Impact on Urban Health

Investing in Children's Future: A Cost Benefit Analysis of Free School Meal Provision Expansion

Final Report

October 2022

Contents

Impact on Urban Health is a part of Guy's and Thomas's Foundation, focused on improving health in inner-city areas by understanding and changing how inequalities impact health.

This report reflects work undertaken to evidence the costs and benefits of expanding Free School Meal provision in England, which Impact on Urban Health appointed PwC to undertake. A number of other organisations and individuals also contributed to this work and Impact on Urban Health thanks them for their time and interest.

Abbreviations

Listed below are the abbreviations used in the report:

Abbreviation	Definition
BCR	Benefit-cost ratio
CAD	Coronary Artery Disease
CAGR	Compound Annual Growth Rate
CapEx	Capital expenditure
CBA	Cost-benefit analysis
CO	Child obesity
FSM	Free School Meals
GVA	Gross Value Added
ISER	Institute for Social and Economic Research
NHS	National Health Service
NPV	Net Present Value - the value, in the present, of a sum of money
NRPF	No Recourse to Public Funds
OECD	Organisation for Economic Co-operation and Development
PP	Percentage points
PRU	Pupil Referral Unit
SFR	School Food Review
SROI	Social Return on Investment
ToC	Theory of Change
UC	Universal Credit
UIFSM	Universal Infants Free School Meals
UFSM	Universal Free School Meals

Key Definitions

Core Benefits - Benefits arising from the children in receipt of FSM

Wider indirect benefits - Benefits generated over and above the core benefits, impacting the wider economy and supply chain.

Discounted - Determining the present value of a payment that is to be received in the future

Foreword

Every child should have the opportunity to be healthy, no matter where they live. This includes access to a nutritious diet, but families living in poorer areas are more likely to be flooded with unhealthy food options, and experience worse physical and mental health as a result. For many children and young people, free school meals are their main source of hot, nutritious food.

Healthy, free meals at school help enable all children to have the same opportunities to learn and thrive, no matter where they grow up. The impact has been shown to last well into adulthood, with evidence linking free school meals to improved educational attainment and a host of social, financial and health benefits.

At a time when households are facing unprecedented financial pressures, the Government has the opportunity to unlock the huge potential of school food to better support families.

Impact on Urban Health and our partners are clear that provision of free school meals is falling far short of what's needed. Current eligibility criteria means that around a third of children living in poverty in the UK do not qualify for free school meals. As a result, too many children are going without the nutritious food they need to thrive.

That's why we commissioned PwC to undertake the most ambitious analysis to date into the societal and economic benefits of increasing free school meal provision in England. Together with our partners, we believe that this ground-breaking analysis more than provides the evidence required for a transformational policy shift in school food.

Amidst serious cost of living pressures that are impacting the nation's health and wellbeing, the case for the Government to invest in our children's present and future health has never been stronger.

We're proud to work with our partners, including the School Food Review coalition, to make that case and work towards a better, more equitable school food system.

Rebecca Sunter

Programme Director, Impact on Urban Health

1. Executive summary

1.1 Why expand free school meal provision?

All children deserve the chance to grow up healthy, no matter where they live. Yet rising poverty rates mean that more families are finding it difficult to afford healthy food. In 2020/21, 2.5 million people in the United Kingdom accessed food banks, up by almost 600,000 people from the previous year.

In England alone over 1.74 million children were eligible for free school meals in 2020/21, 300,000 more than in the previous academic year. Record inflation and increasing energy prices are to push more households into poverty. Therefore, it is more important than ever that proactive steps are taken to protect children's health and wellbeing. Expanding free school meals is a powerful way to achieve this.

The COVID-19 pandemic shone a spotlight on the importance of free school meals for families who rely on school food for regular access to nutritious food. Existing evidence (UK and international) on the benefits of free school meal provision indicates that free school meals have long been contributing significant and lasting benefits to individuals and society. The research shows a positive impact on educational attainment, mental and physical health and productivity improvements over the short, medium and long-term.

However, this evidence base contains significant gaps, particularly at the UK level where research has often focused on disparate benefits from free school meals. For example, studies have focused on obesity and child nutrition or educational performance, rather than a comprehensive consideration of the costs and benefits of increasing such provision over time.

In light of this context and the constraints of the current evidence base, Impact on Urban Health commissioned PwC to undertake an assessment of the costs and benefits of expanding free school meal provision in England.

The cost benefit analysis (CBA) undertaken explores two different expansion scenarios in England over a twenty-year period (2025-2045), to inform the debate and decision making around future provision:

Expansion Scenario 1 (UC) - Free school meal provision for all state school pupils receiving Universal Credit.

Expansion Scenario 2 (UFSM) - Free school meal provision for all state school pupils i.e. Universal Free School Meals.

1.2 Topline Findings

The CBA found that both expansion scenarios presented a positive return on investment (ROI).

For each scenario the total discounted core benefit has been estimated, as follows:

Expansion scenario 1 (Universal credit)

£8.9bn = Total discounted core benefit for all pupils receiving Universal Credit from 2025-2045

Every £1 invested is estimated to generate £1.38 in the core benefits.

Expansion scenario 2 (Universal Free School Meals)

£41.3bn = Total discounted core benefit for all pupils in state-funded schools from 2025-2045

Every £1 invested is estimated to generate £1.71 in the core benefits.

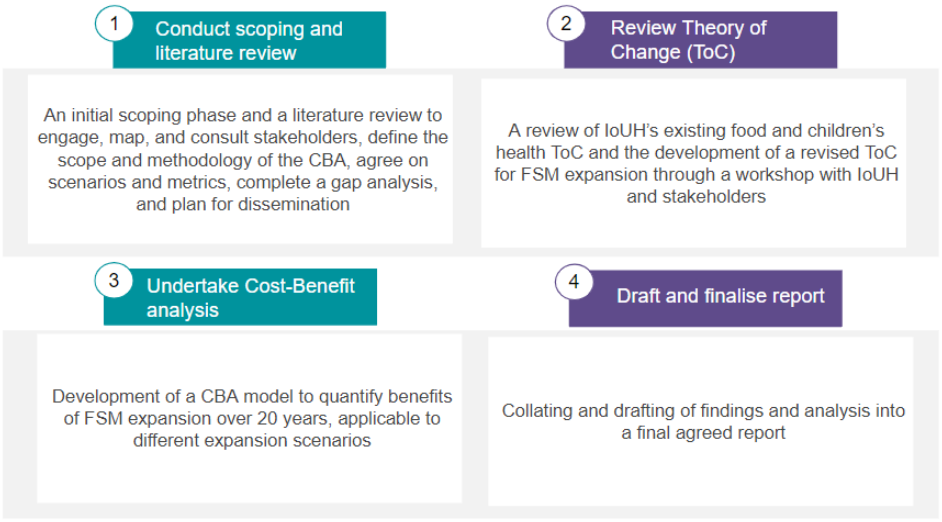
1.2.1 Points to note:

These findings are based on benefits for newly eligible children under each expansion scenario rather than the total benefits, which includes those currently in receipt of free school meals.

Core benefits are those arising directly from the children in receipt of free school meals.

Wider indirect benefits are generated over and above the core benefits, impacting the wider economy and supply chain.*

1.3 How were these results calculated



1.3.1 Stakeholder engagement

Engagement with a range of organisations across the school food sector was a critical success factor for the CBA. This included discussions with academics, NGOs and policymakers to understand the free school meal policy context, and key areas of concern relating to free school meal provision and expansion. It was a collaborative effort that provided expertise and insight into the practical challenges of free school provision and the robustness of the existing evidence base.

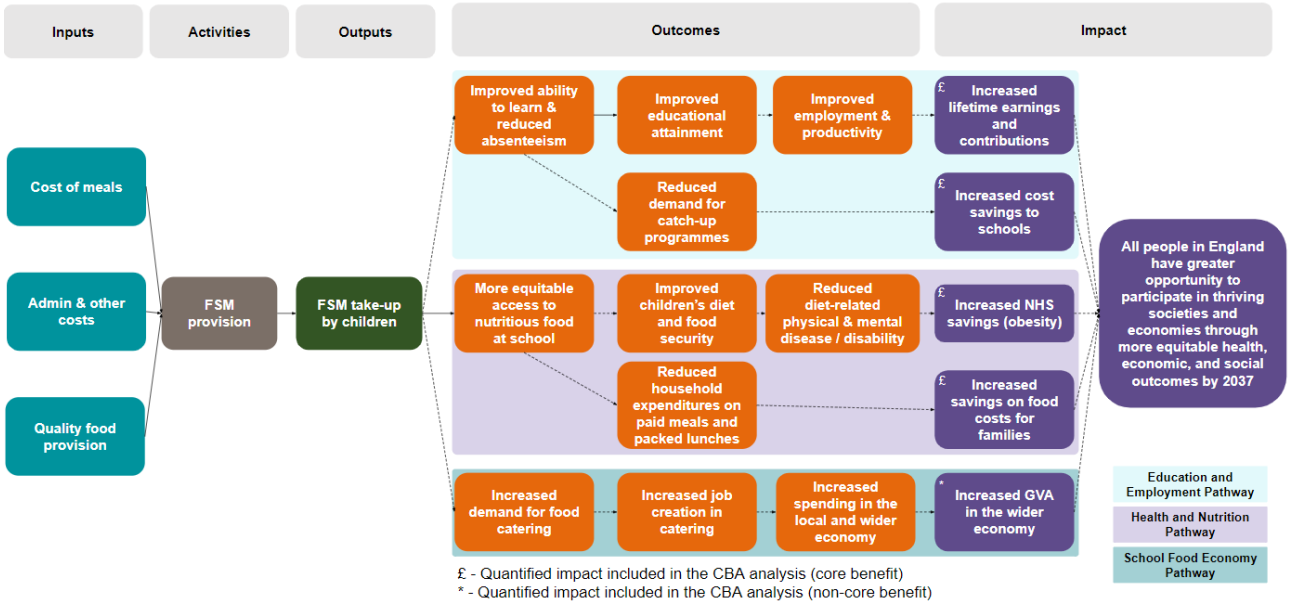
A full list of organisations involved is available at Section 5.5.

1.3.2 Developing a Theory of Change (ToC)

The first stage of the CBA focused on developing a ToC to identify the spectrum of benefits that would result from the expansion of free school meal provision. The ToC also aided in understanding the barriers and enablers of such expansion.

A broad system-level ToC was developed first (see Appendix 3), and a more streamlined version was then constructed, based on the robustness of available evidence (Figure 1).

Figure 1: Free school meals ToC (CBA version)



*The benefits are all discounted meaning they are the present value of the benefits accruing in the future.

1.3.3 Developing the CBA

The CBA was then developed through the creation of a framework to assess value for money under each of the two expansion scenarios:

Expansion Scenario 1 (UC) - Free school meal provision for all state school pupils receiving Universal Credit.

Expansion Scenario 2 (UFSM) - Free school meal provision for all children across all state funded education settings i.e. Universal Free School Meals.

The CBA was organised along three pathways (as identified from the ToC); these are the broad strategic areas of intervention that contribute to achieving the long-term change:

1	**Education & Employment pathway** *(core benefit)*	• *Increased cost savings to schools* • *Increased lifetime earnings and contributions*
2	**Health & Nutrition pathway** *(core benefit)*	• *Increased savings on food costs for families* • *Increased NHS savings due to reduced treatment of childhood obesity*
3	**School Food Economy pathway** *(wider benefit)*	• *Increased Gross Value Added in the wider economy (from local employment and spending effects)*

1.3.4 Key secondary evidence sources informing the pathways

The evidence suggests that providing free school meals results in:

Education and Employment:

- Improved ability to learn and reduced absenteeism in the short term. This is linked to reduced costs on schools (e.g., catch-up programmes).[1]
- Improved educational attainment in the medium term, leading to improved productivity and employment in the medium-to-longer term.[2] The evidence also suggests a link between improved productivity and employment, contributing to improved lifetime earnings and wider contributions in the longer term.[3] [4]

Health and Nutrition:

At school

- Improved nutritional balance of food consumed during the school day. Children taking a packed lunch to school were found to consume a lower-quality diet over the whole day, including higher levels of sugar and sodium and fewer vegetables.[5]

[1] https://www.centreforsocialjustice.org.uk/wp-content/uploads/2021/06/Cant_Catch_Up_FULL-REPORT.pdf

[2] https://www.iser.essex.ac.uk/2020/12/02/final-report-published-on-the-impact-of-universal-infant-free-school-meals-policy

[3] https://www.econstor.eu/bitstream/10419/177038/1/dp11234.pdf

[4] https://bmjopen.bmj.com/content/7/4/e013840

[5] https://eprints.leedsbeckett.ac.uk/id/eprint/3308/1/impact-of-school-lunch-type-on-nutritional-quality-of-english-children-s-diets.pdf

- Improved eating habits at school and during childhood, helping to improve children's health and reduce incidence of childhood obesity.[6] This is as a result of a more standardised and equitable approach to school nutrition, with increased involvement of schools in educating around healthy eating habits.

At home

- Lower costs for food provision and reduced financial pressures for households living on lower incomes, increasing their ability to purchase more nutritious food at home.[7]
- Improved overall household food security in the medium term, contributing to improved dietary choices and habits into adulthood.[8]

At population level

- Decreased incidence of adult obesity and reduction in diet-related disease and disability at the population level, saving costs for the NHS over the long term.[9]

School Food Economy

- The evidence links increased demand for school catering to the expansion of employment opportunities and increased spending in the school food economy (catering/provision):
- If the catering supply chain expands its operations to meet increased demand, evidence suggests that this can help strengthen local and wider economies around school food provision, such as via local procurement of food and catering supplies.[10]

A detailed breakdown of the costs and benefits can be found in the main report, along with a review of further qualitative benefits associated with free school meal provision across the three pathways.

1.4 Key findings in detail

1.4.1 Expansion scenario 1: Universal Credit

Total core benefit: **£8.9bn**

Benefit-cost ratio (2025-2045): **1.38**

Every £1 invested in this scenario is estimated to generate £1.38 in the core benefits.

[6] https://foodandnutritionresearch.net/index.php/fnr/article/view/7702

[7] https://commonslibrary.parliament.uk/research-briefings/sn04195/

[8] https://www.iser.essex.ac.uk/2020/12/02/final-report-published-on-the-impact-of-universal-infant-free-school-meals-policy

[9] https://pubmed.ncbi.nlm.nih.gov/26696565/

[10] https://www.rockefellerfoundation.org/wp-content/uploads/2021/11/True-Cost-of-Food-School-Meals-Case-Study-Full-Report-Final.pdf

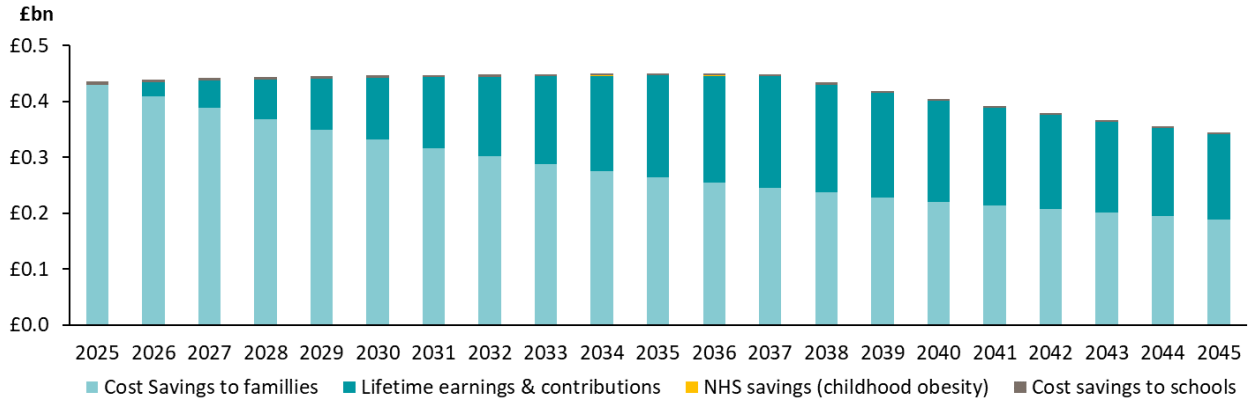
The breakdown of the total discounted core benefit for the Universal Credit scenario between 2025-2045 is estimated to be:

- Increased cost savings to schools**: £81m** *(0.92%)*
- Increased lifetime earnings and contributions**: £2.9bn** *(32.55%)*
- Increased NHS savings (childhood obesity)**: £3m*** *(0.03%)*
- Increased savings on food costs for families**: £5.9bn** *(66.50%)*

*The NHS cost savings are accounting only for the reduction in the cost of treating childhood obesity. The £3m cost saving does not include the potential reduction in costs that children in receipt of FSM may bring to the NHS as they grow older. Further details on the methodology for the Cost Benefit Analysis can be found in the full report.

Education & Employment Pathway *(2025-2045)*	**Health & Nutrition Pathway** *(2025-2045)*
£3.0bn *(33.46%)*	**£5.9bn** *(66.54%)*

Figure 2: Universal Credit scenario core benefit profile (2025-2045)**



**The decline in annual benefits is due to the forecasted fall in the schooling population over the 20-year time period rather than changes or reductions to the amount of benefits accrued per pupil over time.

Figure 3: Universal Credit scenario total cost vs total core benefit by school type (2025-2045)

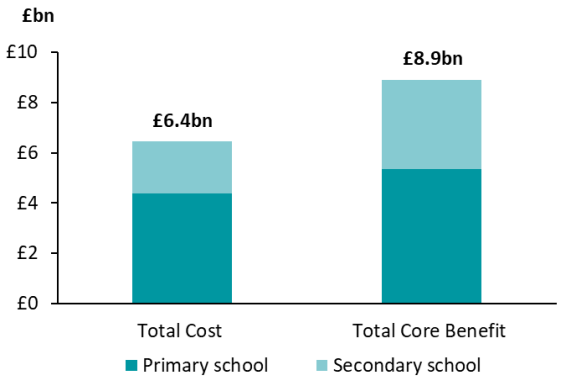


Figure 3 highlights the total discounted cost and benefit by eligible school type (i.e., excluding nursery provision).

Wider benefit: The estimated total discounted benefit of increasing Gross Value Added in the wider economy for free school meal expansion between 2025 and 2045 in England is an additional **£16.2bn on top of core benefits.**

Total combined core and wider benefit: £25.1bn

1.4.2 Expansion scenario 2: Universal free school meals

Total core benefit: **£41.3bn**

Benefit-cost ratio (2025-2045) **1.71**

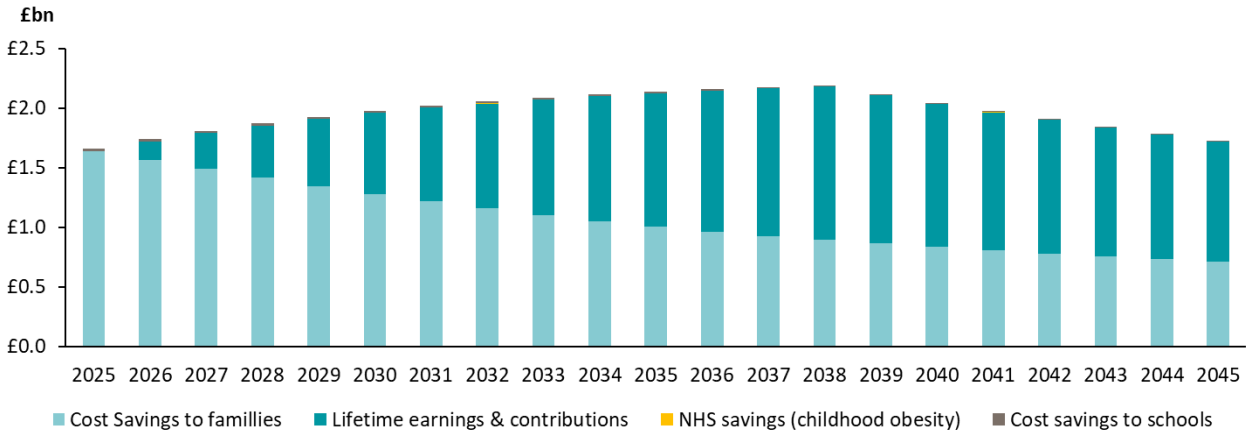
Every £1 invested in this scenario is estimated to generate £1.71 in the core benefits.

The breakdown of total discounted benefit for the Universal Free School Meals scenario between 2025-2045 is estimated to be:

- Increased cost savings to schools**: £0.3bn** *(0.70%)*
- Increased lifetime earnings and contributions**: £18.5bn** *(44.76%)*
- Increased NHS savings (childhood obesity)**: £12m** *(0.03%)*
- Increased savings on food costs for families**: £22.5bn** *(54.51%)*

Education & Employment Pathway *(2025-2045)*	**Health & Nutrition Pathway** *(2025-2045)*
£18.8bn *(45.46%)*	**£22.5bn** *(54.54%)*

Figure 4: Universal Free School Meals scenario core benefit profile (2025-2045)*



*The decline in annual benefits is due to the forecasted fall in the schooling population over the 20-year time period rather than changes or reductions to the amount of benefits accrued per pupil over time.

Figure 5: Universal Free School Meals scenario total cost vs total core benefit by school type

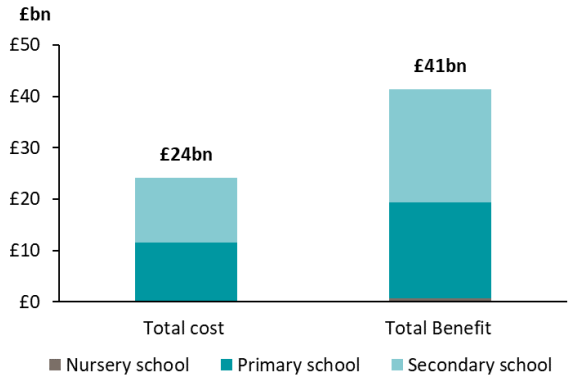


Figure 5 highlights the total discounted cost and benefit by eligible school type (i.e., excluding nursery

provision).

