NHS Health Scotland

Evaluability assessment of Free School Meals for all children in P1 to P3.

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Executive summary

From January 2015 Scotland will move from the current targeted system of free school meal provision, focused on children from families in receipt of certain prescribed benefits, towards a new system of universal provision of free school meals (FSM) for all children in the first three years of primary school (P1 to P3), in addition to the existing arrangements.

This policy change is set within the wider context of school food and nutrition provision and education, which has been influenced by a series of Scottish policies and guidance over the last decade, from *Hungry for Success* (2003) through to, more recently, *Better Eating, Better Learning* (2014).

Working in partnership with key stakeholders – including the Scottish Government and Education Scotland HM Schools Inspectorate – NHS Health Scotland, MRC/CSO Social and Public Health Sciences Unit (SPHSU) at the University of Glasgow and the Scottish Collaboration for Public Health Research and Policy (SCPHRP) at the University of Edinburgh undertook an evaluability assessment of this policy change. An evaluability assessment seeks to inform decisions about whether and how to evaluate new policies and programmes by weighing the value of the evidence from an evaluation for informing future decisions against the likely costs and practicality of gathering that evidence.

The evaluability assessment included a rapid review of the literature on FSM and consultation with key stakeholders to inform the development of a theory of change for FSM. This identified the following key outcomes:

- Increased school meal uptake
- Cash savings for families not already in receipt of free school meals
- Increased demand for food from local and sustainable sources
- Healthier diets
- Improved school behaviours
- Improved educational attainment.

The theory of change also highlighted a number of positive and negative unintended consequences, including impacts on other aspects of school life such as provision of PE, potential increases in inequalities and impacts on school meal uptake of children in P4 to P7.

An assessment of the availability and quality of possible sources of data for monitoring and evaluating the impact of the policy on these outcomes and unintended consequences was then undertaken. This identified a number of data sources which could potentially contribute to an evaluation, including administrative sources, data collected through HM Schools Inspectorate, the annual Scottish Government *Healthy Living Survey* and the *Growing Up in Scotland* study. New primary data collection was also considered, including surveys with children and school catering staff, and qualitative research with families.

Taking account of the quality of existing data and the constraints of time and cost, the project group recommended making best use of existing data sources, specifically the annual *Health Living Survey* and the *Growing Up in Scotland* study. To evaluate the implementation of the policy, additional data collection was recommended, to be undertaken in partnership with Education Scotland's HM Schools Inspectorate, plus a study of the impact on the nutritional content of school meals to be undertaken with nutritionists at Queen Margaret University College. It was further recommended that a project team and advisory board be established to help develop and implement a more detailed evaluation proposal.

Introduction

This paper presents an evaluability assessment of the extension of free school meals to all children in their first three years of primary school (P1 to P3) in Scotland. Evaluability assessments are intended to inform decisions about whether and how to evaluate new policies and programmes by weighing the value of the evidence an evaluation would provide, in terms of informing future decisions, against the likely cost and practicality of gathering that evidence.

In section 1 we outline the changes to the school meals system in Scotland. In section 2 we present a theory of change for universal free school meals (FSM) and the key outcomes expected. In section 3 we provide an assessment of the data quality and availability for those outcomes. In section 4 we present options for monitoring and evaluating the policy in terms of the outcomes listed in section 2 and given the constraints on data availability summarised in section 3. In section 5 we present our recommendations.

1. Moving to universal free school meals (FSM)

In January 2015, Scotland will move from a targeted system of free school meals, in which free meals are available only for children whose parents/carers receive certain prescribed benefits, or for young people who themselves receive benefits, to the provision of FSM for all children in P1 to P3, in addition to the existing arrangements (*Box 1*).

Box 1: Free School Meals in Scotland – key statistics

At present:

- 18.8% of all school-age children were registered for FSM in February 2014.
- Around 80% of those eligible for free school meals live in out-of-work households or households with earned income of less than £1,000 per month.
- Around 35,000 school children in P1 to P3 are eligible for FSM.
- Uptake of FSM in primary schools is around 85% for all those registered in Scotland, but there is variation between local authorities in school meal uptake (both free and paid for) according to the annual Scottish Government *Health Living Survey*. The proportion of children registered for FSM and present on the day of the most recent survey who took a school lunch varied from just under 80% to well over 90%.

