funded at a rate of £2.30 per meal, assuming the estimated number of meals taken is reflected across 190 school days of the year - providing £437 per eligible pupil.

pupils in different year groups and between boys and girls, for both FSM and non-FSM-claiming pupils.

Table 2.19: School lunch take-up rates by whether or not pupils are known to be eligible for and claiming FSMs at the time. January School Census, National Pupil Database.

		All	FSM	Not FSM
Year	2015	85.6%	87.7%	85.1%
	2016	85.1%	87.0%	84.8%
	2017	86.1%	87.5%	85.9%
Year group (2017)	Reception	86.2%	86.5%	86.1%
	Year 1	86.1%	87.7%	85.9%
	Year 2	86.1%	88.3%	85.8%
Gender (2017)	Male	85.5%	86.9%	85.2%
	Female	86.9%	88.2%	86.7%

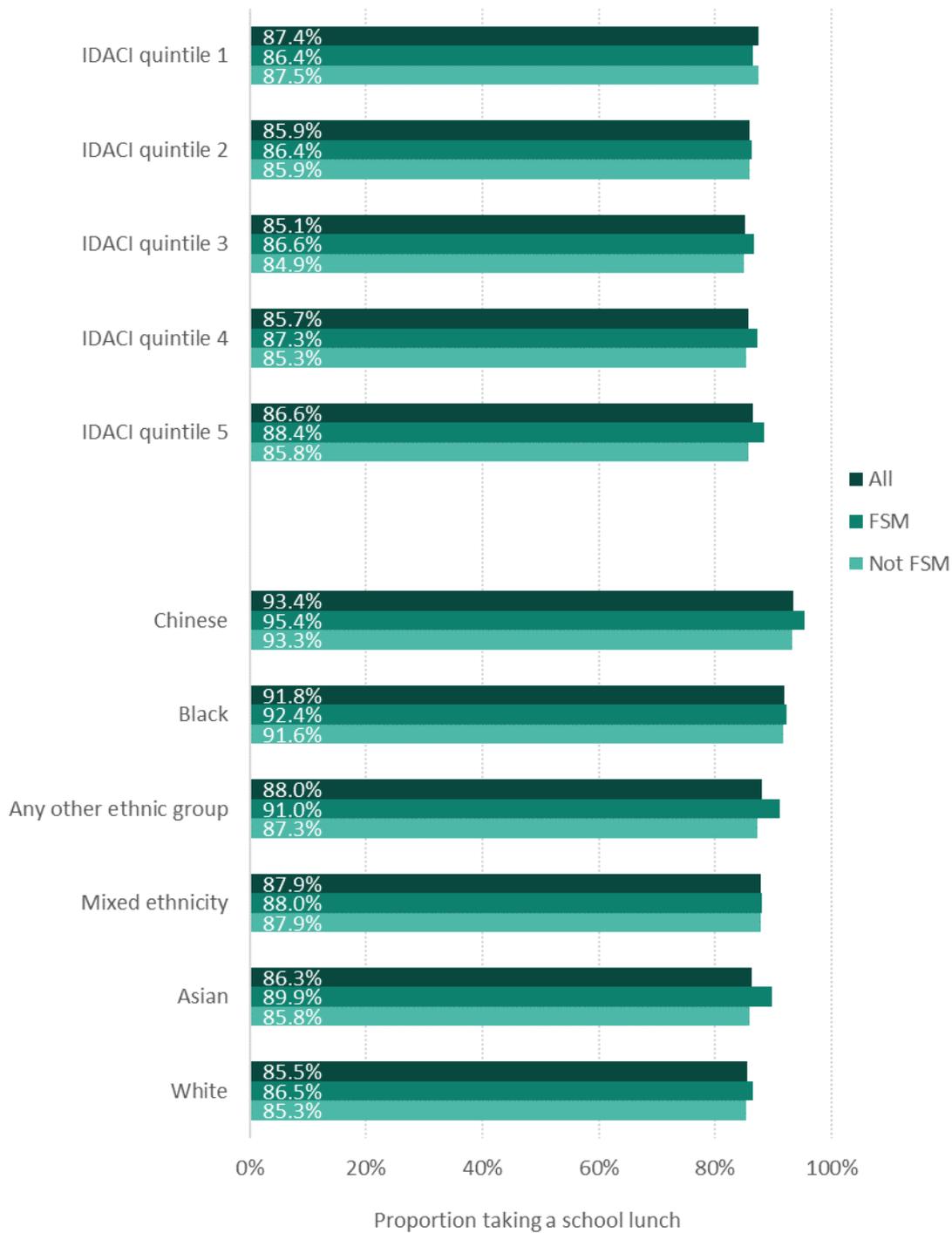
Figure 2.9 shows that there are similarly only small differences in take-up across children living in areas of different levels of deprivation, assessed by dividing children into five equal-sized groups according to the 'Income Deprivation Affecting Children Index' (IDACI) score of their area of residence, with IDACI quintile 1 containing pupils living in the least deprived neighbourhoods and IDACI quintile 5 the most.⁵⁶ Those in the least deprived quintile have the highest rate of take-up, 2.3ppts greater than that of the middle quintile, which has the lowest rate. The difference in take-up between those claiming FSM and others is greater in more deprived areas (2.7ppts in quintile 5), whereas in the least deprived quintile those claiming FSM are slightly less likely to take a meal (-1.1ppts).

In contrast, there are clearer differences between pupils of different ethnic backgrounds.⁵⁷ Chinese pupils have the highest rate of take-up, at 93.4%, compared with white pupils who have a rate of 85.5%. It is not clear what explains these trends, although the fieldwork reported in this chapter highlights the importance of children's preferences, linked to wider dietary habits, and engagement between parents and schools; these factors may be associated (causally or otherwise) with ethnicity.

⁵⁶ More information on the calculation of the IDACI can be found at: <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015>

⁵⁷ Those with unclassified ethnicity are excluded from this analysis.

Figure 2.9: School lunch take-up rates by FSM status, IDACI of pupil's residence and ethnicity. January 2017 School Census, National Pupil Database.

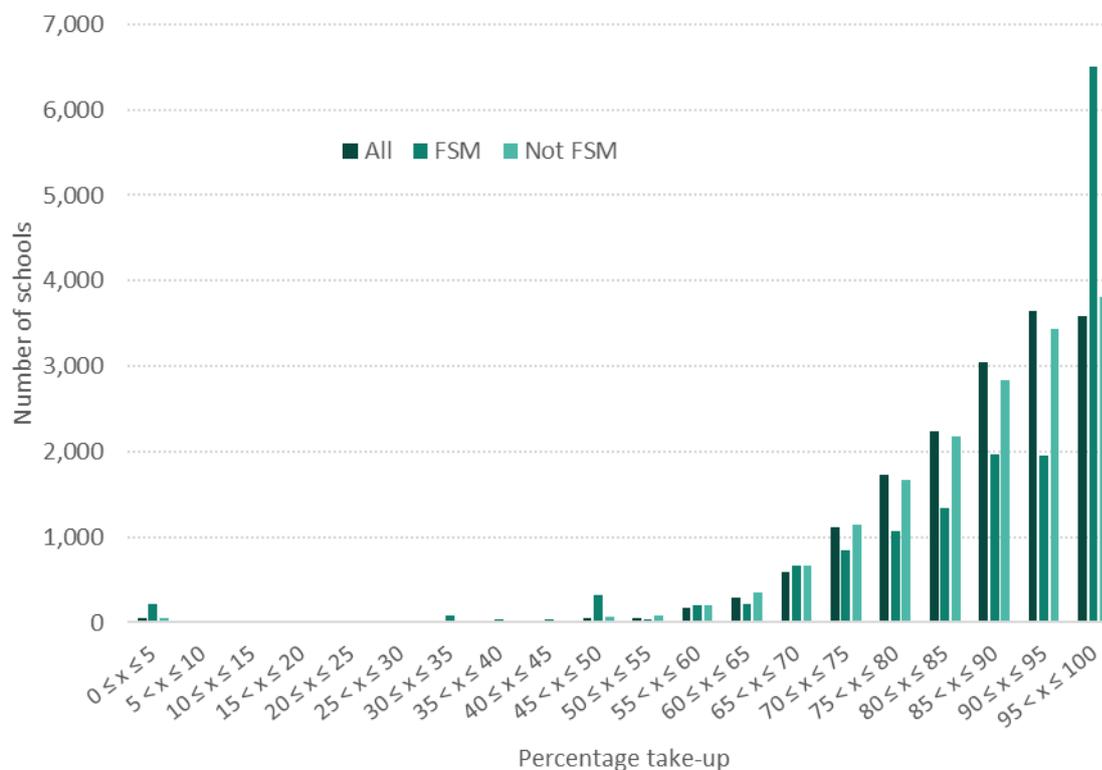


Variation in take-up across schools and areas

Assessing take-up rates within schools with infants, it is clear that, at least on census days, take-up has reached high levels in most schools (Figure 2.10, Table 2.20). Whilst there are some outliers with very low reported take-up (in most cases, this is likely to reflect errors in reporting or schools with very low pupil numbers overall – schools with no pupils of the relevant category are excluded), in

January 2017 98% of schools reported take up of over 60% across all infants, with 75% reporting over 80% and 44% reporting over 90% (Table 2.20).

Figure 2.10: Distribution of schools across school lunch take-up rates for all, FSM and non-FSM infants. January 2017 School Census, National Pupil Database.



The distribution of schools is even more skewed towards high levels of take up for FSM pupils in particular, with 37% reporting 100% take-up for this group compared to 6% for non-FSM pupils, and 55% reporting take-up of over 90% compared to 44%.

Table 2.20: Distribution of schools across school lunch take-up rates for all, FSM and non-FSM infants. January 2017 School Census, National Pupil Database.

	All	FSM	Not FSM
Proportion over 60%	98%	94%	97%
Proportion over 70%	93%	88%	91%
Proportion over 80%	75%	76%	74%
Proportion over 90%	44%	55%	44%
Proportion = 100%	5%	37%	6%

With such a high concentration of schools in high levels of take-up, it may not be expected that there will be large differences across different sorts of school. Figure 2.11 depicts how take-up (across all infants) varies across local authorities⁵⁸, grouping them into 5 groups of equal number according to take-up. All local authorities have average take-up rates of over 72%, but authorities in the north of England and in London tend to have higher-than-average take-up, some reaching over 90%, and this is consistent with patterns seen before the introduction of UIFSM (Nelson et al., 2012).

⁵⁸ Excluding City of London and the Isles of Scilly.

Figure 2.11 School lunch take-up rates (all pupils) by local authority. January 2017 School Census, National Pupil Database.

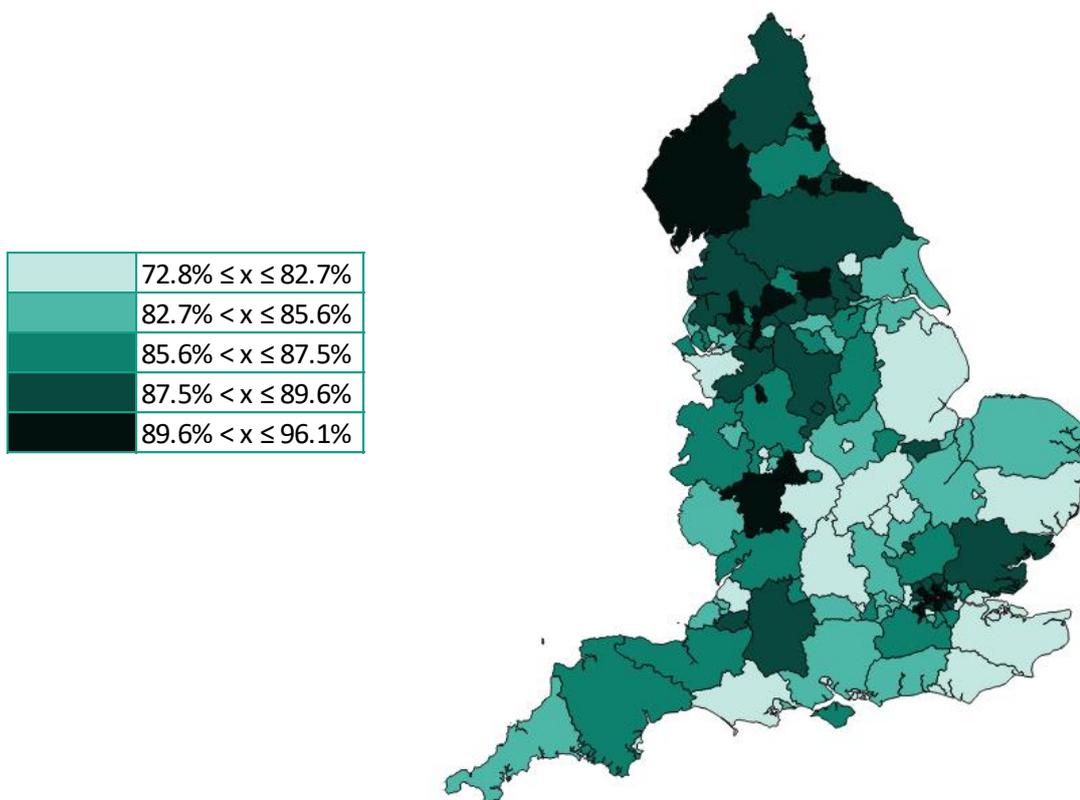


Table 2.21 provides some further breakdowns of take-up rates from the January 2017 census. Whilst small, rural schools have previously reported facing challenges in delivering high-quality meals at low costs due to a lack of scale and transport difficulties (Dimpleby and Vincent, 2013), there is no evidence here that these factors have translated into lower take-up following the introduction of UIFSM. Urban city and town schools have the lowest take-up rates, though differences are small (84.4% for all pupils compared with 87.9% in urban conurbations and 86.6% in rural schools). In terms of overall school size (including older children), small schools have the highest take up rates for all pupils (88.0%) and schools with over 500 pupils have the lowest (85.7%). As reflected in surveys and case studies, it appears likely that – from the perspective of enabling high take-up – limitations on dining facility space have been at least as important as the need for economies of scale. It is also possible that these results reflect the impact of additional small schools funding and the targeting of DfE delivery support towards small, rural schools, but there is no direct evidence on that here. Smaller schools may also find it easier to engage with parents and pupils on schools food, and to adapt menus to demand.

Among mainstream schools (separating out special schools, alternative provision, pupil referral units and nursery schools), free schools tend to have higher levels of take-up, with an average of 92.3% compared with the lowest rate seen of 82.9% in sponsored academies. It should be noted that there are a small number of free schools in these data (accounting for only around 20,000 pupils) as the programme is relatively new. Their take-up rates will be influenced by the fact that they are disproportionately found in London (Andrews, J. and Johnes, R., 2017), which has a high level of take-up overall.

Table 2.21: School lunch take-up rates by region, rurality, size, type, outcome of latest Ofsted inspection, and proportion of infants claiming FSMs. January 2017 School Census, National Pupil Database.⁵⁹

		All	FSM	Not FSM
Region	North East	89.6%	90.4%	89.4%
	North West	87.8%	89.1%	87.6%
	Yorkshire and the Humber	87.0%	87.7%	86.9%
	East Midlands	83.6%	85.9%	83.3%
	West Midlands	87.7%	89.3%	87.4%
	South West	85.4%	86.4%	85.3%
	East of England	85.6%	86.6%	85.4%
	South East	82.3%	82.3%	82.3%
	London	88.1%	88.6%	88.0%
Rurality	Rural	86.6%	87.0%	86.6%
	Urban city and town	84.4%	86.1%	84.1%
	Urban conurbation	87.9%	88.8%	87.7%
School size (all pupils)	Small (0-100)	88.0%	87.6%	88.1%
	Medium (101-500)	86.2%	87.7%	85.9%
	Large (501+)	85.7%	86.9%	85.5%
Type of school	Mainstream free school	92.3%	91.4%	92.5%
	Mainstream maintained	86.4%	87.7%	86.2%
	Mainstream academy converter	86.1%	87.7%	85.8%
	Mainstream academy sponsored	82.9%	86.1%	82.0%
	Special/AP/PRU/Nursery	79.8%	84.0%	78.1%
Outcome of last Ofsted inspection (overall effectiveness)	Outstanding	88.3%	88.5%	88.3%
	Good	85.9%	87.6%	85.6%
	Requires improvement	84.1%	86.4%	83.5%
	Inadequate	82.3%	85.6%	81.5%
Quintile of FSM rate	1 - least deprived	87.8%	87.0%	87.8%
	2	86.2%	86.2%	86.2%
	3	85.7%	86.6%	85.6%
	4	85.5%	87.2%	85.1%
	5 - most deprived	86.2%	88.4%	85.2%

Looking at variation in take-up across schools with different Ofsted inspection outcomes, it appears that sponsored academies' below-average take-up rates might be associated with historic school performance or management quality. Schools judged Outstanding had a take-up rate, at 88.3%, that was 6.0ppts greater than that of Inadequate schools. Good and 'Requires Improvement' schools had take-up rates of 85.9 and 84.1% respectively. These comparisons hold for both FSM and non-FSM pupils. It is not clear what may drive these differences – it is possible that a well-run and appealing lunch service is another outcome of generally-strong school management or that high performing schools place a higher priority on raising take-up and struggling schools prioritise other things in search of urgent improvements in academic outcomes.

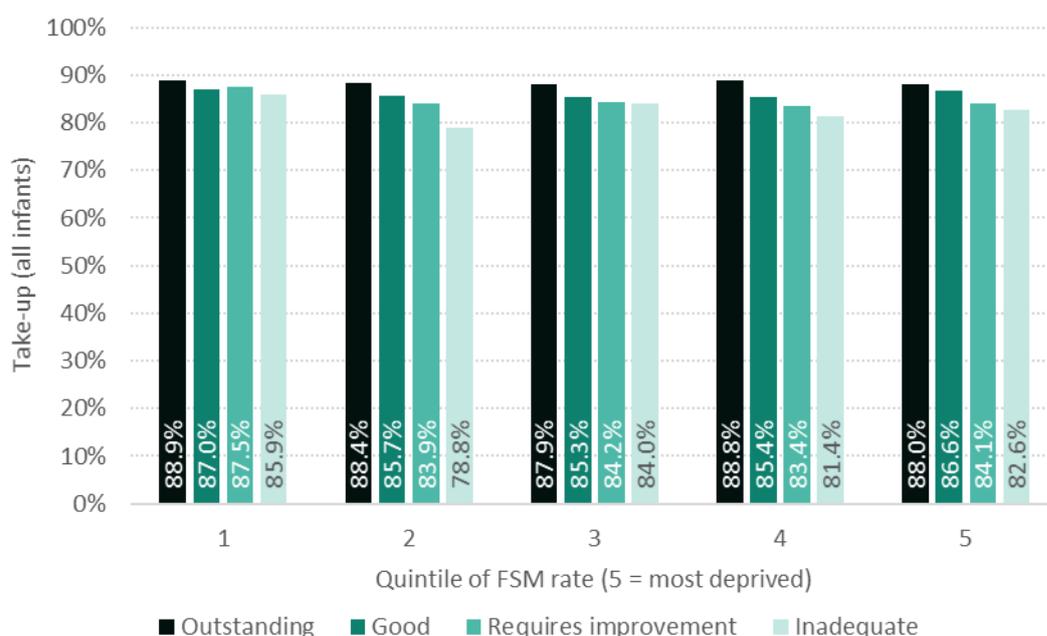
⁵⁹ Ofsted inspection outcomes for 'Overall effectiveness' as at 31st March 2017. School type information drawn from Edubase (<https://get-information-schools.service.gov.uk/>, extract from March 2017).

In contrast, there are much smaller differences between schools with different levels of deprivation, measured by the proportion of infants eligible for and claiming FSMs for pupil premium purposes. For those not on FSM, less deprived schools tend to have slightly higher rates of take-up (87.8% in the least deprived quintile compared to 85.2% in the most deprived). However, for those in receipt of FSM the most deprived quintile has the highest level of take-up, and there is not a linear relationship (as we saw with pupils' IDACI scores).

Schools containing a higher proportion of disadvantaged pupils have, on average, achieved weaker Ofsted inspection outcomes (Hutchinson J., 2016), while here they have been shown to have slightly lower rates of take-up among children who are not claiming FSM.

To check whether the findings above in relation to Ofsted ratings are associated with differences in deprivation levels, Figure 2.12 therefore shows take-up rates across all pupils for schools with different Ofsted ratings, separately for schools with different proportions of children registered for FSM. This shows that, at all levels of deprivation on this measure, there is a positive association between Ofsted inspection outcome and take-up of school meals, though this less clear for the schools with the lowest FSM rates and it is not known what causes this.

Figure 2.12: School lunch take-up rates by outcome of latest Ofsted inspection and proportion of infants claiming FSMs. January 2017 School Census, National Pupil Database.



2.4. Resourcing UIFSM

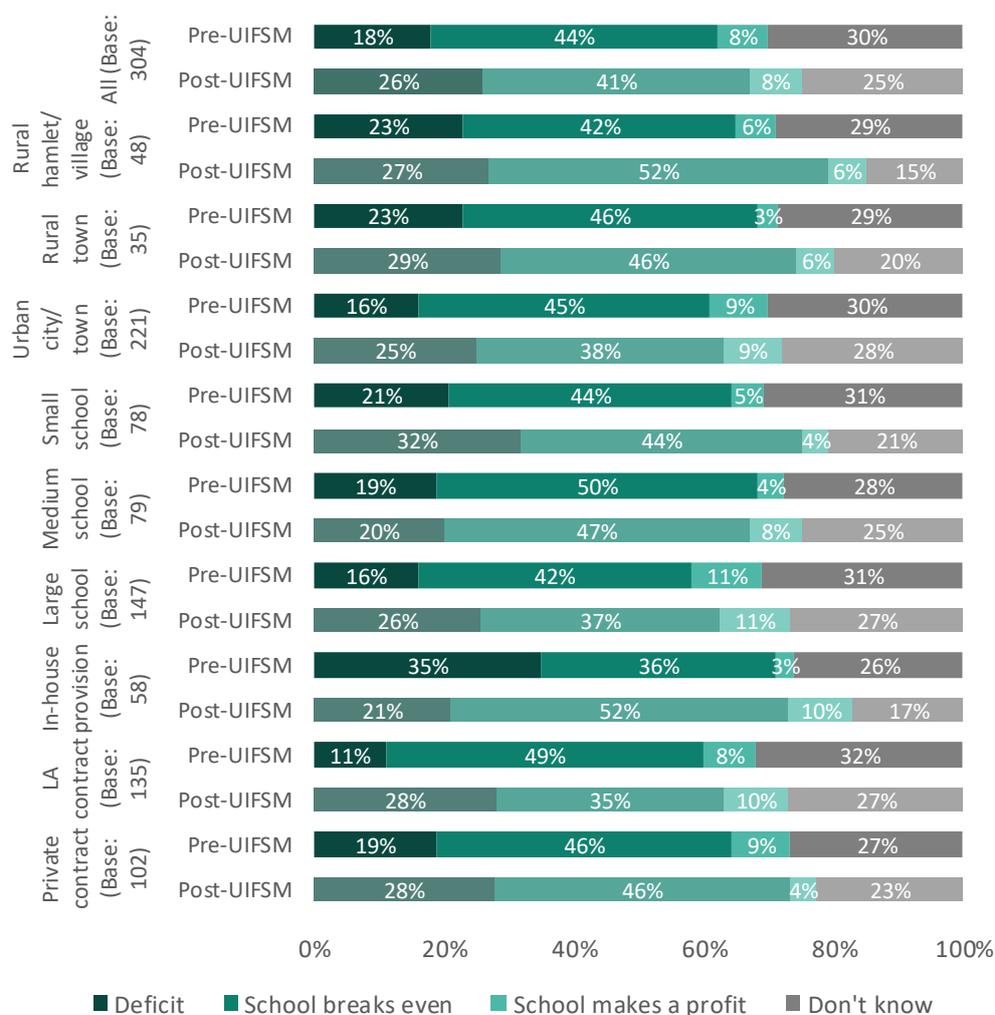
This section presents information provided by schools on the costs of implementing and continuing to deliver UIFSM, investments made in staffing, facilities and equipment, and the impact of UIFSM on Pupil Premium funding.

Overall school finances

Prior to UIFSM being introduced, 44% of 304 school leaders participating in the survey thought that, in relation to school lunch provision, financially there was no net loss or gain. This percentage dropped by 3% post-UIFSM (Figure 2.13).

Overall, there were 8% more school leaders reporting an increase in deficit once UIFSM had been introduced, and there was no change in the proportions of school leaders reporting a profit. The largest increase in respondents reporting that the school makes a profit post-UIFSM were school leaders in schools with in-house provision; with the largest increase in those reporting a deficit post-UIFSM being among those with LA contracts (Figure 2.13).

Figure 2.13: Please tell us how the school's finances stood in relation to providing school lunch provision, before and after UIFSM was introduced. CGR UIFSM School Leaders survey data, 2017.



Where school leaders reported an increase or decrease in either profit or deficit, 56% (of 16) attributed the change solely to the introduction of UIFSM (rather than other policy changes or changes in catering provision).⁶⁰

In the schools with a deficit, senior leaders noted that this was related to the requirement for additional staffing and administration hours to manage the delivery of UIFSM within the school.

⁶⁰ Where school leaders reported a **profit** both before and after the introduction of UIFSM, 36% (of 11) said the profit stayed the same; 27% said the profit increased; and 18% said the profit decreased. The remainder did not know. Where school leaders reported a **deficit** both before and after the introduction of UIFSM, 39% (of 28) said the deficit stayed the same; 29% said the deficit increased; and 14% said the deficit decreased.

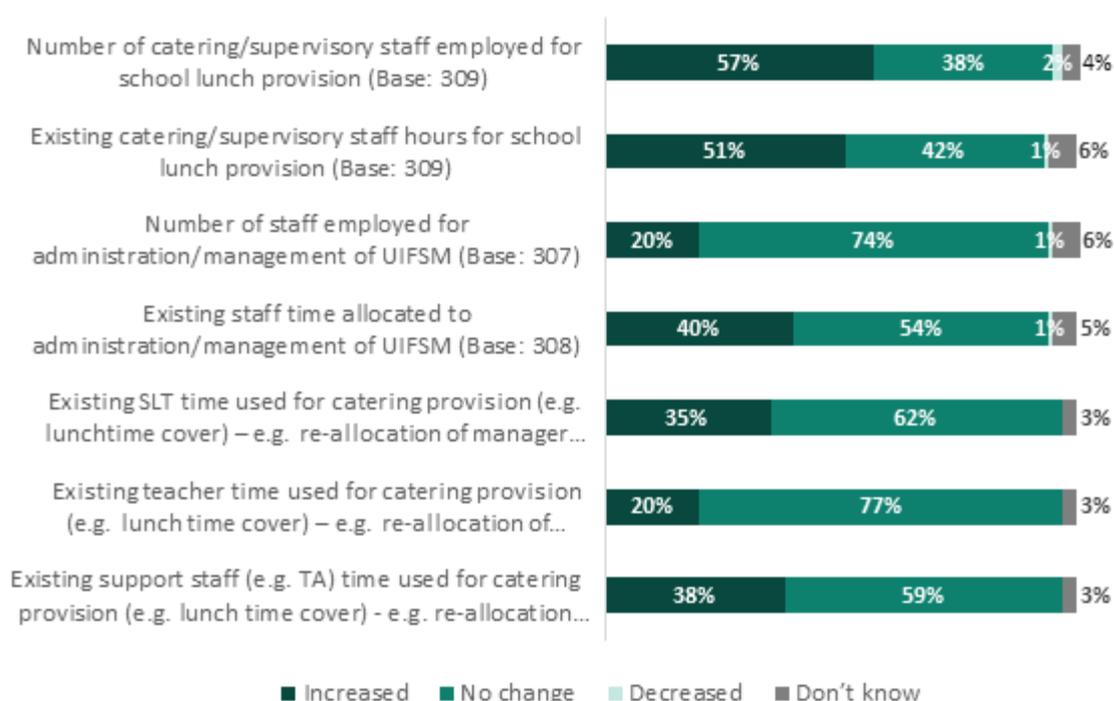
‘The additional administration and extra [midday supervisors] we have had to employ means that the school is operating at a loss. This is simply not sustainable’. (Senior leader – online survey)

Another suggested that where food was thrown away or wasted, this was ‘coming out’ of the school’s budget and several shared the view that UIFSM funding would be better spent on ‘learning resources’ or ‘teaching staff or facilities’. Further detail on the various investments made by schools are provided below.