Wider benefit: The estimated total discounted benefit of increasing Gross Value Added in the wider economy for the FSM expansion between 2025 and 2045 in England is an additional **£58.2bn on top of core benefits.**

Total combined core and wider benefit: £99.5bn

1.4.3 Reminder of points to note

These findings are based on benefits for newly eligible children under each expansion scenario rather than the total benefits, which includes those currently in receipt of free school meals.

Core benefits are those arising directly from the children in receipt of free school meals. In this CBA, the Education and Employment and Health and Nutrition pathways contribute to the core benefits outlined.

Wider indirect benefits are generated over and above the core benefits, impacting the wider economy and supply chain. In this CBA, the School Food Economy pathway contributes to the wider benefits outlined.

1.5 Limitations

As expected with any project of this scale, there were some limitations in undertaking this analysis. These included:

- The use of secondary data to estimate costs and benefits for the CBA.
- The omission of wider benefits due to the lack of data (for example in relation to the wellbeing of teaching staff).
- The lack of consideration of the opportunity cost or counterfactual scenario of the Government using the funding for free school meals for alternative uses (instead focusing on key wider benefit areas to reduce the risk of double counting).
- The undertaking of the analysis on a gross basis (rather than net basis, i.e. accounting for displacement and leakage etc, per Green Book (2022).

A complete list of these limitations has been provided within the main report and appendix.

1.6 Conclusion

These findings, explored in depth in the main report, paint a clear picture. The data and supporting evidence indicate that expansion of free school meals in England would not only multiply the existing benefits to individuals and society but could prove to be a prudent and timely investment in children's health, education and future working life opportunities now and for the future.

At a time when families are increasingly struggling to access and afford healthy food, the provision of free, nutritious meals in schools is a powerful tool in the Government's armoury to provide targeted support and accrue long term social and economic benefits.

2. Introduction

2.1 Context

2.1.1 Economic condition

During 2022, price levels have risen rapidly in the UK, with the inflation rate rising to 10.1% for the first time in 40 years. This is projected to reach approximately 13% by the end of 2022 and up to 18% in early 2023.[11] [12] This increase in the cost of living has been driven by soaring food and energy prices putting increasing pressure on households; with 9 out of 10 households experiencing an increase in their cost of living in July 2022 alone. More than a third of people across the UK have also cut back on their spending on food and essentials to help with rising prices.[13] This is likely to result in an increasing number of children going hungry and thereby exacerbating the need for greater provision of free school meals (FSM).

The UK had 3.9 million children living in poverty between 2020-21 (27% of total children)[14] and over 2.6 million children living in households experiencing food insecurity in April 2022.[15] This is likely to be exacerbated by the projected contraction in the UK economy by 0.1% for April to June 2022, with the economy forecasted to fall into recession towards the end of 2023.[16]

This is also a growing international concern. For instance, higher costs of inflation in the United States, supply chain problems and the lasting effects of the COVID-19 pandemic are taking a toll on FSM provision and children's access to school meals nationally.[17] In response to rising food costs and increase in the number of hungry children in recent months, California was the first state to announce a statewide Universal Meals programme to provide FSM to all 6 million public school students.[18]

The cost of living crisis, inflationary pressures and economic downturn felt in the UK economy have and will make it increasingly challenging for families to cope with rising costs. This presents a concern, as it pushes many further into poverty. The FSM scheme could be a supportive mechanism for families and children, particularly for those from a low-income, in providing a hot meal. These are families that would be hit the hardest from soaring prices as a larger share of their income would be spent on essentials (food and energy bills) in comparison to high earning households.

2.1.2 FSM scheme

The Universal Infant Free School Meals (UIFSM) scheme was first introduced in September 2014 by the Government and delivered by local councils, in which all state-funded school children from Reception to Year 2 (aged 4-7 years old) are eligible for a free meal, regardless of their household earnings. From Year 3 upwards, eligibility is means-tested based on children living in households receiving specific income-support benefits. Those eligible are from households claiming[19]:

- 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;

[11] https://www.bankofengland.co.uk/knowledgebank/will-inflation-in-the-uk-keep-rising

[12] https://news.sky.com/story/uk-inflation-to-top-18-as-gas-prices-soar-banking-giant-citi-forecasts-12679147

[13] https://www.bbc.co.uk/news/business-62408121

[14] https://cpag.org.uk/child-poverty/child-poverty-facts-and-figures

[15] https://foodfoundation.org.uk/initiatives/food-insecurity-tracking

[16] https://www.bbc.co.uk/news/business-62405037

[17] https://abcnews.go.com/Politics/school-lunch-programs-brace-higher-costs-supply-issues/story?id=88405457

[18] https://www.goodmorningamerica.com/food/story/california-1st-state-offer-free-meals-school-kids-88290584

[19] https://www.gov.uk/apply-free-school-meals

- Child Tax Credit (provided you'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 - paid for 4 weeks after you stop qualifying for Working Tax Credit; and
- Universal Credit - if you apply on or after 1 April 2018 your household income must be less than £7,400 a year (after tax and not including any benefits you get).

In June 2022, the Government announced that it would permanently extend FSM eligibility to children in all households with no recourse to public funds (NRPF), subject to a maximum income threshold.[20] The maximum income threshold differs based on the location and the number of children within a family. Furthermore the Department of Education recently announced that schools will receive funding of £480 per pupil for all FSM eligible primary and secondary school pupils for 2023-2024 as part of the National Funding Formula.[21] This is an increase from the £470 funding per pupil for the 2022-2023 academic year.[22]

2.1.3 Related initiatives to widen access to school food

Several wider initiatives are currently in place to support families in providing healthy meals and activities for their children. One such initiative is the Government's 'Holiday Activities and Food Programme' aimed at coordinating and providing free holiday meals involving healthy food and enriching activities for FSM eligible children from reception to year 11 (inclusive). In October 2021 the Government announced an additional investment towards the programme of over £0.2bn per year for the following three financial years due to its successful roll out.[23]

The Government's 'National School Breakfast Club Programme' is a further initiative which offers all pupils in 2,500 participating schools breakfast at no cost, enabling children to have a nutritious meal at the start of the day.[24] Research by Bartfel et al, 2019[25] and Family Action and Magic Breakfast, 2021[26] indicates that providing healthy school breakfast at the start of the school day has a positive contribution towards learning, concentration, wellbeing and behaviour. The eligibility criteria for participating schools was based on geographic deprivation levels and pupil demographics.[27] To fund this programme the Government provided a 100% subsidy to the schools for breakfast club provision until the end of July 2022. Thereafter, the subsidy is reduced to 75%, with schools expected to contribute the remaining 25% from other funding streams.[28]

2.1.4 Government policies

Given recent economic pressures and significant rises in costs-of-living, addressing affordability of, and access to, energy and good food is a key element of the Government's policy responses. As demonstrated by the Chancellor's £15 billion cost of living support package in May 2022, including reducing household energy bills by £400 and providing a £650 cost of living payment to the most vulnerable households. This was in addition to the previously announced £22 billion support (in total the package is now £37 billion) by the Chancellor in the March 2022 Spring Statement. Currently the energy price cap is set at £1,971 per year per household, based on the typical consumption, and is predicted to rise up to 80% to £3,549 by the end of 2022.[29]

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[20] https://www.gov.uk/Government/publications/free-school-meals-guidance-for-schools-and-local-authorities/providing-free-school-meals-to-families-with-no-recourse-to-public-funds-nrpf

[21] https://assets.publishing.service.gov.uk/Government/uploads/system/uploads/attachment_data/file/1091863/2023-24_NFF_schools_block_technical_note_.pdf

[22] https://assets.publishing.service.gov.uk/Government/uploads/system/uploads/attachment_data/file/1003492/2022-23_NFF_Policy_Document.pdf

[23] https://www.gov.uk/government/publications/holiday-activities-and-food-programme/holiday-activities-and-food-programme-2021

[24] https://thehub-beta.walthamforest.gov.uk/national-school-breakfast-programme#:~:text=About%20the%20programme,School%20Breakfast%20Programme%20(NSBP).

[25] https://pubmed.ncbi.nlm.nih.gov/30715390/

[26] https://www.family-action.org.uk/what-we-do/children-families/breakfast/

[27] Participating schools are mostly in disadvantaged areas or state-funded schools with 40% or more pupils in bands A-F of the Income Deprivation Affecting Children Index

[28] https://www.gov.uk/guidance/breakfast-clubs-programme-2021-2023

[29] https://www.moneysavingexpert.com/utilities/what-is-the-energy-price-cap/

In June 2022, the Government announced its Food Strategy for England to support a food system that offers access to healthy and sustainable food.[30] Significantly, one of the objectives of the strategy was to improve school food and build a strong food curriculum. This has entailed up to £5m in funding to deliver an educational programme focused on the value of healthy and sustainable diets via a 'school cooking revolution'.[31] This also includes a new pilot to assure school compliance with school food standards in local authorities with the aim to ultimately halve childhood obesity and reduce the healthy life expectancy gap by 2030.

The food industry also has an important role to play in the Government's ambitions to 'level-up' and spread economic prosperity, given the sector's role in the country's health, and its contribution to local communities through employment opportunities and economic activity. Through the Food Strategy, the Government aims to safeguard and strengthen current levels of domestic food production (of 75%)[32], by seeking to monitor and strengthen the resilience of supply chains and support domestic production through helping farmers and food producers locally.

The well evidenced, varied benefits of FSM provision highlighted in this report presents important context in relation to FSM as a possible lever to contribute to the Government's Levelling-up agenda. For instance, one of the stated 'missions' in the Levelling-up White Paper is for 90% of pupils to achieve the expected standard in reading, writing and maths, and for the percentage of children meeting the expected standard in the worst-performing areas to have increased by over a third.[33] If the Government is to meet this mission, it will need to prioritise the education and food systems especially for vulnerable households who have already been significantly impacted by the economic downturn and cost of living crisis.

2.2 Objective and Purpose

The socio economic imperative for FSM is an increasingly important topic for debate and discussion. Rising national food poverty levels, record inflation, increasing energy prices, and the COVID-19 pandemic have highlighted the importance of FSM provision for children from families/households living on low income. In 2020/21 the number of people that use food banks in the United Kingdom increased by more than 600,000 to almost 2.5 million people. In England alone, over 1.74 million children were eligible for FSM in 2020/21, 300,000 more than in the previous academic year. Recently, public figures (e.g., Marcus Rashford) as well as a number of key stakeholders (school food organisations e.g. The School Food Review group and coalition of members including NGOs/charities, local authorities, headteachers etc) have advocated for increased prioritisation of improvements to FSM provision by the Government.

The long-term success of FSM provision requires policy-driven intervention in relation to both access to, and quality of, school food provision. Impact on Urban Health's work on children's health and nutrition is investing in coordinating campaign activity through the School Food Review group, a coalition of charities, headteachers, local authorities, academics, governors and caterers, to call for a Government review of national school food policy and funding mechanisms to improve the nutritional quality of school meals and expand eligibility to FSM.

It is within this context that Impact on Urban Health appointed PwC to evidence the costs and benefits of expanding FSM provision in England. Evidence from smaller pilots in the UK and schemes abroad have indicated varied and potentially significant benefits for FSM expansion, but not enough is known about how these might manifest, if at all, in England and at larger scale. For this purpose, a Cost-Benefit Analysis (CBA) was conducted on the expansion of FSM provision in England, creating a framework to subsequently assess value for money under different provision scenarios. This has been based on published/available data around FSM uptake and supporting evidence generated for campaign activities within this space. This report summarises the process followed in undertaking the CBA and the results of economic modelling for different scenarios of FSM expansion in England.

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[30] https://www.gov.uk/government/publications/government-food-strategy/government-food-strategy

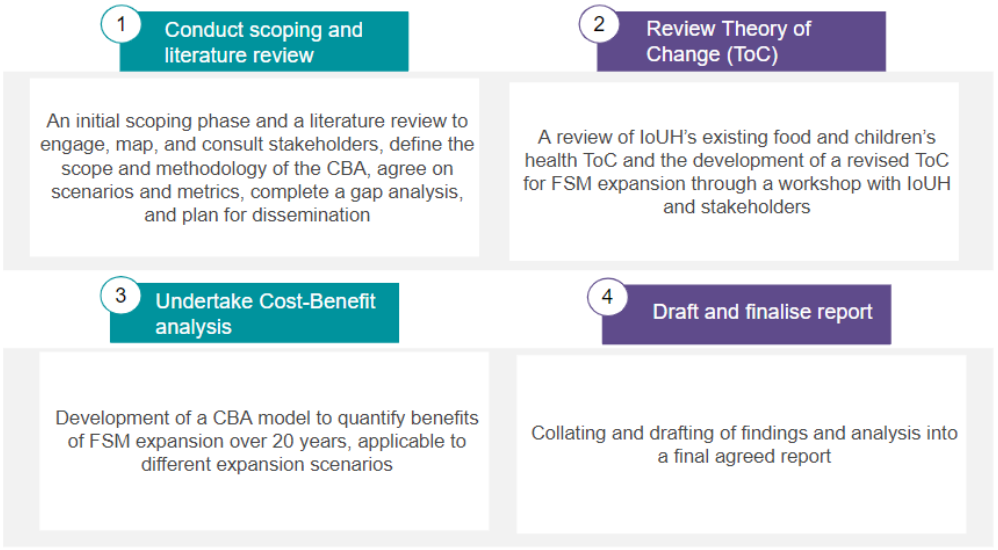
[31] The Government's ambition to deliver a 'school cooking revolution' focused on educating the value of healthy and sustainable diets which includes developing new materials for school curriculum and finding opportunities for children and young people to better understand sustainable food and its connection to nature.

[32] https://www.gov.uk/government/publications/government-food-strategy/government-food-strategy

[33] assets.publishing.service.gov.uk/Government/uploads/system/uploads/attachment_data/file/1095544/Executive_Summary.pdf

2.3 Scope of work

The CBA was undertaken through a structured, multi-stage approach, building a common understanding of the required project outputs and modelling approach. The four stages of this work included:



When initially commissioned, the modelling for the CBA foresaw four scenarios for FSM provision:

- **Scenario 1:** Inclusion of all those receiving Universal Credit (UC);
- **Scenario 2:** Inclusion of all those from households earning <£20,000 p.a.;
- **Scenario 3:** Inclusion of those with No Recourse to Public Funds (NRPF)*; and
- **Scenario 4:** Universal inclusion of all children across all state funded education settings.

However, when the CBA work had launched, scenario 3 had become the espoused approach by the Government, permanently extending FSM eligibility to children in all households with NRPF. This was subject to maximum income thresholds,which differed based on the location and number of children in the household.[34] Scenario 2 (those with household earnings under £20,000) was also removed from consideration due to the difficulties of setting an appropriate threshold given the volatility in rising prices and cost of living squeeze experienced in the UK. As a result, Scenarios 1 (all those receiving UC) and 4 (universal free school meals across state-funded education settings) were the two scenarios modelled as part of this CBA.

Further detailed information regarding the scope and approach of the CBA has been provided in Chapter 4.

2.4 Report structure

The rest of this report is structured as follows:

- Chapter 3 sets out the context, current framework and methodology followed to develop a bespoke ToC for FSM provision in England;
- Chapter 4 presents the expected costs and benefits across the two CBA scenarios tested as well as consideration of the wider qualitative benefits associated with FSM provision; and
- Chapter 5 provides the methodological appendix which details the CBA approach and evidence, including an overview of the underpinning key assumptions and limitations.

34 https://www.gov.uk/Government/publications/free-school-meals-guidance-for-schools-and-local-authorities/providing-free-school-meals-to-families-with-no-recourse-to-public-funds-nrpf

*This is based on Section 115 of the Immigration and Asylum Act 1999 which states that a person will have 'no recourse to public funds' if they are 'subject to immigration control'. This means they have no entitlement to the majority of welfare benefits, including income support, housing benefit and a range of allowances and tax credits.

A separate technical appendix is also provided. It outlines the key findings from the desk-based analysis, the CBA approach including the detailed assumptions and calculations used to estimate the cost and benefit of FSM provision, and stakeholder interviews conducted in support of this work.

3. Theory of Change

3.1 Context

Generating the evidence required to mobilise wider change around the provision of FSM is complex - affecting individuals and systems, with longer term, more pervasive benefits to society. Crucial to the CBA was the identification of the different pathways through which short, medium, and long term benefits can be explored as a result of different scenarios of expansion of FSM provision. There is evidence that the expansion of FSM provision results in impacts at the individual and societal levels, including health and nutrition, social, education, and employment outcomes, with potential wider benefits to school food economies and the environment.

The development of a Theory of Change[35] (ToC) was, thus, fundamental as it provides the framework to identify benefits and associated quantitative and qualitative metrics, immediately affecting individuals and systems and more pervasively, through which the impact of FSM expansion scenarios could be better understood.

A ToC is a set of beliefs and assumptions that explain if and why certain interventions and actions produce the desired changes in a given context at a given time. A ToC should be designed to:

- Provide a framework to conceptualise what impact looks like for a programme or policy and the immediate changes that need to be achieved along the pathway to impact;
- Develop common understanding of the programme or policy among stakeholders; and
- Guide programme evaluation and produce insights that support programme or policy design, implementation and evidence based decision making.

It is the intention that the ToC for FSM is a process of continual discussion, analysis, learning and iteration.

3.2 Revising the Framework for FSM

3.2.1 Approach

To enable the measurement of the benefits of expanding FSM provision through the CBA, and to facilitate future measurement and evaluative work, the revised programme ToC builds on the cumulative experience of the School Food Review working group (SFR) coalition and other stakeholders within the FSM system in a range of contexts. A socialised, evidence-based ToC was developed through:

1. A desk review of Impact on Urban Health's current and past ToCs relating to food and children's health;
2. A review of existing literature exploring the potential impacts of FSM provision;
3. Individual consultations with Impact on Urban Health, the SFR coalition, and nominated stakeholders;
4. A ToC development workshop with Impact on Urban Health and nominated stakeholders held on 6 July 2022; and
5. Feedback and socialisation with stakeholders.

The ToC was developed in line with Magenta Book recommended practices, focusing on the Outcome and Impact levels, with expansion of FSM provision and uptake as the primary activity and output from which impact pathways were explored. The ToC consists of a schematic as shown in Figure 6 and a supporting narrative. The narrative examines the underlying assumptions/rationale about how change is intended to happen, what magnitude of change is expected, and who the intended beneficiaries of change are.

The ToC for the expansion of FSM provision aimed to:

1. Create a clear pathway to impact (short term, medium term, longer term) from FSM expansion;
2. Provide Impact on Urban Health and partners with a comprehensive view of FSM outcomes, allowing for understanding of interactions, feedback loops, and interdependencies, mapping the spectrum of positive change/benefits;
3. Support the development of interventions/influencing work for FSM expansion in the future;

[35] The Magenta Book states that *understanding the intervention is typically done through synthesising existing evidence and producing a ToC. A ToC captures the theory of how the intervention is expected to work (setting out all the steps expected to be involved in achieving the desired outcomes), the assumptions made, the quality and strength of the evidence supporting them, and wider contextual factors.*

4. Identify barriers and enablers for change;
5. Include key assumptions made across the impact pathway; and
6. Provide evidence-based metrics/indicators (quantitative or qualitative) that will allow for the measurement/assessment of the benefits of FSM expansion at present and in the future.

The ToC development focused on understanding and identifying the spectrum of benefits that would result from the expansion of FSM provision to support the CBA. In addition to understanding the barriers and enablers of FSM expansion, this was considered important for creating a more complete picture of the anticipated benefits. However the ToC did not aim to build out complete pathways around inputs and activities towards achieving the expansion of FSM provision at this time, given the CBA's focus on key costs and benefits.

The following impact statement under which domains of change were developed was agreed based on stakeholder consultations during the ToC workshop: *All people in England have greater opportunity to participate in thriving societies and economies through more equitable health, economic, and social outcomes by 2037*. Five key pillars were identified by the SFR coalition under which the expansion of FSM provision and uptake could be influenced:

1. Entitlement;
2. Funding System;
3. Procurement & Operations;
4. Accountability; and
5. Uptake.

3.2.2 Establishing the Outcomes

Impact on Urban Health and the SFR coalition's campaign intends to contribute to the reduction of the health, economic, and social inequalities that result from inequitable access to nutrition at school, increasing the opportunity for people across the UK to more actively participate in social and economic activity through the expansion of FSM provision and uptake. The FSM ToC recognises that FSM are one of a spectrum of factors that contribute towards impact in the longer term, denoting expected contribution vs. attribution. It details the expected impact pathway and benefits from the expansion of FSM provision in England, along with underlying assumptions, under five interrelated domains of change as identified under a system-level ToC (Appendix 3):

1. Health & nutrition;
2. Education & employment;
3. School food economy;
4. Social; and
5. Environmental.

For purposes of the CBA, a streamlined ToC was adapted based on the system-level ToC, focusing only on the first three domains of change (Health & Nutrition, Education & Employment, School Food Economy) related to direct impact on the lives of children and the school food economy, as this was where the strongest quantitative evidence for cost-benefit analysis existed (Figure 6).