From January 2015:

- Up to 135,000 children in P1 to P3 will be newly eligible for FSM.
- The Scottish Government is providing £70.5 million revenue funding to local authorities over the next two years to fund implementation of the policy.

The introduction of universal FSM has been supported by an alliance of campaigners against child poverty, including Child Poverty Action Group Scotland, Children in Scotland, One Parent Families Scotland, the Church of Scotland and trade unions. This is against the wider context of an economic recession and rising levels of poverty as well as the introduction of UK welfare reforms which may reduce the size of the population eligible for

FSM. Moving to universal school meal provision is seen as one way of protecting children and low-income families from some of the potentially negative impacts of these reforms.

The introduction of FSM for all children in P1 to P3 is occurring within a wider set of changes to the way schools provide food, drink and food education that have been implemented in recent years. There has been more than a decade of activity around school food in Scotland since the publication of *Hungry for Success: a whole school approach to school meals* (Feb 2003). More recently, the revised guidance *Better Eating, Better Learning - A New Context for School Food* (March 2014) was published. The intervening decade saw the following, amongst other things:

- The introduction of the Schools (Health Promotion and Nutrition) Scotland Act 2007, which placed school health promotion duties on education authorities as well as a duty to promote school lunches, and free school lunches in particular.
- The introduction of school food nutritional regulations in 2008, which set rigorous standards for food provided with which schools have a duty to comply.
- The introduction of Curriculum for Excellence, which included food and health within the Health and Wellbeing curriculum area. This impacted on the food and health education delivered in schools.
- The launch of Scotland's Food and Drink Policy 'Recipe for Success' with an injection of funding to support food education in schools.
- Significant work in related areas around, for example, obesity and child healthy weight across Scotland.

Education Scotland Inspections indicate that there is generally a high level of compliance with the Health Promotion and Nutrition Act and nutritional regulations by schools, but there is also considerable variability across the country. Similarly, there are a very small number of local initiatives which have been used to extend FSM to all or some children in P1–3, with some areas possibly acting as early adopters. This variability in school food policy implementation may have a significant effect on the ease and extent of implementation with repercussions for school meal uptake and impacts. This was acknowledged during a workshop of key stakeholders held during 2014 to inform this evaluability assessment. The workshop participants also identified the following factors within the school context that could potentially influence the level of change that might be achieved through introducing universal FSM:

- Local authority school food policy and commitment to implementing national guidance.
- School approach to school meals, health promotion and food/health and wellbeing education.
- Parental engagement in the school and their awareness of and support for school meals.
- The implementation of Child Healthy Weight initiatives in schools.
- The difficulties presented around the dual use of facilities for PE and dining.

It will be important for any evaluation of the impacts of universal FSM to be able to classify schools and/or local authorities according to the extent and nature of implementation.

2. A theory of change for universal free school meals

In order to assess the evaluability of universal FSM, we need to address a critical question:

What difference is the policy likely to make, for whom, and what are the key variations we might expect to observe?

To address this, we have developed a theory of change drawing on a rapid review of the existing published evidence where FSM have been introduced before (see Annex) and recent evaluation studies in the UK (*Box 2*).