Investment in staffing

School leaders reported increases across a range of staff types for both the delivery and supervision of lunch provision, and the administration and management of UIFSM. The most significant increases perceived by senior leaders were related to the number of catering/supervisory staff employed, or that had taken on additional hours. However, there were also increases reported in the use of existing staff time (at all levels) to deliver, administer and manage lunch provision (Figure 2.14).

Figure 2.14: What changes have been made in your school as a direct result of UIFSM? CGR UIFSM School Leaders survey data, 2017.



Senior leaders in large primary schools with over 300 pupils particularly noted that the number of catering/supervisory staff employed had increased as a result of UIFSM (64% of 149), reflecting the large volume of learners that need to be catered for in these schools over lunchtime. However, this means that a significant proportion of leaders did not observe substantial increases in staff numbers or hours worked dedicated to lunch provision, suggesting that – given take-up increased in most schools – economies of scale are likely to have occurred in the labour costs of school meal provision.

In terms of type of provision, senior leaders of schools with a local authority contract were most likely to say that the number of catering/supervisory staff had increased (61% of 138); compared with 59% of those with private contractors and 52% of schools with internal catering.

In support of this:

- 56% of 48 caterers responding to the survey noted that the number of catering/supervisory staff employed for school lunch provision had increased; and
- 70% of 47 caterers responding to the survey noted that the existing catering/supervisory staff hours for school lunch provision had increased.

Generally, this was reflected in the site visits also, where the numbers and/or hours of kitchen and supervisory staff had increased in order to meet the demand for school lunches. In some cases, teaching assistants were taking on the role of midday supervisors or supporting this role more frequently. Schools in rural areas reported challenges in finding adequate midday supervision: *'no one wants to come out...to work for 1.5 hours in the middle of the day'*. To resolve this issue, one school paid its teaching assistants as midday supervisors over lunchtimes.

In terms of the involvement of teaching staff, Table 2.22 shows that the majority of school leaders (77%) felt that there had been no change in existing teacher time used for catering provision. This was supported by feedback from the online survey of teachers, where 47% of respondents felt that there had been no change in the amount of time they spend on school lunch supervision (Table 2.22).

Table 2.22: Do you spend, more, less, or the same amount of time on school lunch supervision? CGR UIFSM Teachers survey data, 2017.

	Increased
More	7%
No change	47%
Less	7%
Don't know/not applicable	39%

(Base: 57)

Whilst only a small number of teachers suggested that there was a change in the amount of time they spend on school lunch supervision, they were asked to provide an indication of the time difference. Due to the very small sample size, these findings are only indicative. Four teachers reported that they spend an average (mean) of 14 minutes more on school lunch supervision on a daily basis. The four teachers that reported they spend less time on school lunch supervision, reported an average (mean) of 11 minutes less per day.

Some teachers participating in focus group discussions or interviews during the school visits highlighted that they spend more time *'collecting children and taking them to the dining room'* or that they shared their meal with learners more often (particularly in those schools adopting family service), but there was no consistent sense among teachers that they were spending more time specifically on lunchtime supervision.

Investment in facilities and equipment

Several of the schools visited had received grant funding to support the development of kitchen facilities during the initial implementation of UIFSM.

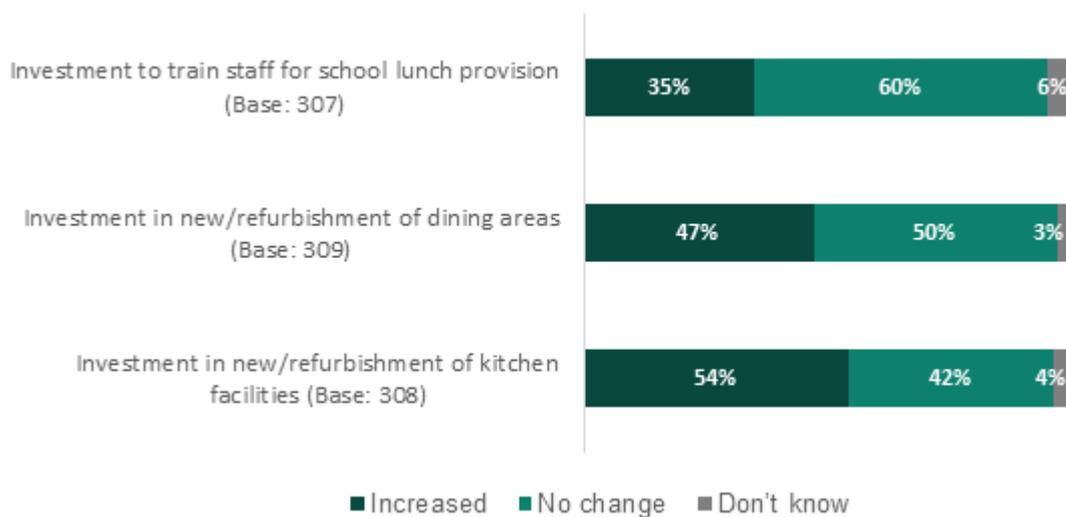
'The dining hall and kitchen were built with transitional funding. The kitchen had to be equipped from the school budget. We had to buy various equipment such as tables, pans, plates and serving things.'

The school tries to buy a large piece of equipment each year...The equipment we buy is chosen to release as much of the chef's time as possible, to release her to go into the school and support the curriculum...We break even with UIFSM every year. The Governors agreed at the outset that we could exclude the utility bills from the kitchen costings for a couple of years – this was to allow us to fund investment in new equipment. Some money is kept back for repairs'. (Business Manager, school with internal caterer)

School leaders reported during the survey that there had been increases in investment in kitchen and dining facilities, as well as staff training for lunch provision (Figure 2.15). However, these investments were reported by several school leaders to have created challenges for schools.

'The cost of upgrading the kitchen to cater for larger numbers of meals being cooked has had a detrimental effect on our school budget'. (Senior leader – online survey)

Figure 2.15: What changes have been made in your school as a direct result of UIFSM? CGR UIFSM School Leaders survey data, 2017.



Among some senior leaders, UIFSM had offered an ‘opportunity’ to prioritise these investments in order to change lunch provision within their schools. For example, one felt that the provision prior to UIFSM had been ‘sub-standard’ with low take-up. Since UIFSM was introduced, they had started to cook meals on-site and had seen numbers ‘continue to increase based on the flexibility we have with the menu and meals delivered that the majority of pupils want to eat’. Others felt that more investment in facilities would be required in the future, so that they could provide higher quality catering services.

'The policy theory is a good one but the initiative was not funded sufficiently to improve the kitchen facilities to meet Environmental Health standards. Our kitchen required £40k of structural and decorating work but our school budget cannot fund this'. (Senior leader – online survey)

Headteachers and school Business Managers highlighted that the ongoing maintenance of kitchen facilities was one of the largest costs to their schools in relation to the delivery of UIFSM. They were concerned that these ongoing costs for kitchen and facilities maintenance would not be sustainable on £2.30 funding per meal. Two headteachers noted during the case study visits that economies of scale made budgets for lunchtime provision more cost effective, so it was important to them to

maintain a high level of take-up. This included promoting a wide range of theme days and ensuring that one of these was taking place on the day of the UIFSM funding census, so as to reflect the highest level of demand that the school is required to meet. One school leader indicated during the visits that the school had a larger take-up for lunches than was reflected on the day that the funding census had been taken. They felt that this had led to school lunch provision running at a deficit.

In terms of the facilities available to them, the vast majority of caterers participating in the survey (98% of 49) said that they had a full-production kitchen in the school they were replying about. The remainder had a regen or 'mini' kitchen. In some instances, external caterers were responsible for facilities maintenance or for the provision of certain pieces of equipment. Thus, caterers commonly identified that increased investment had taken place following the introduction of UIFSM, including the installation of new, or the refurbishment of existing, kitchen facilities (67%). In addition:⁶¹

- 31% of 45 caterers reported increased investment in dining areas as a result of UIFSM; and
- 47% of 47 caterers reported increased investment in staff training (although 60% of 307 school leaders reported no change).

Perceptions of impacts on pupil premium registration

'The main impact is on parents not applying for FSM/Pupil Premium. The money we gain in UIFSM we have lost in Pupil Premium payments'. (Senior leader – online survey).

Schools are given extra funds for supporting disadvantaged pupils via the pupil premium, which for 2016-17 amounted to £1,320 for pupils in reception to year 6, and £935 for pupils in years 7 to 11. The deprivation part of the pupil premium is determined by the number of pupils recorded in each school's census return who has been identified as having been eligible and claiming FSMs at any point in the previous 6 years (under the 'Ever6' criteria). Further funding is available for children adopted from care, or who have left care, and service children.⁶² Following the introduction of UIFSM, there is no longer a direct financial benefit from parents registering their children for FSMs, but their schools stand to gain funding from them doing so. At the same time, through performance tables and the school inspection framework, schools are held to account for the performance of children entitled to FSMs, and for how their pupil premium funds are spent. Whilst the effects of the pupil premium on the disadvantage gap in educational outcomes is difficult to assess, evidence suggests the policy has had a significant impact on the targeting of school resources and the interventions they adopt (Carpenter et al., 2013).

School leaders reported some changes in take-up of Pupil Premium since the introduction of UIFSM – with 31% stating that take-up had decreased, and 15% reporting that it had increased and 38% reporting that it had stayed the same (Table 2.23).

⁶¹ For feedback from caterers in relation to resourcing and managing delivery of UIFSM, please refer to section 3.2.

⁶² <https://www.gov.uk/guidance/pupil-premium-information-for-schools-and-alternative-provision-settings>

Table 2.23: Since the introduction of UIFSM, has there been any change in the level of Pupil Premium take-up? CGR UIFSM School Leaders survey data, 2017.

	Increased	Stayed the same	Decreased	Don't know
ALL (Base: 307)	15%	38%	31%	16%
URBAN/RURAL				
Rural hamlet/ village (Base: 48)	13%	58%	13%	17%
Rural town (Base: 36)	22%	47%	11%	19%
Urban city/ town (Base: 223)	15%	31%	39%	15%
SIZE				
Small (Base: 79)	17%	51%	18%	15%
Medium (Base: 81)	9%	40%	31%	21%
Large (Base: 147)	18%	29%	39%	14%
TYPE OF PROVISION				
In-house caterer (Base: 59)	19%	46%	19%	17%
LA caterer (Base: 136)	12%	43%	32%	13%
Private caterer (Base: 103)	19%	26%	39%	16%
% OF LEARNERS ELIGIBLE FOR FSM				
High (Base: 107)	18%	28%	38%	16%
Average (Base:65)	19%	26%	43%	12%
Low (Base: 135)	12%	50%	20%	18%
SCHOOL FINANCES BEFORE INTRODUCTION OF UIFSM				
Breaks even (Base: 134)	12%	43%	33%	12%
School makes a profit (Base: 23)	22%	30%	35%	13%
School operates at a deficit (Base: 55)	20%	35%	38%	7%
SCHOOL FINANCES AFTER INTRODUCTION OF UIFSM				
Breaks even (Base: 125)	18%	46%	29%	8%
School makes a profit (Base: 25)	16%	48%	32%	4%
School operates at a deficit (Base: 78)	10%	28%	44%	18%

Furthermore:

- School leaders responding from schools in rural towns were most likely to note an increase in Pupil Premium rates since the introduction of UIFSM.
- School leaders in schools in rural hamlets/villages more commonly noted Pupil Premium take-up to have stayed the same since the introduction of UIFSM.
- School leaders in large schools, schools with private caterers and schools in urban city/town areas most commonly reported Pupil Premium take-up having decreased since the introduction of UIFSM.
- Where schools had a high or average proportion of learners eligible for Free School Meals, school leaders more commonly reported Pupil Premium take-up having decreased since the introduction of UIFSM.

In the cases where Pupil Premium had decreased, the effects of this were perceived to be significant by the senior leaders reporting them. One reported that their school 'lose[s] about £15,000 a year' as a result of the decrease in Pupil Premium applications. For others, the reduction in applications was still continuing.

'We've seen a huge reduction in the number of parents applying for FSM as a result of UIFSM. This has impacted on our Pupil Premium figures and our budgets. With the additional decrease in deprivation funding, this has impacted on our funding detrimentally'. (Senior Leader – online survey)

Decreases in Pupil Premium take-up that were attributed by school leaders to UIFSM were most commonly reported in schools with high or average proportions of learners eligible for Free School Meals, compared to those with lower proportions of learners eligible for Free School Meals.⁶³ School leaders in urban cities and towns most commonly reported a decrease (39%; compared to 13% in rural villages and 11% in rural towns).

Visits to two schools with a high proportion of learners eligible for Free School Meals highlighted that *'it's harder to get [parents] to fill the form in now as the children get a free meal anyway'* (Vice Principal). A third with a high proportion of eligible learners, however, indicated that their strategies to build positive relationships with parents had helped them in this respect. Therefore, the school had encouraged parents to apply for Pupil Premium by asking them all to fill in the necessary application forms.

'Lots of parents have had a bad experience of school themselves. The challenge for the school has been in making sure that the understanding of UIFSM is that it is there for everybody, and so there is no stigma attached to children taking it up'. (Food and Wellbeing Advisor, school with internal caterer)

Consequently, where schools reported an increase in Pupil Premium take-up, this might be explained by schools' efforts to promote Pupil Premium. Indeed, thirty per cent of 308 school leaders reported that they had introduced a strategy to maintain/improve Pupil Premium take-up

⁶³ Pupil Premium take-up was reported to have decreased by the following proportions of school leaders, by FSM Quintile: Very High – 40%; High – 37%; Average – 43%; Low – 28%; Very Low – 13%.

due to UIFSM (39% would have done this anyway, 18% were already doing this and 9% have not – the remainder did not know or did not think this was applicable).

'Parents don't bother applying for FSM if they are eligible as they have UIFSM, so they don't need to...We send parents a letter on entry to the school and termly, asking them to apply for Pupil Premium'. (Business Manager, school with external caterer)

These strategies were most common as a result of UIFSM among:

- school leaders in institutions with average proportions of learners eligible for FSM (39%) compared to those in institutions with high (33%) or low (21%) proportions of learners eligible for FSM; and
- school leaders in schools with internal catering (36%) compared to those with LA contracts (31%) or private caterers (25%).

There was some indication that strategies to engage with parents may have had a positive effect (or that engaged parents were more likely to respond to the survey). During the parent survey, parents of learners in Early Years/Key Stage 1 who were entitled to Free School Meals were asked whether they were more or less likely to register for Pupil Premium as a result of UIFSM. Of the 238 parents answering, half (50%) said that they were more likely to register for Pupil Premium; 3% said that they would be less likely to register for Pupil Premium.⁶⁴

One school participating in the case study visits had a very high proportion of learners eligible for Free School Meals (73%); here it was not felt that UIFSM had made a difference to their receipt of Pupil Premium funding as most learners had been receiving free school meals beforehand. This meant that Pupil Premium applications were a standard part of their school system. In addition:

- Parents of children aged up to the end of Year 2 who were taking school meals and had **not** indicated that they were registered for FSM/Pupil Premium were asked if they would still have school meals if they had to pay for them. Of the 123 that answered this question, nearly half (48%) said that they would, and 40% said that they would not. The remaining 12% did not know.⁶⁵
- Parents of learners in Early Years/Key Stage 1 and who said that they **were** entitled to FSM/PP were asked whether they were more or less likely to opt for their child to have a school lunch as a result of UIFSM. Of the 248 providing a response, nearly three-quarters (73%) said that they were more likely to opt for school lunches; 4% said that they were less likely. Of the remainder, 17% said that UIFSM made no difference, 4% did not know and 2% said that this was not applicable to them.

Trends in national FSM registration

Based on statistics published by the Department for Education, Figure 2.16 plots recent trends in the proportion of pupils in state primary (and from 2011 nursery) schools and secondary schools of

⁶⁴ A further 19% said that UIFSM made no difference, 17% said that this was not applicable to them, 10% didn't know.

⁶⁵ This may include parents who were entitled to FSM but did not claim them.

different ages (based on age at the start of the school year) recorded on the school census as eligible for and claiming FSMs.⁶⁶

In recent years, the proportion of pupils claiming FSMs has followed a consistent ranking across ages, with younger pupils being more likely to be claimants if in school. For under 5s, the overall proportion of claimants is lower, with a minority of FSM claimants in this category pupils in early years provision, where FSM is only available for full time pupils or those staying before and after lunch.⁶⁷ Across all ages, the proportion of children claiming FSMs has fallen since 2013, likely due to changes in employment rates and welfare reforms. Changes in Lone Parent Obligation rules will have particularly affected the parents of infants from 2012.⁶⁸ However, these trends suggest that in the school census following the start of the policy (2015), the proportion of under-5s claiming FSM (most of whom will be in reception) fell more quickly than that of other groups. The following year there was a noticeable drop, as that cohort reached 5, whilst rates for 6-year-olds had also fallen below those of 7 year olds, in contrast to historic patterns.

This is consistent with reports from the fieldwork suggesting that the introduction of UIFSM has reduced FSM registration rates, and in this case it appears that it has had a more noticeable effect on children starting school – whose parents may be unfamiliar with their school’s systems and the Pupil Premium – which then persists as they progress. Figure 2.17 shows FSM rates across groups of ages aligned to normal phases of education, again reflecting the convergence between rates for junior pupils and younger ones. As an illustration of the scale of divergence in trends, compared with a counterfactual where the pre-7 FSM rate followed the same path as that of 7-10s in proportional terms from 2014, the actual rate has fallen by 1.0ppts, or 7.2%, by January 2017.

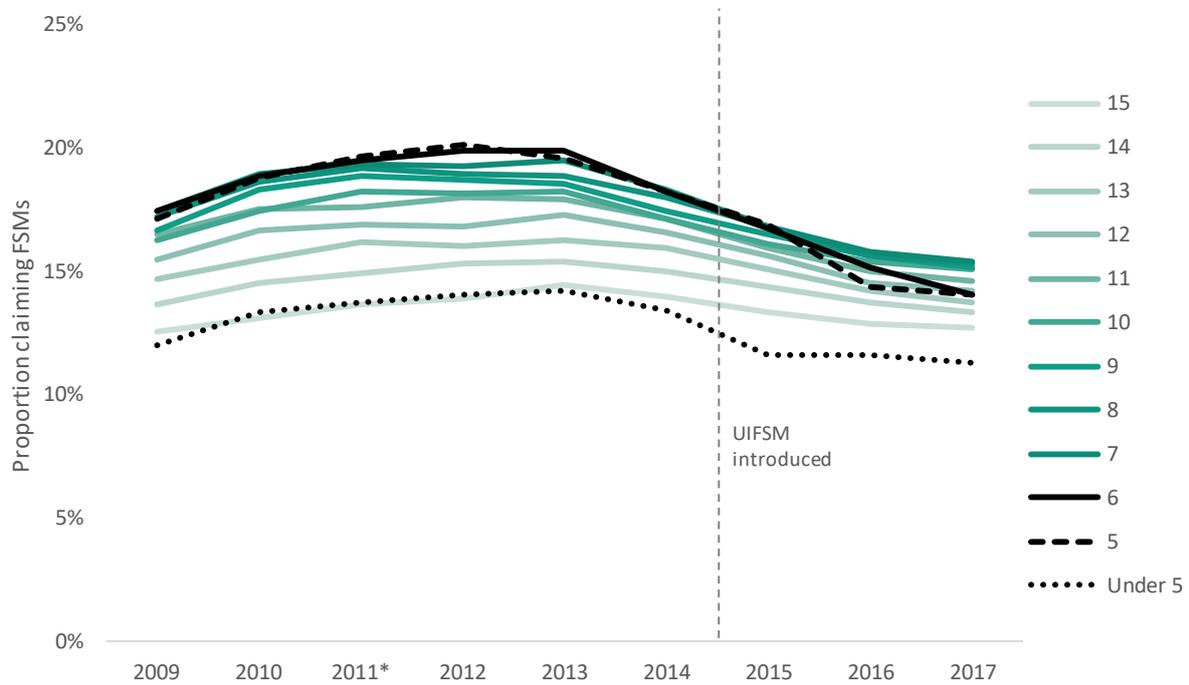
It is unclear how much of this can be attributed to UIFSM. Wider changes in the economy and the welfare system may have disproportionately affected the parents of infants, and there is some indication that rates for younger pupils started to dip slightly in 2014 – although the announcement of the policy could have started to affect parents’ decisions in 2013-14. It is also possible that wider use of mitigations reported to have been put in place by some schools will eventually reverse the trend.

⁶⁶ Figures are based on the Department for Education’s annual ‘Schools, pupils and their characteristics’ publication, the January 2017 edition of which can be found at: <https://www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2017> . Numbers of pupils claiming FSMs are based on table 3a, and the FSM rate is calculated by dividing this by the total number of pupils aged 4 to 6 from on table 1a (for under-5s, the total number of pupils is inferred from table 3a).

⁶⁷ <https://www.gov.uk/apply-free-school-meals>

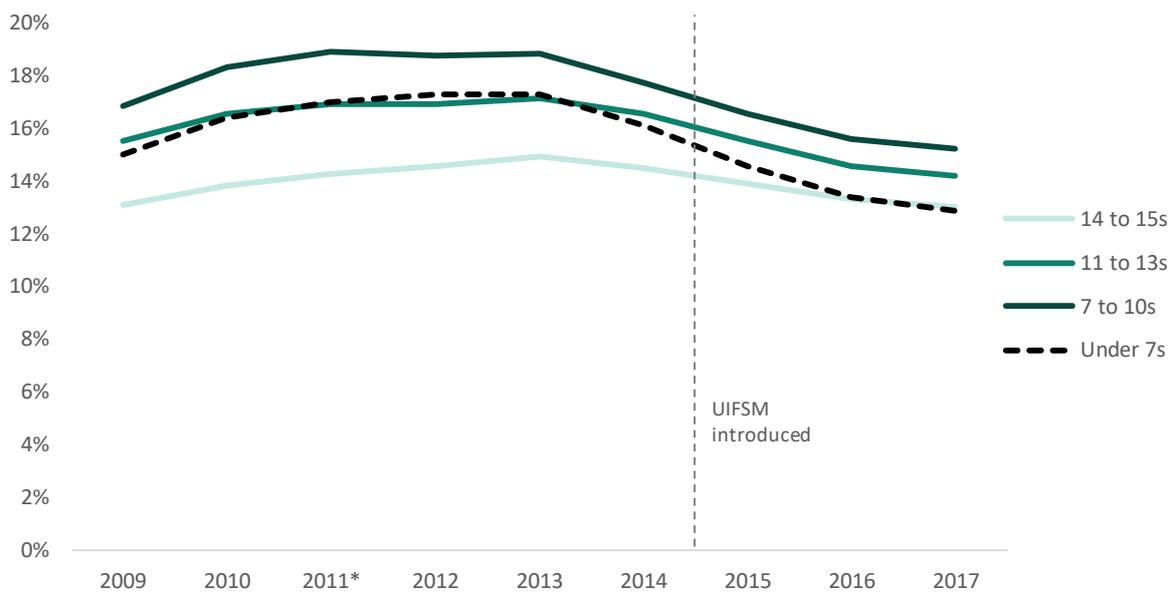
⁶⁸ In 2012 the Lone Parent Obligation (LPO) age threshold was reduced from 7 to 5, meaning that parents with a youngest child aged 5 or 6 were no longer entitled to Income Support solely on the basis of being a single parent (Johnson, 2014). This might have had some lagged impact on FSM registration.

Figure 2.16: Proportion of nursery, primary and secondary school pupils known to be eligible for and claiming FSMs by academic age. Based on Department for Education 'Pupils, Schools and Characteristics' Statistical First Releases.



*Nursery pupils included from 2011.

Figure 2.17: Proportion of nursery, primary and secondary school pupils known to be eligible for and claiming FSMs by grouped ages. Based on Department for Education 'Pupils, Schools and Characteristics' Statistical First Releases.



*Nursery pupils included from 2011.

The ultimate effect of this on schools' Pupil Premium budgets is uncertain, and may play out over several years:

- Reductions in FSM during infant years will affect Pupil Premium funding later on, under the Ever6 criteria.
- With FSM rates declining for all pupils, as many older children will already be guaranteed eligibility for 6 years, it is younger children whose reductions in FSM rates are most likely to result in a reduction in Pupil Premium payments, regardless of UIFSM.
- The effect on Pupil Premium eligibility will depend upon whether those children who do not claim FSM as a result of UIFSM are more or less likely to have already claimed and so secured pupil premium eligibility.
- The Department for Education have increased Pupil Premium funding rates over time, so past reductions in expected eligibility may have already been compensated for (whether explicitly or not). However, with junior pupils provided the same rate of funding, it is likely that these trends have shifted Pupil Premium funds away from infants. With allocations for primary schools totalling around £1.5bn in 2016/17, if the impact is of the same proportion as the relative reduction in FSM rates, the impact could be of the order of tens of millions of pounds per year.⁶⁹

Any impact on FSM registration will also affect the way schools are held to account for the performance of disadvantaged children, and in the targeting of support towards them. This may mean that more needs to be done to ensure that schools can determine eligibility as easily as possible. As part of its consultation on determining FSM eligibility under Universal Credit, the Department for Education recently proposed more guidance for schools on how to engage parents and ensure they can use the local authority-accessed Eligibility Checking Service, but did not propose introducing automatic registration (Department for Education, 2017).

Sustainability

As noted elsewhere, there were some concerns raised by school leaders and by caterers (both internal and external) that various resource demands would create sustainability issues in the future for UIFSM provision. These were particularly noted around:

- The rising cost of food prices, and where schools or caterers used local suppliers a standardised pricing system was unlikely to be agreed for produce
- Ongoing costs of kitchen maintenance and equipment repair, and the need to carry out large-scale remedial works to ensure facilities met Environmental Health standards
- Staffing costs for an expanding workforce (e.g. midday supervisors, kitchen staff, transport / logistics)

There were suggestions from senior leaders and caterers that the £2.30 funding allowance would need to increase to support the long-term sustainability of UIFSM.

At the time of the fieldwork, a proposal was put forward in the Conservative election manifesto to remove UIFSM and replace this with free breakfast provision in infant schools. Although in several schools visited it was noted by staff that learners often came to school hungry, they tended to

⁶⁹ 2016/17 Pupil premium allocations are published at: <https://www.gov.uk/government/publications/pupil-premium-conditions-of-grant-2016-to-2017>

suggest that a hot lunch would be more beneficial and nutritional to these children than a free breakfast. School staff also highlighted various challenges in terms of the logistics of delivering breakfast provision.