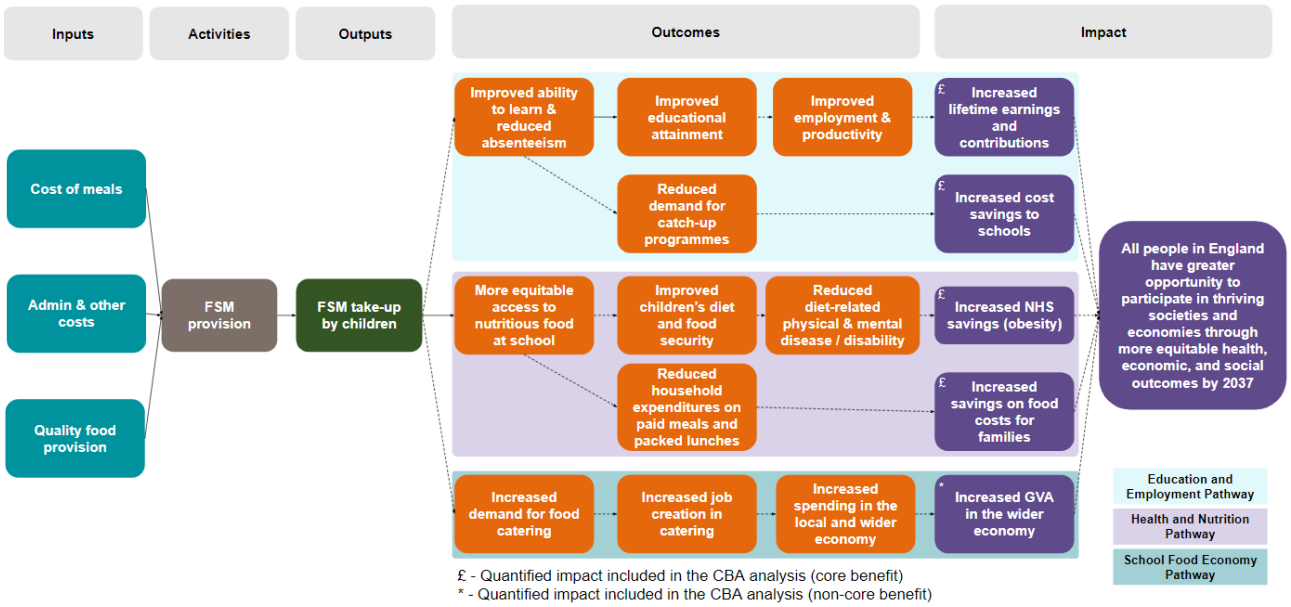
The ToC outlines the impact pathway from inputs (such as the cost of meals) that are expected to lead to the expansion of the provision of FSM (the activity). The output of this provision is the take-up of FSM by children at school. The impact pathway is detailed along three different domains of change (Health & Nutrition, Education & Employment, School Food Economy) from shorter-term to the longer-term outcomes. Each of these domains of change leads to domain-specific impact, contributing to the overall impact statement. This is further discussed in Section 3.3: ToC Narrative below.

The ToC focuses on costs (inputs) and benefits (outcomes) analysed as part of the CBA through quantitative or qualitative evidence, allowing for modelling of projected impacts of the expansion of FSM provision under the two selected scenarios.

Fundamental to developing a ToC is reflecting on the rationale/assumptions upon which the intervention is based and the strength or weakness of the evidence supporting these assumptions. This includes an examination of the wider context, such as other policy changes or changes in economic, social and environmental factors. Defining

these assumptions can help test the validity of the impact pathways using evidence collected through evaluation processes. The assumptions/rationale behind the ToC is summarised in Section 3.3.5 of this report.

Figure 6: FSM ToC (CBA version)



3.2.3 Understanding the ToC Schematic

The ToC schematic should be read from left to right. The schematic is sequential in order to demonstrate the different causal pathways underpinning the theory. In reality the processes of change are complicated, multidirectional and context specific. Therefore the causal pathways are not always linear and are represented in the schematic through connecting, multi-directional arrows.

The schematic should be treated as an analytical framework that can be adapted depending on the context or type of intervention that Impact on Urban Health is working in.

The application of the rationale in the context of the ToC and FSM provision has been provided under the ToC Narrative in Section 3.3.

3.3 ToC Narrative and Rationale

The narrative below outlines a series of assumptions underpinning the ToC. It details evidence underpinning each principle and explains their relevance to achieving FSM benefits. The narrative also expands on each stage of the ToC.

3.3.1 Inputs and activities

The cost of meals, administrative/other costs, and quality school food are inputs required for the provision of FSM (activity). The provision of FSM is dependent on several underlying assumptions. To support successful provision, those responsible for FSM policy-making and implementation must possess the knowledge, capabilities, and resources required to do so. Decision makers and stakeholders in the FSM system (local authorities, school administration, catering staff) are expected to possess good knowledge and understanding of school food standards and of the FSM funding model.

To ensure resources are in place, there must be capital expenditure (CapEx) to support operations and implementation, and money from the government should be ring-fenced for FSM, preventing allocation to other expenditure streams. To ensure that implementation is effective at the school level, head-teachers and schools are expected to have sufficient support and resources and are empowered to implement FSM expansion, and schools are expected to have the space/facilities/staffing to deliver FSM.

3.3.2 Outputs

If taken up by children at school (output), FSM will lead to a spectrum of outcomes along different impact pathways. Underlying contextual assumptions around the successful uptake of FSM by children focus on awareness, quality, and culture. Parents, who play an important role in encouraging and ensuring uptake, are expected to be supportive of FSM/universal FSM, and in non-universal FSM scenarios, parents are assumed to be aware of their children's FSM eligibility.

The quality of food provided can also affect likelihood of uptake and quality is expected to be high enough for take-up from 85%[36] of children (including currently ineligible children). Children are further expected to be required to take up FSM without alternative, off-site food options, reducing the likelihood that they will consume other/less healthy foods.

Cultural and religious considerations can also affect uptake rates. Cultural assumptions around social dining experiences (e.g. dining table, cutlery, etc.) are assumed to be accounted for. The food is also assumed to be suited to cultural and religious dietary requirements/preferences.

3.3.3 Outcomes

As indicated above, the ToC focuses on three pathways to impact (domains of change) stemming from FSM take-up by children:

1. Health & nutrition
2. Education & employment
3. School food economy

Health & nutrition

Summary of key impacts:

- Increased NHS savings (childhood obesity)
- Increased savings on food costs for families

Under the Health & Nutrition domain of change, there is evidence to show that FSM provision and uptake, particularly under a universal free school meals scenario, can create a more standardised approach to school food consumption. This creates more equitable access to food at school and improves the quality of food consumed by children at school. There is evidence that links increase take-up of school meals to improved nutritional balance of food consumed during the school day (i.e. compared with children having a school meal, children taking a packed lunch to school were found to consume a lower-quality diet over the whole day, including higher levels of sugar and sodium and fewer vegetables).[37] An underlying assumption is that the food provided will be of high enough nutritional value that it will contribute to improved health for children.

There is evidence that a more standardised approach to school nutrition, with increased involvement of schools in educating around healthy eating habits, improves eating habits at school and during childhood, helping to reduce incidence of childhood obesity.[38] If eating habits are improved at school as a result of FSM provision, then the underlying assumption is that eating habits will also improve outside of school.

Additionally, by providing children with FSM, households living on lower incomes face lower costs for food provision and reduced financial pressures, which can increase their ability to purchase more nutritious food at home.[39] Evidence suggests that this can help to improve overall household food security in the medium term.[40]

[36] Based on UIFSM uptake rates

[37] https://eprints.leedsbeckett.ac.uk/id/eprint/3308/1/impact-of-school-lunch-type-on-nutritional-quality-of-english-children-s-diets.pdf

[38] https://foodandnutritionresearch.net/index.php/fnr/article/view/7702

[39] https://commonslibrary.parliament.uk/research-briefings/sn04195/

[40] https://www.iser.essex.ac.uk/2020/12/02/final-report-published-on-the-impact-of-universal-infant-free-school-meals-policy

Evidence further suggests that this contributes to improved dietary choices and habits into adulthood, which can decrease the incidence of adult obesity and reduce diet-related disease and disability at the population level. This can help to decrease the pressure on health services, saving costs for the NHS over the longer term.[41]

Education & employment

Summary of key impacts:

- Increased lifetime earnings and contributions
- Increased cost savings to schools

Under the Education & Employment domain of change, evidence suggests that improved nutrition from FSM results in improved ability to learn and reduced absenteeism in the short term. Reduced absenteeism is further linked to reduced costs on schools (e.g. catch-up programmes).[42]

There is evidence that this improves educational attainment in the medium term.[43] Evidence links this improved educational attainment to improved productivity and employment in the medium-to-longer term. Further, evidence has shown a link between improved productivity and employment contributing to improved lifetime earnings and wider contributions in the longer term.[44] [45]

School food economy

Key impact:

- Increased GVA in the wider economy

Under the School Food Economy domain of change, evidence links increased demand for catering to the expansion of employment opportunities and increased spending in the school food economy (catering/provision). If market actors within the catering supply chain expand their operations to meet increased demand, evidence suggests that this can help strengthen local and wider economies around school food provision, for example via local procurement of food and supplies.[46]

3.3.4 Impact statement

It is, thus, assumed that FSM leads to improved opportunities for children and increased contribution to the economy and wider society. In universal scenarios where all children have access to FSM, FSM is also assumed to have a greater relative impact on those of lower income backgrounds. Improved health outcomes into adulthood as a result of FSM provision are also assumed to reduce pressure and costs on the NHS in the long term. If assumptions hold true, these outcomes will contribute to the reduction of the health, economic, and social inequalities that result from inequitable access to nutrition at school, increasing the opportunity for people in England to more actively participate in social and economic activity by 2037.

3.3.5 Summary of theoretical and contextual rationale for impact pathway

The key theoretical and contextual rationale linked to the ToC are respectively summarised in Tables 1 and 2 below.

Table 1: Theoretical rationale linked to FSM ToC (CBA version)

Theoretical rationale
Education & Employment
• Improved nutrition leads to improved cognitive behaviour and function.

[41] https://pubmed.ncbi.nlm.nih.gov/26696565/

[42] https://www.centreforsocialjustice.org.uk/wp-content/uploads/2021/06/Cant_Catch_Up_FULL-REPORT.pdf

[43] https://www.iser.essex.ac.uk/2020/12/02/final-report-published-on-the-impact-of-universal-infant-free-school-meals-policy

[44] https://www.econstor.eu/bitstream/10419/177038/1/dp11234.pdf

[45] https://bmjopen.bmj.com/content/7/4/e013840

[46] https://www.rockefellerfoundation.org/wp-content/uploads/2021/11/True-Cost-of-Food-School-Meals-Case-Study-Full-Report-Final.pdf

• Improved cognitive behaviour and function leads to improved school (e.g. reduced absenteeism) and educational attainment. • Improved educational attainment leads to better employment and increased productivity into adulthood. • FSM leads to improved social mobility and increased contribution to the economy and to society. • There will be greater relative impact on those of lower income backgrounds if there is universal FSM.
Health & Nutrition
• The provided food will be healthy/provide high nutritional value. • Schools will take on a wider role in health & wellbeing, including nutrition education. • Improved food education will promote consumption of healthier food options beyond the school day. • Healthier eating habits in childhood leads to reduced childhood obesity. • Reduced childhood obesity leads to improved longer term health. • Improved health outcomes as a result of FSM provision will reduce pressure and costs on the NHS in the long term.
School Food Economy
• Increased demand for FSM catering has a knock-on effect on the local and/or wider food and catering economy and job creation.

Table 2: Contextual rationale linked to FSM ToC

Contextual rationale	
FSM Provision	**FSM Uptake**
• Decision makers and stakeholders in the FSM system (LAs, school administration, catering staff) possess good knowledge and understanding of standards. • Decision makers and stakeholders understand the FSM funding model. • There is capital expenditure to support operations and implementation. • Money from the Government is ring-fenced for FSM, preventing allocation to other expenditure streams. • Headteachers and schools have enough support and resources and are empowered to implement FSM expansion. • Schools have the space/facilities/staffing to deliver FSM.	• In non-universal FSM scenarios, parents are aware of FSM eligibility. • Parents are supportive of FSM/universal FSM. • Quality is high enough for take-up from over 85% of children (including currently ineligible children). • The food is suited to cultural and religious dietary requirements/preferences. • Children are required to take up FSM without alternative, off-site food options. • Cultural assumptions around social dining experiences (e.g. dining table, cutlery, sharing, etc.) are accounted for.

3.4 Operationalising the System-level FSM ToC

The system-level ToC acts as a broader monitoring and evaluation framework through which assumptions and potential impact pathways should be tested in the future. As part of the CBA, quantitative and qualitative benefit metrics have been identified under each domain of change in alignment with existing literature. This helps form a basis from which longer-term impact can be measured.

However, while these metrics allow for monitoring and evaluation of the potential impact of FSM expansion, they may not be directly applicable to specific interventions under the FSM umbrella and may not be measurable within the intervention's lifetime. Operationalising the ToC under specific interventions or influencing work will

require the development of more specific monitoring and evaluation plans in line with intended outcomes, which can be selected as priority pathways from the broader ToC.

To help inform the evidence base underpinning the expansion of FSM provision, it is proposed that intervention-specific ToCs be developed to include more nuance at the Input, Activity, and Output levels, linking to specific pathways explored within the system-level ToC. These ToCs can be translated into monitoring and evaluation plans that are more approachable and pragmatic for short and medium term result measurement. Development of monitoring and evaluation plans should include the assignment of key performance indicators (at the Output and Outcome levels) that will be measurable that are directly relevant and attributable to the intervention or influencing work, and that can be measured within its lifetime.

4. Cost-Benefit Analysis

4.1 Introduction

General principles and assumptions based on secondary data have been applied to estimate the economic costs and benefits of expanding FSM provision. This analysis has been undertaken in light of the ToC which provides the strategic context relating to FSM provision. The ToC proposes that the benefits which are incurred as a result of FSM expansion are not only to the individual but also to wider stakeholders in society. These key stakeholders include families, schools and the economy. In order to appreciate the scope and scale of these benefits, this analysis quantifies the cost of FSM and maps the benefits to the different stakeholder groups across the three impact pathways. It is within this context that the full impact of FSM towards greater equitable health, social and economic opportunities can be materialised.

The distributional nature of FSM provision (relating to FSM funding being a form of welfare or transfer payment provided by the Government to families) is an important consideration, in terms of understanding potential additional value from FSM expansion and whether a different funding route could be more efficient or better than the current approach. Consideration of such distributional impacts has not formed part of this analysis. Instead, there are a number of important additional considerations in terms of wider benefits associated with FSM relating to improvements in education, health and wellbeing which has been the focus of this work.

As presented in Section 2.3, this CBA has been undertaken in relation to two FSM expansion scenarios as follows:

1. **UC scenario** - Expanding FSM provision to include all children in universal credit claiming households; and
2. **UFSM Scenario** - Expanding FSM provision to all pupils in state-funded education.

The following section provides a detailed breakdown of the CBA approach in terms of:

1. Key project scope and eligibility estimates;
2. Key costs and benefits;
3. The overall results - presenting the total costs and benefits across the two expansion scenarios;
4. Key assumptions and limitations that should be considered when estimating these impacts; and
5. Next steps identified from the CBA for Impact on Urban Health and its stakeholders' consideration.

4.2 CBA approach

4.2.1 Geographic Scope

The approach for this analysis is to consider the costs and benefits associated with the expansion of FSM specifically for England at the country level. The four home nations currently have adopted different approaches to FSM provisions; each having different eligibility criterias for FSM, therefore affecting the number of children eligible and the associated costs and benefits. Whilst the type of costs and benefits associated with FSM are similar despite the geographic differences, their quantified values will vary and therefore for the purposes of the analysis the results will focus solely on England.

This research is also carried out at the country level rather than county level. Regional disparities in FSM provisions and associated costs and benefits do exist but are not within the scope of this report due to constraints in relation to the availability of robust data.

4.2.2 Timing

In order to profile the impacts from FSM expansion over the short, medium and long term, the CBA analysis has been undertaken over a 20 year time horizon, between the years 2025 and 2045. Under UIFSM, the provision was implemented over a three year time frame. Hence it is assumed that 2025 is the earliest feasible year for the expansion of means-tested FSM to be implemented.

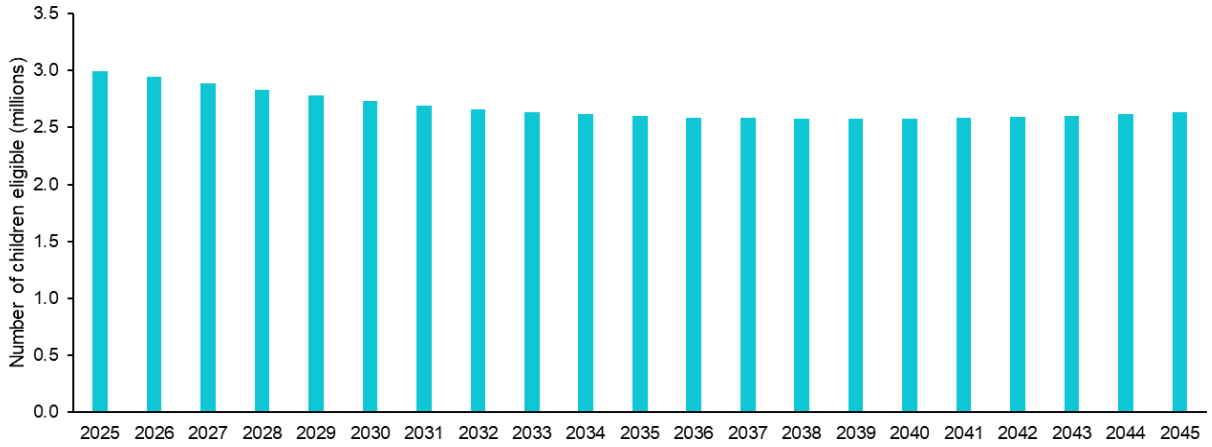
It is important to note that the majority of quantitative benefits associated with FSM do not occur immediately. For instance, research suggests that FSM must be implemented over a significant proportion of a child's education in

order to realise the benefits associated with it.[47] In addition, the benefits to FSM tend to occur over the lifetime of the child, so a 20 year time frame was chosen in order to capture as much of the long-term benefits brought about by FSM. The number of children in state-funded schools have also been forecasted to decrease between 2025 and 2045. In order to identify how many children will be eligible for FSM in each year of the forecasted period, pupil projections[48] were used to forecast between 2025 and 2032 and the population projections[49] were then used for the remainder of the 20 year horizon.

4.2.3 Eligibility

To identify the number of pupils who will be eligible for FSM provision under the two expansion scenarios, the first step in this analysis has been to identify the baseline of current FSM provision criteria, and therefore the number of pupils already in receipt of such provision. Using pupil and population projections, the number of children eligible for FSM under the current provisions are forecast over the period 2025 - 2045. In 2025 it is estimated that 3.0m children will be in receipt of FSM and this is estimated to decrease to 2.6m over the 20-year period as a result of the falling pupil population.

Figure 7: Summary of number of children forecast to be eligible for the current means-tested FSM and UIFSM (2025-2045)



The next step was to calculate the number of pupils eligible for FSM under each of the expansion scenarios and similarly forecast this number over the 20-year time horizon. The existing eligibility was then subtracted to give the additional number of children eligible for FSM under each of the scenarios. The costs and benefits were then calculated on the basis of the additional number of pupils eligible for FSM. It is estimated that 1.4m additional children will be eligible for FSM under the UC scenario in 2025. This figure will decrease to 1.2m by 2045. Under the UFSM scenario the respective figures are 4.5m additional children eligible in 2025 and 3.9m in 2045.

Table 3: Summary of number of children forecast to be eligible for FSM in each expansion scenario (2025-2045)

	Existing Eligibility (2025)	Additional Eligibility (2025)	**Total**	Existing Eligibility (2045)	Additional Eligibility (2045)	**Total**
Universal Credit (UC) Scenario	3.0m	1.4m	**4.4m**	2.6m	1.2m	**3.8m**

[47] https://cepr.org/voxeu/columns/swedish-school-lunch-reform-nutrition-and-lifetime-income

[48] https://explore-education-statistics.service.gov.uk/data-catalogue/national-pupil-projections/2021

[49] https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/z3zippedpopulationprojectionsdatafilesengland

Universal Free School Meals (UFSM) Scenario	3.0m	4.5m	**7.5m**	2.6m	3.9m	**6.5m**

4.2.4 Take-up Rate

An important factor to include in the cost benefit analysis is the take-up rate of FSM. The take-up rate indicates the proportion of children who on any given day physically take and consume the free lunch out of the pool of pupils who are eligible for FSM. Due to various factors, the take-up rate is below 100% and differs between the two expansion scenarios. Further details on these variations are provided in the Methodological Appendix (Chapter 5). Whilst the literature on FSM provision reviewed (cited in Chapter 5) provides a range of take-up rates, for the purpose of this report the median range is used. On this basis a take-up rate of 75% under the UC scenario and 85% under the UFSM scenario is estimated. In summary, the take-up rate is higher under the Universal Free School Meals scenario as the stigma surrounding FSM is less prevalent than under the UC scenario.

Table 4: The median take-up rates of FSM across the two expansion scenarios

	Expanding to children from all families receiving Universal Credit (UC)	**Universal FSM provision for all children across all state funded education (UFSM)**
Take-up rate *(median range)*	**75%**	**85%**

Applying these take-up rates to the number of additional children eligible for FSM gives the additional number of children who are eligible for and take-up FSM under each scenario.