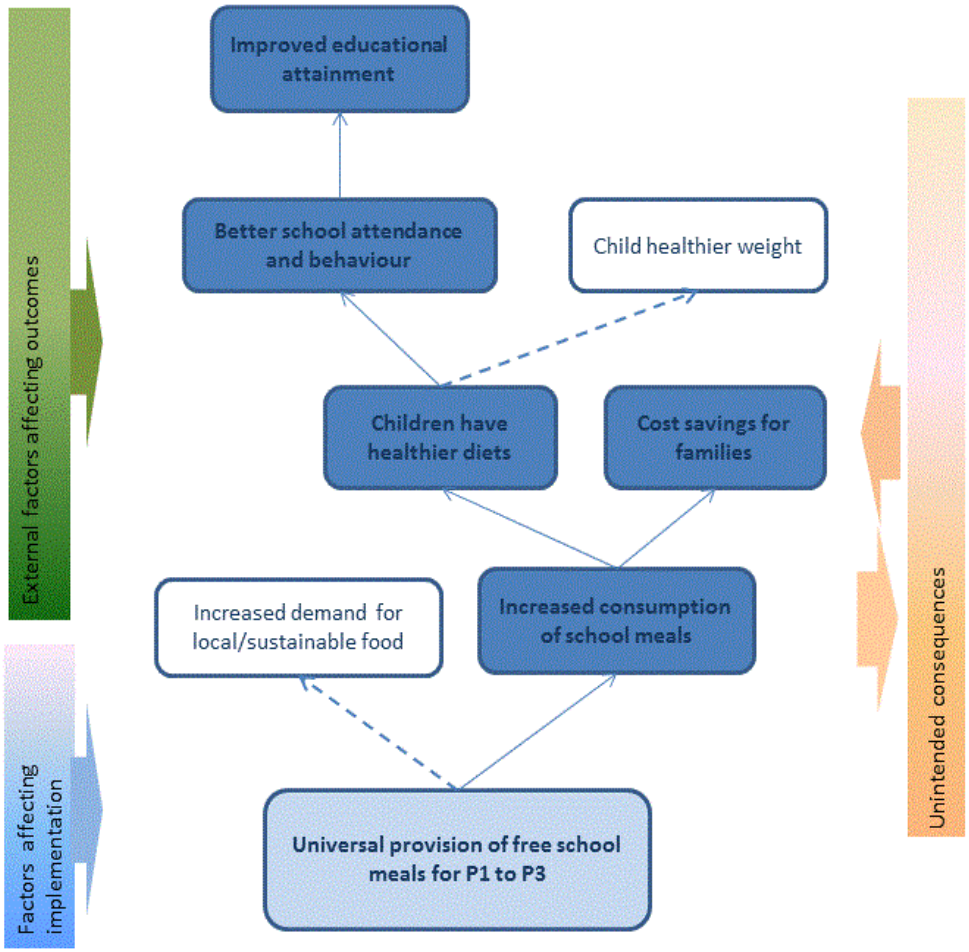
Box 2: FSM pilots in the UK

- *Scotland* – The pilots of FSM in five local authorities in 2007/08 (East Ayrshire, Fife, Glasgow, Scottish Borders and West Dunbartonshire). This is probably the most relevant evidence base for the Scottish context today but, 6 years on, the impact of recession on public and household finances will have significant implications for the policy.
- *Wales* – The Primary School Free Breakfasts Initiative was introduced incrementally in Wales from Spring 2009 on a pilot basis. The national roll-out was accompanied by an independent evaluation of its implementation and impact on school pupils. The evaluation adopted a cluster randomised controlled trial design, with a nested qualitative process evaluation. This aimed to obtain an accurate assessment of the impact of the scheme on children's dietary habits, cognitive performance, attitudes and classroom behaviour, to assess how the initiative was implemented, gain an in-depth understanding of the views of users and establish the potential influence of context on outcomes.
- *England* – The FSM pilot was a two-year pilot that operated in three local authorities from late 2009 to mid-2011. It tested two models of extending FSM provision: a universal offer (Newham and Durham) through which all primary school children were offered FSM and an extended entitlement offer (Wolverhampton) covering pupils in primary and secondary schools whose families were on Working Tax Credit and whose annual income did not exceed £16,040 in 2009/10.

The initial theory of change was further elaborated on during a workshop with policymakers and analysts from Scottish Government and national agencies who have knowledge of both this particular policy and the primary school implementation context. It was then amended further following a second meeting between the research team and policymakers. The amended theory of change (with notes on data sources) is shown below (*Figure 1*) followed by a brief summary of the evidence related to key identified outcomes. In the summary, the

priority attached to each of the outcomes by workshop participants is indicated by the number of asterisks: three for high, two for medium and one for low.