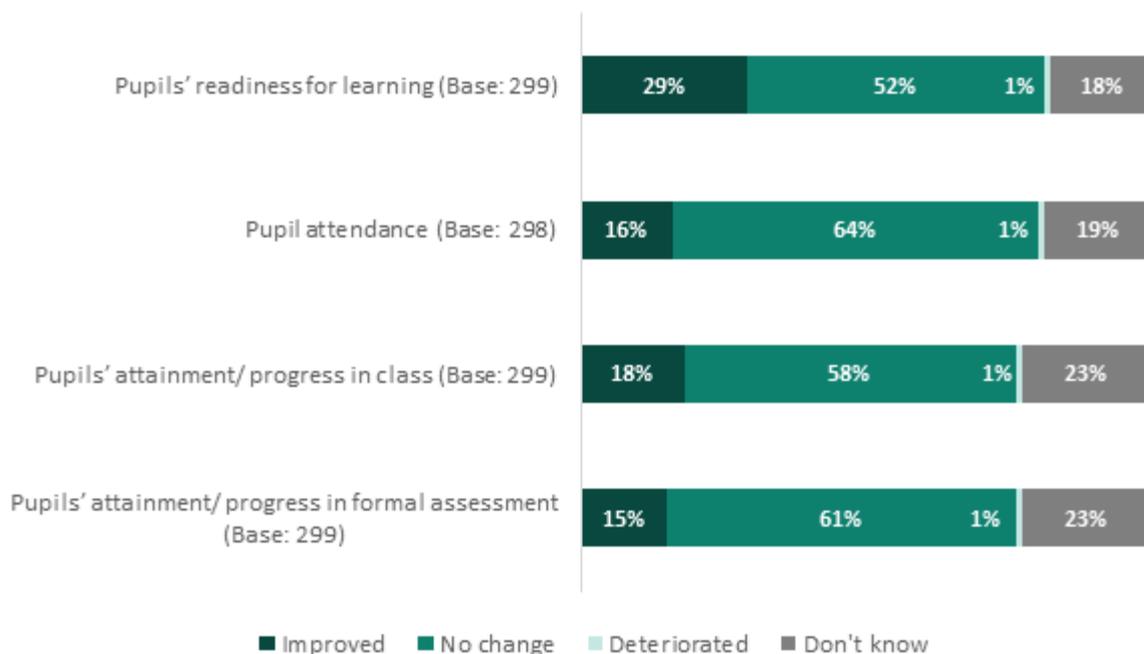
‘The thought of getting rid of school lunch was short-sighted – schools have spent so much time investing, putting in really quality service, to replace it with breakfast. How would that work, who would provide it? Who would supervise the children early in the morning? Would parents even bother, as they have wraparound care anyway...7p per breakfast, what would they have?’ (Business Manager, school with internal caterer)

Some staff mentioned how they offer breakfast provision anyway and where they were aware that a child had come into school without breakfast and was hungry, they tried to ensure that some breakfast was provided.

2.5. Educational outcomes

Using their knowledge of school data and their perception of pupil ability and progress, school leaders were asked to identify any changes that they felt could be attributed to the introduction of UIFSM. Over one-quarter (29%) identified an improvement in pupils’ readiness for learning (Figure 2.18). Small proportions also reported improvements in attainment/progress in assessment and class and attendance. However, the majority of school leaders felt that there had been no change to educational outcomes.

Figure 2.18: Please tell us if you think there has been any change in the following as a direct result of the introduction of UIFSM. CGR UIFSM School Leaders survey data, 2017.



Teachers gave more positive perceptions of the impact of UIFSM on educational progress and abilities (Table 2.24). Those participating in the online survey most commonly identified pupils’ readiness for learning as having improved as a direct result of UIFSM (40% of 57). Some teachers also perceived the following to have increased as a result of UIFSM:

- Attainment/progress in class
- Ability to complete desk-based activities
- Ability to concentrate, not getting distracted

Teachers in two schools visited felt that *'it is noticeable in the afternoon after a good lunch, there is better concentration and progress with tasks'*, or that learners were more prepared to learn and were *'more settled'* following the introduction of UIFSM.

'Eating a nutritious satisfying lunch becomes a habit. More children seem alert and have a sustained energy level making them ready to work after lunch because their lunch has not involved high sugar rushes followed by the inevitable dip that some less nutritious packed lunches involve'. (Senior leader – online survey)

Table 2.24: Please tell us if you think there has been any change in the following educational outcomes and pupil abilities as a direct result of UIFSM. CGR UIFSM Teachers survey data, 2017.

	Improved	No change	Deteriorated	Don't know
Pupils' attainment/ progress in formal assessment (Base: 57)	25%	33%	0%	42%
Pupils' attainment/ progress in class (Base: 57)	39%	26%	0%	35%
Pupil attendance (Base: 57)	26%	40%	0%	33%
Pupils' readiness for learning (Base: 57)	40%	30%	0%	30%
Seeing tasks through to the end, good attention span (Base: 57)	30%	37%	0%	33%
Ability to complete desk-based activities (Base: 56)	36%	29%	0%	36%
Ability to concentrate, not getting distracted (Base: 56)	36%	30%	0%	34%

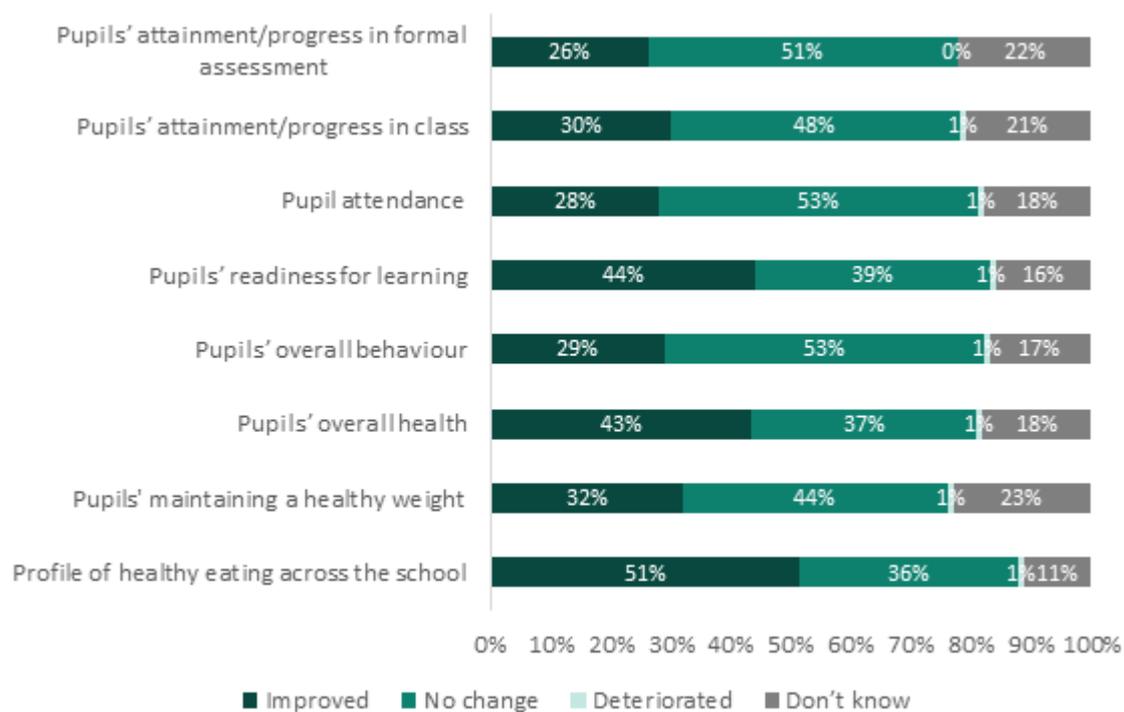
Figure 2.19 shows that where school leaders identified during the online survey any strategic changes that had been made in schools *directly due to UIFSM* (for example changing contractual arrangements with caterers, implementing strategies to improve parental engagement), these senior leaders also most commonly noted an improvement in:

- The profile of healthy eating across the school
- Pupils' readiness for learning
- Pupils' overall health

Overall there was a sense from the site visits that the UIFSM policy alone had not engendered a large range of specific impacts for learners in relation to educational outcomes. It was noted during most of the site visits that the way that schools chose to embrace and implement UIFSM (often in tandem with a wider focus on healthy lifestyles, or as part of a 'family' ethos) had a large contributing factor to its effect on outcomes.

For example, it has been noted elsewhere in this report that where schools were already delivering topics related to healthy eating in the curriculum, approaches to teaching had changed as a result of UIFSM – for example, coverage of topics such as nutrition and healthy choices increasing in frequency. Likewise, in some schools, UIFSM had been regarded as an opportunity to invest in catering facilities and food provision. This was undertaken by school leaders with the aim of bringing about positive changes in awareness and attitudes towards food and healthy eating. Overall, the effects on attainment attributed directly to the policy itself are limited, but as an Early Years teaching lead observed, it is not UIFSM *per se* but *'it is how the policy is implemented in school that makes the difference'*.

Figure 2.19: Outcomes linked to actions put into place by schools. CGR UIFSM Senior Leader survey data, 2017.



(Base: 625 – totalling all responses from senior leaders that noted a strategy being implemented in school due to UIFSM; this includes multiple strategies and therefore multiple responses from the same respondents).

Likewise, the majority of parents responding to the online survey felt that educational outcomes such as attendance, achievement and ability to concentrate at school had stayed the same since the introduction of free school meals for all infants (Table 2.25). Just under one-quarter of parents (22%) noted that achievement at school, attention span and a child's ability to concentrate had all improved in the last three years.

The ethos of healthy eating and sharing meals together that schools reported had been encouraged alongside the introduction of UIFSM may have then influenced these positive behaviours among

pupils. Indeed, nearly one-third (31%) of 312 parents attributed the changes in Table 2.25 ‘a great deal’ to UIFSM and 38% attributed the changes ‘a little’ to UIFSM.⁷⁰

Table 2.25: Please tell us if you think there has been any change in the following for your child in the last three years. CGR UIFSM Parent survey data, 2017.

	Stayed the				
	Better	same	Worse	Don't know	N/A
Attendance at school (Base: 492)	11%	75%	2%	1%	10%
Achievement at school (Base: 493)	22%	64%	3%	3%	8%
Attention span (Base: 486)	22%	65%	3%	4%	7%
Ability to concentrate (Base: 490)	22%	64%	4%	4%	7%

Educational outcomes for children eligible and not eligible for FSM

Overall, more teachers (44% of 57) felt that free lunches for all infants had had a positive impact on the educational outcomes of children eligible for Free School Meals (in the absence of UIFSM) than those who are not eligible for FSM (23 % of 57).

Table 2.26: Can you please tell us about the impact you think free lunches for all infants has had on the educational outcomes of the following groups of children. CGR UIFSM Teacher survey data, 2017.

	Those eligible for FSM	Those not eligible for FSM
Positive impact	44%	23%
No change	39%	49%
Negative impact	0%	5%
Don't know	18%	23%

(Base: 57)

A minority of parents agreed, and those that indicated that their child was eligible for Free School Meals were more likely to have perceived improved educational outcomes over the previous three years than parents whose children were not eligible for Free School Meals (Table 2.27).

It was also specifically highlighted by one teacher during a case study visit that they felt that UIFSM had a positive impact on the educational attainment of *‘those on the safeguarding register – those coming in without breakfast who are not necessarily those on FSM...For those who suffer true neglect, [the policy] will have a big impact...It is worthwhile for these children’*. (Early Years Lead, school with external caterer)

⁷⁰ Of the remainder, 13% did not attribute the changes to free school meals at all, 14% did not know and 5% said that this question was not applicable to them.

Table 2.27: Please tell us if you think there has been any change in the following for your child in the last three years – parents of learners eligible and not eligible for Free School Meals. CGR UIFSM Parents survey data, 2017.

	Those eligible for FSM (Base: 262)				Those not eligible for FSM (Base: 210)			
	Better	Worse	Stayed the same	Don't know/ N/A	Better	Worse	Stayed the same	Don't know/ N/A
Attendance at school	14%	0%	73%	13%	8%	4%	76%	10%
Achievement at school	25%	0%	63%	10%	18%	5%	64%	12%
Seeing tasks through to the end	24%	1%	65%	9%	18%	5%	62%	11%
Ability to concentrate	24%	2%	65%	9%	19%	6%	61%	12%

2.6. Social and behavioural outcomes

There were mixed views across stakeholder types as to whether UIFSM had had an effect on the social behaviours of young people.

The majority of school leaders (60% of 300) felt that there had been no change in overall pupil behaviour since the introduction of UIFSM (19% felt that behaviour had improved, 2% felt it had deteriorated and 19% did not know). Caterers (who were more likely to be directly involved in the delivery of school meals) more commonly reported both an improvement and deterioration in behaviour, in comparison with the responses of school leaders (Table 2.28).

Table 2.28: Now that you offer free school meals to all infants, have you noticed any change in children's social skills and behaviour as a direct result of UIFSM being introduced? CGR UIFSM Caterers survey data, 2017

	Improved	No change	Deteriorated	Don't know
Pupils' behaviour during lunch - time (e.g. when queuing, eating, cleaning up)	41%	43%	12%	4%
Social skills during lunch (e.g. interaction with each other)	47%	43%	2%	8%
Dining etiquette (e.g. knowing how to use a knife and fork)	45%	39%	10%	6%

(Base: 49)

‘[The policy has impacted] in a very positive way. We have got more time in the morning, [my daughter] seem happier and more active, more open, and tries new food – compared to before also, school results improved and she is more confident’. (Parent – online survey)

Over one-third of parents responding to the online survey (35%) felt that their child’s dining etiquette had improved since the introduction of UIFSM, and just more than one-quarter (26%) felt that behaviour at mealtimes was better. Over half of parents reported no change.

Table 2.29: Please tell us if you think there has been any change in the following for your child in the last three years. CGR UIFSM Parent survey data, 2017.

	Better	Stayed the same	Worse	Don't know	N/A
Behaviour at mealtime (Base: 492)	26%	59%	6%	4%	6%
Dining etiquette (Base: 495)	35%	54%	4%	2%	5%
General obedience (Base: 491)	18%	68%	4%	3%	7%
Ability to stay still (Base: 493)	22%	64%	5%	2%	7%

When asked to what extent any of the changes in Table 2.29 were due to free school meals being available to all infants, 31% of parents attributed the changes ‘a great deal’ to free school meals and 38% attributed the changes ‘a little’ to free school meals. Of the remainder, 13% did not attribute the changes to free school meals at all, 14% did not know and 5% said that this question was not applicable to them.

During the case study visits, too, there were several examples of schools where staff had noted an improved ability among learners to use cutlery, to pour themselves water from jugs or serve themselves food at mealtime (including managing their own portion control). Often good behaviour was rewarded with stickers, or ‘Top Table’ places, where learners showing an ‘exemplary’ attitude are given the opportunity to eat with the headteacher and other members of the SLT once a week.

‘It is not just about promoting healthy eating, but the social skills that are developed by eating together too. They might not get this opportunity at home, some children have very complex home lives and so they can experience the family aspect of eating together at school instead’. (LA Caterer – telephone interview)

Caterers reported that the presence of teaching staff within the dining hall would often positively impact on pupil behaviour – but that *‘the children also say that it is nice to have the adult company during mealtimes’*. Staff members interviewed during school visits echoed the sense that sharing mealtimes with learners can be rewarding – for them as well as the children. This was common among schools where ‘family sitting’ arrangements were used, with teachers noting that they would receive ‘disclosures’ from learners during meals that helped them learn about pupils, their family relationships and any background information that could help to support them.

‘We like [having adults sitting with us]. When we need something on our table, they are always there. If there’s someone rude on your table, you can tell an adult. You can talk to a teacher or teaching assistants more easily [if they have lunch with us]’. (Learner focus group)

Social outcomes for children eligible for FSM

Overall, most teachers (42% of 57) felt that free lunches for all infants had a positive impact on the social skills and behaviour of children eligible for Free School Meals (in the absence of UIFSM). Another 40% reported no change.

Table 2.30: Can you please tell us about the impact you think free lunches for all infants has had on the social skills and behaviour of the following groups of children. CGR UIFSM Teacher survey data, 2017.

	Eligible for FSM	Not eligible for FSM
Positive impact	42%	26%
No change	40%	47%
Negative impact	0%	5%
Don't know	18%	21%

(Base: 57)

Reflecting this finding, when asked to rate various indicators of social outcomes, the parents of children eligible for Free School Meals were more likely than others to state that there had been improvement in their child (e.g. in terms of behaviour and dining etiquette) in the last three years (Table 2.31). This may reflect the overall social benefits of school attendance and sharing meals with their peers. In addition, parents who reported their children not eligible for Free School Meals more commonly stated that the indicators had worsened (Table 2.31).

Table 2.31: Please tell us if you think there has been any change in the following for your child in the last three years – parents of learners eligible for Free School Meals. CGR UIFSM Parents survey data, 2017.

	Those eligible for FSM (Base: 262)				Those not eligible for FSM (Base: 210)			
	Better	Worse	Stayed the same	Don't know/ N/A	Better	Worse	Stayed the same	Don't know/ N/A
Behaviour whilst eating meals	31%	4%	56%	8%	31%	7%	63%	10%
Dining etiquette	39%	4%	52%	5%	31%	6%	55%	8%
General obedience	21%	3%	66%	10%	15%	6%	67%	9%
Ability to stay still	26%	3%	63%	8%	19%	7%	63%	10%

2.7. Health outcomes

'For many of our children, this is the only hot freshly cooked meal that they will eat in the day and in some cases, generally'. (Senior leader – online survey)

Nearly one in three (30%) school leaders felt that pupils' overall health had improved as a result of UIFSM being implemented (Table 2.32). One-fifth of school leaders felt that pupils were maintaining a healthy weight as a result of UIFSM. Over half however, did not report any change. During the visits, school staff often perceived that the addition of a hot meal on its own would improve health outcomes even if they were unable to specify differences that they had observed among their class cohorts.

'Children are much better physically, not as many obese children here...They are more ready for learning, don't tail off at lunchtime as they run out of energy'. (Headteacher, school with internal caterer)

Table 2.32: Please tell us if you think there has been any change in the following as a direct result of the introduction of UIFSM. CGR UIFSM School Leaders survey data, 2017

	Improved	No change	Deteriorated	Don't know
Pupils' overall health (Base: 299)	30%	50%	1%	19%
Pupils' maintaining a healthy weight (Base: 299)	20%	56%	1%	23%

Teachers were more likely than school leaders to note an improvement in children reporting hunger and their physical activity levels (Table 2.33). Around one-quarter of the 57 teachers also felt that UIFSM had helped learners to maintain a healthy weight (28%) and improved their overall health (25%). Similar proportions however, reported no change in health-related outcomes. A teacher in one school felt that children were no longer as 'skinny' as a result of UIFSM.

'It's a bit of everything. UIFSM has a big impact, as does fruit at break and milk and water in the class daily. It all improves the healthy eating profile across the school. [Things like the switch from juice to water are] the early building blocks [that learners] will take with them to make healthy choices in the future. [Children are] learning to have a healthy lifestyle. It is important that the children are involved in choosing food from the menu'. (Early Years teacher, school with internal caterer)

In comparison to social and educational outcomes, however, parents participating in the survey were much likely to say that outcomes around health, such as maintaining a healthy weight and healthy teeth and gums, had not changed since the introduction of UIFSM (Table 2.34).

When asked for more detail during interviews on the impacts of UIFSM, generally parents reported that their children had become more 'adventurous' eaters and were happier to choose healthy options, and new foods. However, some raised concerns during the online survey that their child had gained weight, or had become a more fussy eater since the introduction of free school meals. They felt that the options available at school were not varied enough and that their children could eat a lot of carbohydrates and not many vegetables. The option of having a dessert following every lunch was also an issue for a small number of parents.

Table 2.33: Please tell us if you think there has been any change in the following health-related outcomes as a direct result of UIFSM. CGR UIFSM Teacher survey data, 2017.

	Improved	No change	Deteriorated	Don't know
Children reporting hunger (Base: 57)	40%	32%	9%	19%
Physical activity levels (Base: 57)	33%	42%	0%	25%
Maintaining a healthy weight (Base: 57)	28%	35%	0%	37%
Pupils' overall health (Base: 57)	25%	37%	0%	39%
Skin complexion/healthy skin (Base: 56)	11%	46%	0%	43%
Maintaining healthy teeth and gums (Base: 55)	16%	44%	0%	40%
Complaints of sickness (Base: 57)	18%	51%	9%	23%

Table 2.34: Please tell us if you think there has been any change in the following for your child in the last three years. CGR UIFSM Parent survey data, 2017.

	Better	Stayed the same	Worse	Don't know	N/A
Overall health (Base: 487)	18%	70%	5%	2%	5%
Maintaining healthy weight (Base: 492)	16%	72%	5%	2%	5%
Maintaining healthy teeth and gums (Base: 491)	15%	75%	5%	2%	5%
Healthy skin (Base: 490)	11%	77%	4%	2%	6%
Complaints of sickness (Base: 491)	11%	58%	5%	4%	23%

Health outcomes for children eligible for FSM

Overall, the majority of teachers (54% of 57) felt that free lunches for all infants had a positive impact on the health of children eligible for FSM (in the absence of UIFSM). This message was reinforced during the visits to schools, with several members of school and catering staff highlighting that for many children the lunch was the only hot meal of the day.

'Disadvantaged children are particularly affected, they feel nurtured after having a good meal at the school'. (Teaching Assistant, school with external caterer)

Table 2.35: Can you please tell us about the impact you think free lunches for all infants has had on the health of the following groups of children. CGR UIFSM Teacher survey data, 2017.

	Those eligible for FSM	Those not eligible for FSM
Positive impact	54%	35%
No change	30%	39%
Negative impact	2%	4%
Don't know	14%	23%

(Base: 57)

As with educational and social outcomes, a positive effect on health outcomes over the last three years was cited more often by parents of children eligible for Free School Meals than others.

Table 2.36: Please tell us if you think there has been any change in the following for your child in the last three years – parents of learners eligible for Free School Meals. CGR UIFSM Parents survey data, 2017.

	Those eligible for FSM (Base: 262)				Those not eligible for FSM (Base: 210)			
	Better	Worse	Stayed the same	Don't know/ N/A	Better	Worse	Stayed the same	Don't know/ N/A
Overall health	21%	1%	71%	6%	15%	9%	67%	7%
Maintaining a healthy weight	18%	1%	73%	7%	14%	11%	67%	7%
Maintaining healthy teeth and gums	16%	2%	76%	5%	13%	8%	71%	7%
Skin complexion/ healthy skin	14%	0%	79%	7%	9%	7%	74%	8%
Complaints of headache/stomach ache/sickness	12%	3%	55%	30%	10%	6%	60%	22%

Making healthy choices

All types of research participant providing qualitative feedback were positive that they had noticed an improvement in children's eating habits in terms of making healthy choices and trying new foods since the introduction of UIFSM.

'Children do seem to have a wider variety of different foods now, after UIFSM. For example, there was one boy who would only have a cheese sandwich every day but now after encouragement he eats anything'. (Key Stage 1 Manager, school with external caterer)

One caterer reported that midday supervisors can be really helpful when they are part of the service team as well, in terms of engaging with learners and learning which children are 'fussy eaters' and which children have medical requirements. This was perceived to better enabled the caterer to tailor their approach.

Over half of teachers participating in the survey (54% of 57) thought that there had been improvement in children's preferences for healthy food as a direct result of UIFSM. In addition, nearly one-third (32% of 57) felt that there was an improvement in children bringing in healthy snack food at break times (42% felt there was no change, 2% felt this had deteriorated and the remainder did not know).

The majority of caterers said that there had been an increase in children taking healthier/more balanced meals (69% of 48) – Table 2.37.

Table 2.37: Please tell us if you think there has been any change in the following for your child in the last three years. CGR UIFSM Caterers survey data, 2017.

	Increased	Stayed the same	Decreased	Don't know
Children taking school meals rather than packed lunches (Base: 49)	88%	4%	6%	2%
Children taking healthier/more balanced meals (Base: 48)	69%	29%	0%	2%
Healthier/better quality packed lunches (Base: 46)	9%	67%	11%	13%
Children leaving food on their plates /wasting food (Base: 49)	12%	53%	33%	2%
Children leaving particular foods on their plates (wasting healthy food/vegetables/fruit etc) (Base: 49)	14%	57%	27%	2%

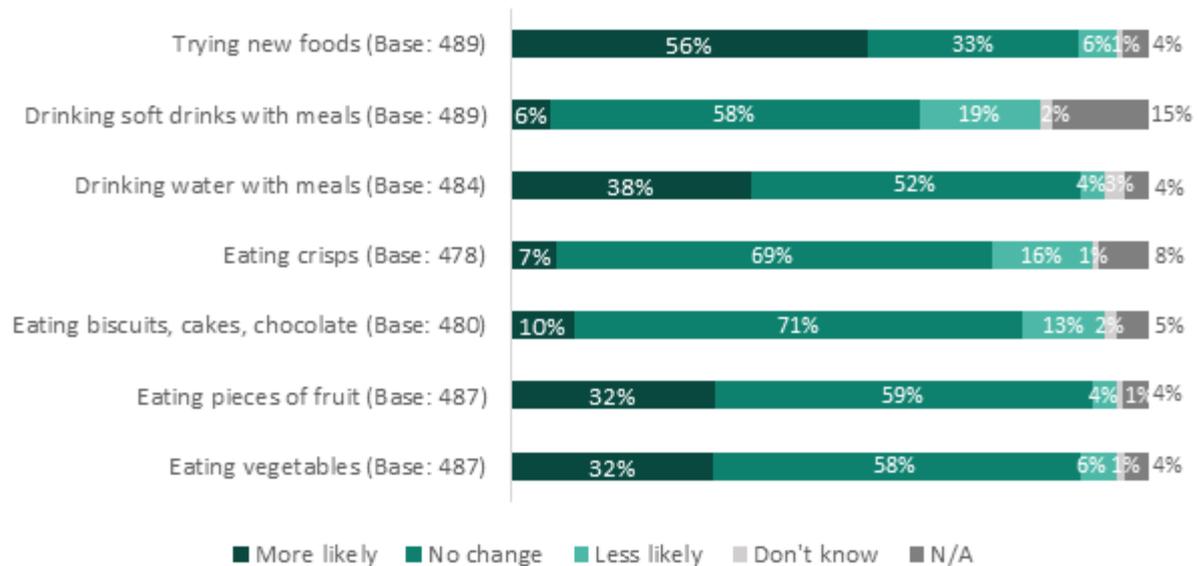
'Where schools have a higher predominance of [learners eligible for Free School Meals] then we have found that we need to do more to encourage the children to eat the food. If the food is different to what they see at home, they don't recognise it, and won't try it...We have worked harder and needed to become more creative at a) finding out what children eat at home and then b) slowly transitioning them into more healthy eaters. For example, we will put a plain chicken wrap on a menu and if this is received well, we will introduce a different flavour of chicken and say – 'well, you liked the last one, try this one'. It is a slow process of encouraging them' (Private caterer – interview)

Parents responding to the online survey were asked if there had been any changes in their child's food choices since the introduction of UIFSM (Figure 2.20) – note that this could include choices made at home and at school.

- Over half of parents (56%) felt their child was more likely to try new foods.
- Over one-third (38%) said that their child was more likely to drink water with their meals (with 19% saying that their child was less likely to drink soft drinks with meals).
- Just less than one-third (33%) said that their child was more likely to eat pieces of fruit or vegetables.

Most parents attributed the changes listed in Figure 2.20 ‘a great deal’ (42%) or ‘a little’ (37%) to UIFSM. Of the remainder, 10% did not attribute them to UIFSM, 8% did not know and 3% stated that the question was not applicable.

Figure 2.20: Have there been any changes in your child's food choices in the last three years? CGR UIFSM Parent survey data, 2017.



Although in most areas, parents of Reception/Key Stage 1 and Key Stage 2 learners answered along broadly similar lines, 41% of parents with Reception/Key Stage 1 learners reported that children were more likely to drink water with meals over the last three years (compared with 23% of parents of Key Stage 2 learners).

In addition, parents who noted that their child was eligible for Free School Meals reported that their child was more likely to show an improvement against all indicators, in comparison to those whose children were not eligible for Free School Meals (Table 2.38).

Table 2.38: Please tell us if you think there has been any change in your child’s food choices in the last three years – parents of learners eligible for Free School Meals. CGR UIFSM Parents survey data, 2017.

	Those eligible for FSM (Base: 261)				Those not eligible for FSM (Base: 207)			
	More likely	Less likely	No change	Don’t know/ N/A	More likely	Less likely	No change	Don’t know/ N/A
Eating vegetables	35%	4%	56%	3%	27%	7%	59%	7%
Eating pieces of fruit	34%	1%	59%	4%	30%	6%	57%	8%
Eating biscuits, cake and chocolate	11%	12%	69%	5%	8%	13%	69%	9%
Eating crisps	7%	64%	18%	7%	5%	70%	13%	12%
Drinking water with meals	48%	3%	44%	5%	28%	5%	57%	7%
Drinking soft drinks with meals	6%	20%	55%	15%	4%	19%	57%	18%
Trying new foods	61%	3%	31%	4%	50%	8%	36%	6%

UIFSM in conjunction with other activities

When asked if they would spend UIFSM funding on something else if given the choice, senior leaders gave a mixed response. Some felt that they would prefer to spend the funding on additional teaching resources (including staffing), others felt that UIFSM provision was very important particularly for learners that arrived at school without having had breakfast.