Table 5: Summary of the number of additional children eligible for and taking FSM by expansion scenario (2025, 2045)

	Additional children eligible and taking FSM (2025)	**Additional children eligible and taking FSM (2045)**
Universal Credit Scenario	**1.0m**	**0.9m**
Universal Free School Meals Scenario	**3.8m**	**3.3m**

4.2.5 Costs

The expected cost to the Government related to expanding FSM under both scenarios is determined by considering two main factors:please

1. **The cost of meal provision:**

This is the amount paid by the Government to schools in order to facilitate the provision of FSM. The funding is spent on the provision of the lunches themselves as well as any administrative costs incurred by the school. The total cost of providing the meals in 2025 is estimated to be £0.5bn under the UC scenario and £1.8bn under the UFSM scenario.

Table 6: Summary of the total cost of meal provisions under each expansion scenario (2025-2045)

	Cost of meal per child per year (2022 prices)	Additional children eligible and taking FSM (2025)	**Total** (NPV - Adjusted)	Additional children eligible and taking FSM (2045)	**Total** (NPV - Adjusted)
Universal Credit Scenario	£465	1.0m	**£0.5bn**	0.9m	**£0.2bn**
Universal Free School Meals Scenario	£458	3.8m	**£1.8bn**	3.3m	**£0.8bn**

Further information on the approach to calculating the two cost categories is provided in the Methodological Appendix (Chapter 5).

2. Capital expenditure:

This is the additional capital expenditure (CapEx) that schools must undertake in order to expand their kitchen facilities and increase their dining capacity in order to make the provision of FSM feasible under each of the expansion scenarios. Under the UC scenario, the estimated CapEx required is £7.9m for primary school and £1.6m for secondary schools. The estimated figures under the UFSM scenario are £22.6m and £5.5m for primary schools and secondary schools respectively.

Table 7: Summary of the total capex expenditure under each expansion scenario (2025-2045), 2022 prices

	Cost of upgrading kitchen and dining facilities per school (2010 prices)	**Capex Cost: Primary Schools** (2022 prices)	**Capex Cost: Secondary Schools** (2022 prices)
Universal Credit Scenario	£750	£7.9m	£1.6m
Universal Free School Meals Scenario	£2,500	£22.6m	£5.5m

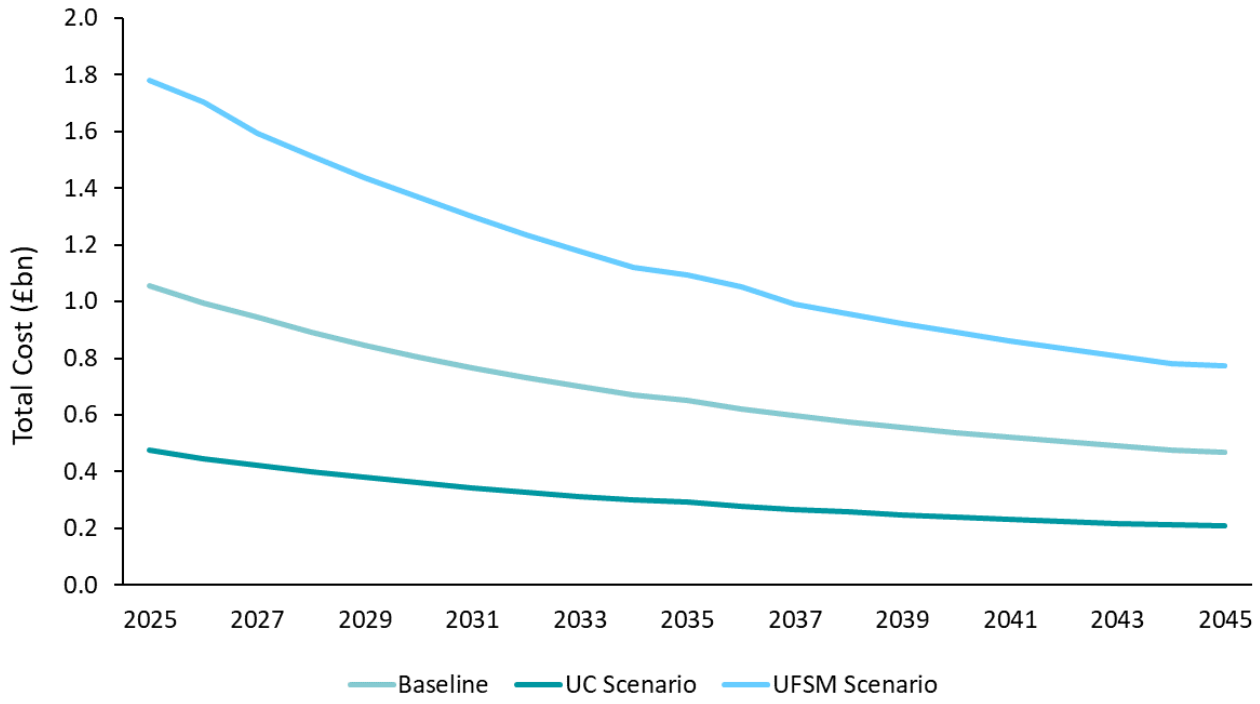
Further information on the approach to calculating the two cost categories is provided in the Methodological Appendix (Chapter 5).

Total cost

The figure below aggregates the cost of meal provisions and the CapEx to calculate the total cost of providing FSM under each scenario. The total cost under the UC scenario is £0.5bn in 2025 and decreases over the 20-year period to £0.2bn. Under the UFSM scenario, the total cost in 2025 is estimated to be £1.8bn and decreases over the same period to £0.8bn. The reduction in costs is linked to the forecasted fall in the number of pupils in state-funded education over the 20-year period using both pupil and population projections. In addition, capital expenditure is high in the initial years of provision to expand kitchen and dining facilities and the costs of

meal provisions are discounted over the 20-year period. Together these three factors contribute to the fall in the cost of meal provision over time. [50] [51]

Figure 8: Summary of the total cost for the baseline scenario and the two expansion scenarios



Further information on the approach to calculating the two cost categories is provided in the Methodological Appendix (Chapter 5).

4.2.6 Benefits

As indicated in the ToC section above, providing free nutritious lunches to pupils results in a range of quantitative and qualitative benefits not only to the individual but also to society at large. Five of these benefits have been identified as quantifiable (based on data availability and robustness) and their attribution to FSM provision has been evidenced in this report in Section 3.4.

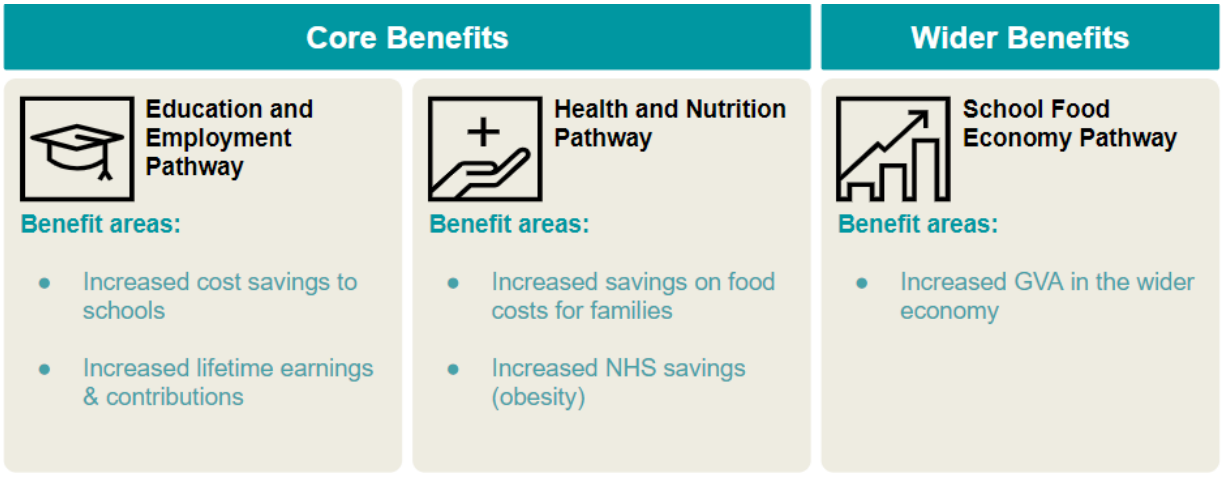
The rest of this section sets out these benefits across the three impact pathways developed via the ToC and illustrated by Figure 9. These quantitative benefits can be split into two categories:

- Core benefits: arising from the children in receipt of FSM; and
- Wider indirect benefits: benefits generated over and above the core benefits, impacting the wider economy and supply chain.

Figure 9: Summary of the key benefits quantified in the CBA

[50] https://explore-education-statistics.service.gov.uk/data-catalogue/national-pupil-projections/2021

[51] https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/z3zippedpopulationprojectionsdatafilesengland

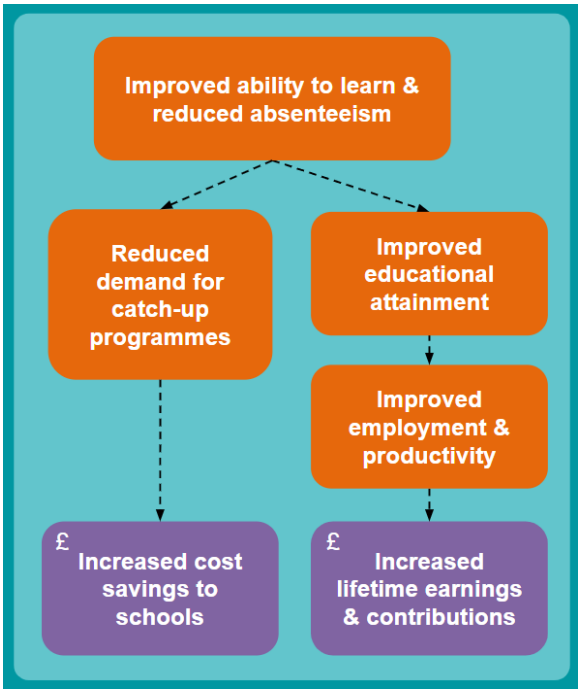


Additionally the literature review identified a range of further qualitative benefits associated with FSM provision across the three impact pathways. A qualitative review of these benefit areas has been included for each pathway in this subsection as follows:

1. **Education & Employment:**
   a. Improvement in early years educational attainment and cognitive function; and
   b. Improvement in lifetime earning and productivity.
2. **Health & Nutrition:**
   a. Improved dietary outcomes and eating habits; and,
   b. Reduction in wider diet-related illnesses.
3. **School Food Economy:**
   a. Increased spending across the economy

The rest of this section provides an overview of the evidence and data used to estimate the quantitative and qualitative benefits arising from FSM provision across the three impact pathways, including the results from the CBA across the two expansion scenarios.

Education and Employment pathway



The Education and Employment pathway captures the core quantitative benefits associated with FSM provision via improvements in a child's ability to learn and reduced absenteeism. This is captured in the form of two benefit areas:

i. Cost savings to schools; and

ii. Increased lifetime earnings to the economy.

The evidence underpinning the causal link in this relationship is provided in Section 5.4.1. The quantitative benefits under this pathway for the two FSM expansion scenarios have been provided below.

Benefit metrics and results

The quantification of the first benefit area - **increased cost savings to schools** over the 2025-2045 period, is based on:

- FSM attributing to 1.2 fewer days of absences per year;[52] and
- An annual cost-saving of education support staff cost per pupil across the different school phases (i.e. Maintained Nursery, Primary and Secondary schools).

[52] https://www.iser.essex.ac.uk/2020/12/02/final-report-published-on-the-impact-of-universal-infant-free-school-meals-policy

The table below presents the results from this approach under the two expansion scenarios and indicates a cost saving of between £81m and £0.3bn under the UC and UFSM Scenario respectively over a twenty year period.

Table 8: Summary of increased cost savings to schools for the two expansion scenarios (2025 and over the period 2025-2045)

	Annual cost savings to schools from reduced absences per child by schooling phase (2022 prices)	Additional children eligible and taking FSM (2025)	**Total benefit** (2025)*	**Total benefit over the period 2025-2045** (NPV - adjusted)
Universal Credit Scenario	Nursery: £26 Primary: £7 Secondary: £4	Primary: 679,000 Secondary: 325,000	**£6m**	**£81m**
Universal Free School Meals Scenario		Nursery: 18,000 Primary: 1.8m Secondary: 2.0m	**£21m**	**£0.3bn**

*The total benefit in each year is calculated based on the number of additional children eligible and taking FSM in that year. The results for 2025 are included as it is the assumed first year of implementation of the expansion of FSM.

The second benefit relating to **increased lifetime earnings and contributions** has been estimated by:

- Using the average marginal lifetime benefit of achieving 5+ good GCSEs;
- Assuming a constant year-on-year (Y-o-Y) benefit over a child's lifetime from the age of 16 (after completing their GCSEs) until they reach 67 (state pension age by 2028);[53]
- Assuming that a child must be receiving FSM for at least 1 year to accrue this benefit; and
- Assuming a 16.3% improvement in GCSE attainment for those on FSM given fewer absences.[54]

The table below shows the lifetime benefit occurring from this approach under the two scenarios of between £2.9bn and £18.5bn over a 20 year period (2025 to 2045).

Table 9: Summary of increased lifetime earnings and contributions for the two expansion scenarios

Average marginal lifetime benefit of achieving 5+	Improvement in GCSE attainment due to FSM	**Total benefit over the period 2025-2045**

[53] https://www.ageuk.org.uk/globalassets/age-uk/documents/factsheets/fs19_state_pension_fcs.pdf

[54] Department of Education (2016) The link between absence and attainment at KS2 and KS4. Available at: https://assets.publishing.service.gov.uk/Government/uploads/system/uploads/attachment_data/file/509679/The-link-between-absence-and-attainment-at-KS2-and-KS4-2013-to-2014-academic-year.pdf. p.15.

	good GCSEs (2022 prices)		(NPV - adjusted)
Universal Credit Scenario	£127,000	16.3%	**£2.9bn**
Universal Free School Meals Scenario			**£18.5bn**

Wider supporting evidence

This subsection highlights the additional key qualitative benefits which are important to consider but could not be fully quantified in the CBA due to data constraints and challenges in relation to robustness and attribution. In summary:

- **Improvement in early years educational attainment and cognitive function** - substantial evidence already exists validating the link between FSM and educational outcomes, as follows:
  - Universal infant FSM provision had a significant positive impact on attainment for primary school pupils at Key Stages 1 and 2, with pupils in pilot areas making between four and eight weeks' more progress than similar pupils in comparison areas who were not part of the pilot.[55]
  - It was also found that it costs £100 to £120 to obtain a 1% increase in attainment at Key Stage 1 and £40 to £60 to obtain a 1% increase in attainment at Key Stage 2.[56]
  - Research also found that schools that were part of a school meals programme saw attendance rates improve by 6%.[57]
  - A further study found school meals led to an improvement in students' school function, with increased concentration, energy and social skills.[58]
- **Improvement in lifetime earning and productivity** - similarly the literature review stage revealed several studies linking FSM provision with increased lifetime earnings and productivity, as follows:
  - Research on lifetime earnings in Sweden found a 3% improvement in lifetime earnings as a result of participation in a school lunch programme.[59]
  - The World Food Programme similarly found that lifetime productivity improvements associated with FSM provision on average represents 67% of the overall benefit (in NPV terms). This consisted of two thirds of the lifetime NPV being attributable to increased wages due to better cognition, and one third associated with better education.[60]

For detailed information on studies looking into education and employment benefits, please refer to the Methodological Appendix in Chapter 5.

[55] https://www.gov.uk/Government/publications/evaluation-of-the-free-school-meals-pilot-impact-report

[56] https://www.gov.uk/Government/publications/evaluation-of-the-free-school-meals-pilot-impact-report

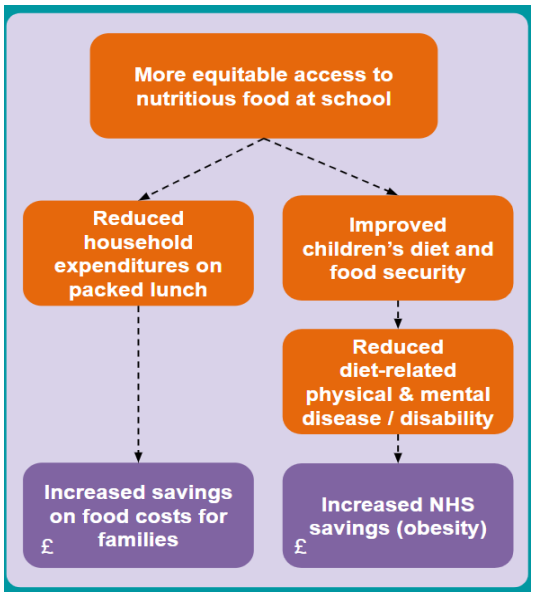
[57] https://docs.wfp.org/api/documents/WFP-0000038422/download/

[58] https://foodandnutritionresearch.net/index.php/fnr/article/view/7702/13710#content/citation_reference_75

[59] https://www.econstor.eu/bitstream/10419/177038/1/dp11234.pdf

[60] https://docs.wfp.org/api/documents/WFP-0000038422/download/

Health and Nutrition pathway



The Health and Nutrition pathway captures the core quantitative benefits associated with FSM provision via more equitable access to nutritious food at school. This is quantified in terms of the following two benefits:

i. Savings on food costs for families[61]; and

ii. NHS savings due to reduced treatment of childhood obesity.

The evidence underpinning the causal link in this relationship is provided in Section 5.4.2. The quantitative benefits under this pathway for the two FSM expansion scenarios have been provided below.

Benefit metrics and results

In order to model the first benefit relating to **increased household cost savings on food**, the average yearly household saving per child arising from the provision of FSM was used. This was based on an average weekly household cost-saving of £10.[62]

Applying the cost-saving to the number of children eligible for FSM under the two scenarios gives a total discounted benefit between 2025 and 2045 of £5.9bn at 2022 prices under the UC scenario and £22.5bn under the UFSM scenario.

Table 10: Summary of increased savings on food costs for families for the two expansion scenarios

	Annual household cost savings per child (2022 prices)	Additional children eligible and taking FSM (2025)	**Total benefit** (2025)	**Total benefit over the period 2025-2045** (NPV - adjusted)
Universal Credit Scenario	£429	1.0m	**£0.4bn**	**£5.9bn**

[61] Cost savings to families are clearly a benefit at a household level. One economic approach in relation to such cost savings is treating it as similar to a transfer or welfare payment and therefore resulting in no immediate direct economic value (i.e. a distribution effect). The other approach is to include the cost savings as a net cost to the total cost profile and therefore only treating the remaining cost of running the scheme (i.e. excluding cost savings to families) in the CBA and resulting Benefit Cost Ratio (BCR). For the purposes of the CBA the former approach has been undertaken. This is due to data limitations in relation to a detailed cost profile of FSM costs.

[62] https://feedingbritain.org/wp-content/uploads/2019/06/Hungry-for-Change_Final_Version_GD-002.pdf

Universal Free School Meals Scenario		3.8m	**£1.6bn**	**£22.5bn**

*The total benefit in each year is calculated based on the number of additional children eligible for FSM in that year. The results for 2025 are included as it is the assumed first year of implementation of the expansion of FSM.

In order to model the second benefit area under the Health and Nutrition pathway, **obesity-related cost savings** were proxied as the major **cost-savings area to the NHS**. Whilst there are many other health-related benefits including mental health cost-savings arising from FSM, obesity is considered one of the largest and most reliable metrics to quantify. To note, in the CBA only childhood obesity has been quantified given the limitation on data available to robustly estimate the total NHS cost savings of obesity (i.e. including adult obesity).

To quantify and model this benefit area, the following data points and assumptions were used:

- NHS spending on treating childhood obesity-related illnesses[63], based on the number of under-16 obesity-related hospital admissions.[64]
- Assume a constant growth rate of 1.7% for the NHS cost saving of treating childhood obesity.[65]
- Assume a 2.5% annual growth rate for the number of children obese (based on 2019 and 2040 obese population estimates) to project figures over a 20-year horizon.[66]
- Assume one year of FSM results in reduction of obesity amongst children by 0.7pp.[67]
- Assume that NHS savings related to treating childhood obesity are lagged by a year.

The table below presents the resultant cost savings related to childhood obesity under the two expansion scenarios of between £3m for the UC scenario and £12m for the UFSM scenario across the 20-year time horizon.

Table 11: Summary of increased NHS savings related to childhood obesity for the two expansion scenarios

	Number of obese children and forecasted annual growth rate (2022)	Cost of childhood obesity and forecast annual growth rate (2022 prices)	Impact of FSM on childhood obesity	**Total benefit over the period 2025-2045** (NPV - adjusted)
Universal Credit Scenario	Number of obese children: 1,600,000 Forecasted CAGR[68]: 2.5%	Cost of childhood obesity: £46m Forecasted CAGR: 1.7%	7pp reduction	**£3m**
Universal Free School Meals Scenario				**£12m**

Wider supporting evidence

This subsection highlights the additional key qualitative benefits under the Health and Nutrition pathway which are important to consider but that could not be fully quantified within the CBA. In summary:

[63] https://www.kingsfund.org.uk/sites/default/files/2021-07/Tackling%20obesity.pdf

[64] https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-obesity-physical-activity-and-diet/england-2021/part-1-obesity-related-hospital-admissions

[65] Holmes, J. (2021) Tackling obesity - The role of the NHS in a whole-system approach, The King's fund. Available at: https://www.kingsfund.org.uk/sites/default/files/2021-07/Tackling%20obesity.pdf pp. 2 and 13.