Figure 1: Theory of change for universal FSM for P1 to P3



Possible data source

- Healthy Living Survey
- Growing Up in Scotland
- Education Scotland Inspectorate
- Administrative data (schools/local authority)
- Primary data collection

Assumptions in the theory of change

- The nutritional content of school meals is better than packed lunches
- Children will eat the food provided
- Children make healthy choices
- School meals are palatable/appeal to pupils
- Stigma/peer pressure will not affect P1–P3
- Parents are supportive of FSM policy
- Schools provide a pleasant eating environment in terms of queuing, space, enough time for eating, good balance of social time to spend with friends over lunch.
- Children eat each day (food is 'balanced' over a week)
- No compensatory unhealthy eating later in the day

External factors affecting implementation and outcomes

- Local school food policy and guidance about food and drink in school
- School approach to school meals and nutrition education
- Parental engagement in school/school meals
- PE commitment: 2 hours/week minimum puts demand on dual purpose facilities
- Child Healthy Weight initiatives in schools
- Welfare reforms and wider economic context
- Food availability and cost
- Levels of early years provision

Potential unintended consequences

- Effect on claims for other benefits (e.g. clothing allowance) due to admin link with FSM
- Other aspects of school life suffer (e.g. PE, breakfast clubs)
- School meal food quality suffers
- Increase inequalities – greater benefits for the better-off families
- Current P4 to P7 and other siblings are put off having school meals
- Food waste increases
- Parents' time freed up

Outcome 1: Increased school meal uptake***
The most immediate (and readily measurable) outcome is that FSM leads to improved uptake of school meals among children in P1 to P3. There is strong supporting evidence for this. In the Scottish pilot:

- ✓ Among all P1 to P3 pupils, school meal uptake rose from 53% to 75% (up 22% pts).
- ✓ Among P1 to P3 pupils not FSM registered, FSM uptake increased from 41% to 69% (up 28% pts).
- ✓ Among P1 to P3 pupils previously FSM registered, uptake increased from 89.2% to 93.6% (up 4% pts).
- ✓ Uptake increased more in schools with lower levels of deprivation/FSM registration and lower pre-pilot FSM uptake levels.

These findings are echoed in the English pilot. Around 90% of primary school pupils offered FSM had school meals at least once per week by the end of the pilot, compared with 60% of pupils in matched comparison areas. Uptake of school meals increased both for pupils not previously eligible for FSM and for those already eligible, but the increase was greatest for those who were not previously eligible. In the pilot of free school breakfasts in Wales, a less direct comparison, there was a significant increase in breakfast consumption at school and a decrease in breakfast consumption at home by the end of the pilot.

Because uptake of free school meals is already high amongst children from families on the lowest incomes, the biggest gainers may be those on low and insecure incomes but just above the current threshold of eligibility. The question of who benefits from introducing universal FSM has only been assessed through differentials in school meal uptake using school-level data. More fine-grained analysis by household income or dietary status requires individual level data on pupils. Another potential benefit from the introduction of universal FSM is a spill over effect on older siblings and other children in P4 to P7. There was a small increase in school meal uptake amongst children in P4 to P7, from 47% to 50%, during the Scottish FSM pilots.

Outcome 2: Cash savings for families not already receiving a free school meal***
The Scottish Government estimated that newly eligible families would save around £330 per child. But who will this cost saving benefit? As a simple transfer, the cash saving itself should not be counted as a benefit. Benefits to those not previously eligible will be offset by costs to those who pay for it (even if this is indirectly through taxes or through the opportunity costs of programmes that could have been paid for with the money required to expand eligibility for FSM). The distribution of gainers and losers may still be considered a benefit of the policy overall, for example, if it addresses health or other social or economic inequalities. However, there will be no

saving or benefit for low income families who already take up a free school meal. The main gainers will be newly eligible families and those who are already eligible but decide to take up a free school meal as a result of the policy. As noted above, the families who will benefit most may be those on a low or insecure income but who are currently not eligible.

Outcome 3: Increased demand for food from local and sustainable sources**
At the workshop, it was suggested that a policy aspiration is that the introduction of universal FSM might generate local economic benefits if school catering companies source their ingredients from local food producers and use sustainable sources. This would be in line with the current policy aspiration that Scotland becomes 'a food nation' and that the population buys, eats and enjoys high-quality Scottish food. This is similar to the rationale for introducing free school meals in the US, where there was an intention to boost the local agricultural economy. However, there is little evidence that this outcome was realised.