‘I don’t think [if they had the choice of UIFSM funding] it would all get spent on school meals. Ultimately, it would be a management decision and they would want more for teachers’ resources...There are children now coming in without breakfast and we are not a deprived area. Parents have come to rely on meals the children have at school. Psychologically for parents [children] are having a hot meal, that is a good thing’ (Business Manager)

Teachers and other staff gave similar mixed responses. There was some suggestion, including from a few parents involved in the case study visits (more commonly in wealthier areas), that infant school meals did not need to be universal and that a means tested approach would be more appropriate. Some teachers, senior leaders, midday supervisors and some parents also mentioned however, that free school meal eligibility needed to be widened to ensure that those on lower incomes who would ordinarily fall outside the eligibility criteria, could have the opportunity to have free school meals.

It was felt across respondent types that a meal provided as part of a school lunch or as a result of UIFSM was not the only driver to encouraging children to make healthier choices, but that this was necessary in conjunction with other initiatives and messages that were reinforced in a range of ways both at school and at home.

‘A free meal encourages some children to eat healthier, but it is not a driver of how people think about food. We need events and workshops on top of this’ (Vice Principal, Academy)

Over one-quarter of teachers (28% of 57) felt that parental involvement in the monitoring of pupils' food consumption had improved as a result of UIFSM (44% felt it had not changed, 2% felt it had deteriorated and the remainder did not know). Reflecting this, three-quarters (75%) of 503 parents responding to the online survey (both across Key Stage 1 and Key Stage 2 learners) reported that they regularly check what their child eats for lunch; 18% said that they check occasionally, 5% check rarely and 3% do not check. They do this by speaking to their child about meal choices, but also by talking to school staff (such as class teachers) and logging in to meal ordering software.

In terms of the level of physical activity undertaken by young people, more than one-third of parents (37%) felt that the amount had increased in the last three years, and 30% felt the amount of time they spent outdoors had increased (Table 2.39).

Table 2.39: Please tell us if you think there has been any change in the following for your child in the last three years. CGR UIFSM Parent survey data, 2017.

	Increased	Stayed the same	Decreased	Don't know	N/A
Amount of physical activity (Base: 488)	37%	51%	5%	2%	5%
Amount of sleep (Base: 486)	14%	66%	13%	1%	6%
Amount of time outdoors (Base: 485)	30%	58%	6%	1%	6%
Amount of screen time (Base: 487)	14%	61%	18%	1%	7%

More than one-third (39%) of 279 parents did not attribute these changes to UIFSM at all; with 26% attributing it 'a little' and 19% attributing the changes to UIFSM 'a lot'. The remaining 12% did not know and 4% did not think this question was applicable to them.

Having been asked to rate the changes that they may or may not have noted in their child's behaviour, food choices, educational outcomes and health, parents were asked why they thought that they had noticed these changes. Most (47%) did not know, with under one-quarter (22%) relating the changes overall to their child's swap from packed lunches to free school meals, or other factors relating to the introduction of UIFSM.

Table 2.40: Why have you noticed these change(s), on what basis? CGR UIFSM Parent survey data, 2017.

	Proportion of respondents
Child changed from a packed lunch to school meal	11%
Comparing child to older sibling who didn't have school meals	8%
Heard from others that eating school meals had made a difference	6%
Other changes relating to UIFSM	11%
Don't know	47%
Other	17%

(Base: 404)

For many parents providing additional feedback, any changes in their child over three years in areas such as levels of screen time and time spent outdoors were more attributable to their growing older, developing socially and becoming more confident, rather than the provision of free school meals.

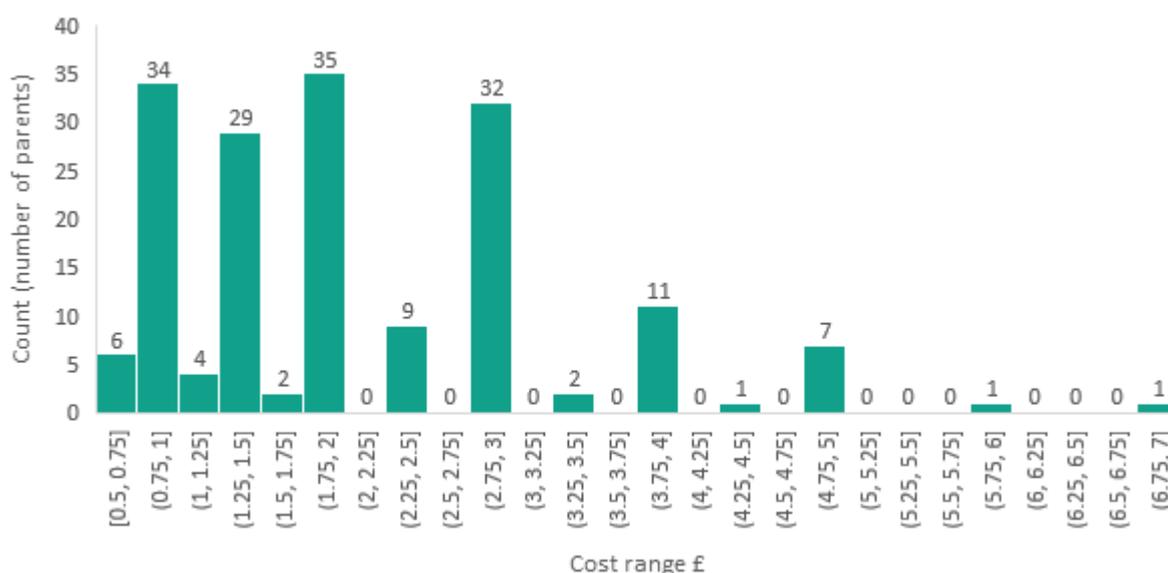
2.8. Household savings

Financial savings reported by parents and schools

According to parents responding to the survey, a typical packed lunch can cost on average £2.18 (median of £2). Their responses ranged from 50 pence to £7.⁷¹

The distribution of responses is shown in the chart below where typically costs tended to lie between 75 pence and £2 although over 30 parents also suggested a cost range of £2.75 to £3.

Figure 2.21: What does a typical packed lunch cost? £s. CGR UIFSM Parent Survey data, 2017.



(Base: 174)

The introduction of UIFSM has meant that some parents no longer need to provide a packed lunch for their children. Those obtaining such savings were asked how much money their household has saved on average per week by not having to make packed lunches for their child, compared to paying for school meals. Valid responses ranged from 50 pence to £25 with an average weekly saving across the 309 parents⁷² of £11.50 (median £10).

The cost saving experienced as a result of free school meals provision was highlighted by some parents has having been especially beneficial to their households, not only in removing ‘stigma’ but also assisting those experiencing financial challenges. Furthermore, senior leaders in schools responding to the survey had also noted the difference that UIFSM had made to ‘middle income families’ who may have previously ‘struggled to provide pupils with a healthy lunch’. This included families who were not eligible to apply for Pupil Premium/Free School Meals but were unable to afford school meals.

⁷¹ Base 174, note that 3 respondents gave costs of zero which were omitted from the analysis

⁷² Several (20) parents inserted zero in answer to this question. These were omitted from the analysis along with high outliers (those responding over £25 per week).

'I felt that universal free school meals was great for the life chances of those who are struggling the most by levelling the playing field and removing the stigma of free lunches. I would never qualify for free school meals but am definitely not a high earner. The free provision has made a huge difference to me when things were tight financially'. (Parent – online survey)

Others had noted that the provision of free school meals had helped financially during periods of maternity leave or other household challenges.

'When my daughter was entitled to those free meals I was a single parent on minimum wage working part-time, trying to juggle bills and making sure I had enough to eat for us both. Those free meals helped ensure she was eating well, as well as increasing her varieties of food'. (Parent – online survey)

Alongside these financial benefits, a smaller number of parents queried during the survey whether free school meals was the most appropriate use of resources during times of tight budgets for schools; there was a sense among these parents that free school meals should only be available to those families that require the financial support, and not to all. However, as noted elsewhere in the report, the reduction of stigma attached to free school meals was recognised by parents as having social benefits for children from poorer backgrounds. This had been particularly noted when there was a move back again to paid meals in Year 4 – *'My child wasn't aware of who in his class was entitled to free meals while it was free for everyone, now in Year 4 he is'*.

The household incomes of UIFSM beneficiaries

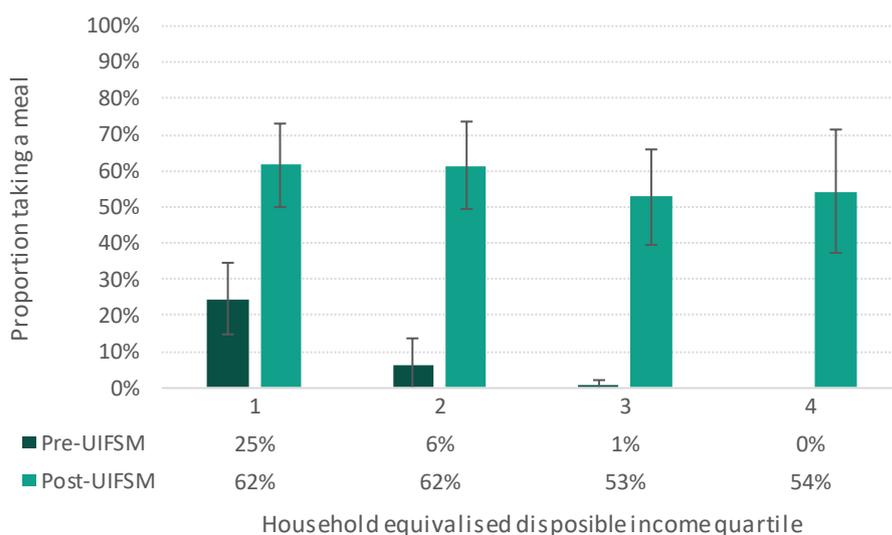
One of the most significant impacts of UIFSM is to shift resources from taxpayers to infants and, in financial terms, their households. The Living Costs and Food Survey can be used to draw tentative conclusions about the relative incomes of households benefitting from UIFSM in England, using a similar method to that used in section 2.3 (see Annex C for more information on the use of the LCF here). To improve the sample sizes used, recent survey waves have been pooled to create two 6-quarter groups of respondents, covering the periods October 2012 to March 2014 (pre-UIFSM) and October 2014 to March 2016 (post-UIFSM). A 6-month period in the middle is omitted to ensure the same calendar quarters are included in the comparison, with take-up tending to be seasonal. Households surveyed in England have been divided into quartiles of equivalised household disposable income, within each financial year of the survey. This places each household (and their children) into four groups based on their relative income, taking into account the fact that larger households will require a greater income to sustain a given standard of living.⁷³

Figure 2.22 plots the proportion of infants from these different households who took a free school meal in the week before, with 95% confidence intervals shown in error bars and survey weights used to compute estimates. Before the introduction of UIFSM, take up of free school meals was only substantial among those in the 25% of households with the lowest incomes, reflecting the heavily means-tested nature of the qualifying benefits. An estimated 25% of this group took a free meal in the previous week, and making a simple adjustment for the fact that the survey was carried out across the whole year including school holidays implies that, on average, 34% of this group received

⁷³ This uses the OECD's equivalence scales, where the first adult household member is ascribed an 'equivalence value' of 1, subsequent adults 0.5, children over-13 0.5, and younger children 0.3. Each household's equivalence values are summed, and disposable income is divided by this number to give their equivalised income (Bulman et al., 2017).

a free school meal in a given term-time week. A small proportion of infants in the next income group also took a free school meal. As expected, UIFSM significantly raised the proportion of children from higher-income households receiving a free school meal in a given week. However, it also increased the proportion of the lowest income quartile's infants receiving a free meal to 62% (or 84% with an adjustment to term-time weeks).

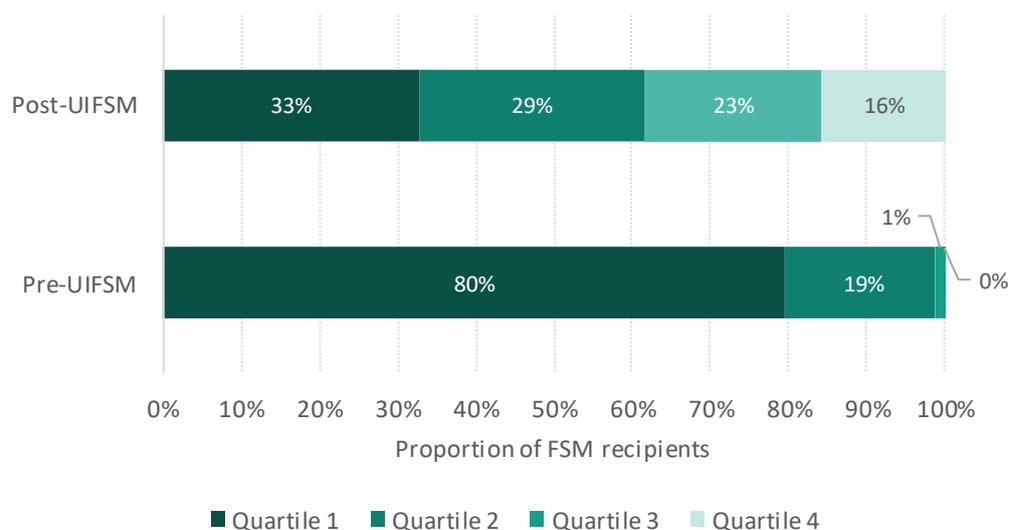
Figure 2.22: Proportion of infants taking a free school meal in the previous week, by quartile of household equivalised disposable income, with error bars representing 99% confidence intervals. Living Costs and Food survey.



A similar comparison has been made, classifying households as being in relative poverty if they have an equivalised disposable income less than 60% of the England median. This is analogous, but not identical, to official definitions of poverty used in recent years. For this group in particular, the proportion of infants taking a free meal was estimated to be 29% (equivalent to 40% across term-time weeks) before UIFSM's introduction, increasing to 62% (85%) after.

Figure 2.23 displays a related set of statistics: the proportions of infant recipients of free school meals in the last week that were from households in each income quartile. The estimates suggest that before UIFSM was introduced, 80% of recipients of free meals were from the bottom quartile of equivalised disposable income, and this decreased to 33% afterwards. However, after UIFSM's introduction it remains the case that the majority of recipients, 62% (statistically significantly different from 50% at the 1% level), are from households with incomes below the median for England. This result is caused by a combination of infants from lower-income households being estimated to have slightly higher take-up rates, and the fact that today's infants are disproportionately from households with below-average income.

Figure 2.23: Distribution of infants taking a free school meal in the previous week across quartiles of household equivalised disposable income. Living Costs and Food survey.



Time savings

Parents were also asked how much time they have saved per week by not having to make a packed lunch on those days when their child has a school meal. They were asked to estimate the number of minutes saved per week. The wide range of responses for time saved per week suggests that parents may have misunderstood the question, giving either estimated time savings relating to more than one child or not providing a weekly estimate. Whilst the average time saved was 51 minutes (median of 50)⁷⁴, there were 27 respondents suggesting that they had saved two hours or more per week (five said they had saved three hours and one said 200 minutes). The distribution of responses is therefore presented in Figure 2.24, showing that the majority of respondents suggested a time saving of 61 minutes or below.

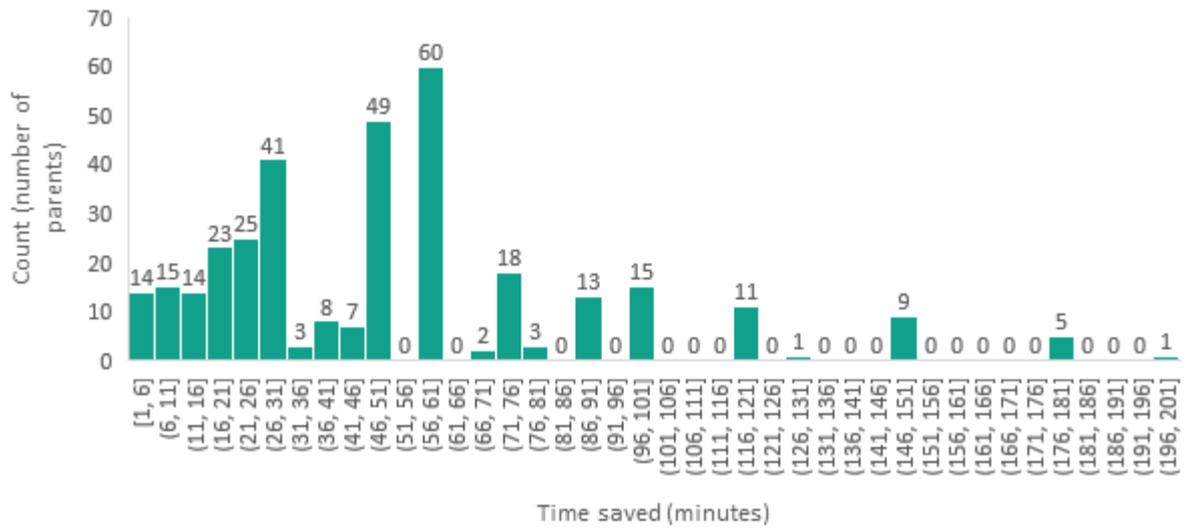
The time saving in the evening was, for some parents, the greatest benefit.

‘The impact of quality time gained in the evening by not having to cook an evening meal as a result of school lunches is far more important to us than the time saved by not having to make a packed lunch’ (Parent – online survey)

For this parent, the additional time in the evening allowed for *‘more time...playing together, reading or doing school work. It also means we have more time to spend on a calm and quality bedtime routine...rather than the evening being rushed’*. For others there had been ‘challenges’, for example where they had a younger child eligible for UIFSM, and an older child who would need to have paid lunches and therefore had a packed lunch for reasons of cost. For these parents, there were difficulties negotiating the mismatches between what children were eating at lunchtime, and therefore the varying meal requirements that they needed in the evening.

⁷⁴ Base 337, note that 15 parents gave time savings of zero which were omitted from the analysis

Figure 2.24: How much time, on average, per week have you saved by not having to make a packed lunch on those days when your child takes a school meal? CGR UIFSM Parent Survey data, 2017.



(Base: 337)

Part 3: The costs and cost-effectiveness of UIFSM

3.1. Introduction

For reasons explained above, it is difficult to quantify the full range of likely social impacts of UIFSM, and it is inherently difficult to place monetary values on some outcomes. This section aims to model the subset of economic costs of the policy that are simpler to estimate, assess how sensitive these are to the assumptions required and future changes in circumstances, and weigh them up against the quantified educational outcomes on which there is some quantified evidence. This helps to establish how far the policy, on a narrow assessment of impacts, can be described as a cost-effective educational intervention. Combining this with one's judgement about the likely scale and importance of other impacts would be necessary to provide a full assessment of the policy.

The analysis also estimates the net financial impact of the policy on schools, taking into account food delivery costs, implementation expenses, and government funding, and evaluates the prospects for these over the near future.

It is important to note that not all economic impacts estimated here and monetised are associated with financial transactions; some reflect non-financial benefits experienced by a group of people which are equivalent to the those they would obtain by receiving a given sum of money, and these are equally important. The Government's Green Book provides an overview of cost-benefit analysis for public policy, and the distinctions between financial and other costs and benefits (HM Treasury, 2011). Given the assumptions required, this analysis is not expected to provide a completely accurate estimation of benefits and costs, but a set of illustrative scenarios, based on assumptions, to indicate their likely scale and sensitivity to certain factors.

3.2. Summary of methodology

UIFSM has been implemented nationally for three full years. Here the relevant costs and benefits are modelled over a period of ten financial years, starting from 2014/15, so the overall assessment takes into account the fact that some of the initial costs of the policy represent investments in support of delivery over the longer term.⁷⁵ The analysis therefore combines a retrospective view of likely impacts with a projection for the future. As well as annual cost and benefit estimates, a net present value (NPV) estimate is produced, summing the total impacts across these 10 years, expressing them in 2017/18 prices, and discounting impacts that occur later by the 3.5% discount rate recommended by the Green Book.⁷⁶ Over this period, the outcomes of interest (e.g. expenditures) that have

⁷⁵ For simplicity, all implementation costs are assumed to fall in this period, though in practice some investments counted here made by schools and caterers may have occurred in the latter half of 2013-14. The choice of a 10-year period is arbitrary. Public investments would normally be appraised over a longer period (HM Treasury, 2011), but in UIFSM's case, the value of capital costs relative to ongoing costs is smaller than in other areas of investment – suggesting that a longer appraisal period would make less difference to the estimated long-term impacts. A longer-term appraisal would provide an overly-optimistic view of the net impacts unless the future replacement and maintenance costs of the investments made are fully taken into account, and on these there is little evidence on which to base an assessment.

⁷⁶ This provides an ex-post NPV from the perspective of decisions made at the start of the period. Whilst the 3.5% discount rate incorporates the importance of uncertainty around future effects – which is not relevant for years of the policy that have already passed – applying a discount factor also reflects the opportunity cost of social returns that could have been achieved through alternative investments.

occurred since the introduction of UIFSM (the 'policy' scenario) are compared to those that are estimated to have occurred in a counterfactual scenario without it (the 'baseline' scenario).

Given the large transfers involved in UIFSM – most significantly the financial savings to households with children, funded ultimately by taxpayers – distinguishing economic costs from Department for Education spending is an important aspect of this assessment. The analysis differentiates between the following types of costs.

- **Government costs:** additional funding provided to schools by the DfE to cover ongoing expenditure on food delivery (revenue funding) and initial investment (capital funding).
- **Net school financial impacts:** the net impact on schools is taken to include additional food production and serving costs – which are all assumed to be passed on to schools where food is provided by external providers – and any loss of revenue compared to the baseline scenario (i.e. through not being able to charge parents for meals), offset by DfE funding. It is not assumed that DfE funding covers all school costs exactly, and where it falls short this is treated as creating a net cost, which will have to be compensated for by reductions in school spending elsewhere. It also includes one-off staff costs (for caterers and schools staff) and other costs incurred as part of the transition to UIFSM.
- **Net public costs:** the total of government costs and net school financial impacts are taken to be the total public cost burden. If government funding does not fully compensate schools for costs, the balance is assumed to represent an additional financial burden on the public sector – unless schools raise additional income, they will have to reduce spending on other activities which is assumed to reduce social outcomes by an equivalent value, even the increase in overall education spending is limited to the level of government funding for UIFSM.
- **Economic costs:** increases in real resources used in the delivery of UIFSM – such as increases in staff time required, or ingredients for food production – are treated as economic costs, representing a genuine opportunity cost. Transfers between one group and another – such as the government paying for a school meal that is identical to one a parent would otherwise have paid for – cancel out in the calculation of total economic costs, even if they have distributional implications that are important.

Set against economic cost estimates, survey respondents indicate that parents perceive benefits from UIFSM through financial savings and, for those switching from packed lunches to school lunches, time savings associated with not having to source the ingredients for packed lunches and prepare them. The 'consumer benefits' perceived by parents will also depend upon the relative values they place on school lunches and their alternatives, and how highly they value extra time to spend on activities besides making packed lunches, and it cannot be assumed they will equal the financial costs of the policy experienced by schools or the government.

Some of the additional costs of delivering food through schools are associated with fewer resources spent preparing the ingredients for sale (e.g. in supermarkets) for packed lunches. Therefore, it is likely that extra spending on and employment in the provision of school lunches has also come with a reduction in economic activity in the production of ingredients and food products used for packed lunches caused by household spending – the balance of the two would be difficult to quantify and this has not been attempted here. Beyond the source of ingredients, the policy will have created a

shift from household food preparation to catering business activity – which may expand the tax base – but more research would be needed to establish the extent of this.

The fieldwork in Part 2 generally suggested that most respondents did not observe social or health outcomes that could be clearly attribute to the policy, a significant minority observed such benefits, whilst very few perceived negative outcomes. Research evidence on the links between school food, nutrition, health and child socialisation (see Part 1) suggest that there could be a range of benefits from improvements in children’s diets, and that these can be improved through school food policy, but the FSM pilots did not statistically identify health benefits that manifest in the short term. Perhaps the strongest, positive perceptions of potential health outcomes from UIFSM identified in fieldwork for this study by both parents and schools are associated with improvements in dietary habits, and a willingness to try new, healthier foods. These could have long-term impacts that are impossible to determine at this point.

In contrast, as outlined in Part 1, the FSM pilot evaluation observed statistically significant impacts of the trials in Durham and Newham on several measures of Key Stage 1 and 2 attainment, after two years of implementation (Kitchen et al., 2012). The national roll-out of UIFSM constitutes a different policy: it only covers infants, has been implemented on a non-voluntary basis and has occurred after several important changes in school system contexts, including further academisation, increasing funding pressures, and changes in school food regulation. However, the size of the attainment impacts seen for key stage 1 pupils after having received universal FSMs for 2 years are compared to the costs of the policy estimated here to illustrate the potential cost effectiveness of UIFSM as an educational intervention if similar impacts were to be observed nationally.

The parameters used in modelling are based on a combination of previous research (much of which was carried out before UIFSM was introduced), insights from fieldwork conducted for this study, and the authors’ judgement.

3.3. Modelling assumptions

The following sections outline the key modelling steps and assumptions made under a central scenario. Where data sources or other inputs are available for or relate to a particular academic rather than a financial year, they are apportioned simply across financial years on the basis of, for example, 7/12ths of the 2014/15 academic year falling in the 2014-15 financial year and 5/12ths falling in the 2015/16 financial year. Figures quoted below relate to financial years unless otherwise stated, which mean they will differ from some of the published statistics on which they are based. Annual results are reported in 2017/18 prices, using the GDP deflator series in the OBR’s latest forecasts.⁷⁷

⁷⁷ Office for Budget Responsibility (2017). Economic and Fiscal Outlook – November 2017. Supplementary economy table 1.7.

Take-up scenarios

The total number of infants in England for years 2014-15 to 2016-17 are based on published DfE statistics.⁷⁸ Growth in pupil numbers after that are based on forecasted growth in the state primary school population in DfE's pupil projections.⁷⁹

It is assumed that, in the baseline scenario, on a given day across 190 school days, 75.5% of FSM-claiming pupils take a school meal, whilst 35.1% of non-FSM pupils do so, based on Natcen's 2013-14 take-up survey (Wollney et al., 2015). It is assumed that following the introduction of UIFSM, take-up for non-FSM infants over the first three years of the policy are in line with the take-up rate implied by UIFSM revenue funding allocations (which rises to 86.0% in 2016-17), and stay at the 2016-17 rate from then onwards.⁸⁰ For FSM-claiming pupils the take-up rate under the policy scenario is equal to that suggested by January census figures, as estimated in Part 2 of this report: 87.5% in 2017-18, and assumed to stay at that rate thereafter.

As indicated in Part 2, UIFSM appears to have slightly reduced the proportion of infants registered for FSMs. Based on the scale of reduction implied by the deviation of under-7 FSM rates from an assumed counterfactual trend whereby they had the same proportional change each year as 7-10 year-olds (juniors) from 2014-15 (implying around a 7% reduction in the FSM rate by 2016-17), impacts quoted separately for FSM and non-FSM pupils relate to those who would be classified either way under the baseline. This assumes that all of those who have had their status changed by the policy would have been taking school meals with or without UIFSM. This adjustment has a negligible impact on headline results.