[66] https://news.cancerresearchuk.org/2022/05/19/new-analysis-estimates-over-21-million-uk-adults-will-be-obese-by-2040

[67] https://www.iser.essex.ac.uk/research/publications/526031

[68] Compound Annual Growth Rate

- **Improved dietary outcomes and eating habits -** significant evidence exists highlighting the link between FSM provision and improved dietary and nutritional outcomes as follows:
    - Among 19 studies conducted in OECD countries*, 13 found improvements in students' dietary outcomes whilst only three found no association with universal FSM.[69]
    - One study found that children who had a packed lunch consumed on average 11.0g more total sugars and 101mg more sodium over the whole day. Conversely, children who received a school meal consumed, on average, 4.0g more protein, 0.9g more fibre and 0.4mg more zinc.[70]
    - 41% of school leaders reported that the general profile of healthy eating across the school had improved as a direct result of UIFSM. The evaluation estimated consumer benefits from UIFSM at £0.5bn in 2017-18 or £4.4bn in NPV terms over the period.[71]
    - The World Food Programme also found that on average, 21% of the overall benefit consists in the transfer of additional income to the household, including the value of the food received and the healthcare expenditures avoided due to the children's better health.[72]
- **Reduction in wider diet-related illnesses -** the literature review stage identified strong causal links between FSM and wider (non-obesity related) health outcomes, including:
    - Improvement in nutrition and lifestyle choices being linked to reduced risk of coronary artery disease (CAD), ischemic stroke, diabetes, and specific diet-related cancers in the longer term.[73]
    - A study in Canada found that food insecurity was associated with higher likelihood of mental health conditions (i.e. suicidal thoughts, mood disorders and anxiety disorders).[74] This pattern became progressively worse as food insecurity increased. It also found that moderate food insecurity was more closely associated with mental health problems at the age of 18-24 year olds relative to 12-17 year olds.

For detailed information on studies looking into health and nutrition benefits, please refer to the Methodological Appendix in Chapter 5.

[69] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8000006/pdf/nutrients-13-00911.pdf

[70] https://eprints.leedsbeckett.ac.uk/id/eprint/3308/1/impact-of-school-lunch-type-on-nutritional-quality-of-english-children-s-diets.pdf

[71] https://epi.org.uk/publications-and-research/evaluation-universal-infant-free-school-meals/

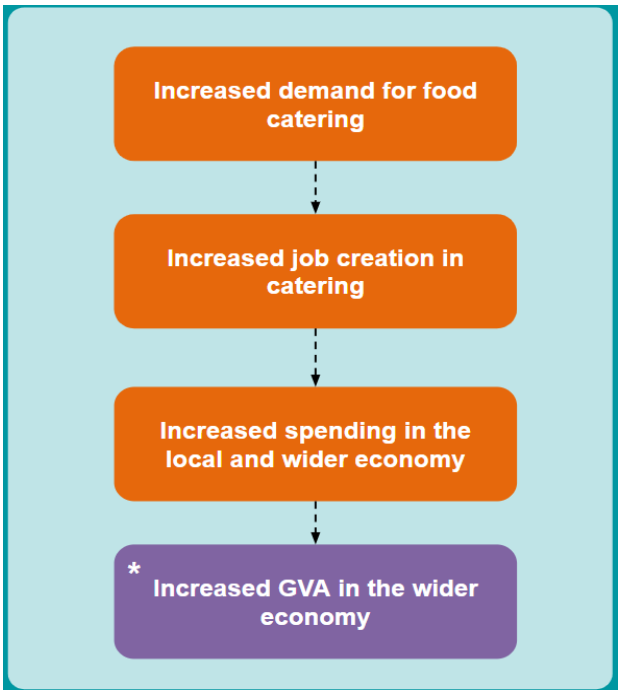
*18 peer-reviewed and one Government report, including the UK, Denmark, Norway, Japan, Greece, and New Zealand

[72] https://docs.wfp.org/api/documents/WFP-0000038422/download/

[73] https://www.ncbi.nlm.nih.gov/books/NBK11795/

[74]https://jech.bmj.com/content/75/8/741.full?s=03

School Food Economy pathway



The School Food economy pathway captures the wider quantitative benefits associated with FSM provision via the food catering sector. This is quantified in terms of GVA uplift in the wider economy via employment and local supply chain spending.

The evidence underpinning the causal link in this relationship is provided in Section 5.4.3. The quantitative benefits under this pathway for the two FSM expansion scenarios have been provided below.

Benefit metrics and results

In order to model the impact of increased GVA in the wider economy resulting from the expansion of FSM, the approach focuses on quantifying the direct and indirect GVA impact as follows:

Direct GVA impact	This is the impact of FSM provision, where the direct GVA impact is estimated based on the number of catering staff per year (i.e. as a sum of returns to labour) from FSM provision.

Indirect GVA impact	This is the impact on the economy as a result of procurement from FSM provision. This looks at: (a) the economic value added of immediate suppliers, and (b) the wider supply chain.

To undertake this analysis, three data points were identified, as follows:

- The estimated total number of additional catering staff who would be employed as a result of FSM expansion;
- The average GVA per head in England (£27,949 based on 2017 prices) to calculate the direct GVA impact from the additional catering staff; and
- The GVA Type I multiplier for the Food and Beverage industry (1.62) to calculate the gross indirect impact from the additional catering staff in GVA terms.

For the UFSM scenario, it is assumed that 30% additional staff are required. This is based on additional staff figures from UIFSM. For the UC scenario, it is assumed that the number of catering staff required will be lower (at 9%) given the smaller relative increase in catering provision required under this scenario.

The table below presents the breakdown of direct and indirect GVA impact from catering staff needed for FSM provision. Under the two expansion scenarios, the total GVA impact for the 20-year horizon is estimated to be £16.2bn and £58.2bn for the UC and UFSM scenarios respectively.

For detailed explanation on the approach used in calculating the direct and indirect GVA impact for additional catering staff in the wider economy, refer to Section 5.4.3.

Table 12: Summary of increased GVA in the wider economy for the two expansion scenarios

	GVA per head per year (2022 prices)	Average additional catering staff required by school phase (2022 prices)	Type I Multiplier (Food and Beverage Industry, 2018)	**Total benefit over the period 2025-2045** (NPV - adjusted)
Universal Credit Scenario	£31,526	Primary: 26,000 Secondary: 1,600	1.62	**£16.2bn**
Universal Free School Meals Scenario		Primary: 85,000 Secondary: 5,400		**£58.2bn**

Wider supporting evidence

In the context of the School Food economy pathway, evidence in relation to wider benefits on the local economy beyond local job creation is currently scarce. Discussions with local authority stakeholders revealed a link between the expansion of FSM and increased demand for local catering and food suppliers, resulting in job creation to fulfil demand. This acts as a benefit to the Government as the procurement process stimulates local and domestic food economies.

Further studies providing insights on the local economy impacts from FSM provision include:

- A study in Nottinghamshire, which estimated that spending for school meals locally within a FSM framework had generated over £5m in value per annum. The proportion of spending on ingredients from seasonal, local produce had risen by £1.65m per year, returning £3.11 in social, economic and environmental value for every £1 spent.
- In Plymouth, the study valued the change in spending on seasonal, local produce at £384,000 per year. This spending into the local economy was found to generate £1.2m of value per year, a return of £3.04 for every £1 spent.[75]
- Another study in Scotland calculated a £6 return to the local economy for every £1 spent on school meal procurement using the Social Return on Investment (SROI) method.

For detailed information on studies looking into the school food economy benefits can be found in the Methodological Appendix in Chapter 5.

4.3 Overall Results

To estimate the total impact of the expansion of FSM, the costs associated with FSM provision were aggregated and mapped over the projected period of 2025 to 2045. This was then assessed against the aggregated impact accruing from the four core benefit areas over the same 20-year time horizon. This analysis allowed the derivation of benefit-cost ratios (BCR) for each scenario - an analysis that calculates the quantified benefits that arise for every £1 invested in the provision of FSM.

In summary, this analysis was considered for the following two scenarios*:

1. **UC scenario** - Expanding FSM provision to include all children in universal credit claiming households; and
2. **UFSM Scenario** - Expanding FSM provision to all pupils in state-funded education.

It is important to note that in undertaking the CBA, only the additional costs and benefits which accrue as a result of the expansion of FSM provision have been considered, i.e. the baseline figures are not included. This is in line with good practice per the Treasury Green Book (2022) when calculating the value for money associated with

[75] https://www.foodforlife.org.uk/~/media/files/evaluation%20reports/fflp-nef---benefits-of-local-procurement.pdf

public funded initiatives, whereby the benefit calculated should be considered in the absence of the baseline (or existing provision).

The results presented below have been provided for the three impact pathways split by key core and wider benefits across the two expansion scenarios (per Figure 9).

UC scenario

Core benefits

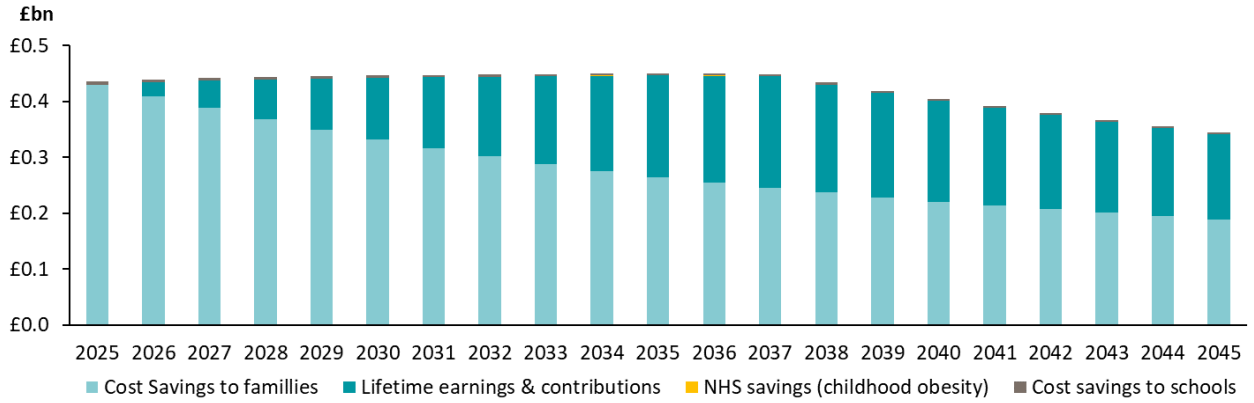
Under the UC scenario, the two major cost categories are assessed against the four core benefits. This can be further broken down by primary and secondary schools to demonstrate the benefits generated under each category. Maintained nurseries are excluded from the UC scenario as the current means-tested FSM eligibility excludes children in maintained nurseries. This is assumed to continue under this means-tested expansion scenario. Both cohorts have positive returns on investment with expansion to secondary schools yielding higher returns. The estimated benefit under Primary school of £5.3bn (60% of core benefit) is greater than Secondary school benefits of £3.5bn (40% of core benefit) under the UC scenario.

The largest benefit contribution estimated for both cohorts is seen through the increased savings on food costs for families, totaling £5.9bn. This is followed by an increased lifetime earnings and contributions estimate of £2.9bn.

Table 13: Breakdown of the discounted core benefits by primary and secondary schools between 2025 and 2045.

	Education and Employment Pathway		Health and Nutrition Pathway		**Total**
	Increased cost savings to schools	Increased lifetime earnings & contributions	Increased savings on food costs for families	Increased NHS savings	
Primary School	£62m	£1.3bn	£4.0bn	£2m	**£5.3bn** (60%)
Secondary School	£19m	£1.6bn	£1.9bn	£1m	**£3.5bn** (40%)
Total	**£81m**	**£2.9bn**	**£5.9bn**	**£3m**	**£8.9bn**

Figure 10: Universal Credit scenario core benefit profile (2025-2045, discounted)



As presented in the figure above, the health and nutrition pathway, consisting of NHS savings from reduced treatment of childhood obesity and savings on food costs for families, has the largest contribution of £5.9bn (66.5% of core benefit) towards the core benefits from the expansion of FSM under the UC scenario. The

education and employment pathway, through cost savings to schools and lifetime earnings and contributions from education attainment, is estimated to contribute £3.0bn (33.5% of core benefit) under the UC scenario.

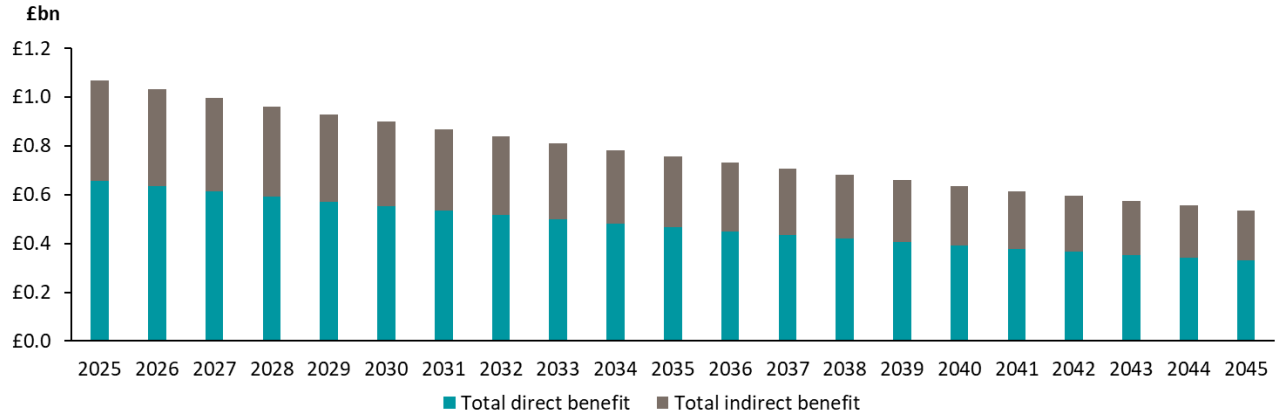
In summary, the overall benefit of FSM provision under the UC scenario over the period 2025-2045 is £8.9bn. The overall cost of provision over the same 20-year time horizon is £6.4bn.

The benefit-cost ratio under this scenario is estimated to be **1.38**, meaning for every £1 invested in FSM expansion, there will be a return of £1.38 considering the costs and **core** benefits over the 20-year time horizon (2025-2045).

Wider benefits

The impact of the increased GVA in the economy as a result of the increased number of catering staff employed is subsequently considered. This wider benefit contributes £16.2bn to the economy under the UC scenario over the 20-year time period. This additional benefit accruing as a result of the expansion of FSM, can be split by the direct GVA impact, as an estimate of the returns to labour from FSM provision, and the indirect impact, the impact as a result of supply chain procurement from FSM provision. Over the 20-year time period, on average the wider benefit is composed of 62% from the direct GVA impact and 38% from the indirect GVA impact.

Figure 11: Illustration of the wider GVA impact on the economy split by the direct and indirect impact over the period 2025-2045.



UFSM scenario

Core benefits

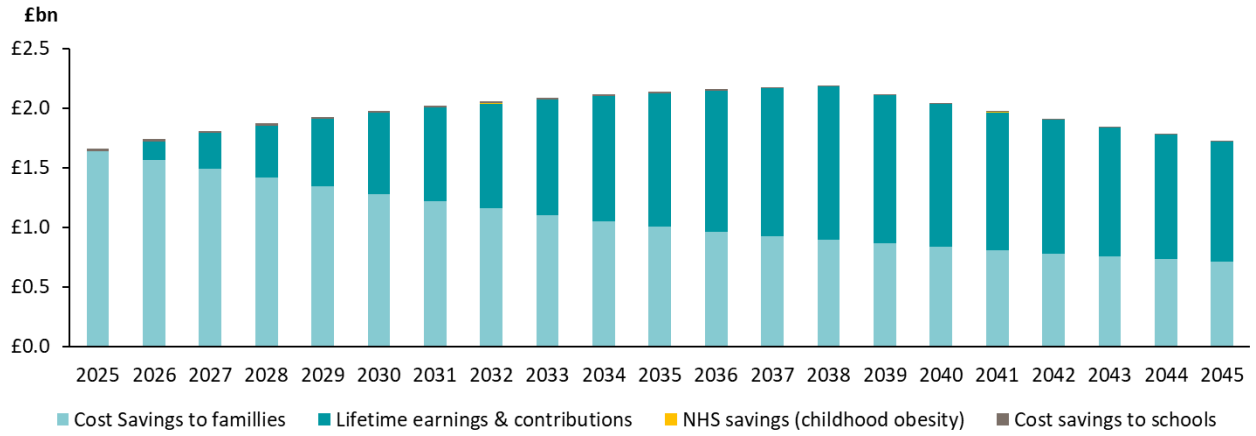
Similar to the UC scenario, the two major cost categories are assessed against the four core benefits for the UFSM scenario. Currently, the Government has taken a step approach to the expansion of FSM by making it universal to pupils in infant primary school (i.e. Reception to Year 2). Consequently, under a UFSM scenario the impact of FSM expansion has been considered in relation to all school groups currently not in receipt of FSM including: maintained nursery pupils, primary school pupils (excluding existing infant provision) and secondary school pupils. If this strategy was to continue, it is necessary to consider the costs and benefits of FSM by the schooling phase. All schooling phases demonstrated a positive return on investment with expansion to secondary schools yielding higher returns. The estimated benefit under secondary school of £21.9bn (53% of core benefit) is greater than primary school benefits of £18.7bn (45% of core benefit) under the UFSM scenario.

The largest benefit contribution estimated for all three cohorts is seen through the increased savings on food costs for families, totaling at £22.5bn. This is followed by an increased lifetime earnings and contributions estimate of £18.5bn.

Table 14: Breakdown of the discounted core benefits by maintained nursery, primary and secondary schools between 2025 and 2045. The core benefits are applied only to the additional children who would be eligible for and take-up FSM under this scenario (i.e. excludes the benefits from those currently in receipt of UIFSM).

	Education and Employment Pathway		Health and Nutrition Pathway		Total
	Increased cost savings to schools	Increased lifetime earnings & contributions	Increased savings on food costs for families	Increased NHS savings	
Maintained Nurseries	£6.9m	£0.6bn	£0.1bn	£0.1m	**£0.8bn (2%)**
Primary School (Years 3 to 6)	£0.2bn	£7.9bn	£10.6bn	£6m	**£18.7bn** (45%)
Secondary School (Years 7 to 11)	£0.1bn	£10.0bn	£11.8bn	£6m	**£21.9bn** (53%)
Total	**£0.3bn**	**£18.5bn**	**£22.5bn**	**£12m**	**£41.3bn**

Figure 12: Universal Free School Meals scenario core benefit profile (2025-2045, discounted)



The health and nutrition pathway, consisting of NHS savings from reduced treatment of childhood obesity and savings on food costs for families, has the largest contribution of £22.5bn (54.5% of core benefit) towards the core benefits from the expansion of FSM under the UC scenario. The education and employment pathway, through cost savings to schools and lifetime earnings and contributions from education attainment, is estimated to contribute £18.8bn (45.5% of core benefit) under the UFSM scenario.

In summary, the overall benefit of FSM provision under the UFSM scenario over the period 2025-2045 is £41.3bn. The overall cost of provision over the same 20-year time horizon is £24.2bn.

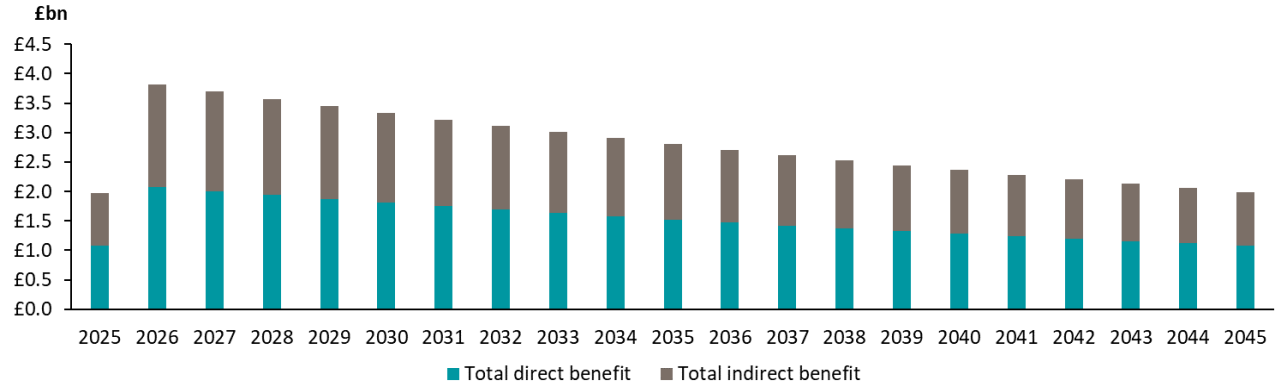
The benefit-cost ratio under this scenario is estimated to **1.71**, meaning for every £1 invested in FSM expansion, there will be an average return of £1.71 considering the costs and **core** benefits over the 20-year time horizon (2025-2045).

Wider benefits

Over the 20-year time period, the wider benefit from increased catering staff and supply chain spend contributes £58.2bn to the economy under the UFSM scenario. This benefit can be split by the direct GVA impact, as an

estimate of the returns to labour from FSM provision, and the indirect impact, the impact as a result of supply chain procurement from FSM provision. Over the 20-year time period, on average the wider benefit is composed of 54% of the direct GVA impact and 46% from the indirect GVA impact.

Figure 13: Illustration of the wider GVA impact on the economy split by the direct and indirect impact over the period 2025-2045.



4.4 Assumptions and limitations

To develop the approach in estimating the costs and benefits of expanding FSM, work has been done collectively to define the scenarios, assess the available evidence regarding their effectiveness and agree on a set of assumptions to help fill the data gaps.The approach has considered:

- The links between the benefits (as presented in Chapter 3) and uses evidence and/or assumptions to identify the impact of FSM (i.e. extent to which the identified benefits can be attributed to FSM). This has been based on a composite of evidence (from literature review and data collection); and
- Stakeholder engagements and technical judgement to inform the approach and assumptions made.