Government spending

Published allocations data suggest that the DfE provided around £570m, £620m and £640m for academic years 2014/15, 2015/16 and 2016/17 respectively in its main revenue grant to schools.⁸¹ Final allocations were based on the proportion of non-FSM-claiming infants taking a meal on school census days in October and January, and a funding rate of £2.30 per implied meal, which is in line with estimated costs of providing school lunches reported in the School Food Trust's last school food survey (Nelson et al., 2012). This funding rate has been unchanged up to 2017/18 and, in lieu of announcements to the contrary, is assumed to continue for the whole of the 10-year period. The Government also provided £22.5m in 2014/15 and £10m in 2015/16 to schools with no more than

⁷⁸ Department for Education (2015/2016/2017). Pupils, schools and their characteristics. Table 3d.

⁷⁹ Department for Education (2017). National pupil projections: July 2017. Table 1.

⁸⁰ This takes into account the total pupil numbers implied by the aforementioned pupil population statistics. Department for Education (2017). Universal infant free school meals (UIFSM): funding allocations 2017 to 2018. Department for Education (2016). Universal infant free school meals (UIFSM): funding allocations 2016 to 2017. Department for Education (2015). Universal infant free school meals (UIFSM): funding allocations 2015 to 2016.

⁸¹ Department for Education (2017). Universal infant free school meals (UIFSM): funding allocations 2017 to 2018. Department for Education (2016). Universal infant free school meals (UIFSM): funding allocations 2016 to 2017. Department for Education (2015). Universal infant free school meals (UIFSM): funding allocations 2015 to 2016. Figures will exclude some allocations suppressed in published data due to small pupil numbers, but this will not greatly affect the totals.

150 pupils, to support them in transition to UIFSM, on the basis of evidence that they might find it more difficult to achieve economies of scale in production (see Part 1).

DfE also distributed an additional £150m of capital funding in 2014-15 to support implementation of UIFSM through local authorities and the Academies Capital Maintenance Fund (ACMF), as well as around £23m on the basis of separate approved bids from schools facing particular challenges. A further £10m was allocated for 2015-16, mainly to local authorities with relatively low take-up rates.⁸²

One-off implementation costs

Capital costs

As highlighted in section 2.4, in order to cope with the increase in demand for school lunches, schools are expected to have had to make substantial investments, often involving light capital such as cutlery, but often involving more expensive items including new furniture. 54% of school leaders surveyed said that there had been investment in new kitchen facilities, and 47% said that a refurbishment of old ones had taken place (Table 2.15).

The surveys and case studies reported here did not yield sufficient information about the costs of such investments for use in this analysis, so it is not clear exactly what investment has been made, or the extent to which DfE funding has compensated for it. It is likely that some schools have coped much better than others, as reflected in case study evidence. The FSM pilot evaluation collected more comprehensive information on costs, and found that they varied significantly, depending on the existing facilities available. There was an average cost per school of £2,400 in Newham and £17,000 in Durham (Kitchen et al., 2012, Rahim et al., 2012). Across the two years of capital funding provision for UIFSM, primary schools received an average of roughly £11,000 in capital funding (though many will have received little or none), which falls in the middle of this range.⁸³ Clearly, the identified requirements will depend on schools' preferences over improving the quality of provision, and if schools were intending to improve their facilities anyway not all of these costs can be attributed to UIFSM. Here it is assumed that schools' capital investments were on average equal to the amount of DfE funding provided, in the absence of further evidence.

Wider staff costs

Survey responses and case study information suggests that catering staff have often been involved in a change in provision in response to UIFSM, including seeking to raise the quality of food, sometimes employing external consultants. Smaller proportions of school leaders suggested that their schools had done so (for instance, 7% said their school had introduced a strategy to improve its approach to health eating as a result, Table 2.3) but it is likely that many staff in schools were also involved in decision-making and other activities in preparation for the policy. 35% of school leaders suggested there had been an extra investment in staff training (Figure 2.15).

⁸² Department for Education (2015). UIFSM: capital funding for 2014 to 2015 and 2015 to 2016.

⁸³ £11,000 is calculated by dividing the total announced capital funding by the number of schools listed in the published UIFSM funding allocations.

To illustrate the potential scale of these costs, it is assumed that in every school, during 2014-15, UIFSM implementation issues took up:

- 2 days of school leader time (at a cost derived from an annual salary of £53,000 with on-costs of 25%)⁸⁴;
- 6 days of school support staff time (at a cost derived from an annual salary of £16,463 with on-costs of 20%)⁸⁵;
- 5 days of catering manager time (at a cost derived from an hourly wage of £10.80 with on-costs of 20%)⁸⁶; and
- 5 days of non-management catering staff time (at a cost derived from an hourly wage of £8.28, with on-costs of 20%)⁸⁷.

These assumptions are arbitrary and serve to illustrate the potential magnitude of costs: with the approach taken here the total cost of these activities would be proportional to the amount of time required.

Centrally funded support

The Children's Food Trust (CFT) and the Lead Association for Catering in Education (LACA) were commissioned by the Department for Education (DfE) to provide a support service for schools, local authorities and caterers preparing to provide UIFSM. This included telephone and online services to provide advice, guidance and support to schools, adviser visits and 'What Works Well' visits to schools.⁸⁸ Information on the total costs of this provision, absorbed by central government but representing an economic resource cost, is not publicly available and so excluded from this analysis, but is likely to be small in comparison to the other costs cited here.

School food delivery costs

The fieldwork did not provide sufficient information on which to base an estimate of the average ongoing (revenue) costs associated with school meal provision, which will be paid for by schools but incurred by external catering organisations where relevant. For this assessment, the average cost per meal of ingredients, labour and overheads (e.g. premises costs and other related expenses) is based on the cost breakdowns of local authority provision in 2011-12 reported in Nelson et al. (2012, Table 29). It is on this evidence that the Government's current £2.30 per meal funding rate was based. These costs are uplifted to current levels, and projected forward, as follows:

⁸⁴ Based on average salaries for school leaders in maintained nursery and primary schools, reported in Department for Education (2015). School workforce in England: November 2014.

⁸⁵ Based on an answer to a parliamentary question drawing on School Workforce Census data: <http://www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2015-06-02/856/> applying a 1% pay increase to estimate 2014/15 costs.

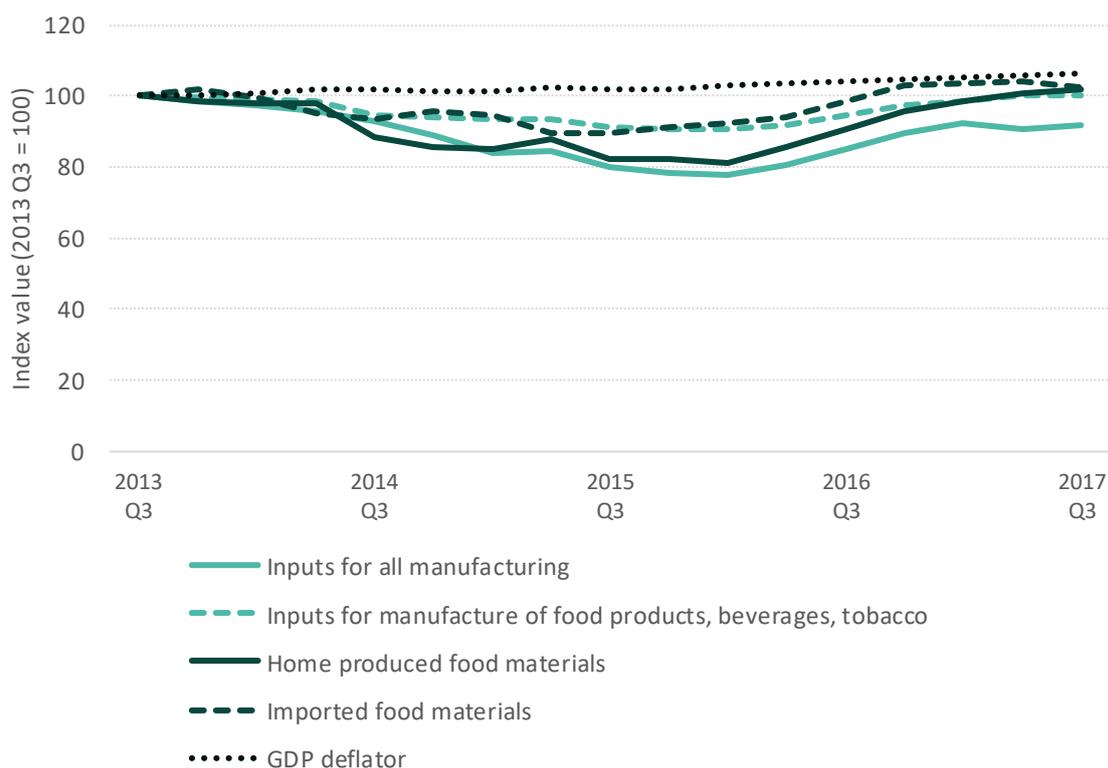
⁸⁶ Based on the midpoint of the Head Cook hourly pay range reported in Nelson et al. (2012), Table 31, uplifted using the OBRs average hourly earnings index (Office for Budget Responsibility (2017). Economic and Fiscal Outlook – November 2017. Supplementary economy table 1.6).

⁸⁷ Based on the midpoint of the Assistant Cook hourly pay range reported in Nelson et al. (2012), Table 31, uplifted using the OBRs average hourly earnings index (Office for Budget Responsibility (2017). Economic and Fiscal Outlook – November 2017. Supplementary economy table 1.6).

⁸⁸ <http://www.schoolfoodplan.com/report/kickstart-take-up-of-good-school-food/>

Ingredients were found to cost £0.67 per meal in 2011-12. ONS publish inflation rates specific to (a) an appropriately-weighted basket of the material inputs used by a range of manufacturing industries, defined by their end products, and (b) particular inputs that may be used in a range of manufacturing industries (ONS, 2017). From group (a), Figure 3.1 plots the trend in prices for inputs used across all manufacturing industries and for food products, beverages and tobacco production in particular since the announcement of UIFSM in quarter 3 of 2013.⁸⁹ From group (b), it plots prices paid by manufacturers for home and foreign-produced food materials.⁹⁰ They can be compared to the GDP deflator, a general, economy-wide measure of inflation for economic output.⁹¹

Figure 3.1: Indices of manufacturing industry and home/food input prices, 2013-2017.



Whilst these indices will not precisely match the trends in prices paid by school food caterers, this shows that over the first two years following announcement of the policy (and its funding rates) ingredients prices are likely to have fallen, but that this trend has been reversed since, with food input prices having recovered to the levels seen in 2013. For this assessment, a simple average of home and imported food price inflation on this measure has been used to uprate costs from the 2011-12 data to the present, and future trends are assumed to follow the latest OBR forecasts for the GDP deflator.⁹²

Labour costs were found to have amounted to an average of £1.20 in 2011/12. The baseline costs per meal have been uplifted over time for whole-economy hourly earnings using OBR data and

⁸⁹ ONS series K646 and MC35.

⁹⁰ ONS series MB57 and MC40.

⁹¹ ONS series L8GG.

⁹² Office for Budget Responsibility (2017). Economic and Fiscal Outlook – November 2017. Supplementary economy table 1.7.

forecasts.⁹³ One of the key rationales for intervention to increase take-up cited in the School Food Plan (Dimbleby and Vincent, 2013) was the possibility of economies of scale reducing unit costs in food production. They cited an Association of Public Service Excellence (2010) study which estimated that the number of meals produced per staff hour in schools was 8.4 but varied significantly, between 4.8 and 13.8. The School Food Plan suggested that this rate could be raised to an average of 11 - a 31% increase. If we assume that this scale of improvement could only be achieved by extending FSMs to all primary pupils, and that extending to all infants would deliver 3/7ths of the effect, that would imply that meals produced per hour would rise to 9.5, a 13% increase. As an illustration of the potential gains from economies of scale, a 13% increase in labour efficiency is assumed, reducing the costs per meal accordingly, for the policy scenario.

Finally, **overheads** associated with auxiliary expenses including premises costs were estimated to cost an average of £0.43 in 2011/12. In some circumstances, it might be expected that overheads would increase by less than the increase in meal delivery. However, given this study has shown that schools have had to significantly expand facilities – and cite concerns about future maintenance requirements – as a conservative assumption it is assumed that overhead costs per meal are not affected by the policy and are updated in line with the GDP deflator over time.

Based on this methodology, the nominal total estimated delivery cost per meal is estimated to be £2.36 in the baseline scenario in 2015-16 (above DfE's funding rate), but due to economies of scale in labour costs it is assumed to equal £2.21 under UIFSM (below DfE's revenue funding rate). The estimated net cost to schools also takes into account lost revenue from not being able to charge non-FSM-claiming pupils for school meals. The average baseline price charged for a meal is assumed to equal £2.00 in 2014-15, based on uplifting the median 'pre-UIFSM' price charged for infants and juniors reported in the survey of school leaders in line with the estimated baseline per-meal cost of food provision. The calculations therefore take into account that schools have historically subsidised school meals, so the revenue loss as a result of UIFSM for meals already provided is less than the cost of producing the meal, but this increases over time with delivery costs.

Ongoing wider school costs

Alongside food delivery costs, school leaders responding to the survey sometimes cited that wider school staff were having more of their time allocated to catering provision – for instance 20% reported an increase in teacher time used for this purpose, and 38% did so for support staff including teaching assistants (Figure 2.14). 40% said that existing staff time had been allocated to administration/management of UIFSM (Figure 2.14), while 30% reported introducing new strategies to encourage registration for the pupil premium due to UIFSM (section 2.4). To illustrate the potential magnitude of costs associated with ongoing increases in staff time use caused by UIFSM, here we assume that the policy takes up, in every year:

- 5.1 days of teacher time (at a cost derived from an annual salary of £33,900 with on costs of 25%)⁹⁴; and

⁹³ Office for Budget Responsibility (2017). Economic and Fiscal Outlook – November 2017. Supplementary economy table 1.6.

⁹⁴ This is equivalent to one teacher in 20% of schools spending an hour per school day on food provision. Cost based on average salaries for classroom teachers in maintained nursery and primary schools, reported in

- 12.7 days of support staff time (at a cost derived from an annual salary of £16,463, with on costs of 20%)⁹⁵.

It is not assumed that UIFSM's potential impact on pupil premium eligibility results in a cost to schools, for – as explained in section 2.4 – it is possible that this has already been compensated for in funding rates. If it has, though, it would still result in a redistribution away from infant children to others (some within the same schools), and this is not captured here.

Consumer benefits

In calculating the perceived household benefits associated with school meals provided under either scenario, there are four relevant categories of meal, determined by their recipient:

- **For meals that are consumed under both a baseline and counterfactual by children not claiming FSM who would otherwise have had to pay for them**, the benefit obtained by the household is taken to be equal to the money saved, determined by the price that would have been charged under the baseline scenario (£2.00 in 2014-15, as above).
- **For those claiming FSM and taking a meal with or without the policy**, we assume there is a much smaller benefit, as for these pupils there is no change in take-up decision as a result of the policy. Many survey respondents perceived improvements in the quality of provision as a response to UIFSM, although case studies suggest that some schools will not have been able to significantly improve the finding experience or prevent increases in queuing times. For illustration, for these pupils it is assumed that they obtain a benefit equivalent to 10% of the baseline price of a school meal, or £0.20 in 2014-15.⁹⁶
- **For additional means consumed by those who would not otherwise be claiming FSMs**, even if we can estimate how much they have cost caterers to provide, we cannot assume that these additional meals will be valued by pupils (or their households) to the same extent. If they choose school lunches because they have become the cheaper option (in line with survey evidence on the motivation for parents to provide packed lunches in the first place), there is no guarantee that the benefit they perceive from the policy is as high as the financial savings they obtain from not making packed lunches, and valuations will vary in practice. It is for this reason that, in general, unless a market failure is being corrected, there is an efficiency cost from providing goods for free as a way of improving living standards, as opposed to raising incomes and allowing people to decide what to spend it on.

If we assume households are well informed and have an accurate perception of the quality and benefit of school meals, then their 'revealed preferences' suggest that the upper limit of

Department for Education (2015/2016/2017). School workforce in England: November 2014/2015/2016. Salaries are uplifted by 1% to 2019/20, and in line with the OBR's Public Sector Paybill Per Head forecast (Office for Budget Responsibility (2017). Economic and Fiscal Outlook – November 2017. Supplementary fiscal table 2.33).

⁹⁵ This is equivalent to one staff member in 50% of schools spending an hour per school day on food provision. Salary source as for implementation cost estimate, uplifted in the same way as for teachers.

⁹⁶ This means that we assume that these pupils or their families have perceived a benefit equivalent to that received by a family given a 10% discount on school meal prices that they would otherwise have had to pay.

the valuation of additional meals they consume is equal to the price they would have faced in the absence of the policy, calculated as above. If they held a higher value, then in the baseline scenario they would have already been taking the meal. A simple approach, analogous to the 'rule of a half' applied in the Department for Transport's appraisal of transport investments (Department for Transport, 2011), would be to assume that the value of these additional meals is distributed uniformly between zero and this upper bound (implying that the net benefit is equal to half of this upper bound value multiplied by the number of meals).

However, taking zero as a lower bound would imply that many parents place an extremely low value on their children having a meal to eat at school of some form, which is inconsistent with the fact that even those who choose not to pay for school lunches will usually be paying for ingredients for packed lunches. Further, there is evidence (outlined in Part 1 and supported by perceptions in Part 2) to suggest that school meals generally *are* of better quality than packed lunches, and that the most common reason cited by parents for choosing packed lunches is their cost, not relative quality. Therefore, in a central scenario the lower bound is taken to be equal to the average cost of a packed lunch, with household valuations of additional meals distributed evenly between this and the hypothetical average price they would have faced for a school lunch in the absence of UIFSM. The assumed cost of a packed lunch is based on the survey of Ensaff & Mahoney (2014), suggesting an average cost of £1.42 in summer 2014.⁹⁷ This figure is uplifted for CPI food price inflation to the present, and projected forward using OBR CPI inflation forecasts.⁹⁸ This leads to an average perceived benefit of £1.71 in 2014-15.

- We have even less information on which to base an estimate of the **perceived benefits associated with additional meals consumed by pupils who would already have been claiming FSMs but not taking school meal**. Given these households could have already received a free meal, but chose not to, it can be expected that the value perceived is associated with an improvement in the quality of food or the dining experience, and that the value is unlikely to be as high as for those becoming newly entitled to FSMs under the policy (or these pupils would tend to already have been taking the meals on offer). For the central estimate, it is simply assumed as an illustration that the extra value received for these meals is equal to 25% of the baseline price of a school meal – £0.50 in 2014-15.

Of course, parents and children may not correctly perceive the quality of a school meal, and Part 2 suggests that one of the benefits of UIFSM is encouraging children to try new foods they may not have thought they would like. Caterers surveyed for this study often suggested that they thought the quality of provision had increased due to the introduction of UIFSM (section 2.2). Therefore, these estimates could represent a conservative estimate of the benefits to households as consumers, and

⁹⁷ This survey has a larger sample size than the parent survey reported here, so is preferred here as a source of assumptions. £1.42 is also more consistent with earlier estimates by London Economics (2008).

⁹⁸ For historic estimates of inflation, this uses food price CPI based on ONS's D7BU index. For forecasts, it is assumed that packed lunch costs increase in line with the OBR's overall CPI inflation forecast – which therefore assumes that food prices increase in line with other aspects of consumer spending. Forecast based on Office for Budget Responsibility (2017). Economic and Fiscal Outlook – November 2017. Supplementary economy table 1.7.

should be seen as only a narrow assessment of the potential benefits for pupils and their families. However, it should be noted that many of the perceived improvements in food provision noted by fieldwork respondents were said to be a result of wider activities not contingent on UIFSM, and where dining conditions worsen (e.g. longer queues) it cannot be assumed that households or their children perceive these benefits.

Whilst the benefit of household time savings from not having to prepare packed lunches should already be captured in the consumer benefit estimates described above, an alternative method is used to produce a separate estimate of time savings benefits in particular, to illustrate the potential magnitude of the impact. Consistent with the findings of the fieldwork, this assumes that for each additional meal taken, a parent saves 10 minutes of time. Following the approach of transport appraisal methods, a monetary value is attached to this, reflecting research on the amount people appear willing to pay in financial terms to save time (when not at work) through travel choices – estimated at £6.04 per hour for 2010 (uplifted by the GDP deflator across the period). Clearly, we are applying these values to a different context, and so these estimates should be treated with caution.

3.4. Central results

Cost estimates

Table 3.1 shows the main modelling results under the central scenario, in 2017-18 prices. Here, the number of school meals taken more than doubles in all years except for the first (some of the financial year 2014-15 falls in the academic year before UIFSM was introduced). This creates benefits to pupils and their families – according to the narrow definition used here – of £549m in 2017-18, or £4.407bn in NPV terms over the period, of which the majority are experienced by those who would not have been claiming FSMs. This is because all pupils in this group have a free meal available which was not previously so, and for those already taking school meals this benefit is equivalent to the full price of a school meal – the implication is that those pupils not previously entitled to FSMs who were already choosing to take a meal will on average receive the greatest financial benefit.

The policy generates an increased cost of producing school meals of £380m in 2017-18, adding up to an NPV of £2.957bn over 10 years. The assumption of economies of scale in labour costs mean that the unit cost per meal is £0.16 lower under UIFSM than in the baseline in most years, but increases from £2.29 in 2015-16 to £2.48 by the end of the period, in real terms.

Initial capital costs are small in comparison to the ongoing delivery costs summed over a 10 year period, at an NPV of £184m. The initial school and catering staff time in implementation generates costs of £37m in 2014-15, but there remains an ongoing cost of £41m in 2017-18 for schools in additional staff requirements (e.g. teachers helping with catering and extra parental engagement to increase pupil premium registration), equivalent to an NPV of around £343m over 10 years. Capital costs, other implementation spending, and ongoing use of school staff time are estimated to amount to an NPV of £562m.

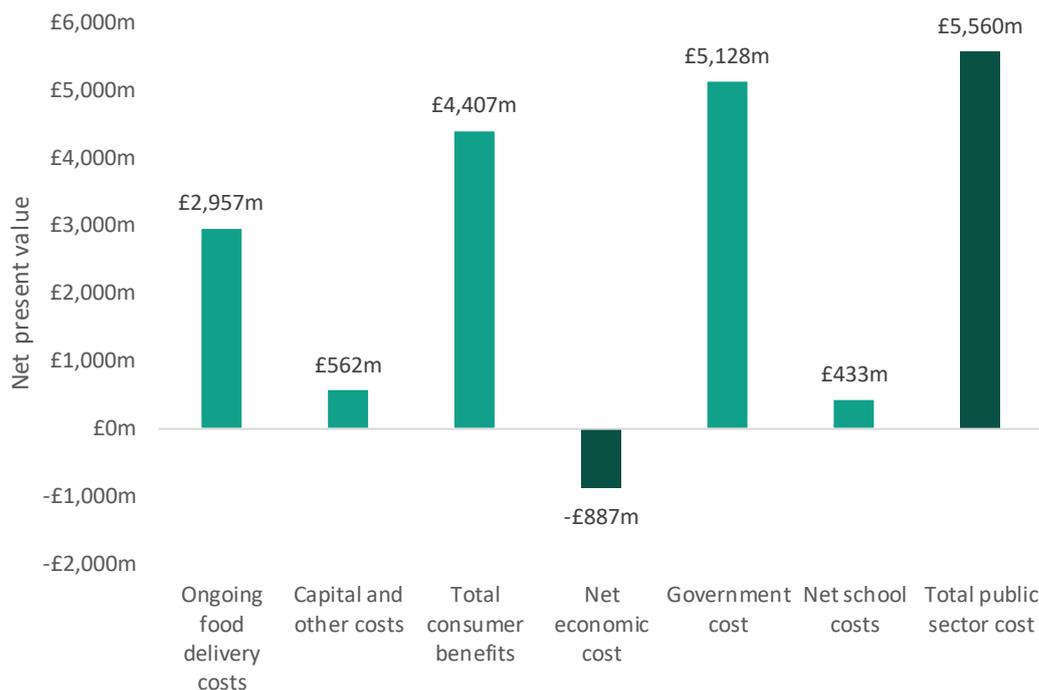
Taking into account initial implementation activity, the revenue cost of food provision, ongoing wider school costs, and offset by DfE funding, the results suggest that UIFSM created an initial net cost to schools of around £125m (as explained earlier, some of the transitional cost relevant here will have in practice fallen in 2013-14 rather than 2014-15, but it is included here under the latter in

tables). Following that implementation period, in 2015-16, schools are estimated to have on average received £38m more funding than the estimated costs they faced as a result of the policy, and the year after net school costs are around zero (a £2m surplus). This corroborates the reports of school leaders in the survey suggesting that, whilst there had been a substantial amount of implementation activity required, only a small proportion had found that school food deficits had increased as a result of UIFSM so far.

However, across the rest of the period, the results suggest that if the funding rate is held at £2.30, by 2023-24 the policy will be creating a net £109m annual cost to schools, in today's prices. Across the whole period schools will have faced an estimated NPV net cost of £433m.

As Figure 3.2 illustrates, the additional ongoing costs of food delivery are lower than the benefits assumed to be experienced by infants and their households. This is because the increase in take-up has been taken to have reduced delivery costs per unit, through economies of scale. Combined with the capital costs, implementation activity and wider ongoing school costs (all of which represent real economic costs), this means that the net economic costs of the policy are estimated to be negative, at -£887m. However, schools are still left with a net NPV cost of £433m, and the total public sector cost including DfE funding is £5.560bn.

Figure 3.2: Headline cost and benefit estimates, Central scenario. 2017-18 prices, discounted to 2014-15.



This shows how, because of the significant deadweight arising from funding meals that parents would otherwise have paid for, whilst the policy is not estimated to represent a large economic cost (school food production has substituted for food preparation at home and consumption of packed lunch ingredients) it comes with much greater public spending implications.

Cost-effectiveness

The Sutton Trust-EEF's Teaching and Learning Toolkit summarises research evidence on a wide range of educational interventions, expressing the findings of impacts using two key metrics (Higgins et al., 2014)⁹⁹:

- **Impact:** Interventions can be compared using 'effect sizes', which compare the size of statistical impact on an educational outcome measure (e.g. test scores) with the variation seen across pupils in that measure (e.g. the standard deviation of those scores). These can be compared to normal educational development paths to establish the equivalent 'months of progress' affected by an intervention. Along their standardised scales, the Toolkit describes impacts of up to less than one month as providing 'very low' impact; between 1 and 2 months, or an effect size of 0.02 to 0.18, as 'low'; between 3 and 5 months, or an effect size of 0.19 to 0.44, as 'moderate impact'; between 6 and 8, or an effect size of 0.45 to 0.69 as 'high impact'; and larger impacts as 'very high'.
- **Cost:** Low impact interventions may be well worthwhile if their costs are low. The Toolkit therefore allows standardised comparisons of costs (based on educating whole classes of pupils), describing interventions with costs of up to £80 per pupil per year as 'very low' cost; from £81 up to £200 as 'low'; from £201 up to £720 as 'moderate'; from £721 up to £1,200 as 'high'; and beyond £1,200 as 'very high'.

In order to compare UIFSM to these scales we consider the best evidence on potential educational impacts of the policy, based on the FSM pilots. That evaluation observed statistically significant impacts of the trials in Durham and Newham on several measures of key stage 1 and 2 attainment, after two years of implementation (Kitchen et al., 2012). In one area the impact had an effect size of 0.116, and in the other a (not statistically significant) effect of 0.070.¹⁰⁰ Both would fall into the Toolkit's 'Low impact' category.

Taking into account the offsetting benefits that have been estimated here, the central scenario's NPV of economic costs has been annualised and divided by the average number of infants in schools across the period to give an average cost per pupil per year of -£54.¹⁰¹ Clearly, with the policy producing net economic benefits overall, this would fall into the 'very low' category. On this basis, therefore, in aggregate UIFSM appears to be a reasonably cost-effective intervention on these terms: it has a low impact but the economic costs of delivering it are also low.¹⁰² This reflects that it is difficult to view UIFSM as comparable to other educational interventions. As an illustration, if extra teachers are hired to provide one-to-one tuition that provides no educational benefit, the economy is worse off to the value of the opportunity cost of their time. In UIFSM's case, if no wider educational, health or social impacts were achieved it would represent a large shift of resources

⁹⁹ Category definitions for costs and impact available at:

<https://educationendowmentfoundation.org.uk/evidence-summaries/about-the-toolkits/about-the-toolkits/>

¹⁰⁰ See Tables 4.1 and 4.1 of Kitchen et al. (2012).