Where data were not available or for benefits that cannot be robustly quantified within the CBA, key findings from studies were used to illustrate the potential benefits in quantitative and/or qualitative terms.

It is important to note that although the results in the report have been provided for the two expansion scenarios it does not fully align to the HM Treasury Green Book Guidance (2022) in relation to additionality analysis.[76] For example, the CBA does not consider the opportunity cost or counterfactual scenario of the Government using the funding for FSM for alternative uses but instead focuses on key wider benefit areas to reduce the risk of double counting.

Where the approach is aligned with the Green Book Guidance, it is in relation to the discounting approach used i.e. the report is based on the net present value of benefit and costs in relation to newly eligible children under the two expansion scenarios. The Green Book Guidance seldom specifies a particular approach in calculating the BCR other than defining it as a ratio of the present value of benefits to the present value of costs. In summary, the Guidance provides a measure of the benefits relative to costs.

Section 5.4.4 provides a detailed outline of the key assumptions and limitations that were used for the CBA approach in deriving the results presented in the report.

4.5 Next steps

There is a broad diversity of programmes funded by Impact on Urban Health aimed at improving access to nutritious, good quality school food for all children and this includes calls for extended entitlement to FSM. The revised ToC for the impact of FSM provision, and the benefit metrics profiled and quantified as part of the CBA, provide an important framework for organisations and decision makers working on school food provision. Organisations working in this space can further strengthen the evidence base of FSM interventions by developing a:

[76] https://assets.publishing.service.gov.uk/Government/uploads/system/uploads/attachment_data/file/1063330/Green_Book_2022.pdf

- Timeline and plan for capturing outcomes and the impact of FSM programmes now and in the future through additional longitudinal primary data collection and dissemination. This would allow cumulative impact to be measured across FSM interventions and facilitate learning and cohesion with a view to improving value for money analysis; and
- Cross departmental FSM data repository open to researchers, food organisations and Government bodies to monitor and evaluate the impacts of FSM provision over time. Reflecting the cross departmental nature of the benefits associated with FSM provision (in terms of educational, health and wider economic impacts) which needs to be considered in terms of the commissioning, collection and sharing of FSM benefit data going forwards.

In this context further data collection providing a detailed breakdown of the fixed and variable costs underpinning FSM provision would also be beneficial in supporting the evidence base surrounding both existing and any potential expansion in provision. This data would help inform any further research in relation to both the potential cost savings from the economies of scale resulting from FSM expansion and the value for money implications associated with different approaches to FSM procurement and provision.

5. Methodological Appendix

5.1 Eligibility approach

5.1.1 Current eligibility

FSM eligibility is currently means-tested for those in Year 3 onwards, and is only available to children in:

i) households in receipt of income support (Job-Seekers Allowance or Employment and Support Allowance), working tax or child tax credits;

ii) households with no recourse to public funds; and

iii) universal credit claiming households which earn below £7,400 per year post tax.[77]

In addition to this, the Government is currently providing universal infant FSM (UIFSM) to all state school pupils between Reception and Year 2 (See the Context section for more information on FSM eligibility criteria).

Whilst means-tested FSM currently allows for 1.9m pupils to be eligible, it does not provide the opportunity for a free lunch to all children living in poverty or to all households receiving Government support packages.[78] This pool of children who are in poverty but currently ineligible for FSM is forecast to increase amidst the current economic climate and increased pressure on the cost of living. It is estimated that an additional 500,000 children are expected to fall into absolute poverty in 2023, as households struggle to keep up with high inflation and are forced to cut back on expenditure on food and other essentials.[79] [80]

5.1.2 Eligibility under the two expansion scenarios

Against this backdrop, this section maps out eligibility for FSM under the two expansion scenarios. The first expansion scenario continues to apply a means-tested approach in order to determine eligibility for FSM. It draws on the expansion of the Universal Credit criteria which is currently capped to households earning below £7,400pa post tax. This scenario, here forward referred to as the **Universal Credit (UC) scenario**, considers the removal of the income threshold meaning all children in households in receipt of Universal Credit will be eligible for FSM regardless of their household income level.

The second expansion scenario adopts a wider approach, similar to the existing UIFSM. It is defined as widening FSM provision eligibility to all pupils in state-funded education. In other words, this **Universal Free School Meals (UFSM) scenario** is an extension of UIFSM to also include all pupils between Year 3 and Year 11.

Both scenarios have been applied to children from primary school through to secondary school. They are restricted to state-funded schools only and exclude pupil referral units (PRUs) and special schools. This is due to the lack of data available forecasting the number of pupils attending PRUs and special schools over the period 2025-2045. The UFSM scenario also includes pupils in state-funded maintained nursery schools. Whereas for the UC expansion scenario additional pupils in state-funded maintained nursery schools are not included as currently the scheme is only available to children as young as Reception, and under this scenario the means-tested approach continues. In this case, the number of additional maintained nursery pupils under the UC scenario would be marginal or negligible.

The approach adopted in order to calculate the number of pupils who would be eligible for FSM in each scenario entailed calculating the number of pupils who would be eligible under each of the expansion scenarios and subtracting the baseline eligibility (the current children who are eligible for FSM, which is comprised of all pupils eligible for means-tested FSM and UIFSM). This provides the additional number of pupils who would be newly eligible for FSM under each expansion scenario. The costs and benefits for each scenario were then calculated on the basis of the additional number of pupils eligible for FSM.

Figure 14: Summary of the number of additional children who will be eligible under each expansion scenario.

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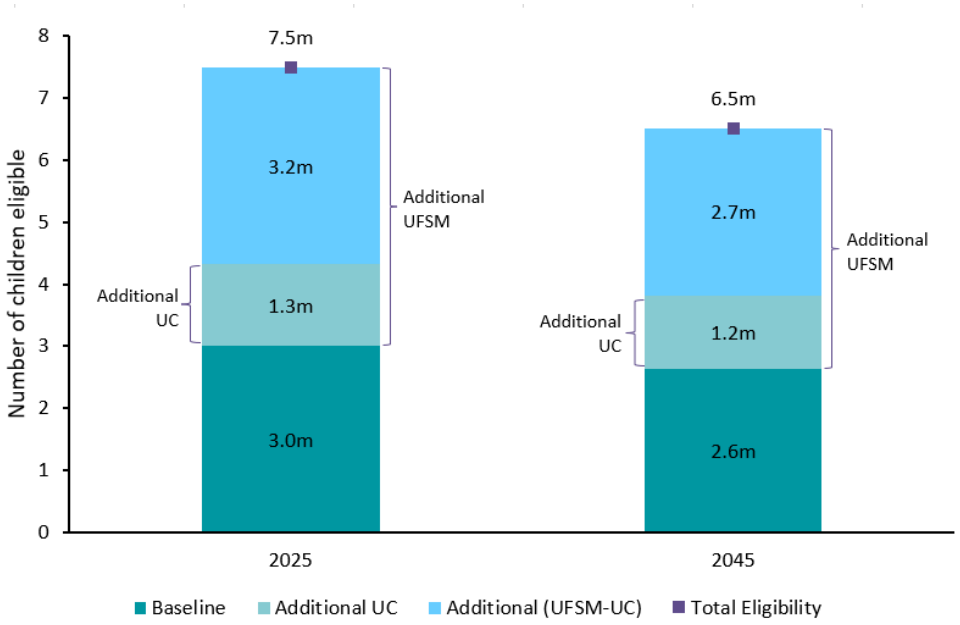
[77] https://explore-education-statistics.service.gov.uk/find-statistics/school-pupils-and-their-characteristics

[78] https://explore-education-statistics.service.gov.uk/find-statistics/school-pupils-and-their-characteristics

[79] https://www.bigissue.com/news/social-justice/uk-poverty-the-facts-figures-and-effects/

[80] https://www.bbc.co.uk/news/business-62408121



In the results, the figures quoted for the UC and UFSM scenarios are based solely on the additional costs and benefits that would accrue from expanding the eligibility criteria.

5.2 Take-up approach

Whilst means-tested FSM are currently available to all children meeting the eligibility criteria, the take-up rate is not 100%. This suggests that on any given day, the number of children actually consuming their FSM is below the number of children who are eligible and registered onto the programme. One factor contributing to the lower than maximum take-up rate is the stigma that surrounds FSM. Feelings of embarrassment and judgement for parents or their children often leads to children not taking up their free lunches.[81] Other factors include parents having insufficient information about the programme or for other personal reasons (e.g. dietary requirements or religious factors). Significantly, evidence from UIFSM provision indicates it has a higher take-up rate (85%) than means-tested FSM; anecdotal evidence suggests this is likely due to the stigma factor being less of an issue as well as parents not having to enrol for access to FSM.[82]

The analysis considers a range of take-up rates separately for each of the scenarios in order to capture the effects of stigma which are likely to be more prevalent in the UC scenario compared to the UFSM scenario. Using a range of take-up rates also allows modelling different scenarios and testing the sensitivity of the results against the take-up rate. For the purpose of this report, the median point of the range was used to form the basis of the results. This is based on take-up rate data from the Government as well as other studies for example, by Newham Council, the Child Poverty Action Group and the Institute for Social and Economic Research (ISER).[83]

5.3 Costs approach

This section provides an explanation of the approach to calculate the two major costs associated with the provision of FSM under the two expansion scenarios.

1. The cost of meal provision

Currently, for the academic year 2022-23, the Government pays £470 per pupil per year for means-tested FSM through the National Funding Formula.[84] This amount is due to increase to £480 for the academic year 2023-24. [85] This total is not necessarily the full amount that goes towards the meal as a competitive contracting process occasionally leads to a lower price per pupil per year being agreed with the school. Assuming the £480 goes

[81] https://www.mwpweb.eu/1/132/resources/document_344_1.pdf

[82] https://explore-education-statistics.service.gov.uk/find-statistics/school-pupils-and-their-characteristics

[83] https://explore-education-statistics.service.gov.uk/find-statistics/school-pupils-and-their-characteristics#dataDownloads-1

[84] https://assets.publishing.service.gov.uk/Government/uploads/system/uploads/attachment_data/file/1003492/2022-23_NFF_Policy_Document.pdf

[85] https://assets.publishing.service.gov.uk/Government/uploads/system/uploads/attachment_data/file/1091988/2023-24_NFF_Policy_Document.pdf

entirely to the cost of the meal provision, this cost was profiled over the 20-year period by applying the £480 to the number of children who are eligible but also take-up their FSM each year. This costing is applied to the UC scenario as it is means-tested.

Under UIFSM, the cost per child per meal of FSM is £2.41, or £457.90 per child per year (assuming 190 lunches are offered in one academic year). Therefore in the absence of means-testing under the UFSM scenario, the cost of meal provision is based on the number of children eligible, taking up their FSM each year multiplied by £457.90.

The cost of meal provision is also likely to decrease as caterers begin to experience economies of scale as production increases as a result of more children taking FSM. This in turn will make it more cost effective and increase the ability of caterers to provide high quality, nutritious meals thus increasing the scope of the benefits associated with FSM and reducing the cost burden on the Government. To account for economies of scale under both expansion scenarios, the analysis undertaken assumes a lower cost of provision for the UFSM scenario relative to the UC scenario.

2. Capital expenditure

One of the largest costs associated with the expansion of FSM is the cost to upgrade kitchen and dining facilities at schools. Whilst some schools have advanced catering systems already in place and the implementation of UIFSM was coupled with funding to upgrade the catering facilities in primary schools, further spending will be required to respond to the increase in pupils eligible for FSM under the two expansion scenarios. Both scenarios assume an average cost of £2,500 per school over two years (2010 price)[86] to upgrade the kitchen and dining facilities. To calculate the total CapEx required, the cost of upgrading kitchen and dining facilities per school (£2,500) was multiplied by the number of state-funded schools for primary and secondary provision in 2021-22.[87]

Under the UC scenario, given the smaller pool of eligible children, it is assumed that 30% of this average cost will be required to upgrade a school's catering facilities, i.e. £750. This 30% is calculated based on the proportion of additional children eligible under the UC scenario relative to the UFSM scenario. This weight was used to account for the variation in demand levels for school meals, as more capital investment would be needed to meet the greater demand from the expansion of FSM. It is estimated that the CapEx per annum for primary schools will therefore be £7.9m and for secondary schools, £1.6m (2022 prices). It is also assumed that the roll out of this spending will be over a 1-year time period and that capital depreciates over a lifespan of 10 years, therefore another 1-year top-up is assumed after ten years.[88]

Under the UFSM scenario, the estimated CapEx per annum for primary schools is £26.6m and for secondary schools, £5.5m (2022 prices). This is based on the cost per school to upgrade their kitchen and dining facilities (£,2500) multiplied by the number of state-funded primary and secondary schools. As more schools will be upgrading their catering facilities and also schools with existing catering facilities will need to increase their capacity in response to the significantly larger pool of children eligible for FSM under this scenario, a longer roll-out period of 2 years is assumed. Again, capital costs are depreciated over 10 years with a 2-year top-up, after ten years. The two tables below summarise the breakdown of total costs including both the cost of meal provisions and the CapEx spending under each scenario.

Under the Universal Free School Meals scenario there is a larger pool of pupils eligible for FSM, therefore the CapEx required to upgrade kitchen and dining facilities is also greater. For this reason, the CapEx is spread over two years for the UFSM scenario but only one year for the UC scenario.

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[86] https://www.gov.uk/Government/publications/evaluation-of-the-free-school-meals-pilot-impact-report

[87] https://www.besa.org.uk/key-uk-education-statistics/

[88] https://assets.publishing.service.gov.uk/Government/uploads/system/uploads/attachment_data/file/937700/Green_Book_Review_final_report_241120v2.pdf

Table 15: Breakdown of costs over the period 2025-2045 for the provision of FSM under the Universal Credit expansion scenario.

	Cost of Provision (Millions)	CapEx (Millions)	**Total costs (Millions)**
2025	£467	£10	£477
2026	£444		£444
2027	£422		£422
2028	£400		£400
2029	£379		£379
2030	£360		£360
2031	£343		£343
2032	£327		£327
2033	£313		£313
2034	£300		£300
2035	£287	£7	£294
2036	£276		£276
2037	£266		£266
2038	£257		£257
2039	£248		£248
2040	£240		£240
2041	£232		£232
2042	£225		£225
2043	£218		£218
2044	£211		£211
2045	£205	£5	£210
Total	**£6,421**	**£21**	£6,442

Table 16: Breakdown of costs over the period 2025-2045 for the provision of FSM under the Universal Free School Meals expansion scenario.

	Cost of Provision (Millions)	CapEx (Millions)	**Total costs (Millions)**
2025	£1,750	£32	£1,782
2026	£1,671	£31	£1,702
2027	£1,592		£1,592
2028	£1,513		£1,513
2029	£1,437		£1,437
2030	£1,367		£1,367
2031	£1,301		£1,301
2032	£1,236		£1,236
2033	£1,176		£1,176
2034	£1,121		£1,121
2035	£1,072	£23	£1,095
2036	£1,029	£22	£1,051
2037	£991		£991
2038	£956		£956
2039	£923		£923
2040	£892		£892
2041	£861		£861
2042	£833		£833
2043	£807		£807
2044	£782		£782
2045	£758	£16	£774
Total	**£24,069**	**£124**	£24,193

5.4 Benefits approach

5.4.1 Education and Employment pathway

5.4.1.1 Evidence and causal link

The role of lunchtimes is to harness an attentiveness to learn amongst pupils that will enable them to benefit to a greater extent from the educational benefits that schooling provides. Lunchtimes do not only allow students to socialise with their friends; they also ensure that students have the nutrition required to continue learning for the remainder of the day. In this context, research also finds a relationship between improved nutritious lunches and reduced absenteeism in the short term.[89] Consequently, an absence of school lunches has been found to diminish pupils' educational attainment as they miss valuable lesson time and poses an increased financial burden on schools who off-set absenteeism and truancy with catch-up programmes.

Benefit 1: Cost savings to schools

Stemming from the nutritional and social improvements that can result from the expansion of FSM provision and uptake, particularly under universal scenarios, children are expected to have improved school/cognitive functioning and improved attendance. Approximately two thirds of absences in primary school are due to illness and medical appointments, and UIFSM was found to improve absence rates for FSM-registered infants.The effect size was found to be equivalent to missing 1.2 fewer whole days at school over the academic year in total. Approximately 60% of this effect was accounted for by reduced absences for illness or medical appointments.[90]

FSM offers all eligible pupils access to hot, nutritious meals which is found to lead to an improvement in attentiveness and a reduction in absences. In the short term, this provides cost savings and relief to schools who can reduce their spending on catch-up programmes and supporting staff. This forms the basis of the first of the two quantitative benefits under the Education and Employment pathway.

[89] https://foodandnutritionresearch.net/index.php/fnr/article/view/7702

[90] https://www.iser.essex.ac.uk/2020/12/02/final-report-published-on-the-impact-of-universal-infant-free-school-meals-policy

In the context of the provision of catch-up programmes, a gap in both absence rates and persistent absence rates exists between disadvantaged and non-disadvantaged pupils. The Department for Education found that the persistent absence rate for FSM eligible pupils in 2021 is 24.4% compared to a persistent absence rate of 8.3% for pupils who were not eligible for FSM.[91] Thereby providing further evidence of the link between FSM provision and absence rates amongst pupils.

Benefit 2: Educational attainment

Evidence suggests the existence of a large educational attainment gap between disadvantaged and non-disadvantaged pupils, with the former more likely to be in receipt of FSM. In this context, FSM expansion is linked to improved educational outcomes and consequent improvements in employment and productivity in the longer term and over the lifetime of an individual. This, in turn, will impact their lifetime earnings as well as their economic contributions through taxation. Thereby contributing towards reducing the educational attainment gap between disadvantaged and less disadvantaged pupils. This forms the basis for the second benefit/impact area under the Education and Employment pathway.

This attainment gap exists from a child's first year of schooling and has been found to continue through to GCSEs and beyond - ultimately impacting lifetime earnings. Using FSM as a proxy for disadvantaged pupils, research from the Institute for Fiscal Studies (IFS) finds that FSM-eligible pupils are 27pp less likely to earn good GCSEs than their less-disadvantaged peers.[92]

A recent ONS analysis found that FSM pupils earned less than their peers, with half of FSM recipients earning £17k or less while the top 10% independent school pupils were earning £71k or more at age 30; even when matching educational level and secondary school attainment.[93] It also found evidence of the earning gap between independent school students and FSM students widening as they got older. Part of this overall gap in lower earnings is because people from income-deprived backgrounds are significantly less likely to continue on to higher education. Additionally, when looking at the earning gap between FSM and non-FSM pupils, 95% of the gap was accounted for by education and labour market experiences.

5.4.1.2 Benefit metrics approach

The approach taken in determining the benefit metrics under the Education and Employment pathway is described below.

In order to model the first benefit area - **increased cost savings to schools**, the analysis is based on research which finds that FSM leads to 1.2 fewer days of absences per year.[94] Annually, schools apportion some of their funding towards educational support staff and catch-up programmes. In this case, a reduction in absenteeism resulting from FSM will result in a cost saving for schools. This cost-saving is calculated by multiplying the annual education support staff cost per pupil by 1.2 divided by 190 (the proportion of fewer days that the support staff will be needed). This annual cost per pupil is then multiplied by the number of additional pupils eligible for FSM under each expansion scenario to estimate the total level of cost savings generated.

The second benefit relating to **increased lifetime earnings and contributions** has been estimated by taking the average marginal lifetime benefit of achieving 5+ good GCSEs multiplied by the number of children eligible for FSM who are completing their GCSEs, i.e.pupils aged 15. In order to profile this benefit over a lifetime, a constant year-on-year (Y-o-Y) benefit over a child's lifetime from the age of 16 (after completing their GCSEs) until they reach 67 (state pension age by 2028) is assumed.[95] The benefits accrued over the 20-year period form the basis of the results for this core benefit in Table 9.

It is assumed that for this lifetime benefit to be experienced a child must be receiving FSM for at least 1 year and that the benefit will begin in the year after GCSE completion. Based on research from the Department of

[91] https://explore-education-statistics.service.gov.uk/find-statistics/pupil-absence-in-schools-in-england

[92] https://www.theguardian.com/education/2022/aug/16/no-improvement-in-school-attainment-gap-in-england-for-20-years-report-says

[93] https://www.ons.gov.uk/peoplepopulationandcommunity/educationandchildcare/articles/whyfreeschoolmealrecipientsearnlessthantheirpeers/2022-08-04

[94] https://www.iser.essex.ac.uk/2020/12/02/final-report-published-on-the-impact-of-universal-infant-free-school-meals-policy

[95] https://www.ageuk.org.uk/globalassets/age-uk/documents/factsheets/fs19_state_pension_fcs.pdf

Education (DfE), the approach assumes a 16.3% improvement in GCSE attainment for those on FSM given fewer absences (transitioning from 5-10% absences to 0-5% absences).[96]

5.4.1.3 Wider supporting evidence

An evaluation of a universal FSM provision pilot by DfE showed that it had a significant positive impact on attainment for primary school pupils at Key Stages 1 and 2, with pupils in pilot areas making between four and eight weeks' more progress than similar pupils in comparison areas who were not part of the pilot. Results tended to be strongest amongst pupils from less affluent families and amongst those with lower attainment before participation in the pilot. This suggests that the improved attainment found in the universal pilot areas result from improvements in productivity at school.[97]

The evaluation further found that (at a cost of around £223 per pupil per year for UFSM provision) these results suggest that it costs £100 to £120 to obtain a 1% increase in attainment at Key Stage 1 and £40 to £60 to obtain a 1% increase in attainment at Key Stage 2. Another study also found that schools that were part of a school meals programme saw enrollment rates improving by 8%, attendance rates increasing by 6% and dropout rates falling by 4% which resulted in test results improving.[98]

Three studies in the United States that looked at the academic performance of students with FSM, found that students whose nutrient intake improved from free meals saw a positive improvement in their maths grades (Kleinman et al 2002[99], Schwartz et al 2020[100] and Wahlstrom et al 1999[101]). The Food and Nutrition Research conducted a study on 55 students found that having school meals helped improve the student's school function including increased concentration, energy and social skills.[102] Evidence suggests that this results in improved educational attainment in the short-to-medium term, leading to improved productivity and employment in the medium-to-longer term, contributing to improved lifetime earnings and contributions in the longer term. One study found a 3% improvement in lifetime earnings as a result of participation in a school lunch programme.[103]

A Cost-Benefit Analysis conducted on a sample of ten countries by the World Food Programme, found that for every dollar invested, it was estimated to give an economic return of 3 to 10 USD from improved health and education among school children and increased productivity when they become working adults.[104] It also found that most of the benefits of school meals programmes derived from the increased productivity of the beneficiaries when they became adults. Where the lifetime NPV due to improved productivity on average represents 67% of the overall benefit. This consisted of two thirds of the lifetime NPV being attributable to increased wages due to better cognition, and one third associated with better education.