¹⁰¹ Annualisation computes the real cost which, if repeated in every year over the 10-year period, would sum to the same NPV as that estimated in the scenario. This is equal to: $NPV / [(1 - (1/(1+3.5\%)^{10})) / 3.5\%]$. The result is divided by the average number of infants across the 10 years of the assessment.

¹⁰² Other interventions for which evidence suggests a 'low' impact and 'moderate' cost on the Toolkit scales include extending school time and mentoring approaches:

<https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit>

from taxpayers to households, which has clear implications for public finances, but it may not create such a large opportunity cost in the round under the assumptions made in the central scenario here.

Accordingly, the annualised total public sector cost per pupil (taking into account up-front investment and ongoing costs across 10 years) is estimated to be £336 per year, which gives the policy a 'moderate' cost on the Toolkit scale. Combined with a 'low' educational impact, this gives a less favourable assessment of efficacy. This suggests that if public finances are heavily constrained, the substantial deadweight of the policy mean that it does not produce a strong return on investment in terms of educational outcomes alone. That assessment would improve were we to assume that there are additional health benefits arising from UIFSM, or that parents and pupils benefit more in the short term from the additional school meals than we have assumed here. There will have been wider savings to the Exchequer if the policy has improved work incentives, contributing to recent increases in employment rates.

Table 3.1: Results of costs analysis – Central scenario. 2017-18 prices, by financial year.

		2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	NPV (2014/15 base)
Overall take-up	Baseline meals (000s)	154,866	155,812	157,078	158,963	159,786	159,751	160,025	160,094	159,888	159,374	
	Policy meals (000s)	240,337	310,988	323,667	327,674	329,369	329,299	329,864	330,005	329,581	328,522	
	Increase in meals (000s)	85,472	155,176	166,589	168,711	169,584	169,548	169,839	169,911	169,693	169,147	
	Increase in meals (%)	55%	100%	106%	106%	106%	106%	106%	106%	106%	106%	
Perceived consumer benefits	Increase in non-FSM meals (000s)	80,878	148,226	160,011	161,931	162,769	162,734	163,014	163,084	162,874	162,350	
	Increase in FSM meals (000s)	4,594	6,949	6,578	6,780	6,815	6,813	6,825	6,828	6,819	6,797	
	Non-FSM consumer benefits	£369m	£490m	£520m	£536m	£541m	£544m	£548m	£551m	£554m	£555m	£4,295m
	FSM consumer benefits	£12m	£13m	£13m	£13m	£14m	£14m	£14m	£14m	£14m	£14m	£111m
	Total consumer benefits	£381m	£503m	£533m	£549m	£555m	£558m	£561m	£565m	£567m	£569m	£4,407m
School food delivery costs	Baseline food delivery cost	£382m	£382m	£394m	£406m	£410m	£413m	£416m	£419m	£421m	£423m	£3,369m
	Policy food delivery cost	£567m	£714m	£761m	£787m	£794m	£798m	£804m	£809m	£814m	£816m	£6,326m
	Additional food delivery cost	£184m	£332m	£367m	£380m	£384m	£386m	£388m	£391m	£393m	£394m	£2,957m
	Baseline delivery cost per meal	£2.47	£2.45	£2.51	£2.56	£2.57	£2.58	£2.60	£2.61	£2.63	£2.65	
	Policy delivery cost per meal	£2.36	£2.29	£2.35	£2.40	£2.41	£2.42	£2.44	£2.45	£2.47	£2.48	
	Change in delivery cost per meal	-£0.11	-£0.15	-£0.15	-£0.16	-£0.16	-£0.16	-£0.16	-£0.16	-£0.16	-£0.17	
	Real DfE revenue funding rate	£2.40	£2.39	£2.34	£2.30	£2.27	£2.24	£2.20	£2.16	£2.12	£2.08	
	Baseline food revenue	£224m	£229m	£240m	£248m	£250m	£251m	£253m	£255m	£257m	£257m	£2,041m
	Policy food revenue	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m
	Change in food revenue	-£224m	-£229m	-£240m	-£248m	-£250m	-£251m	-£253m	-£255m	-£257m	-£257m	-£2,041m
	Baseline school meal deficit	£159m	£153m	£154m	£159m	£160m	£161m	£162m	£164m	£164m	£165m	£1,328m
	Policy school meal deficit	£567m	£714m	£761m	£787m	£794m	£798m	£804m	£809m	£814m	£816m	£6,326m
	Change in school meal deficit	£408m	£561m	£607m	£628m	£634m	£637m	£642m	£646m	£649m	£651m	£4,998m
	Net cost after DfE funding	£48m	-£79m	-£43m	-£16m	-£4m	£8m	£22m	£37m	£52m	£66m	£54m
Capital cost	£180m	£10m	£0m	£184m								
Net capital cost after DfE funding	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	
School wider costs	Transitional catering staff costs	£15m	£0m	£14m								
	Transitional school staff costs	£22m	£0m	£21m								
	Ongoing school staff costs	£41m	£41m	£41m	£41m	£41m	£41m	£41m	£42m	£42m	£43m	£343m
	Net school costs	£125m	-£38m	-£2m	£25m	£37m	£49m	£63m	£79m	£94m	£109m	£433m
Government finances	Revenue funding	£361m	£640m	£650m	£644m	£638m	£629m	£619m	£608m	£597m	£585m	£4,943m
	Capital funding	£180m	£10m	£0m	£184m							
	Total government cost	£541m	£650m	£650m	£644m	£638m	£629m	£619m	£608m	£597m	£585m	£5,128m
	Total public sector cost	£666m	£612m	£648m	£669m	£675m	£678m	£683m	£688m	£691m	£694m	£5,560m
Narrow economic impacts	Consumer benefits	£381m	£503m	£533m	£549m	£555m	£558m	£561m	£565m	£567m	£569m	£4,407m
	Total resource costs	£443m	£383m	£408m	£421m	£425m	£426m	£429m	£432m	£435m	£436m	£3,520m
	Narrow net economic cost	£62m	-£119m	-£125m	-£128m	-£130m	-£131m	-£132m	-£132m	-£133m	-£133m	-£887m
Time savings	Time savings (000s hours)	14,245	25,863	27,765	28,118	28,264	28,258	28,306	28,319	28,282	28,191	
	Value of time savings (not additive)	£96m	£174m	£187m	£190m	£191m	£191m	£191m	£191m	£191m	£190m	£1,476m

3.5. Sensitivity analysis

As the description of assumptions makes clear, there is significant uncertainty over the potential costs and benefits of the policy. Here, two alternative modelling scenarios are produced to illustrate the potential implications.

In a more pessimistic scenario, we assume:

- School food ingredients price inflation is 2ppts higher in each year from 2018-19 to the end of the period, and this is also reflected in the prices of packed lunch ingredients.
- Economies of scale in labour costs of school meal delivery are not achieved.
- The lower bound for the consumer benefits of additional meals consumed by non-FSM claimants is taken to be zero instead of the average price of a packed lunch.
- The assumed benefit perceived for additional meals taken by those already entitled to FSM is 10% of the baseline price of a school meal instead of 25%.

In a more optimistic scenario:

- School food and packed lunch ingredients price inflation is 2ppts lower in each year from 2018-19 to the end of the period.
- Economies of scale in labour costs of school meal delivery are stronger, reaching the full level of efficiency anticipated in the School Food Plan (equivalent to 11 meals per staff hour in the original APSE (2010) study).
- The lower bound for the consumer benefits of additional meals consumed by non-FSM claimants is taken to be halfway between the average price of a packed lunch and the baseline price of a school meal (£1.71 in 2014-15, instead of £1.42).
- The assumed benefit perceived for additional meals taken by those already entitled to FSM is 35% of the baseline price of a school meal instead of 25%.

Results are detailed in Tables 3.4 and 3.5 at the end of this chapter. Table 3.2 summarises the key results in NPV terms. This highlights how important economies of scale and assumptions of children and their parents' perceived benefits from additional meals are. In the pessimistic scenario, there are now net economic costs of £500m, where under a central scenario these were negative. Because additional food price inflation is assumed to increase both the delivery costs of school food and the financial savings conferred on parents, the impact on net economic costs is dampened. However, the total net financial costs to schools, assuming DfE funding rates are not adjusted, have more than doubled, and by the end of the period they are £189m per year. The total public sector cost increases to £6.031bn.

In contrast, under more optimistic assumptions the consumer benefits have increased, and the net economic benefits rise to £1.618bn, from £887m in the central scenario. Schools start to receive a net increase in financial resources as a result of UIFSM across the period, of £51m, but the annual net cost to school still rises to £30m by the end of the period under the assumption that the £2.30 funding rate is not increased.

Table 3.2: Key results of costs analysis – NPV to a base of 2014-15. 2017-18 prices.

	Pessimistic	Central	Optimistic
Ongoing food delivery costs	£3,405m	£2,957m	£2,496m
Capital and other costs	£562m	£562m	£562m
Total consumer benefits	£3,467m	£4,407m	£4,676m
Net economic cost	£500m	-£887m	-£1,618m
Government cost	£5,128m	£5,128m	£5,128m
Net school costs	£904m	£433m	-£51m
Total public sector cost	£6,031m	£5,560m	£5,076m

As table 3.3 highlights, though, in broad terms these changes would not change the assessment of cost-effectiveness in terms of the categories of the Sutton Trust-EEF Toolkit scales.

Table 3.3: Comparisons of cost-effectiveness across scenarios. 2017-18 prices.

	Pessimistic	Central	Optimistic
Annualised economic cost	£60m	-£107m	-£195m
Annualised economic cost per pupil	£30	-£54	-£98
Sutton Trust toolkit cost scale (economic costs)	Very low	Very low	Very low
Annualised public sector cost	£725m	£669m	£610m
Annualised public sector cost per pupil	£364	£336	£307
Sutton Trust toolkit cost scale (public sector costs)	Moderate	Moderate	Moderate

3.6. Conclusion

This analysis suggests that, under reasonable assumptions, UIFSM does not carry a substantial economic cost; taking into account the benefits provided to parents and pupils, it might produce net economic benefits. These are derived principally from the gains of economies of scale in food production. It is not certain that the educational impacts seen in the FSM pilots will occur as a result of UIFSM, given the different context of schools today and the non-voluntary nature of the national policy, but if they were of the same magnitude as seen there, then the policy would combine a fairly low educational benefit with very low costs.

However, when considering the *public sector* costs of the policy, including central government funding and the costs for schools not covered by it, then on these terms the assessment cost-effectiveness of UIFSM as an educational intervention worsens substantially. This may be particularly important considering the constrained nature of public finances. In monetary terms, a significant impact of the policy is a transfer of resources from taxpayers to the families of infants. As Part 2 highlighted, on average infants are from households with below-average household incomes, but most of the new beneficiaries of the policy are of higher incomes.

Whilst there is the potential for the narrow economic impacts assessed here to become stronger, if economies of scale don't materialise, then there will be a greater burden on schools, particularly if funding rates are not adjusted. This may start to have a detrimental impact on any potential wider benefits, with schools already having reported disruption to timetables and the use of teacher time for catering.

Table 3.4: Results of costs analysis – Pessimistic scenario. 2017-18 prices, by financial year.

		2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	NPV (2014/15 base)
Overall take-up	Baseline meals (000s)	154,866	155,812	157,078	158,963	159,786	159,751	160,025	160,094	159,888	159,374	
	Policy meals (000s)	240,337	310,988	323,667	327,674	329,369	329,299	329,864	330,005	329,581	328,522	
	Increase in meals (000s)	85,472	155,176	166,589	168,711	169,584	169,548	169,839	169,911	169,693	169,147	
	Increase in meals (%)	55%	100%	106%	106%	106%	106%	106%	106%	106%	106%	
Perceived consumer benefits	Increase in non-FSM meals (000s)	80,878	148,226	160,011	161,931	162,769	162,734	163,014	163,084	162,874	162,350	
	Increase in FSM meals (000s)	4,594	6,949	6,578	6,780	6,815	6,813	6,825	6,828	6,819	6,797	
	Non-FSM consumer benefits	£308m	£383m	£410m	£423m	£430m	£435m	£440m	£446m	£451m	£456m	£3,449m
	FSM consumer benefits	£1m	£2m	£18m								
	Total consumer benefits	£310m	£385m	£412m	£425m	£432m	£437m	£443m	£449m	£454m	£458m	£3,467m
School food delivery costs	Baseline food delivery cost	£382m	£382m	£394m	£406m	£413m	£417m	£423m	£428m	£433m	£437m	£3,408m
	Policy food delivery cost	£593m	£761m	£811m	£838m	£851m	£860m	£872m	£883m	£893m	£902m	£6,812m
	Additional food delivery cost	£211m	£380m	£418m	£431m	£438m	£443m	£449m	£455m	£460m	£464m	£3,405m
	Baseline delivery cost per meal	£2.47	£2.45	£2.51	£2.56	£2.58	£2.61	£2.64	£2.68	£2.71	£2.74	
	Policy delivery cost per meal	£2.47	£2.45	£2.51	£2.56	£2.58	£2.61	£2.64	£2.68	£2.71	£2.74	
	Change in delivery cost per meal	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	
	Real DfE revenue funding rate	£2.40	£2.39	£2.34	£2.30	£2.27	£2.24	£2.20	£2.16	£2.12	£2.08	
	Baseline food revenue	£224m	£229m	£240m	£248m	£251m	£254m	£258m	£261m	£264m	£267m	£2,064m
	Policy food revenue	£0m										
	Change in food revenue	-£224m	-£229m	-£240m	-£248m	-£251m	-£254m	-£258m	-£261m	-£264m	-£267m	-£2,064m
	Baseline school meal deficit	£159m	£153m	£154m	£159m	£161m	£163m	£165m	£167m	£169m	£171m	£1,343m
	Policy school meal deficit	£593m	£761m	£811m	£838m	£851m	£860m	£872m	£883m	£893m	£902m	£6,812m
	Change in school meal deficit	£435m	£609m	£657m	£679m	£689m	£697m	£706m	£716m	£724m	£731m	£5,469m
	Net cost after DfE funding	£74m	-£31m	£7m	£35m	£52m	£69m	£87m	£107m	£127m	£146m	£525m
	Capital cost	£180m	£10m	£0m	£184m							
Net capital cost after DfE funding	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	
School wider costs	Transitional catering staff costs	£15m	£0m	£14m								
	Transitional school staff costs	£22m	£0m	£21m								
	Ongoing school staff costs	£41m	£42m	£42m	£43m	£343m						
Net school costs		£152m	£10m	£48m	£76m	£92m	£109m	£128m	£149m	£169m	£189m	£904m
Government finances	Revenue funding	£361m	£640m	£650m	£644m	£638m	£629m	£619m	£608m	£597m	£585m	£4,943m
	Capital funding	£180m	£10m	£0m	£184m							
	Total government cost	£541m	£650m	£650m	£644m	£638m	£629m	£619m	£608m	£597m	£585m	£5,128m
Total public sector cost		£693m	£660m	£698m	£720m	£730m	£738m	£748m	£757m	£766m	£773m	£6,031m
Narrow economic impacts	Consumer benefits	£310m	£385m	£412m	£425m	£432m	£437m	£443m	£449m	£454m	£458m	£3,467m
	Total resource costs	£469m	£431m	£458m	£472m	£479m	£484m	£490m	£496m	£502m	£507m	£3,967m
	Narrow net economic cost	£159m	£46m	£46m	£47m	£47m	£47m	£47m	£48m	£48m	£49m	£500m
Time savings	Time savings (000s hours)	14,245	25,863	27,765	28,118	28,264	28,258	28,306	28,319	28,282	28,191	
	Value of time savings (not additive)	£96m	£174m	£187m	£190m	£191m	£191m	£191m	£191m	£191m	£190m	£1,476m

Figure 3.5: Results of costs analysis – Optimistic scenario. 2017-18 prices, by financial year.

		2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	NPV (2014/15 base)
Overall take-up	Baseline meals (000s)	154,866	155,812	157,078	158,963	159,786	159,751	160,025	160,094	159,888	159,374	
	Policy meals (000s)	240,337	310,988	323,667	327,674	329,369	329,299	329,864	330,005	329,581	328,522	
	Increase in meals (000s)	85,472	155,176	166,589	168,711	169,584	169,548	169,839	169,911	169,693	169,147	
	Increase in meals (%)	55%	100%	106%	106%	106%	106%	106%	106%	106%	106%	
Perceived consumer benefits	Increase in non-FSM meals (000s)	80,878	148,226	160,011	161,931	162,769	162,734	163,014	163,084	162,874	162,350	
	Increase in FSM meals (000s)	4,594	6,949	6,578	6,780	6,815	6,813	6,825	6,828	6,819	6,797	
	Non-FSM consumer benefits	£381m	£513m	£550m	£567m	£569m	£568m	£568m	£568m	£567m	£565m	£4,473m
	FSM consumer benefits	£24m	£24m	£24m	£25m	£203m						
	Total consumer benefits	£404m	£537m	£574m	£592m	£593m	£593m	£593m	£593m	£593m	£590m	£4,676m
School food delivery costs	Baseline food delivery cost	£382m	£382m	£394m	£406m	£408m	£408m	£409m	£409m	£410m	£409m	£3,333m
	Policy food delivery cost	£539m	£664m	£709m	£734m	£735m	£734m	£735m	£735m	£734m	£732m	£5,828m
	Additional food delivery cost	£157m	£282m	£315m	£327m	£328m	£326m	£326m	£325m	£324m	£323m	£2,496m
	Baseline delivery cost per meal	£2.47	£2.45	£2.51	£2.56	£2.55	£2.55	£2.55	£2.56	£2.56	£2.57	
	Policy delivery cost per meal	£2.24	£2.13	£2.19	£2.24	£2.23	£2.23	£2.23	£2.23	£2.23	£2.23	
	Change in delivery cost per meal	-£0.23	-£0.31	-£0.32	-£0.32	-£0.32	-£0.32	-£0.33	-£0.33	-£0.34	-£0.34	
	Real DfE revenue funding rate	£2.40	£2.39	£2.34	£2.30	£2.27	£2.24	£2.20	£2.16	£2.12	£2.08	
	Baseline food revenue	£224m	£229m	£240m	£248m	£249m	£249m	£249m	£249m	£250m	£249m	£2,019m
	Policy food revenue	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m
	Change in food revenue	-£224m	-£229m	-£240m	-£248m	-£249m	-£249m	-£249m	-£249m	-£250m	-£249m	-£2,019m
	Baseline school meal deficit	£159m	£153m	£154m	£159m	£159m	£159m	£160m	£160m	£160m	£160m	£1,314m
	Policy school meal deficit	£539m	£664m	£709m	£734m	£735m	£734m	£735m	£735m	£734m	£732m	£5,828m
	Change in school meal deficit	£380m	£511m	£555m	£575m	£576m	£575m	£575m	£575m	£574m	£572m	£4,514m
	Net cost after DfE funding	£20m	-£129m	-£95m	-£69m	-£62m	-£54m	-£44m	-£34m	-£23m	-£13m	-£429m
	Capital cost	£180m	£10m	£0m	£184m							
Net capital cost after DfE funding	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	
School wider costs	Transitional catering staff costs	£15m	£0m	£14m								
	Transitional school staff costs	£22m	£0m	£21m								
	Ongoing school staff costs	£41m	£41m	£41m	£41m	£41m	£41m	£41m	£42m	£42m	£43m	£343m
Net school costs		£98m	-£88m	-£55m	-£28m	-£21m	-£13m	-£3m	£8m	£19m	£30m	-£51m
Government finances	Revenue funding	£361m	£640m	£650m	£644m	£638m	£629m	£619m	£608m	£597m	£585m	£4,943m
	Capital funding	£180m	£10m	£0m	£184m							
	Total government cost	£541m	£650m	£650m	£644m	£638m	£629m	£619m	£608m	£597m	£585m	£5,128m
Total public sector cost		£639m	£562m	£596m	£616m	£617m	£616m	£616m	£616m	£616m	£614m	£5,076m
Narrow economic impacts	Consumer benefits	£404m	£537m	£574m	£592m	£593m	£593m	£593m	£593m	£592m	£590m	£4,676m
	Total resource costs	£415m	£334m	£356m	£368m	£368m	£367m	£367m	£367m	£366m	£365m	£3,058m
	Narrow net economic cost	£11m	-£204m	-£218m	-£224m	-£225m	-£225m	-£226m	-£226m	-£226m	-£225m	-£1,618m
Time savings	Time savings (000s hours)	14,245	25,863	27,765	28,118	28,264	28,258	28,306	28,319	28,282	28,191	
	Value of time savings (not additive)	£96m	£174m	£187m	£190m	£191m	£191m	£191m	£191m	£191m	£190m	£1,476m

Conclusion

When it announced UIFSM in September 2014, the Coalition Government's stated aim was to enable all infant pupils to have hot, nutritious meals at lunchtime, teach healthier eating habits, save parents money and improve academic attainment.¹⁰³

With childhood obesity, among other health issues, a growing problem amongst children, previous evidence indeed suggests schools can have an important role to play in educating young people about the benefits of healthy eating and keeping active. Increasing the take-up of school meals tends to improve the nutritional balance of food consumed during the school day, though school meal interventions by themselves have not been found to have substantial benefits for health in the short term. Evidence on the precise links between nutrition and cognitive outcomes is generally not conclusive, and it can be hard to separate the impacts of interventions that change the uptake of school meals from wider changes in school. However, the universal FSM pilots in England had a statistically significant impact on Key Stage 1 and especially Key Stage 2 attainment scores (Kitchen et al., 2012).

Despite the policy being announced only one year before the relevant legislation took effect, UIFSM has achieved a rapid increase in school meal take-up across the majority of schools. Most parents are satisfied with the quality of school meals provided. Schools and caterers have incurred significant costs and made many revisions to catering methods in order to deliver this, and many believe the quality of provision has increased alongside UIFSM being introduced. There appears to be scope for schools to learn from others' experience, as many have found solutions to challenges that others have struggled with. Schools with better Ofsted inspection outcomes have tended to have higher rates of take-up, and the Government's initial fears for the ability of small schools in particular to deliver higher levels of take-up have not been reflected in the rates reported by schools.

Parents have cited significant financial benefits as a result of UIFSM and have appreciated the time that has been saved from not having to make packed lunches. Some, though generally less than half, of the school and parent/carer respondents to surveys have perceived positive impacts in the short term on educational, social and health outcomes, but such effects have not been tested for statistically in this study. UIFSM has not on its own caused most schools to change their wider food policies, but it has often supported, or been a catalyst for, wider efforts to improve the profile of healthy eating in a school, better engage parents and pupils, and develop the school food curriculum. Further research may be required to establish whether similar impacts on education are likely to have occurred as were found in the FSM pilots, and whether the perceived benefits for dietary habits, dining etiquette and social skills noted by many respondents have had longer-term impacts.

In a central modelling scenario, the estimated economic resource costs of the policy are smaller than the value of perceived financial and time savings for families, making UIFSM a potentially cost-effective educational intervention on these terms. This is dependent on seeing the impacts for attainment observed in the FSM pilots replicated, on achieving economies of scale in production, and on maintaining quality in school food provision. School leaders and caterers should reflect on

¹⁰³ <https://www.gov.uk/government/news/free-school-lunch-for-every-child-in-infant-school>

the lessons from this study, and the examples of alternative delivery approaches from case studies, to make sure this happens. However, under any scenario the public financial costs are substantial, and on these terms the policy's efficacy would rest on policymakers attaching a high value on improving the living standards of households with infants who were not already eligible for FSM, and on generating wider social and health benefits.

So far, whilst a small proportion of schools have reported an increase in school food deficits, on average the funding provided by the Department for Education to deliver UIFSM appears to have been adequate. However, on assumptions informed by the fieldwork carried out for this study, the current funding rates applied are likely to become insufficient. If this projection transpires, and if funding rates are not altered, the net costs to schools – and the existing impacts on wider curriculum delivery and school staff time – will be increased.

The initial implementation of UIFSM appears to have influenced Pupil Premium eligibility for infants, which may affect the same children in later years, so the Department for Education should monitor the implications for school funding, and for accountability with respect to the performance of disadvantaged pupils. It should carefully consider ways to make it easier for parents to be registered for the pupil premium under Universal Credit.

Annex A: Case studies of school meal delivery

Case Study 1

This small urban school is part of a Multi-Academy Trust, offering Early Years and Year 1 provision only. A low proportion of young people attending the school are eligible for FSM. The catering provision is provided by an external catering company. The school is currently waiting for a new site, and so all provision is within temporary accommodation.

The current lack of facilities on-site means that all meals are delivered ready prepared by the caterer, and the school uses a hot plate to keep food warm. The menus are on a three-week rotation, and parents order their lunches online for each half-term. The external caterer is responsible for meeting the Food Standards but the school remains in dialogue with them about the menu design and ensuring a broad variety of foods. The caterer offers family tasting events, and also provides packed lunches for sports days and trips.

School policies

The school does not currently have a packed lunch or healthy eating policy, but is working towards a Bronze Healthy School Award. Part of this will be to obtain a certificate for school hygiene. Healthy eating is covered in school assemblies and in the personal, social, health and economic (PSHE) curriculum. The theme of 'healthy eating week' includes staff members encouraging each child to try to eat something new: *'we are growing our own veg – potatoes, carrots, cucumber, herbs. Children are involved, handling veg'*. (Early Years Lead/SENCO)

Lunch service

The ethos of the MAT is to deliver 'family style' lunches. Lunch is served at round tables (eight per table). Each table is set with metal cutlery, serviettes, water jugs, glasses and name places that include the child's name and their picture. Name places are rotated regularly, and one member of staff sits on each table so that they can ensure children are encouraged to eat, and contents of packed lunches are monitored. Where learners do take packed lunches, this tends to be due to medical conditions or being fussy eaters.

'Teachers enjoy that time of being with the children and not being the teacher. There is not a conveyor belt lunchtime service, which means it is a positive time... Children love that there is an adult at the table and they can talk about things – and it is important from a safeguarding point of view'. (Headteacher)

During lunch service, staff clear tables and sweep the floor before the next sitting arrives in the hall. There are currently three midday supervisors, with two more being employed from September 2017 so as to relieve teachers from lunch cover duty.

The food choices on the day of the visit were turkey with vegetables, jacket potatoes, yoghurts, fruit and a dessert of a chocolate chip cookie. The food is served to the children at the tables (either before they arrive, or whilst they are seated): this means there are no queues, each school year enters the hall together for a sitting.

The lunchtime supervisor said that they will encourage the children to try new food and to *'teach them about food. Sometimes they don't know what it is'*, so she will try a little piece and then they will follow her lead. *'It needs to be relaxing first and you need to enjoy the moment – I try to do that with the children'*.

The children pour their own water from the jugs.

'There was a lot of spillage to start with but not now. It is a life skill. In the beginning they don't know how to sit at the table, how not to talk with their mouth full, or how to use a knife and fork'. (Early Years Lead)

Challenge

The biggest challenge the headteacher currently perceives is the lack of space to deliver lunches to more learners as the school grows. They feel that UIFSM has had a positive impact on learning and behaviour, and has 'created equality' among learners.

The Early Years Lead also mentioned the logistics of food being delivered ready-prepared. If there are traffic issues or an item is not placed on the van for delivery, 'the resolution is tricky'. Once the school has a permanent site with a kitchen, these issues should be overcome.

Impact of UIFSM

There is a high take-up of school lunches (over 90%). However, the Early Years Lead feels that UIFSM policy on its own did not make an impact – *'it is how the policy is implemented in school that makes the difference'*. It is important, they suggest, that staff sit with the children, monitor what is being eaten and encourage positive relationships around the table.

'UIFSM has worked well for us – as a small school with small budgets, anything helps. We only have positive feedback about the meals – children let you know what they like and what they don't like...For some children [a free meal] is vital. There's a few children that maybe don't get breakfast or a hot meal [at home]...they have chaotic lives'. (Headteacher)

The Early Years Lead agrees that UIFSM had an impact on the attainment of children on the safeguarding register, and those who arrive at school without having had breakfast (who may not be eligible for FSM).

Case Study 2

This medium-sized academy is situated in an urban area. It has an average proportion of learners eligible for FSM. The school provides its catering internally, and made the decision to do so following the introduction of UIFSM.

Developing an ethos around healthy eating

This school used the introduction of UIFSM as an opportunity to drive wider changes in the way that healthy lifestyles and making positive food choices were embedded into the school day.

'We had to think about what our vision was for what we wanted lunchtime in school to be. It had to be part of the whole school ethos. A quality provision for the children. This was easier to do with our own kitchen'. (Head/Business Manager)

Consequently, healthy eating is talked about more in class, and there are vegetable gardens for children to grow their own herbs and vegetables.

Lunch service

The menu at this school is on a three-week rotation and parents order each choice online a full term in advance. A tasting session is held with all students prior to new items being added to the menu – recently this included homemade pesto and homemade chocolate beetroot cake.

‘The ‘Family Dining’ system was introduced after I had visited another school operating this way. All children sit throughout the meal with no moving around. Dinner time is much calmer. Children have longer to eat as there is no need to queue. There are less problems because children don’t have to move around carrying hot food on trays. The dinner ladies are not needed to serve food from a hatch, so are freed up to interact with the children. Good manners are reinforced and children are gently encouraged to try something new/finish their meals’. (School Chef)

The whole school eats in one sitting. During lunch, the children sit at long tables (12 tables seating 18 children each) with staff members at the ends of the tables. Parents reported in a focus group that they liked these aspects of provision: the family setting, staff presence, with packed lunches and school dinners integrated.

‘My son has a good appetite and is not fussy, but is prepared to try more at school than at home because of the school environment and others are trying it’. (Parent)

Food is placed in the middle of each table on serving trays and the children serve themselves from this. The vegetarian meals and learners opting for baked potatoes are sat on separate tables to make serving easier. Places for packed lunches are identified by yellow circles on the table, integrated among the school dinner eaters of their year group. Blue circles are used to identify children who may need greater help with their food. One midday supervisor is assigned to two tables each.

‘Because we use the ‘family service’ system, the dinner ladies have time to give help with portion size. The dinner ladies pour drinks – either milk or water – and hand out bread once the children have started to eat. They wait until children have begun to eat, otherwise some children – especially those in reception – would only eat the bread as it’s a safe option’. (Lead Midday Supervisor)

On the day of the visit, there was a main option of salmon nuggets, a vegetarian option of fajitas, salad, fresh bread baked on-site at the school, baked beans and chips that were oven-roasted rather than fried.

As there are 200 learners in the hall at the same time it can become a little noisy. However, if it does, all of the people in the room (children and staff) will raise their hands and wiggle their fingers. The noise reduces following this.

‘Dinner ladies walk around children at their tables and encourage table manners and good behaviour. Once a child has finished their first course, the dinner lady assigned to their table removes their plate and serves the child with pudding from one of two serving stations in the hall. Pudding is fresh fruit (e.g. fruit kebabs, fruit platter and yoghurts) three days a week and hot pudding two days a week. We serve pudding to the kids where they sit so that they don’t move around in the hall during lunch’. (Lead Midday Supervisor/Teaching Assistant)

Impact of UIFSM

The Lead Midday Supervisor (also a teaching assistant) felt that there had been several changes as a result of UIFSM. These included:

- An improvement to lunch service and to behaviour at lunchtimes
- Children eating healthier lunches and being more willing to try new foods
- More appetising food being served, and less wastage
- The children having more energy and having better concentration levels in the afternoon

The Head and Business Manager suggested:

- Increase in fruit and vegetables consumed
- Linking the healthy eating experience to the curriculum – being encouraged to do this as a result of bringing UIFSM provision internal
- Concentration levels have increased in the afternoon

The teaching staff noted:

- Approaching food in the curriculum in a different way – ‘foods used to be grouped according to their carbohydrate, protein and fat contents, now we may talk about a food as being more generally healthy’
- Children happier to try more new foods
- Less wastage in the food hall, although this was related more to the caterer (better quality and more portion control)

‘Staff are able to do more interventions in the afternoon as the children are now more able to concentrate. They didn’t do intervention work in the afternoon before UIFSM because of poor concentration’. (Lead Midday Supervisor/Teaching Assistant)

All staff interviewed felt that a combination of factors and approaches mean that health, behaviour, educational and social improvements were being made across the school.

UIFSM has a big impact, as does fruit at break and milk and water in the class daily. It all improves the healthy eating profile across the school. These things are the early building blocks they will take with them to make healthy choices in the future. (Teacher focus group)

Case Study 3

This large rural school is part of a Multi-Academy Trust. It has a low proportion of learners eligible for FSM. It has a two-year contract with external catering providers, and due to a lack of space the kitchen facilities are in an outbuilding.

Take-up

Before UIFSM, take-up of hot meals in Key Stage 1 at this school was 59%. Since UIFSM was introduced take-up has increased to 84%, although take-up in meals for Key Stage 2 is about the same as pre-UIFSM.

Lunch provision

The kitchen outbuilding includes regen ovens, a fridge, freezer and a sink. Tinned and boxed food is also in outside storage. Parents order meals online in advance and can do so until 9am on the day of service, with menus on a three-week cycle.

Sittings for lunch are staggered, with lunchtime extended by 15 minutes to ensure all lunches can be delivered: the number of sittings has increased from two to four. There are approximately fifty learners in the main dining hall at each sitting.

Children with a packed lunch are seated in three separate classrooms due to a lack of space in the main dining hall. The school employs 12 midday supervisors, and the external caterer provides four. Their duties are split – those employed by the caterer are responsible for serving, clearing and managing waste. The school staff oversee behaviour management, queuing, cleaning tables and helping the children. They give out rewards stickers if a learner eats all of their lunch several days in a row.

However, teachers felt that the move from mainly packed lunches to an increased hot meal take-up had made monitoring waste more difficult. They also suspected that due to the time taken to queue for food, children were eating less than they were previously on packed lunches: 'they don't eat their lunches because they want to go out and play' (teaching staff).

The school Business Manager noted a large amount of waste depending on the menu.

'Roast, fish fingers, pizza and sausages are popular days. Vegetables from these days are thrown away. Casseroles, stir fries etc are not popular and a lot is thrown away. The kids choose not to eat from the salad bar'. (Business Manager)

Teachers felt that behaviour can be poor at mealtimes, across all year groups. There was a sense that table manners were not taught at home and that some families did not share meals together, which then affects the way that the learners behave at mealtimes in school. The learners attending focus group discussions also reported throwing away food that they did not like – particularly the vegetables that were served. Some would ask the serving staff not to add the vegetables to their tray when they did not want to eat them. Several reported that where they had been served a school lunch they did not have a hot meal in the evening at home but instead had sandwiches or toast for tea.

Impact of UIFSM

The chef hadn't noticed changes in food preferences among young people since the introduction of UIFSM, and felt that wastage had remained the same.

The Business Manager and teaching staff reported:

- An adverse impact on Pupil Premium payments. Applications have dropped by half since UIFSM.
- The use of classrooms for packed lunches having an impact on time as it creates additional classroom set up/cleaning before the afternoon's lessons can take place.
- The above also affects teacher preparation time, as they are unable to use their classrooms during lunch.

- Extending lunch service by fifteen minutes has shortened learning time, and so the lunchtime service will be reduced again in September.
- Cost of replacing cutlery (children can throw it in the waste when they clear their trays)

'I am an advocate for offering a hot school meal, but UIFSM has been a headache for here in terms of organisation and logistics'. (Business Manager)

The school chef is not involved with curriculum delivery and has little engagement with parents or the young people in the school. Teaching staff cover diet and food groups across the PSHE curriculum, with learners tasked with planning a healthy meal – although this was embedded prior to UIFSM.

The Special Education Needs Coordinator in the school felt that the positive impact of UIFSM was the ability to observe the behaviour and skills of the children at mealtimes. For example, a child with additional needs can be observed to see how they interact with other children, their skills at feeding themselves and use of cutlery.

Case Study 4

This large urban academy has a high proportion of learners eligible for FSM. The school is in the 2% most deprived areas nationally and many children were arriving at school without breakfast. It has a contract with the Local Authority catering service.

The Local Authority caterers for this school are responsible for meeting Food Standards, although there is some flexibility in the menu should the school have specific needs to cater for. The take-up of UIFSM is just over 90%. The school provides toast and a drink every morning to all learners, and delivers healthy eating and cookery lessons through the curriculum. There are rules around the contents of packed lunches – no fizzy drinks, chocolates or sweets.

A community café has been created on-site and is open for half a week to the community, with lessons on culture also taught to learners in this space. For its charitable work in this space, the school has partnered with large corporations to create community link projects.

Implementation of UIFSM

As there were kitchens in situ prior to UIFSM, there has been little change in facilities at this school, although additional light equipment has been required. There has been an increase in take-up of school lunches since the policy was implemented (from 100 meals per day to 400 meals per day). This has led to a rise in staff numbers, from three to 10 caterers. The key challenge for the school has been in making sure that parents understand that UIFSM is available to everybody and as a result there is no stigma attached to children taking it up.

There are taster sessions run for new intake parents, with menus made available on the school website. The children choose their meal each day, with a band system in place to represent the choice they have made.

Lunch service

There is a staggered service, running between 11.30 and 13.15, with two serving stations available in order to move children through the queue more quickly.

'For reception children we have special arrangements – they go to dinner first at 11.30am and initially their food and plates are put on table for them but later [in the school year] they are encouraged to carry their own plate. There is more staffing for reception, they have 45 minutes until years 1 and 2 come in. Year 6 are in last'. (School food and wellbeing advisor)

The school offers a variety of main meal choices, plus a selection of vegetables, baked potatoes, sandwiches, a salad bar and desserts. They cater for different allergies, plus vegetarian and halal options. Midday supervisors and teaching assistants help in the dining room, with catering staff in the servery.

The children eating packed lunches sit at the same tables as those eating school meals. Currently, the children sit at long tables, although in future the school would like to move to smaller, round tables to improve the lunch experience. The whole meal is served at once on a coloured plastic tray with compartments, so some children eat their pudding first.

When children do not want to eat the food on their trays, some throw it on the floors under the tables. When parents have visited the schools, staff have noted that parents do this too with food they do not want to eat.

Impact

There is a sense among staff that behaviour in the afternoons has improved as a result of UIFSM. There has also been a benefit to younger learners in developing social skills and the ability to use cutlery effectively.

Due to the socio-economic profile of the school population, many of the learners do not have access to a wide range or amount of food at home – they would arrive at school hungry. Teaching staff reported that UIFSM *'has made children eat more...the children don't seem as skinny as they used to be'*.

Case Study 5

This large urban academy has a high proportion of learners eligible for FSM. It has a three-year contract with external caterers.

Take-up of school meals at this school has increased over the last twelve months, from 150 to 250 meals per day. Not all families take-up UIFSM, due to 'fussy eaters', or where learners require halal food that is not provided by the caterers. The school tries to encourage take up via the newsletter and holding promotional events to encourage parents and learners to try the food. There is no packed lunch policy, although there is guidance circulated to parents and this suggest no sweets, chocolate or fizzy drinks in packed lunches.

School meals are ordered online, although this is difficult for some families as not all have access to the internet at home. The menu changes three times per year. Teaching staff include healthy eating and lifestyle as part of the science and the PE curriculums.

Lunch provision

The caterers prepare the food freshly in-house within the school's kitchen, and the school employs additional midday supervisors. Teaching staff in this school are not involved in lunchtime provision.

The space used for the dining area is multipurpose, so all furniture is packed away after each lunch setting. There are two sittings during lunchtime, with a lot of the children enjoying being in the second sitting as there are 'seconds' of food available at this point in service. Children eating packed lunches sit at separate tables. Some pupils with special needs eat in a separate, quieter room – *'it would be too much for them in the hall'*. The caterer takes a lunch trolley through to this group. Some may not enjoy the menu and so the caterer will make food separately for these learners.

'Initially with UIFSM more children had dinners so it took too long to deliver all the extra dinners. Now it's quicker, Reception go in ten minutes earlier and we have staggered lunches'. (KS1 Lead)

There are four choices of school meal per day (hot meal, vegetarian option, baked potatoes and sandwiches plus fruit pots, yoghurt and salad are available every day). The midday supervisor felt that there was less food waste at lunchtime since the introduction of UIFSM, although there will be more waste at the times when a new menu is introduced and the food is new to the children.

The supervisors encourage learners to try new food and eat their vegetables: *'we try to make eating fun'* (Midday supervisor). Stickers are distributed to learners who eat their vegetables.

'We try... pirate days, American days, superhero days – to get them to try different foods. We made swords out of carrots and cucumber, so then they will ask for a sword'. (Kitchen manager)

The Headteacher would change various aspects of current lunch arrangements, if there was the time and resources available. For example, they would change to set tables with plates and cutlery so that learners were able to develop social skills. They would also like to source vertical tray holders of the right size, so that learners do not have to scrape waste food from their trays in the hall.

'It isn't just about the quality of the food, it is also about the experience and the emotional impact on children'. (Headteacher)

Impact

The KS1 Lead and the midday supervisors felt that learners were eating a more healthy and varied diet at lunchtime since the introduction of UIFSM. They also reported that the school focuses more on the message of 'healthy eating' too.

Some children 'are hungry in the morning as they haven't had breakfast', and they said that UIFSM ensured that learners receive one 'healthy balanced meal' each day.

Case Study 6

This large urban local authority maintained school has a very low proportion of learners eligible for FSM. It previously held a contract with local authority caterers, but has moved lunch provision in-house and gradually developed a full production kitchen prior to UIFSM.

Converting to internal provision

This school drew on the expertise of a consultant during its conversion to internal provision, to ensure full and appropriate consideration of:

- Environmental health issues
- Food plans (and continues to develop menus)

- Balanced nutrition
- Allergen testing

In addition, members of the Governing Body visited two other schools in the local area in order to get advice and see different ways of running kitchens. Numbers served at lunchtime have now doubled since the implementation of UIFSM and take-up is around 87%.

Parents order meals online in advance, with menus on a three-week cycle. A banded system is applied in the dining hall to make it clear what each child is to be served. The kitchen source all food from local suppliers, including local butchers and farms, and then meals are cooked fresh at school.

Curriculum

Food is covered in the curriculum through different themes such as superheroes (healthy foods to make you strong), and being tasked with bringing pictures from home of healthy food or lifestyle choices such as physical activity.

'We talk more about food groups and choices and what is good and not'. (Teaching Assistant)

There is also a 'SNAG group' in school, where children from each year group, the Headteacher and consultant meet to input into new menu development, ask for their ideas and explain how meals need to fit within nutritional guidelines. Parents are engaged through taster sessions and parents evenings, particularly for new intake.

Lunch service

This was described by the Headteacher as a 'military operation' with staggered lunches and the Year 6 classes coming in for lunch last. There is one hall, although reception classes now eat their lunches in a separate classroom as the main hall was very noisy for them. Younger learners also have the same, dedicated midday supervisor that they get used to, and the smaller room enables more one-to-one attention. The staggered sittings have reduced queue times in the main hall.

'It is like army manoeuvres to get 400 children served – we work precisely to time to do it, we have made it work – we serve the most meals of any school in this authority, we have had the biggest increase'. (Headteacher)

There is a range of meal options available: main meal, vegetarian option, pasta, jacket potato and sandwich options (with the choice of brown or white bread). Water jugs are on the tables. Infant classes use trays, whilst older learners use plates.

There are six kitchen staff, who also serve the dinners at lunchtime. The Head Cook has found the staggered sittings easier to manage.

Children are encouraged to try new foods, and stickers and rewards are handed out by midday supervisors for eating vegetables.

'We try to promote healthy eating, encourage them to have some form of vegetable; even if they put one carrot on their plate'. (Head Cook)

Impact

Staff have found that the older learners work harder in the mornings, and are also better prepared for a later lunch at secondary school, as a result of being in the hall later at lunchtime. There are also less children in the playground at any one time, which makes supervision a little easier.

The Headteacher noted that there have been positive impacts of UIFSM in terms of concentration levels in the afternoons.

'They are well fed and watered, ready for learning and this is sustained in afternoon – more ready for learning, don't tail off at lunch time as run out of energy'. (Headteacher)

Midday supervisors reported improvements in hand-eye coordination and the ability of young learners to use cutlery properly.

The Chair of Governors at this school was particularly engaged and ensures updates are provided at full Governing Body meetings in terms of food quality and perceptions of school meals across parents and learners. They also felt that UIFSM had a positive social effect in terms of reducing the stigma around FSM.

Case Study 7

This large urban academy has a high proportion of learners eligible for FSM. It has an external catering provider that leases the kitchen, and the caterer has been in place for the last three years. The caterer is a not-for-profit organisation.

Since the implementation of UIFSM the school has introduced an electronic ordering system that children use to make their meal choice every morning. The system then displays to serving staff a picture of the child that is colour-coded, to represent their meal choice. Parents are also able to log in to the system to see what their child chose to eat each day.

To encourage take-up there are themed days, newsletters and taster sessions for parents.

Relationship with external caterer

The Vice Principal reports having a good relationship with the caterer, particularly because there are various feedback mechanisms throughout the year (such as visits by the caterer and parents induction events). The caterer is also involved with curriculum events such as science week, where they run workshops with learners about nutrition and allergies.

There are various initiatives in the school to encourage a focus on healthy choices, including Year 6 running a healthy snack bar, packed lunch policy, children bringing in water bottles. They plan in future to run food classes for parents.

'A free meal encourages some children to eat healthier, but it's not the driver of how people think about food. We need events and workshops on top of this'. (Vice Principal)

Lunch service

The main challenges for lunch service are the limited space available compared to the number of children that need to be fed. Lunch sittings are staggered as there is only one hall for dining.

Learners sit at long tables, with eight midday supervisors in the hall. Some of the teaching assistants are also midday supervisors.

'We help cut food up and offer general help; reception teachers go down and help too'. (Teaching assistant)

Children eating packed lunches sit at separate tables. There are two serving stations, offering three meal choices (meat, fish and vegetarian) and unlimited salad. Most of the menu options are gluten free and the kitchen is a nut-free environment. There are variable amounts of waste although most children appear to enjoy their food. Reward stickers are distributed to children who finish their lunches. The children are told to ask permission before they move onto their dessert, and also before they can leave the table and go out to play.

Impacts

The Vice Principal stated that it is now more difficult to encourage parents to sign up for Pupil Premium 'as the children get a free meal anyway'.

'UIFSM is good for healthy food, some children might not get a good dinner at home, whilst young you can also get them to try different things too'. (Teaching assistant/parent)

Case Study 8

This medium-sized local authority maintained rural school has a very low proportion of learners in the school that are eligible for FSM. Some vulnerable learners are given breakfast by the school. It has a long-term catering agreement with the local authority, which existed prior to the implementation of UIFSM.

Catering provision

There is a kitchen on-site, with all food prepared from scratch (although potatoes are bought in ready-peeled). The biggest investment made in preparation from UIFSM was the purchase of an extra table in the dining hall. The caterer owns the kitchen equipment and is responsible for equipment repair and replacement issues.

The school's Business Manager does not think that provision overall has changed much since the introduction of UIFSM, and take-up has increased only slightly. The current level of take-up is 85%. The caterer noted that there had been a 'huge increase in food costs' and that this had been transferred to the cost of meals charged (up from £2 to £2.15 per meal).

The school has in place a Whole School Food and Nutrition Policy, which is reviewed every three years. This includes rules for packed lunch contents: no sweets, no chocolate, nuts or fizzy drinks.

'There was an issue on chocolate cake as this is served at school [as part of lunch menus] so we agreed to a small chocolate bar, crisps which have to be low in salt and fat, and a cake as well as sandwiches'. (Business Manager)

Parents are able to taste sample school meals during a reception class induction day. The caterers engage with the learners and speak to them about their ideas for lunch menus. The School Council will feed back to the caterer during these visits any views of learners that can be used to inform

menu development. The Business Manager reported a positive relationship between the school and the caterer.

'For Father's Day [the caterer] provided extra things that we pay for but at very low cost to us. They provide for events at very reasonable prices. The PTA organise sports days and [the caterer] provides cake sometimes for free...They also talk to the children about healthy eating.' (Business Manager)

Lunch service

Lunch orders are made electronically by learners every morning.

'At registration there is an online system on the white board in the classroom, the teacher gives them the information on what is on offer for lunch then the children pick a lunch that identifies a colour for that lunch. The print out of food options goes to parents and there is one in the classroom too. Cook has the information by 10am at the latest - usually by 9.30 most days. Choices are printed off per class and the midday supervisor gives the child the correct band'. (Midday supervisor)

There are four choices of meal – a meat option, vegetarian option, jacket potato and a picnic option (this includes a sandwich, vegetable/fruit sticks, yoghurt or a cookie and fruit). A salad bar is also available for children to help themselves. The children put up their hands to say that they have finished and to ask for their dessert (served by midday supervisors). Bread is available if children are still hungry after they have eaten their meal and dessert.

There are two lunch sittings so that all children can be catered for at lunchtime. Those with packed lunches sit together with those eating school meals, all at long tables. The queuing does not appear to take too long, and noise levels are controlled by the supervisors in the hall.

Midday supervisors help the youngest learners to cut up their food and pour their water. Reception teachers are also present in the hall with the younger classes. There are stickers given out to those finishing their meals, particularly among the youngest classes.

Perceptions

Among this school community (staff and Governors) there was a sense that UIFSM was not as beneficial as it may be in other areas where levels of deprivation are higher. Despite this, there was agreement that there were positive 'social aspects' to implementing UIFSM.

'There is the pride issue - in deprived areas there would be a reluctance to admit that there was a need to take advantage of free meals. Previously parents had to prove they were on benefit and this was a stigma...a level playing field is so much better to have'. (Chair of Governors)

Case Study 9

This small rural primary school is part of a Multi-Academy Trust, with a very low proportion of learners eligible for FSM. An external caterer was appointed by the MAT and delivers lunch provision to all its schools.

Curriculum and policy

Healthy eating is part of the curriculum, with theme days such as Greek and Spanish days with a focus on food. Food and nutrition are also covered within science and PE. A Teaching Assistant

reported that children showed more interest in healthy eating generally since the introduction of UIFSM.

There are no fizzy drinks allowed as part of packed lunches; chocolate bars and crisps are allowed but these *'must be balanced with a sandwich and fruit or vegetables'* (Midday supervisor).

Meal choices are made online by parents, or parents ring the school on a daily basis. There is an electronic system that provides the caterers with a picture of the child and their lunch choice.

Lunch service

The food is prepared off-site at one of the partner schools and then delivered. Lunch is served in two sittings: Early Years, Key Stage 1 and Year 6 go into the hall first, and then Years 3 – 5 go into the hall second. The younger classes have additional support from midday supervisors in terms of cutting up their food.

'Sometimes children want seconds and there is food left. But the caterer is not allowed to give it to the children as that is their policy. However, the older children are given bigger portions'. (Midday supervisor)

Children sit at long tables, with one table at a time going to the serving area for the meal. As the learners are waiting to go up for their lunch, they have 'quiet time'. Glasses of water and knives and forks are already on the table when children come in for lunch. There are four options: meat, vegetarian, jacket potato and salad. Fruit and yoghurt are available every day, plus an additional dessert three times per week.

Children put their hands up at the end of the meal to ask if they can leave the dining room. If a child does not eat much, teachers are informed and parents will be contacted. Learners with packed lunches also eat in the hall, unless the weather is good and then they are given permission to eat as a picnic outside: *'reception class all sit together – everyone else sits where they like'* (Midday supervisor).

There are four midday supervisors. Stickers are distributed to learners if they have eaten well, and midday supervisors also verbally praise the children.

Impact

The Headteacher feels that as a result of appointing the new caterers, the quality of the food has improved. They reported a 'big jump in hot dinners' as a result of UIFSM, with approximately half of the school taking a hot meal with little 'drop off' at the start of Key Stage 2. They also said that it has become more difficult to get parents to complete the necessary Pupil Premium forms since the introduction of UIFSM.

The Headteacher felt that there has been an improvement in social skills among learners since the introduction of UIFSM, particularly around the proper use of cutlery and good behaviour when waiting for their meal.

A Teaching Assistant reported children not being hungry in the afternoons and *'they perform better, there is more concentration, they are less tired and better behaved'*. They felt that the lack of hunger was *'particularly noticeable'* and there was greater awareness around what a healthy meal looked like and how to talk about this with learners.

Case Study 10

This large urban academy has a high proportion of learners eligible for FSM. It provides its catering internally.

Changes in catering provision

The school moved to a new site three years before the introduction of UIFSM, and this included a new kitchen. Following the implementation of UIFSM *'the school made a big investment in more equipment'* such as crates, freezers and larger cookers.

The take-up of school meals increased from 50% to nearly 100%. Within reception class, new parents are required to opt out rather than opt in to school lunches; parents are offered tasting sessions to encourage engagement with school meal provision.

'The most critical success factor is how it is presented to new parents of children who are starting school. UIFSM is simple to administer.' (Headteacher/Business Manager)

The Headteacher and Business Manager reported that UIFSM had 'huge implications' for the school in terms of requiring additional kitchen staff and midday supervisors, a new lunchtime rota and school timetable to incorporate staggered sittings, storage facilities and greater vigilance in terms of stock control and ordering. The largest additional ongoing cost to the school was noted to be the additional cost of midday supervisors required to cover a staggered (and therefore longer) lunch service, plus the ongoing cost of kitchen maintenance.

Lunch is treated as a 'restaurant' experience with a range of choices for learners, and staff eating with children *'to provide a model for etiquette...the kitchen team are also very influential in promoting good manners and healthy eating.'* (Headteacher/Business Manager)

The school kitchen also caters at special events to engage with parents, for example paid-for food and drink was supplied during Sports Day and this raised £800, which was funding that could be channelled back into the kitchen.

Lunch service

The school has extended lunchtime and adapted the timetable to allow for a staggered service. The younger children come in first for half an hour then years 4 to 6 come in to lunch. Teachers eat their lunch with children in the school hall – one member of staff regarded it as like a *'family dinner and a nice thing'*.

'We have more involvement with kitchen since UIFSM. We ran a school wide competition to name the kitchen...and there are taster sessions for us too.' (Teacher)

Children sit at colourful foldaway tables, and use plastic cups, plates and dishes. Menus are on a three-week cycle. There is a minimum of three choices including a meat or vegetable dish, jacket potato and salad bar every day. There is also a choice of two desserts and fruit. Midday supervisors liaise with the Head Cook who tells them the day's menu. The supervisors then let the children know. Midday supervisors are aware of children who need additional help due to medical conditions, or who may need monitoring a little more – *'some may need extra food if they have Pupil Premium status'* (Midday supervisor).

'[The children] go up and choose their own food and we support them with eating, help year twos chop up food, support those that have packed lunch, talking about packed lunch and what should be in a packed lunch'. (Midday supervisor)

If children are still hungry once they have finished their meal, they can request bread or have extra fruit salad. Among lower school, stickers are given out to those who eat all of their lunch, older learners receive positive praise.

Levels of wastage are very low and it is noted that the bin for waste is 'rarely' up to one-quarter full as all staff encourage learners to eat.

Perceptions

Lunchtime is regarded as a positive aspect of school life, it is a *'good shared experience'* (Headteacher/Business Manager). Learners talk to one another over lunchtime and learn to use cutlery properly. It was also noted by the Headteacher and Business Manager that 'stamina' for the 'whole day' had improved as a result of UIFSM.

Teaching staff felt that the 'ethos' around the school in relation to healthy eating was developing as a result of UIFSM, with an improvement in social behaviours also.

'Children learn from their peers and teachers, there is respect in the dinner room, children ask to leave the dinner hall, they ask to go on to their pudding, and they don't talk with mouth full'.