5.4.2 Health and Nutrition pathway

5.4.2.1 Evidence and causal link

The section presents the evidence base and approach undertaken in relation to the health and nutrition pathway (in terms of cost savings on food and health). In this context, a key concern is the cost of living crisis particularly for parents and carers. Inflation, as a general measure of prices in the economy, is forecast to go above 13% by the end of 2022, a 40 year high. As a result, the UK is forecasted to fall into a recession by the end of 2023. The effects of this are already being experienced with nine out of ten households reporting an increase in their monthly cost of living.

Benefit 3: Savings on food costs for families

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[96] https://assets.publishing.service.gov.uk/Government/uploads/system/uploads/attachment_data/file/509679/The-link-between-absence-and-attainment-at-KS2-and-KS4-2013-to-2014-academic-year.pdf

[97] https://www.gov.uk/Government/publications/evaluation-of-the-free-school-meals-pilot-impact-report

[98] https://docs.wfp.org/api/documents/WFP-0000038422/download/

[99] https://pubmed.ncbi.nlm.nih.gov/12428078/

[100] https://onlinelibrary.wiley.com/doi/abs/10.1002/pam.22175

[101] https://journals.lww.com/topicsinclinicalnutrition/Abstract/1999/12000/More_Than_Test_Scores__Results_of_the_Universal.4.aspx

[102] https://foodandnutritionresearch.net/index.php/fnr/article/view/7702/13710#content/citation_reference_75

[103] https://www.econstor.eu/bitstream/10419/177038/1/dp11234.pdf

[104] https://docs.wfp.org/api/documents/WFP-0000038422/download/

The increased pressure on households present in the UK leads to many families cutting back on their spending and research finds that food and other essential items are amongst the categories of spending being compromised.[105] This often results in children (particularly those from lower socio-economic backgrounds) going hungry or only able to access poor quality food in terms of nutritional content and value, thereby increasing the relative incidence of obesity and related illness amongst this group.

Additionally, parents cited significant financial benefits as a result of FSM and reported appreciating the time that had been saved from not having to make packed lunches, saving an average of 50 minutes and £10 each week.[106] Another study found that having a child become entitled to UIFSM was found to result in monthly savings of approximately £20 per on food expenditure among not-FSM-registered households with two adults and two children.[107]

Benefit 4: NHS savings (childhood obesity)

Childhood obesity is one of the largest health-related issues concerning England today. Currently, 14.4% of children aged 4-5 are obese, and this figure increases to 25.5% by the end of primary school.[108] Children who are obese are also found to be five times more likely to be obese during adulthood.[109] With obesity's direct links to increasing the likelihood of diabetes, heart-related illnesses and certain cancers, this poses a significant financial cost to the NHS. Childhood obesity also varies significantly by the level of deprivation in an area. Obesity rates are approximately double for children who live in the highest income areas compared to those in the lowest income areas.

Evidence also suggests that high quality school meals contribute to improved dietary choices and habits into adulthood, which can decrease the incidence of adult obesity and reduce diet-related disease and disability at the population level. For children in poverty, one study found that the risk of obesity was reduced substantially after the implementation of wider school meal provision, translating to a 47% reduction in obesity compared to what would have been expected without the legislation.[110]

The Health and Nutrition Pathway maps the outcomes and impact areas arising as a result of this via the following two routes:

a) Increasing access to nutritious lunches leads to a reduction in household expenditure on lunches therefore creating a core benefit of increased savings on food costs for families; and

b) Increasing access to nutritious lunches also improves children's diet and food security therefore leading to a lower incidence of disease or illness (such as obesity). This creates a benefit area of cost savings to the NHS.

Currently, lunches provided via FSM must meet specific nutrition standards outlined by the Government.[111] Increasing these provisions allows for a greater pool of pupils to have access to nutritious food, particularly those who are at increased risk of obesity and are more vulnerable to the effects of the cost living crisis.

5.4.2.2 Benefit metrics approach

In this subsection, the approach taken in calculating the benefit metrics under the Health and Nutrition pathway is described.

In order to model the first benefit relating to **increased household cost savings on food**, two data points were required: firstly, the average yearly household saving per child arising from the provision of FSM and secondly, the number of newly eligible children taking up FSM per annum. FSM are found to provide an average weekly

[105] https://www.bbc.co.uk/news/business-62408121

[106] https://epi.org.uk/publications-and-research/evaluation-universal-infant-free-school-meals/

[107] www.iser.essex.ac.uk/2020/12/02/final-report-published-on-the-impact-of-universal-infant-free-school-meals-policy

[108] https://researchbriefings.files.parliament.uk/documents/SN03336/SN03336.pdf

[109] https://pubmed.ncbi.nlm.nih.gov/26696565/

[110] https://pubmed.ncbi.nlm.nih.gov/26696565/

[111] https://commonslibrary.parliament.uk/research-briefings/sn04195/

household cost-saving of £10.[112] Multiplying this by the number of weeks in the academic year of 38 weeks, the cost-saving per year is calculated to be £380 per child. Applying this cost-saving to the number of children eligible for FSM gives a total discounted benefit between 2025 and 2045 of £5.9bn at 2022 prices under the UC scenario and £22.5bn under the UFSM scenario.

In order to model the second benefit area under the Health and Nutrition pathway, **obesity-related cost savings** were proxied as the major **cost-savings area to the NHS**. Whilst there are many other health-related benefits including mental health cost-savings arising from FSM, obesity is considered one of the largest and most reliable metrics to quantify. To note, in the CBA only childhood obesity was quantified given the limitation on data available to robustly estimate the total NHS cost savings of obesity (i.e. including adult obesity). Thus, the analysis undertaken only captures some of the NHS cost saving benefits related to obesity, not all. According to the School Food Plan published in 2013,[113] almost 20% of children are already obese by the time they leave primary school at eleven. It referenced that children who are overweight are more likely to become obese in adult life and prone to other health conditions, e.g. increase in Type 2 diabetes (supported by The King's Fund study referenced below).

The approach to quantify and model this benefit area was to apportion the NHS spending on treating obesity-related illnesses of £6.1bn to the cost of treating childhood obesity.[114] Using the number of under-16 obesity-related hospital admissions as a proportion of total obesity-related hospital admissions as a proxy for childhood obesity. In this case, 0.8% of the total NHS cost of treating obesity was considered to be treating childhood obesity.[115] This cost was profiled over the 20-year time horizon assuming a constant growth rate of 1.7% (based on a compounded annual growth rate of NHS obesity spending between 2015 and 2050).[116] The number of children who are obese, estimated at 1.6m in 2019, was also projected over the time period assuming a 2.5% annual growth rate (based on a compounded annual growth rate calculated from the obese population in 2019 and the projected obese population in 2040).[117] The annual childhood obesity cost per child could then be calculated by dividing the estimated NHS spending on treating childhood obesity by the forecasted number of obese children in that year.

One year of FSM is found to reduce the prevalence of obesity amongst children by 0.7pp.[118] In order to calculate the cost-savings to the NHS related to treating childhood obesity as a result of FSM, the number of children taking FSM is multiplied by the obesity population growth rate (2.5%) then further multiplied by 0.7% to capture the reduction in the number of children obese as a result of FSM. This is then multiplied by the cost of childhood obesity per child to give total savings to the NHS.

In modelling this benefit, it is assumed that NHS savings related to childhood obesity are lagged by a year, i.e. a pupil must be in receipt of FSM for 1 year before the benefit accrues. The approach also assumes that cost savings does not vary by primary and secondary schools and that one year of FSM results in a reduction in childhood obesity by 0.7pp.

5.4.2.3 Wider supporting evidence

A meta analysis found that among 19 studies conducted on FSM provision in OECD countries (18 peer-reviewed and one Government report, including the UK, Denmark, Norway, Japan, Greece, and New Zealand), 13 found improvements in students' dietary outcomes and three found no association. Of the three studies that examined food insecurity, two studies found improvements and one found no association with universal FSM. Of the studies

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[112] https://feedingbritain.org/wp-content/uploads/2019/06/Hungry-for-Change_Final_Version_GD-002.pdf

[113] http://www.schoolfoodplan.com/wp-content/uploads/2013/07/School_Food_Plan_2013.pdf

[114] https://www.kingsfund.org.uk/sites/default/files/2021-07/Tackling%20obesity.pdf

[115] https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-obesity-physical-activity-and-diet/england-2021/part-1-obesity-related-hospital-admissions

[116] Holmes, J. (2021) Tackling obesity - The role of the NHS in a whole-system approach, The King's fund. Available at: https://www.kingsfund.org.uk/sites/default/files/2021-07/Tackling%20obesity.pdf pp. 2 and 13.

[117] https://news.cancerresearchuk.org/2022/05/19/new-analysis-estimates-over-21-million-uk-adults-will-be-obese-by-2040

[118] https://www.iser.essex.ac.uk/research/publications/526031

examining dietary outcomes that were considered to have a low risk of bias, the majority (6 out of 7) found improvements in dietary outcomes.[119]

Additionally, in an evaluation of UIFSM, school leaders believed UIFSM had improved the profile of healthy eating across their school, and parents reported that it had encouraged their children to diversify their food intake, consuming more fruit and vegetables. 41% of school leaders reported that the general profile of healthy eating across the school had improved as a direct result of UIFSM. The evaluation estimated consumer benefits from UIFSM at £0.5bn in 2017-18 or £4.4bn in NPV terms over the period.[120] Studies carried out by the World Food Programme also found that on average, 21% of the overall benefit consists in the transfer of additional income to the household, including the value of the food received and the healthcare expenditures avoided due to the children's better health.[121]

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 percent of primary children's packed lunches meeting the nutritional standards set for their classmates eating school lunches.[122] One study found that children who had a packed lunch consumed on average 11.0g more total sugars and 101mg more sodium over the whole day. Conversely, children who received a school meal consumed, on average, 4.0g more protein, 0.9g more fibre and 0.4mg more zinc .[123] This improvement in nutrition and lifestyle choices is linked to reduced risk of CAD, ischemic stroke, diabetes, and specific diet-related cancers in the longer term.[124]

Another study in Canada found that food insecurity was associated with higher likelihood of mental health conditions (i.e. suicidal thoughts, mood disorders and anxiety disorders).[125] This pattern became progressively worse as food insecurity increased. For instance, the study found that marginal, moderate and severe food insecurity were associated with 1.77, 2.44 and 6.49 times higher risk of suicidal thoughts, respectively. It also found that moderate food insecurity was more closely associated with mental health problems at the age of 18-24 year olds relative to 12-17 year olds.

5.4.3 School Food Economy pathway

5.4.3.1 Evidence and causal link

FSM relies on a catering system to support the provision of lunches. The operating model of catering services varies on a council by council basis, with some councils' catering provisions being fully sourced locally/in-house (e.g. Newham's Eat for Free scheme[126]) and others relying on external private caterers for provision. As eligibility increases, it is expected that caterers will benefit from increased demand for their lunches and reduced costs resulting from economies of scale.

Benefit 5: GVA in the wider economy

Given increases in FSM eligibility means caterers will benefit from increased demand for their lunches and reduced costs resulting from economies of scale. This increased demand for catering is expected to result in the expansion of employment opportunities in the school food economy (i.e. catering/provision) and can help strengthen local and wider economies around school food provision.[127] This would in turn lead to indirect and induced impacts from increased spending in the local and wider economy, resulting in overall growth in Gross Value Added (GVA).

One study found that in Nottinghamshire, spending for school meals locally within a FSM framework had generated over £5m in value each year. The proportion of spending on ingredients from seasonal, local produce had risen by £1.65m per year, returning £3.11 in social, economic and environmental value for every £1 spent. In

[119] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8000006/pdf/nutrients-13-00911.pdf

[120] https://epi.org.uk/publications-and-research/evaluation-universal-infant-free-school-meals/

[121] https://docs.wfp.org/api/documents/WFP-0000038422/download/

[122] https://epi.org.uk/publications-and-research/evaluation-universal-infant-free-school-meals/

[123] https://eprints.leedsbeckett.ac.uk/id/eprint/3308/1/impact-of-school-lunch-type-on-nutritional-quality-of-english-children-s-diets.pdf

[124] https://www.ncbi.nlm.nih.gov/books/NBK11795/

[125] https://jech.bmj.com/content/75/8/741.full?s=03

[126] https://mgov.newham.gov.uk/documents/s153700/Appendix%201%20-%20We%20are%20Food%20Secure%20Six-Months%20Update.pptx.pdf

[127] https://www.rockefellerfoundation.org/wp-content/uploads/2021/11/True-Cost-of-Food-School-Meals-Case-Study-Full-Report-Final.pdf

Plymouth, the study valued the change in spending on seasonal, local produce at £384,000 per year. This spending into the local economy was found to generate £1.2m of value per year, a return of £3.04 for every £1 spent.[128] Another study in Scotland calculated a £6 return to the local economy for every £1 spent on school meal procurement using the Social Return on Investment (SROI) method.[129]

The food industry also has a central role to play in the Government's Levelling Up agenda, as it is present in every part of the country and invests in local communities through employment opportunities and economic activity. In the UK, 75% of foods are produced domestically, and as part of its food strategy, the Government aims to maintain this current level.[130] It also seeks to monitor and strengthen the resilience of supply chains and support the UK's domestic production by helping farmers and food producers locally.

5.4.3.2 Benefit metrics approach

In order to model the impact of increased GVA in the wider economy resulting from the expansion of FSM, the approach focuses on quantifying the direct and indirect GVA impact. To do this, three data points were needed. Firstly, the estimated total number of additional catering staff who would be employed as a result of FSM expansion. Secondly, the average GVA per head in order to calculate the direct impact from the additional catering staff. Thirdly, the GVA Type I multiplier for the Food and Beverage industry in order to calculate the gross indirect impact from the additional catering staff.

To calculate the total number of additional catering staff employed across the country for each of the FSM expansion scenarios, the average number of catering staff employed in a local authority was taken and multiplied by the current total number of local authorities in England (333).[131] This gave the total number of catering staff employed in England. A subset of this figure was then used to calculate the additional number of staff needed for each expansion scenario.

For the UFSM scenario, it is assumed that 30% additional staff are required. This is based on additional staff figures from UIFSM.

For the UC scenario, it is assumed that the additional number of catering staff required will increase by 9%. This assumption is calculated in two steps. Firstly the ratio of children eligible for FSM in the UC scenario to the UFSM scenario is calculated (31%). This ratio is then applied to the additional catering staff figure of 30% assumed for the UFSM scenario. It is therefore assumed in the analysis that the number of additional catering staff is dependent on the number of children eligible for FSM and also dependent on the take-up rate.

The direct impact generated from the additional catering staff is then calculated by multiplying the number of additional catering staff under each scenario by the average GVA per head in England, £27,949 (2017 prices). Applying the GVA Type I multiplier for the Food and Beverage industry (1.62) to the estimated direct GVA impact calculates the gross indirect impact on the wider economy for each scenario.

In order to profile the direct and indirect benefits, under the UC scenario, it is assumed that roll-out of FSM takes 1 year and that in the first year there would be an immediate 9% uplift in the number of catering staff. Under the UFSM scenario, it is assumed that there is a step change in the number of additional catering staff, i.e. a 15% uplift in the first year and another 15% increase in the second.

5.4.4 Detailed description of the assumptions and limitations

To supplement the understanding of the results presented in Chapter 4, the following subsection will outline the key assumptions and limitations that were used for the CBA approach.

5.4.4.1 Assumptions

A set of key assumptions were used to estimate the costs and benefits of FSM expansion within the CBA approach, which is listed below:

[128] https://www.foodforlife.org.uk/~/media/files/evaluation%20reports/fflp-nef—benefits-of-local-procurement.pdf

[129] https://vbn.aau.dk/en/publications/balancing-competing-policy-demands-the-case-of-sustainable-public

[130] https://www.gov.uk/Government/publications/Government-food-strategy/Government-food-strategy#food-security-and-sustainable-production

[131] https://www.gov.uk/guidance/local-Government-structure-and-elections#:~:text=In%20total%20there%20are%20333,unitary%20authorities

- **Estimating additional benefits -** To estimate the additional benefits of expanding FSM, the benefit metrics identified were applied to the newly eligible pupils under each scenario i.e. excluding the baseline.
- **Duration of benefits** - The time period over which the benefits will accrue depends on the specific expansion scenarios. A consistent approach was used where the following assumptions were applied:
    - Benefits accrue to each FSM eligible child for the duration of the initial intervention (2025). For instance, for short-term benefits where children have been on FSM for a year, with the assumption that the benefits accrue within the given year.
    - The approach assumes that the benefits will accrue for the entire duration for existing and new FSM eligible children, unless otherwise stated.
        - It is assumed that no children drop-out of education and that they continue to be in receipt of FSM during the modelled period.
        - For costs and benefits, the first year of the analysis is 2025 and the final year is 2045. The model does not account for any costs and benefits that may accrue post 2045 (this is detailed in the Timing section below).
    - **Variation by school type** - The approach undertaken estimates the number of FSM eligible children by school type (maintained nursery, primary and secondary schools) under the two expansion scenarios. This is to account for the differences in costs and benefit estimates across the school types where appropriate. Where there is no evidence on children-specific estimates by school types, the analysis either uses the national or local authority average. For instance, for the food school economy benefits, local authority level data on the number of catering staff was used which was then apportioned to the different school types.
    - **Homogeneity** - School children are a heterogenous group, especially in terms of their financial and socioeconomic backgrounds which could influence each individual's use of FSM. Where some will take-up FSM and receive benefits more than others or at varying degrees. This approach uses average values for the cost and benefit associated with FSM expansion and so assumes homogeneity across the targeted population with respect to data availability.
    - **Adjustment to values** - Unit values for cost and benefits from a variety of sources were used. This means that the values needed to be adjusted to take account of inflation and for Social Time Preference Rate where:
        - All values are in current prices (2022 prices) to ensure that they can be compared across different points in time. No adjustment is made to account for future inflation so the values are in real terms.
        - Furthermore, to account for society's time preference the values are discounted to 2025, which is consistent with guidance in HM Treasury's Green Book. This is to bring figures to a net present value ('NPV') to ensure that they are comparable costs and benefits for a given year. For most of the values, this has been discounted by 3.5% which is the standard discount rate and for the health related benefits this has been discounted by 1.5% (in line with Government guidance).

Whilst this analysis does not strictly follow the methodology set out in HM Treasury's Green Book, it does align to the core principles of its methodology. This includes focusing on the economic costs and benefits of FSM, rather than the financial costs. That is, the analysis estimates the costs and benefits to individuals, households, the public finances and wider society as a result of the expansion scenarios by valuing them in monetary terms rather than focusing on funding and affordability for the public sector.

5.4.4.2 Limitations

In this subsection the key limitations to the approach are described below, which are deemed acceptable given the level and robustness of data available to date and the scope of the work.

- **Uses secondary evidence** - the CBA relies only on secondary sources to estimate the economic costs and benefits of the two expansion scenarios. No engagement with those directly involved in the delivery or receipt of the FSM provision was undertaken (no primary data). Instead, the approach relied on historic evidence and studies to supplement the CBA.

- **Uses averages** - It deals with averages rather than individuals. So, rather than considering the potential pathways of each individual, the CBA captures the average unit costs and benefits of the two expansion scenarios across the segment of the target population that is assumed to receive the intervention. Some of the unit cost and benefit estimates may not be accurate for specific individuals due to their personal circumstances. The results should, therefore, be interpreted as an estimate of the overall costs and benefits associated with expanding FSM.
- **Uses stock estimates** - The approach uses the initial stock estimates of the number of children eligible for FSM under each expansion scenario and forecasts the year on-year changes to estimate how many eligible children are expected to be in receipt of FSM. The analysis does not account for how many people flow in and out of the eligibility pool over the whole period nor does it account for the flows between the scenarios.
- **Measures only FSM scheme impact** - The approach undertaken focuses on estimating the costs and benefits of directly expanding FSM to a wider pool of children. Recognising that there may be additional costs and benefits associated with a series of additional policy changes that could indirectly contribute to FSM provision, however the CBA approach does not estimate the costs and benefits for these policy changes.
- **Impact within a modelled time horizon** - Notably, some of the benefits measured in the approach will accrue outside of the time horizon considered (2025-2045), but the full costs for those interventions are accounted for in the analysis. In this case, not all of the benefits attributed from FSM, particularly the long term benefits, would have been fully captured in the time horizon analysed. Thus, the benefits could be understated. Given limitations in cost data, the analysis does not fully account for the economies of scale from FSM provision and so there is expectation the costs would be lower than modelled.
- **Gross estimates** - The CBA approach estimates the costs and benefits of expanding FSM in gross terms and therefore it does not take into account net inflows and outflows (additionality) in terms of deadweight, displacement and leakage effects.