(Teacher)

It was felt that levels of hunger in the classroom had decreased, also, and a result *'children work better in the afternoon'* (Teacher).

Annex B: Fieldwork methodology

A multi-method approach was taken to the fieldwork, comprising case study visits to schools, online surveys, telephone interviews and the collation of proformas from schools summarising UIFSM-related data.

Fieldwork took place between May and July 2017. Its timing therefore coincided with the 2017 general election and news reports about proposals for changes to school meal provision (the Conservative Party manifesto included the removal of UIFSM, whereas the Labour and Liberal Democrat manifestos proposed extending free meals to all primary school children). Questions were therefore incorporated into the interview topic guides to reflect this but not into the surveys as these were already live. These announcements may have had an influence on feedback received, particularly from external catering companies and schools facing what media reports of the time might have suggested to be positive or negative perceptions of the value of UIFSM.

Methodological considerations

The mixed method approach involving in-depth work with schools, and different stakeholders within and linked to schools, created a number of key challenges for the research:

- The busy nature of schools and workload commitments of staff means that participation in research is not a priority. This is further exacerbated by the lower priority policy area. As seen in other school food-related research, substantial response rates can be difficult to achieve. Whilst oversampling did alleviate this issue to some extent, considerable liaison with schools took place to boost the sample achieved.
- Due to the diversity of primary schools, there were numerous stakeholders with differing roles relating to school meals. Targeting the appropriate stakeholders for online surveys was therefore problematic. Where possible, the research team was able to discuss their roles and offer suggestions as to who would be appropriate to respond to the surveys.
- Access to online surveys was limited for some stakeholders since they do not regularly work at a computer (e.g. kitchen or catering staff). This inevitably had an impact on response rates. Where it was requested, the research team was able to provide the survey via email, telephone or paper-based modes.
- Whilst some schools were agreeable to acting as gatekeepers, providing access to parents by disseminating the survey on behalf of the research team, it was not clear how many were able to do so. Alternatives were used to access parents, such as via parent representative groups and social media. This meant, however, that parents could not be sampled in a controlled manner, whilst opening the survey to a more public domain.
- Participation in the research was voluntary and as such the sample was self-selected. This has implications for potential bias in the sample and findings where there could be a relationship between willingness to engage with the research and feelings about UIFSM policy in general.

Sampling strategy

School contacts were downloaded from Edubase. These were then filtered to exclude those which were less relevant to the research (e.g. secondary schools, middle deemed secondary, all through, middle deemed primary).

The schools sample was stratified by type of school and school size (LA maintained and academies/free schools) and size (small, medium, large – based on number of pupils as shown in Edubase). Proportions of small, medium and large schools were calculated and applied to proportions of the total number of academies/free schools and total number of maintained schools. Academies and free schools were oversampled to allow sufficient numbers for sub-group analysis.

The sample of 2800 schools was randomly selected from each sub-category to proportionally represent school type and size. The initial sample population this is based on is presented in the Table B1 below.¹⁰⁴

Table B1: School sample

School type	Small (up to 200 pupils)	Medium (201-300 pupils)	Large (over 300 pupils)	Total
Academies/ free schools	258	233	518	1008
LA maintained	458	414	920	1792

Any schools remaining with a statutory low age of 6 and above were also removed from the sample database. Schools known to the research team to have recently participated in research were discounted so as to minimise burden and risk of survey fatigue. Where school data was missing, such as number of pupils, these schools were omitted.

The sample population database was used for three purposes:

- 40 schools were drawn from the sample for survey piloting. These were selected systematically – every 10th school in the database, ensuring coverage of small, medium and large schools and type of schools.
- 40 schools were drawn from the sample to invite participation in case study visits. These were drawn to ensure coverage of a broad range of across school type (academy/free school or maintained schools), urban and rural contexts, low/average/high FSM eligibility and geographical coverage. The schools were deliberately selected to meet these requirements and ensure a mix of schools with internal and external caterers.
- Remaining schools (2536) were allocated to the school survey sample (further details are below).

Case study visits

Of the 40 schools contacted, ten case study visits were carried out to a range of primary schools across England.

The school visits involved in-depth qualitative discussions with a wide range of participants:

¹⁰⁴ Categories do not sum to totals due to rounding.

- Focus groups with pupils (Key Stage 1 and 2);
- Focus groups and interviews with parents and parent governors;
- Focus groups and interviews with teachers and support staff (Early Years, Key Stage 1 and 2);
- Interviews with a catering lead and/or head cook and/or kitchen staff;
- Focus groups and interviews with midday supervisors;
- Interviews with external catering managers; and
- Interviews with business managers, finance managers, assistant/deputy headteachers, headteachers and governors

The range of staff participating in the research was dependent on the schools' staff profile and their availability. This could vary considerably according to the school context. For example, administrative staff or business managers could take a lead on school meal provision, whereas in other schools, headteachers were more involved. In some schools, external caterers or a head cook would take a lead. Some schools involved teaching assistants in lunchtime supervision, whereas in others, midday supervisors were employed. Where possible, the research team also conducted an observation of lunch times. A structured framework, presented on a proforma to complete, was used to observe and record the way lunchtime was arranged, meal choices, contents of packed lunches, wastage, perceptions of cleanliness and noise levels, behaviour, staff participation, reward strategies and efficiencies. The research team participated in lunchtime where they were invited to do so, eating a school meal with the children. They also recorded qualitatively on the proforma any observations as to the efficiency of lunchtime, cleanliness of the dining hall, and types of food served.

Case study sample

The case study visits involved a range of schools across several regions; 2 in London, 1 in Yorkshire and Humber, 3 in the West Midlands, 2 in the East Midlands and 2 in the South East. Three of the schools were LA maintained, 1 was a free school and 6 were academies. They ranged in size: 4 small/medium schools and 6 large schools (over 300 pupils). Most catered for infants and juniors, 2 were infant schools and 1 was a school with infants but with intentions to expand. The schools were located in a range of different areas with differing local populations (with low to high proportions of ethnic minority groups) and differing proportions of pupils eligible for free school meals.

The visits to schools allowed the research team to gather feedback from a range of staff, parents and learners. A summary is provided below.

Table B2: Participant of case study visits. CGR UIFSM case studies, 2017.

Role type	Number of participants
Headteacher/deputy/vice principal	8
Bursar/business manager/finance manager	8
Teachers and teaching assistants/support staff	14
Catering managers (including external regional manager, external consultant), head cooks, cooks, kitchen staff	13
Midday supervisors	28
Specialist role (e.g. parent coordinator/liaison, food and well-being advisor)	2
Parent governors, chair of governors, governors	8
Parents	7
Reception/Key Stage 1 pupils	60
Key Stage 2 pupils	24
Total	172

Case study themes

The interviews and focus groups were open and flexible in nature, allowing in-depth exploration of:

- Investments and costs of provision
- Changes in provision and how UIFSM has been implemented
- Changes in curriculum delivery and school strategies around healthy eating
- Meeting the School Food Standards
- Promotional strategies and engagement with parents and pupils
- Monitoring pupils' meal and food choices, and wastage
- Perceived impact of the policy on schools, staff and caterers
- Perceived impact on pupils' education, eating habits, health, and social behaviours
- Challenges, sustainability and ongoing costs

Questions were tailored to participants and the ages of children. Younger children, for example, used picture cards to aid the discussions.

School surveys

The survey for school staff was designed in a single format which routed staff through relevant questions depending on their job role. Questions related to:

- For senior leaders – school strategy around UIFSM, changes made and investment to implement UIFSM, financial impact, perceived impact on take-up and effects on children's education, health and social behaviours
- For teachers – their involvement in meal times, perceived impact on different aspects of children's education, health and social behaviours, impact of the policy on specific groups
- For catering managers/leads – changes to catering services as a result of UIFSM, resources and investment made, delivery models and promotional strategies, perceived changes in children's eating habits and social behaviours

Contact details for a sample of 2536 schools were collected using Edubase and a process of website review and telephone calls to schools. Email addresses and key information (such as type of school, size of school, region, FSM eligibility) were collated, including direct email addresses for senior leaders where these were available.

A small pilot of the surveys took place with 5 schools, using a sample of 40 schools drawn from the sample list. This highlighted that:

- The questions were suitable overall – respondents provided responses to most questions and were directed through the survey correctly
- On average, the time taken to complete the survey was around 10-12 minutes which was considered suitable
- The email invite required amendment to make it more concise, with key information only to avoid over-whelming respondents

Survey dissemination

Following the pilot, the survey was made live. An email was generated through the Snap Professional webserver inviting 2536 schools to take part in the survey and provided a unique survey link for each school.

The invitation was addressed to Headteachers in the subject line and in the email content. The email requested that it was forwarded to relevant senior leaders, teachers and a lead for catering in the school. The survey was made available as a paper/printable version and was mobile compatible.

When the initial survey invitation was sent, calls to schools were initiated the following day, to check they had received the email and if it had been passed on to relevant staff.

Issues and remedial actions

Initial invitation emails in many cases had been deleted by the school and not passed on. For each school not having seen the email another was generated through the webserver.

Calls to schools confirmed that many emails were not getting through to relevant staff and were being sent manually or automatically into school junk mail/recycle bins. To remedy this, calls were made to schools to gather details for a named person to send the email to and the survey was resent (with a unique link). A small paragraph was added to the beginning of the invite asking reception to ensure the email was forwarded on to the relevant staff. Emails were personalised where possible. Four reminder emails were sent to schools over the fieldwork period.

This process worked well with second emails being sent within an hour (so that staff could look out for them). Follow-up calls were made to ensure they were received.

Boosting response rates

Email invitations were sent to all schools which had not responded at all to the invitation. Further emails were sent to those who had responded (e.g. senior leaders) to encourage response from caterers and teachers. These emails were tailored individually to reflect which members of staff had previously completed the survey and which we required response from.

Survey responses were monitored daily with telephone calls targeted to schools to boost response rates. Communications also took place with a range of organisations to request help to promote the school survey.

School survey response rates and sample breakdown

There were 462 responses to the school surveys, from 327 schools: a school response rate of 13%.

Table B3: School survey response rate by type and size of school. CGR UIFSM School survey data, 2017.

	Issued sample	Target Number	Achieved sample	Response rate
Academies/ Free schools	876	144	128	15%
LA Maintained	1660	256	199	12%
Total	2536	400	327	13%

The responses were across a range of respondent types (of which 461 provided details) – see table B4.

The majority of respondents (76%) had started work at their current school before UIFSM was introduced on 1st September 2014; 23% started on or after 1st September 2014 and the remainder were not employed by the school.

Response by key school characteristics is shown in Table B5. The schools that respondents represented were predominantly LA maintained schools (61%) with the remaining 39% being Academies/Free schools¹⁰⁵. The proportion of different types of schools responding to the survey broadly represents the national profile, although the sample over-represents academy converter schools.

¹⁰⁵ School data was taken from Edubase and matched with survey data to provide key variable information such as school size and type, region and FSM eligibility.

Table B4: What is your current job role? CGR UIFSM School survey data, 2017.¹⁰⁶

	All schools (number of respondents)	Academy/ free school (number of respondents)	LA maintained (number of respondents)
Senior leader (e.g. Executive Head, Head Teacher, Deputy/Assistant Head)	152	66	86
Business Manager/Bursar	134	47	87
Middle leader or (e.g. phase/Key Stage leader, English or maths subject lead or whole-school leadership such as SEND/inclusion)	21	9	12
Head of catering/lead in catering (e.g. Catering Manager, Catering Lead, Head Cook)	49	18	31
Catering staff (e.g. Cook)	1	-	1
Midday Meal Supervisor	1	-	1
Teacher	57	19	38
Support staff (e.g. Teaching Assistant, SENCO)	5	1	4
Administrator	37	16	21
Other (please specify) ¹⁰⁷	4	3	1
Total	461	179	282

Table B5: Type of school (all respondents). CGR UIFSM School survey data, 2017.

School type	Proportion of respondents (base: 462)	Proportion of participating schools (base: 327)	National proportion of schools ¹⁰⁸
Community School	33%	31%	44%
Academy Converter	30%	30%	15%
Voluntary Aided School	12%	13%	18%
Voluntary Controlled School	12%	12%	12%
Academy – Sponsor Led	8%	9%	6%
Foundation School	4%	5%	4%
Free School	0%*	0%*	1%

* Figure shows 0% due to rounding; Free Schools represented 0.2% of respondents and 1 school.

More than half of respondents (52%) worked in large schools of over 300 primary pupils; 25% worked in medium-sized schools of 201 to 300 primary pupils; the remaining 23% of respondents

¹⁰⁶ The survey routed out Administrators, Midday Supervisors, Catering Staff and Support Staff.

¹⁰⁷ Those stating 'other' went on to note that their job role was either Office Manager, Food for Life Co-ordinator or Finance Officer

¹⁰⁸ Source: DfE (2017), *SFR28_2017: Schools, Pupil and their Characteristics, January 2017*

were in small schools of up to 200 primary pupils. The survey responses however, over-represent large schools compared to national figures.

Table B6: Size of school (all respondents). CGR UIFSM School survey data, 2017.

School size	Proportion of respondents (base: 462)	Proportion of participating schools (base: 327)	National representation of schools ¹⁰⁹
Small (up to 200 pupils)	23%	25%	32%
Medium (201-300 pupils)	25%	24%	30%
Large (over 300 pupils)	52%	52%	38%

The large majority (85%) were working in primary schools (4 – 11 years), and FSM eligibility across participating schools was fairly evenly spread (Table B7).

Table B7: FSM quintile of participating schools. CGR UIFSM School survey data, 2017¹¹⁰

FSM quintiles ¹¹¹ (number of pupils eligible for FSM)	Proportion of respondents (base: 462)	Proportion of participating schools (base: 327)
Very High	19%	19%
High	19%	20%
Average	21%	19%
Low	20%	19%
Very Low	22%	22%

Geographically, half of respondents' (50%) schools were situated in an urban city or town setting, with a further 27% in an urban conurbation (major or minor). The remainder were spread across rural settings (for example, villages, town and fringe, and hamlets). They were spread fairly evenly across the regions, although a higher proportion of respondents were from the South East, and slightly lower proportions in the East Midlands and North East (Table B8). The sample of schools according to their geographic location reasonably represents the national profile.

¹⁰⁹ Source: DfE (2017), *SFR28_2017: Schools, Pupil and their Characteristics, January 2017*

¹¹⁰ Note that there are no comparable national figures. The per cent known to be eligible for and claiming free school meals (number of pupils known to be eligible for free school meals expressed as a percentage of number (headcount) of pupils in each age group.) is 'Under 5' – 11.3%; 5-10 years – 14.8%. Source: DfE (2017), *SFR28_2017: Schools, Pupil and their Characteristics, January 2017*

¹¹¹ A quintile is a statistical value of a data set that represents 20% of a given population, so the first quintile represents the lowest fifth of the data (1-20%); the second quintile represents the second fifth (21% - 40%) and so on.

Table B8: Region of school. CGR UIFSM School survey data, 2017.

Government office region	Proportion of respondents (base: 462)	Proportion of participating schools (base: 327)	National representation of schools ¹¹²
East Midlands	8%	9%	10%
East of England	13%	12%	12%
London	10%	9%	11%
North East	5%	5%	5%
North West	10%	10%	15%
South East	21%	18%	15%
South West	13%	14%	11%
West Midlands	11%	11%	11%
Yorkshire and the Humber	11%	10%	11%

Teachers

The 57 teachers responding to the survey were predominantly split across Reception to Year 2. Due to low response from teachers, minimal sub-group analysis is included in this study.

Table B9: What year group do you normally teach? CGR UIFSM Teacher survey data, 2017.

Year group taught	Proportion of respondents (base: 57)
Reception	30%
Year 1	35%
Year 2	30%
Year 3 - 5	5%

Caterers

The 49 catering leads responding to the survey were employed by a range of provider types (Table B10). Due to low response from caterers, minimal sub-group analysis is included in this study. Throughout the report, where the term 'caterer' is used, this refers to all types unless specified otherwise.

Table B10: Caterer sample by employer type. CGR UIFSM Caterer survey data, 2017.

Employer type	Proportion of respondents (base: 49)
Directly by the school	43%
Central local authority	22%
Private catering contractor	29%
Other ¹¹³	6%

¹¹² Source: DfE (2017), *SFR28_2017: Schools, Pupil and their Characteristics, January 2017*

¹¹³ These included schools in the process of changing to new contractors/catering partners; PFI-related arrangements, with catering delivered by facilities management companies; a combined approach using a mix of in-house and external catering; and a local village pub providing catering for a school.

Parent survey

Just less than three in every ten participating schools (98) agreed to distribute the online survey for parents. These schools forwarded an online survey link to parents that had been sent to them by the CGR Survey Manager. The link tended to be distributed via school websites, newsletters and parent email lists. PTA UK, the parent-teacher association membership organisation, also advertised the survey via social media to help boost response. A poster was also provided by CGR to schools, which contained a QR code that parents could scan using their mobile devices to access the survey (although it is not known how these were then distributed by schools). The survey was available online and was mobile compatible, for ease and speed of response. The link was publicly accessible, and so the sample of parents was not restricted to 'participating' schools. The responses to the parent survey cannot therefore be linked with those schools participating. A telephone survey was also offered to parents if this mode was preferred.

The parent survey addressed issues around take-up of school meals, reasons for having or not having school meals, changes of take-up from year 3 onwards, reason for having packed lunches and their contents, satisfaction with school lunch service and any perceived changes in eating habits, well-being, education outcomes, health and social behaviour as a result of the policy. The survey was routed to enable tailored questioning according to the age of children, their FSM entitlement and registration and their take-up of school meals.

Parent survey sample

A total of 508 responses were received to the parent survey. Of these, 99% (503) said that they had at least one child of primary age (up to and including year 6). The majority of these reported that they had children in Early Years or Key Stage 1 (411/82%).

Combined, respondents stated that they were parents to more than 1,000 school age children: 502 children of primary school age (up to and including year 6), and 500 children of secondary school age (from year 7 to year 13). Parents were asked to complete the survey with reference to one child of primary school age (rather than for a pair/group of siblings). The average age of the child being referenced was 6 years old. For a full profile of the children referenced by parents, see Table B11.

Table B11: Profile of child that parents answered survey about. CGR UIFSM Parent Survey data, 2017.

Characteristic	Response	Result
Age Base: 508	Average	6
Gender Base: 492	Male Female Prefer not to say	51% 48% 1%
SEND Base: 501	Yes No	5% ¹¹⁴ 95%
Free School Meals eligibility ¹¹⁵ Base: 503	Yes No Prefer not to say Don't know	53% 42% 1% 4%
Registered for Free School Meals / Pupil Premium Base: 265	Yes No Prefer not to say Don't know	47% ¹¹⁶ 33% 1% 19%

Telephone interviews

Seventeen qualitative interviews were carried out with suppliers, catering providers and school leaders to explore some of the mechanisms that caterers have in place to work with schools in the delivery of UIFSM, changes to their delivery model and the organisation to manage UIFSM implementation and the nature of provision.

School caterers were identified through a process of web searches, case study visits to schools and a list of members provided by the Lead Association for Catering in Education. Where direct contact details could be obtained, each was emailed with an introduction to the research and a request to take part in the interviews. Promotion of the research was also circulated to caterers via LACA, and also through the website, social media feeds and newsletter of EduCatering magazine.

Telephone interview sample

The seventeen interviews comprised:

- Eight external caterers
- Five members of school leadership teams (spread across two schools with external provision and three schools with internal provision)
- Two suppliers

¹¹⁴ This is lower than national figures. For example, January 2017 figures state that there were 25.8% of pupils with a statement or Education, Health and Care (EHC) plan in state funded primary schools. Source: DfE (2017), *SFR37 2017: Schools, Pupil and their Characteristics, January 2017*

¹¹⁵ Note that whilst families can be entitled to Free School Meals/Pupil Premium funding, they are required to register via schools for the funding to be allocated to the schools.

¹¹⁶ 47% of parents stated that they are registered for Free School Meals. These proportions are higher than national averages although this could be explained by parents misunderstanding the question.

- Two local authority caterers

Of these, the two suppliers and one caterer were LACA Partners (a scheme for caterer suppliers to promote partnership working in the sector), and six of the external caterers were LACA Members (accessing training, networking events and regular information updates from the sector). One local authority caterer and one external caterer completed the interview questions electronically.

Collection of cost proformas

A cost proforma was also designed to gather evidence on take-up figures, investments made to set-up delivery and ongoing costs. This was designed in an Excel spreadsheet which was disseminated to schools via email and to schools participating in the case study visits.

Due to the difficulties in gathering cost information from a range of sources and the limited time that school staff have, this element of the fieldwork was less successful. In total, 22 proformas were returned to the research team, all of varying completeness and detail. Analysis of proformas has not been included in the study due to the poor quality of data received.

Annex C: Statistical analysis methodology

Living Costs and Food Survey

The Living Costs and Food Survey (LCF), conducted by the ONS, is an annual survey with a sample of around 6,000 households per year, and forms part of the Integrated Household Survey. Succeeding the Expenditure and Food Survey from 2008, it is used to provide information on living costs and spending patterns for the inflation measures, national accounts and government analysis of the effect of taxes and benefits (Bulman et al., 2017). The survey collects demographic information about household members, income information, and spending using expenditure diaries for all adults and children aged 7-15 in the household.

For this study, ten years of data from the LCF and its predecessor survey (the Expenditure and Food Survey) have been pooled to assess trends in take up, including free and paid-for meals by state school pupils of different ages within households. In most cases, the analysis is carried out by financial year, grouping together quarters of different survey iterations (from 2015 the LCF moved from a calendar-year basis to financial years). Compared with other sources of data, the LCF provides a more consistent measure of school food take-up over time, as most of the relevant questions have remained constant across annual cycles. The survey is designed to be nationally representative, and its response rate is relatively high: 46% of the sample population in 2015/16, though it has been higher in previous years (Bulman et al., 2017).

A lead respondent in the household is asked whether children attending state schools in the household took school meals in the last week, whether they were paid for, how they were paid for, and how much was paid. This information is used here to derive whether state school children in surveyed households took meals in the previous week, how many they took, and whether they were provided free. School meal information is only obtained for at most 5 children in each household, so for a very small number of children (in large households) their take-up is indeterminate.

The disadvantage of using the LCF to assess take-up compared to administrative sources is that some responses will be affected by misunderstandings on the part of respondents – some may misclassify their child's school type or confuse school lunches with other food consumption. The survey only collects information about school food take-up over the previous week, so provides little relevant information from respondents sampled during school holidays, or an assessment of take-up over the whole year.

The public LCF database only provides information on children's current ages and education setting – distinguishing primary state schools from independent schools, nursery provision, state-run special schools, and state-run secondary schools. This means 7-year-olds present could either be infants or juniors. In this analysis, therefore, 'infants' are classified as 4- to 6-year-olds in state-run primary schools (including reception classes), and 'juniors' as 8- to 11-year-olds in such schools, whilst 7-year olds are not included. Being a sample designed to be representative of the whole UK population, in most years only a small proportion of it will include households with children in primary school, but in most years assessed there is take-up information for around 300 state primary school infants, and that constitutes the vast majority (at least 98% in all but one year) of all the infants identified. The table below shows the number of children of the different state school groupings for which there is information on whether school meals were taken in the previous week. It also shows, for infants and

for all of these pupils taken together, how many separate households these children are drawn from.

Figure C1: Identified state school pupils in the LCF with information on whether school meals were taken in last week and the number of households from which they are drawn

Year	Children in state schools					Households	
	Infant	Seven	Junior	Special	Secondary	Infant	All
2006-07	302	127	536	39	785	282	1103
2007-08	228	118	414	31	649	214	895
2008-09	307	129	473	53	697	280	1025
2009-10	280	115	433	56	636	259	936
2010-11	283	119	426	56	666	260	944
2011-12	338	163	492	51	706	318	1067
2012-13	327	131	419	43	657	301	972
2013-14	312	131	404	30	546	284	878
2014-15	308	118	369	51	537	284	864
2015-16	300	119	457	30	534	279	876

The households surveyed in the LCF are selected via multi-stage stratified random sampling, with clustering within the local areas that form primary sampling units (Bulman et al., 2017). The survey is weighted to account for non-response, and to ensure the weighted sample matches the national distribution for region, age and sex. The weights supplied with the household dataset are used to compute nationally-representative estimates using the ‘survey’ package for ‘R’ (Lumley, 2004).

Details of primary sampling units are not supplied with the public-use files, so standard errors are computed here as if random sampling was used, with clustering of observations into households (the latter makes little difference to the results presented here, as most households contain only one pupil of a given phase of education). As such, they represent an approximation of the true standard errors. For various headline expenditure estimates reported by the ONS using the LCF (e.g. average weekly spending on clothing and footwear), the design factor (DEFT) is reported to vary between 0.9 and 1.1, implying that the complex survey design serves to reduce sampling error (relative to a simple random sample) by around 10% for some of those estimates, and increases it by a similar amount for others (Bulman et al., 2017, Table 7.1).

For the distributional analysis in this report, households surveyed in England have been divided into quartiles of equivalised household disposable income, within each financial year of the survey. This essentially places each household (and their children) into four groups based on their income relative to the rest of England, taking into account the fact that larger households will require a greater income to sustain a given standard of living. This uses the equivalised disposable income measure supplied with the LCF database. That is calculated using the OECD’s equivalence scales, where the first adult household member is ascribed an ‘equivalence value’ of 1, subsequent adults 0.5, children over-13 0.5, and younger children 0.3. Each household’s equivalence values are summed, and disposable income is divided by this number to give each’s equivalised income (Bulman et al., 2017, pp.61-62).

National Pupil Database

Since the introduction of UIFSM, its main revenue funding for each academic year has been provided to schools according to the number of pupils in reception, year 1 or year 2 (or aged 4-6 if year groups are not recorded) that were reported to have taken a school lunch on the school census days in October and January who were not claiming FSMs at the time.¹¹⁷

The National Pupil Database has been used with the permission of the Department for Education to assess the variation in recorded take-up based on January school census information for 2015 to 2017. The extract used contains only pupils on roll at a school, and the proportion of pupils taking a meal on a given day is therefore estimated by counting dual-registered pupils only once in the denominator. This differs from the approach taken in the statistics on national take-up rates published in Department for Education statistics, and results in national proportion deviating from those statistics very slightly (by no more than a tenth of a percentage point).¹¹⁸

Compared to the LCF as a source of information on take-up, the NPD has the advantage of providing census information rather than being based on a small sample, allowing more detailed subgroup analyses. However, with funding attached to the reported levels of take-up, schools will have had a financial incentive to ensure take-up was especially high on census days (see section 2.4), creating a bigger risk of bias when extrapolating results to a full year of meal provision.

For the purposes of subgroup analysis, information on schools' type (e.g. academies or maintained schools) and rurality is based on an extract of Edubase downloaded in March 2017.¹¹⁹ Schools' latest Ofsted inspection outcome is sourced from Ofsted data referring to schools' latest inspection as of 31st March 2017.¹²⁰ Where a school's relevant data are not available for a given breakdown they are excluded from the analysis. The Isles of Scilly and City of London are excluded from the local authority and regional comparisons of take-up rates, as they have very small numbers of pupils.

¹¹⁷ <https://www.gov.uk/government/publications/universal-infant-free-school-meals-uifsm-funding-allocations-2017-to-2018/universal-infant-free-school-meals-uifsm-conditions-of-grant-2017-to-2018>. Dual-registered pupils are counted at the school in which they are observed taking a meal. For reception pupils, the greater of the average number of pupils taking a meal across the two census days and the number in January is taken. Meals are funded at a rate of £2.30 per meal, assuming the estimated number of meals taken is reflected across 190 school days of the year - providing £437 per eligible pupil.

¹¹⁸ <https://www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2017>

¹¹⁹ Edubase has been replaced by 'Get information about schools', available from <https://get-information-schools.service.gov.uk/>

¹²⁰ <https://www.gov.uk/government/statistics/maintained-schools-and-academies-inspections-and-outcomes-as-at-31-march-2017>

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