5.5 ToC considerations

During development of this ToC, it was recognised that expansion of FSM provision could be considered to be an outcome in and of itself. Achieving such expansion would require change at the policy level through influencing, or as an activity from which benefits would stem. To clarify, for the purposes of the CBA, FSM expansion was considered to be an activity, with take-up of FSM by children as an output, leading to outcomes (benefits) across the impact pathway. This reduces the complexity in analysing the effects of FSM expansion, allowing for more effective analysis of costs and benefits. Understanding the pathways to the expansion of FSM provision may require a separate ToC that designates the expansion as its impact statement.

When approaching the ToC it is important to note that:

- Stakeholders/Coalition members are not required to deliver activity through the domains of change
- Stakeholders/Coalition members will have different starting points and different trajectories through the ToC and some may be focusing activity on barriers and/or enablers of achieving FSM provision in the first instance
- Stakeholders/Coalition members are not expected to achieve results in every level of the causal pathway. Contribution to impact will depend on the scope and scale of the activity
- Stakeholders/Coalition members will not be expected to measure results beyond short term and long term outcomes. External evaluation would be highly recommended to assess the synergistic effects of the domains of change.

5.6 Description of stakeholder engagement

A total of 14 consultations were conducted with 21 stakeholders from across the FSM system to help understand the opportunities and challenges associated with the costs and benefits of FSM expansion. Stakeholder engagement is summarised below.

Table 17: Summary of stakeholder engagement

Organisation	Number of stakeholders engaged
Impact on Urban Health	2
Bremner Consulting	2
School Food Matters	2
Food Foundation	1
BiteBack 2030	1
Chefs in Schools	1
Sustain	1
Southwark Council	1
Child Poverty Action Group	1
Soil Association	1
London Borough of Newham	1
Department for Education	4
Office for Health Improvement and Disparities	2
University of Essex	1

Key discussion points and findings from the consultations are summarised as follows:

- Most stakeholders felt that two scenarios were most appropriate to the CBA: Scenario 1: Inclusion of all those receiving Universal Credit (UC); and Scenario 4: Universal inclusion of all children across all state funded education settings. Scenario 1 was seen as more realistic, but Scenario 4 was seen as having greater potential for impact.
- Costs were seen as a complex topic to tackle. Administrative costs, in particular, were recommended as a point for focus, as these costs can vary greatly depending on the model of FSM provision.
- Stakeholders discussed universal free school meals for primary students versus universal free school meals for secondary students as potentially realistic scenarios. The former was more often seen as preferred due to higher likelihood of implementation and due to evidence showing greater uptake of FSM by primary students than by secondary students.
- Stigma related to FSM was often cited as a key barrier to uptake, and overcoming that stigma was seen as important to achieving outcomes. Universal scenarios may help with overcoming this stigma, and evidence points towards positive outcomes.
- Quality of food provision was also highlighted as a major barrier to uptake.
- Policy implications: Many stakeholders noted the importance of engaging Government departments (DfE, DWP, DHSC, DEFRA) in this work, as their evidence and perspectives were seen as important for shaping the results and messaging.

- Many stakeholders noted the importance of studying the potential link between FSM expansion and the Pupil Premium.
- Policy-wise, it will be important to be able to provide evidence of the wider societal and economic benefits of FSM. The case for health and nutritional improvements as a result of FSM provision is generally mainstream, but policy and decision makers must be able to see the results of FSM expansion on education, employment, and other societal/economic outcomes.
- One key area where a wider evidence base may be scarcely populated is the potential impact of FSM expansion on local economies. In some cases (e.g., Newham), the expansion of FSM led to increased demand from local caterers, resulting in local job creation to fulfil demand.
- Universal scenarios, while potentially less realistic in the current policy environment, may have greater all-around benefits for students (e.g. overcoming stigma, improving quality of food provision, improving uptake). Universal FSM can further help overcome the idea that FSM are for poor or underprivileged households, increasing overall acceptance and reducing negative associations with the idea that the taxpayer would be paying to feed children from families that are able to afford it. A universal approach is also potentially more efficient when calculated per capita due to economies of scale.
- Where local food economies have catered for school meals, the expansion of FSM provision has led to positive impacts (e.g. job creation) within local economies with net positive benefits to communities. Additionally, local authorities are better able to manage these local food/catering economies to ensure the quality of food provision meets required standards.

5.7 Theory of Change Annex

Introduction

Almost 2.5 million people used a food bank in 2020/2021 in the United Kingdom, 600,000 more than the previous year. Rising national food poverty levels, increasing inflationary pressures, and the COVID-19 pandemic have highlighted the importance of Free School Meal (FSM) provision for children from all households, particularly those with lower incomes. Many children rely on free school meals for their daily nutrition; however, FSM provision continues to fall short in terms of entitlement, uptake and the nutritional quality of food provided. Current policy around eligibility criteria means that only children from households earning less than £7,400 per year can access FSM, leaving a large number of children living in households with low incomes/no income ineligible. It has been estimated that 1 in 3 children living in poverty do not qualify for FSM. There is evidence that shows that inequitable access to nutrition at school can lead to widening health, economic, and social inequalities and increased costs to the NHS and wider economy in the longer term.

Impact pathway

School food is a key component of Impact on Urban Health's (IoUH) 10-year programme to improve food environments for children living in areas with low household incomes. IoUH's Childhood Obesity programme is investing in coordination of campaign activity between School Food Matters, Food Foundation, BiteBack2030, and Chefs in Schools to call for a government reform of England's school food and funding mechanisms to improve the nutritional quality of school meals and expand eligibility to FSM. The campaign will contribute to the reduction of the health, economic, and social inequalities that result from inequitable access to nutrition at school, increasing the opportunity for people in England to more actively participate in social and economic activity. This system-level Theory of Change (ToC) recognises that FSMs are one of a spectrum of factors that contribute towards impact in the longer term, denoting contribution vs. attribution.. It details the expected impact pathway and benefits from the expansion of FSM provision in England, along with underlying assumptions, under five interrelated domains of change:

1. Health & nutrition outcomes
2. Social outcomes
3. Education & employment outcomes
4. Environmental outcomes
5. Economic outcomes (school food economy)

Economic outcomes are further associated with each of the above domains of change. While this ToC intends to map out complete pathways from the expansion of FSM provision and uptake, it also includes a summary of key systemic factors that can be influenced to achieve this expansion, under five barriers/enablers:

1. Entitlement
2. Funding System
3. Procurement and Operations
4. Accountability
5. Uptake

This ToC was informed through individual consultations and a workshop with IoUH and nominated stakeholders, in addition to a review of existing literature. Its intent is to provide an iterative, living framework that should be updated through testing and evaluation over time. As this ToC provides a broad overview of the FSM system, operationalising the framework under specific interventions or influencing work will require the development of more specific evaluation plans in line with intended outcomes, which can be selected as priority pathways from the broader ToC.

Health & nutrition outcomes

There is evidence to show that FSM provision and uptake, particularly under a universal provision scenario, can create a more standardised approach to school food consumption. This creates more equitable access to school and improves the quality of food consumed by children at school. There is also strong evidence that links increase uptake up of school meals to improve nutritional balance of food consumed during the school day.[132] There is evidence that a more standardised approach to school nutrition, with increased involvement of schools in educating around healthy eating habits, improves eating habits at school and during childhood, helping to reduce incidence of childhood obesity.[133]

Additionally, by providing children with free school meals, lower income households face lower costs for food provision and reduced financial pressures, which can increase their ability to purchase more nutritious food.[134] Evidence suggests that this can help to improve overall household food security in the medium term.[135] Evidence suggests that this contributes to improved dietary choices and habits into adulthood, which can decrease the incidence of adulthood obesity and reduce diet-related disease and disability at the population level. This can help to decrease the pressure on health services, saving costs for the NHS over the longer term

Evidence further suggests that improvements in educational, social, and health outcomes are linked to improved mental health/wellbeing for children and adults in the medium to longer term.[136]

Social outcomes

Evidence suggests that a more standardised approach to school food provision and uptake can further promote a more inclusive eating environment, which increases the opportunity to socialise between children from different social backgrounds. Evidence further suggests that this can help reduce the social differences between children and can increase opportunities for positive social interactions during eating times at school. This can improve

[132] Illøkken, K.E.,et al. 2021. Free school meals as an opportunity to target social equality, healthy eating, and school functioning: experiences from students and teachers in Norway, Food & Nutrition Research

[133] Simmons, M., et al. 2016. Predicting adult obesity from childhood obesity: a systematic review and meta-analysis, Obesity Reviews

[134] Long, R., *et al*. 2022. School meals and nutritional standards in England, *House of Commons Library*

[135] Kenney, E.L., et al. 2020. Impact Of The Healthy, Hunger-Free Kids Act On Obesity Trends, Health Affairs

[136] Goudie, S. 2022. Children Missing Out on Free School Meals, The Food Foundation

social skills and capital into adulthood, in the medium-to-longer term. Evidence suggests that this contributes to improved social cohesion at the community level in the longer term.[137]

Education & employment outcomes

Evidence suggests that improved nutrition from free school meals results in improved ability to learn and reduced absenteeism in the short term. Reduced absenteeism is further linked to reduced costs on schools (e.g. catch-up programmes). There is evidence that this improves educational attainment in the medium term. Evidence links this improved educational attainment to improved productivity and employment in the medium-to-longer term. Further, evidence has shown a link between that improved productivity and employment contributes to improved lifetime earnings and contributions in the longer term.[138] [139]

Economic outcomes (school food economy)

Under the School Food Economy domain of change, evidence links increased demand for catering to the expansion of employment opportunities and increased spending in the school food economy (catering/provision). If market actors within the catering supply chain expand their operations to meet increased demand, evidence suggests that this can help strengthen local and wider economies around school food provision.[140]

Environmental outcomes

Evidence further suggests that Increased demand for locally catered school food is further expected to lead to increased demand for more sustainable produce. This will reduce importing of produce and increase consumption of sustainable produce in the medium term, reducing emissions as a result in the longer term.[141]

[137] Illøkken, K.E.,et al. 2021. Free school meals as an opportunity to target social equality, healthy eating, and school functioning: experiences from students and teachers in Norway, Food & Nutrition Research

[138] Alex-Petersen, J., et al. 2017. Long-Term Effects of Childhood Nutrition: Evidence from a School Lunch Reform, IZA Institute of Labor Economics

[139] Wickramasinghe, K. 2017. Environmental and nutrition impact of achieving new School Food Plan recommendations in the primary school meals sector in England, BMJ Open

[140] Ibid.

[141] The Rockefeller Foundation. 2021. The Cost of Food: School Meals Case Study

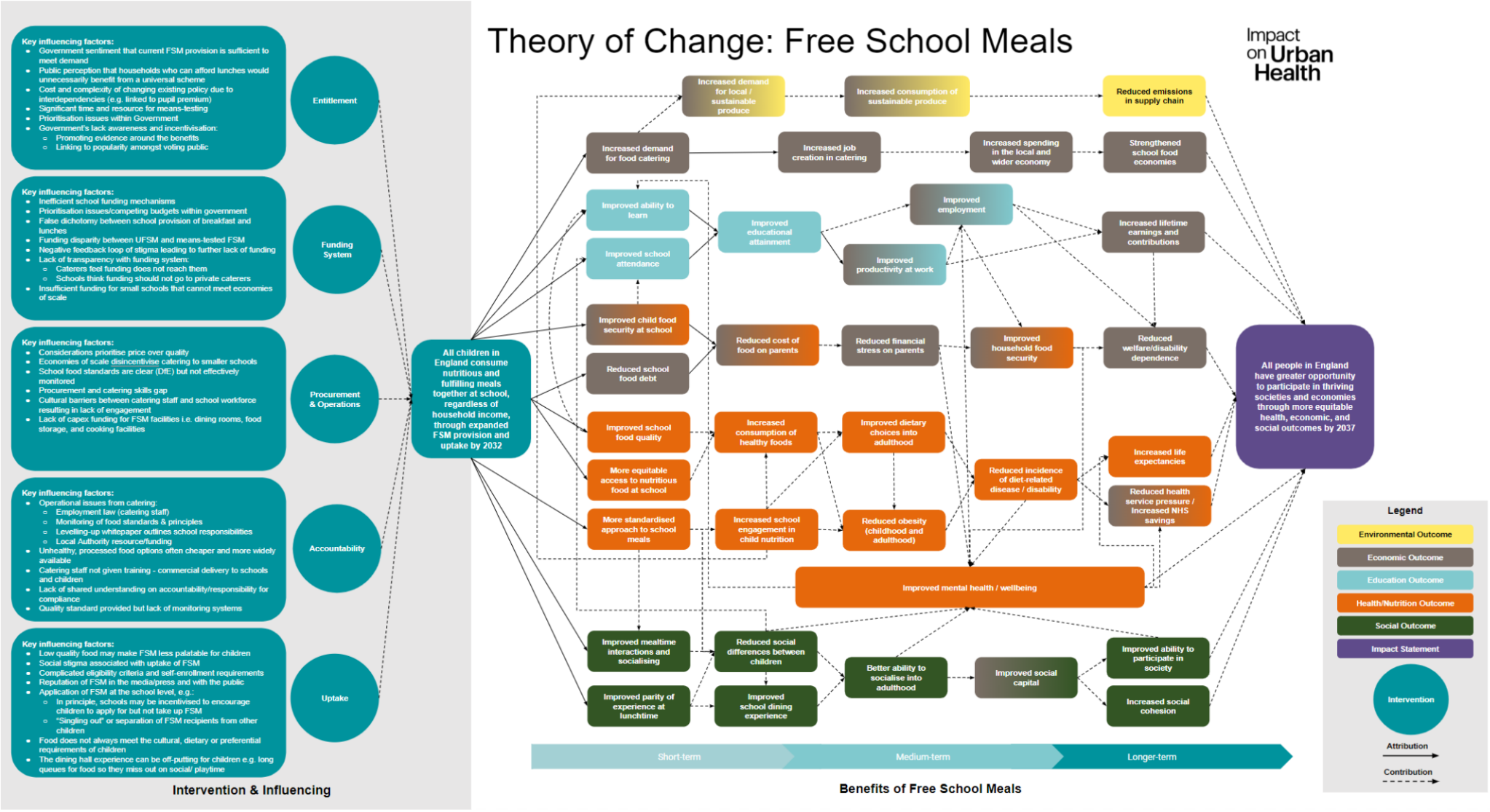
Theory of Change: Free School Meals
Impact on Urban Health
Key influencing factors:
Government sentiment that current FSM provision is sufficient to meet demand
Public perception that households who can afford lunches would unnecessarily benefit from a universal scheme
Cost and complexity of changing existing policy due to interdependencies (e.g. linked to pupil premium)
Significant time and resource for means-testing
Prioritisation issues within Government
Government's lack awareness and incentivisation:
Promoting evidence around the benefits
Linking to popularity amongst voting public
Entitlement
Key influencing factors:
Inefficient school funding mechanisms
Prioritisation issues/competing budgets within government
False dichotomy between school provision of breakfast and lunches
Funding disparity between UFSM and means-tested FSM
Negative feedback loop of stigma leading to further lack of funding
Lack of transparency with funding system:
Caterers feel funding does not reach them
Schools think funding should not go to private caterers
Insufficient funding for small schools that cannot meet economies of scale
Funding System
Key influencing factors:
Considerations prioritise price over quality
Economies of scale disincentivise catering to smaller schools
School food standards are clear (DfE) but not effectively monitored
Procurement and catering skills gap
Cultural barriers between catering staff and school workforce resulting in lack of engagement
Lack of capex funding for FSM facilities i.e. dining rooms, food storage, and cooking facilities
Procurement & Operations
Key influencing factors:
Operational issues from catering:
Employment law (catering staff)
Monitoring of food standards & principles
Levelling-up whitepaper outlines school responsibilities
Local Authority resource/funding
Unhealthy, processed food options often cheaper and more widely available
Catering staff not given training - commercial delivery to schools and children
Lack of shared understanding on accountability/responsibility for compliance
Quality standard provided but lack of monitoring systems
Accountability
Key influencing factors:
Low quality food may make FSM less palatable for children
Social stigma associated with uptake of FSM
Complicated eligibility criteria and self-enrollment requirements
Reputation of FSM in the media/press and with the public
Application of FSM at the school level, e.g.:
In principle, schools may be incentivised to encourage children to apply for but not take up FSM
"Singling out" or separation of FSM recipients from other children
Food does not always meet the cultural, dietary or preferential requirements of children
The dining hall experience can be off-putting for children e.g. long queues for food so they miss out on social/ playtime
Uptake
Intervention & Influencing
All children in England consume nutritious and fulfilling meals together at school, regardless of household income, through expanded FSM provision and uptake by 2032
Increased demand for local / sustainable produce
Increased consumption of sustainable produce
Reduced emissions in supply chain
Increased demand for food catering
Increased job creation in catering
Increased spending in the local and wider economy
Strengthened school food economies
Improved ability to learn
Improved school attendance
Improved educational attainment
Improved employment
Improved productivity at work
Increased lifetime earnings and contributions
Improved child food security at school
Reduced school food debt
Reduced cost of food on parents
Reduced financial stress on parents
Improved household food security
Reduced welfare/disability dependence
Improved school food quality
More equitable access to nutritious food at school
More standardised approach to school meals
Increased consumption of healthy foods
Increased school engagement in child nutrition
Improved dietary choices into adulthood
Reduced obesity (childhood and adulthood)
Reduced incidence of diet-related disease / disability
Increased life expectancies
Reduced health service pressure / Increased NHS savings
Improved mental health / wellbeing
Improved mealtime interactions and socialising
Improved parity of experience at lunchtime
Reduced social differences between children
Improved school dining experience
Better ability to socialise into adulthood
Improved social capital
Improved ability to participate in society
Increased social cohesion
All people in England have greater opportunity to participate in thriving societies and economies through more equitable health, economic, and social outcomes by 2037
Short-term
Medium-term
Longer-term
Benefits of Free School Meals
Legend
Environmental Outcome
Economic Outcome
Education Outcome
Health/Nutrition Outcome
Social Outcome
Impact Statement
Intervention
Attribution
Contribution

Table 18: Key Theoretical Assumptions & Benefit Metrics

	Assumptions	Benefit Metrics
Impact	• FSM leads to improved opportunities and increased contribution to the economy and to society. • Contributions to the economy benefit the individuals and their community. • There will be greater relative impact on those of lower income background if there is universal FSM. • Improved health outcomes as a result of FSM provision will reduce pressure and costs on the NHS in the long term. • Improved health, nutrition, economic, education, and social outcomes lead to improved mental health and wellbeing.	• NHS savings on obesity costs • NHS savings on other health conditions (e.g. mental health) • Lifetime productivity rates
Health and Nutrition	• The provided food will be healthy/provide high nutritional value. • Children want to a have a range of school lunch options that reflect their needs and preferences and enough food so they feel fulfilled. • Schools will take on a wider role in health & wellbeing, including nutrition education. • Improved food education will promote consumption of healthier food options beyond the school day. • Families with less financial pressure will purchase healthier food at home and have increased food security. • Healthier eating habits in childhood leads to reduced childhood obesity. • Reduced childhood obesity leads to improved longer term health.	• Childhood obesity levels • Children's food security • Household food security (expenditure on food savings) • Children's dietary diversity
Social	• Universal FSM provision has an impact on food culture at schools. • Universal FSM provision helps overcome social stigma around FSM. • Increased socialisation during school meal times will improve children's social skills. • Improved socialising experiences and skills at school leads to improved social skills and reduced social barriers as adults. • Improved social skills will improve ability to participate in society in adulthood. • Reducing social barriers will improve social cohesion in the long term.	• Social capital • Social cohesion • Behaviour in school

Education	• Improved nutrition leads to improved cognitive behaviour and function. • Improved cognitive behaviour and function leads to improved educational attainment. • Improved educational attainment leads to better employment and increased productivity into adulthood.	• Educational attainment economic value (GCSE and A-level) • Improved job prospects and youth employment • Cost savings for absenteeism
School Food Economy	• Increased demand for FSM catering has a knock-on effect on the local/wider catering economy and job creation. • Caterers will employ locally.	• Direct impact from catering staff (GVA per head) • Indirect impact from supply chain activities
Environmental	• If schools demand more local / sustainable produce for FSM, then caterers will comply. • Local food production is able to keep up with increased demand from FSM expansion.	• GHGE from school food supply chain

Table 19: Contextual Assumptions

	Provision	Uptake
Systemic	• Decision makers and stakeholders in the FSM system (LAs, school administration, catering staff) possess good knowledge and understanding of standards. • Decision makers and stakeholders understand the FSM funding model. • There is capital expenditure to support operations and implementation. • Money from Government is ring-fenced for FSM, preventing allocation to other expenditure streams. • Headteachers and schools have enough support / resources and are empowered to implement FSM. • Schools have the space/facilities/staffing to deliver FSM.	• In non-universal FSM scenarios, parents are aware of FSM eligibility. • Parents are supportive of FSM/universal FSM. • Quality is high enough for take-up from over 85% of children (including currently ineligible children). • The food is suited to cultural and religious dietary requirements/preferences. • Children are required to take up FSM without alternative, off-site food options. • Cultural assumptions around social dining experiences (e.g. dining table, cutlery, sharing, etc.) are accounted for.

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