Outcome 4: Healthier diets***
The impact of school meals on children's diets depends on the nutritional content of the meals, what children choose and what they actually eat, all of which may vary widely between children, schools and education authorities. Consequently, the evidence on the impact of school meals on children's diet is mixed. Where there are positive effects on diet, these are greater for children who are poorly nourished to begin with. From the UK studies, the positive impacts on children's diets were:

- ✓ Giving children the opportunity to try new foods (Scottish pilots).
- ✓ The increased uptake of school meals led to a change in the types of food that pupils ate at lunchtime, away from foods typically associated with packed lunches towards those associated with hot meals (English pilots).
- ✓ Improving the quality of children's breakfasts by increasing the consumption of food items such as fruit and wholemeal bread (Wales).
- ✓ More positive attitudes to eating breakfast (Wales).
- ✓ Reduced crisp eating at lunchtime did not lead children to eat more crisps in the afternoon and/or evening instead (English pilots).

There is some evidence from the Scottish pilots that FSM impacted positively on the home food and cooking environment. For example, trying new foods at school resulted in some pupils asking for these foods at home. Children and parents talked about school food and discussed food preferences, although some parents keen to make meals that children had enjoyed at school reported that they did not know how to make them.

Evidence from elsewhere in the UK suggests there are no significant impacts on:

- × Awareness of healthy foods

- Reported overall consumption of different types of food; food items consumed during the rest of the day; parental reports of frequency of eating breakfast at home and at school (English pilots, Wales)
- Breakfast skipping (due to relatively low numbers of breakfast skippers at baseline).

Outcome 5: Improved school behaviours*
Eating a nutritious meal may directly affect children's behaviour in school and the classroom. School-based behaviours found in previous research to be associated with increasing school meal participation include classroom productivity (on-task and off-task behaviours), pupils being more satisfied with schoolwork and improved school attendance (more so if breakfast provided). The social aspects of the school meal may also indirectly contribute to improved behaviour inside and outside school and a better sense of a school community. At the workshop it was also suggested that having school meals positively affects children's socialisation (skills related to sitting down and eating a meal with other people).

From the UK studies, there is weak/no evidence to date of an effect on school behaviours:

- Teachers did not report any behavioural changes in pupils at lunchtime or in afternoon classes (Scottish pilot)
- No effect on children's cognitive abilities or classroom behaviour (hyperactivity/inattention) (Wales)

Outcome 6: Improved educational attainment***
Evaluations of the impact of school meals on a variety of measures of educational attainment have produced mixed results. The English pilot showed improvements in attainment which were strongest amongst pupils from less affluent families and those with lower prior attainment.

Unintended consequences
In addition to the above outcomes which are expected to flow from the policy, there may also be unintended consequences. Potentially **negative** unintended consequences of moving to universal FSM identified via the workshop include:

- A reduction in take-up of other benefits (e.g. clothing allowance) linked administratively with FSM.
- Other aspects of school life suffer (e.g. PE, breakfast clubs).
- The quality of school meals suffers due to the increased number of meals that the school meal service needs to prepare.
- Increase inequalities – benefits the better-off families; some indicators can be monitored but attribution difficult.

- Current P4 to P7 and other siblings are put off having school meals due to the increased crowding in school meal halls and consequent reduction in time available to eat meals.
- Food waste increases.

Potentially **positive** unintended consequences include:

- Parents' time freed up as a result of not having to prepare packed lunches.
- Cost savings to parents (identified above) of P1 to P3 children may be used to purchase school meals for older siblings, which may be healthier than current lunch options, or to purchase healthier food for family meals.

3. Possible data sources

A variety of data could provide evidence on the priority outcomes identified in the theory of change. However, none of the data sources available are likely to provide a definitive answer to the identified research questions by themselves. The costs of gathering some of the most robust forms of data would be considerable and need to be weighed against the likely benefits from an evaluation.

Administrative data

- *Impact* cashless payment system for school meals (www.impactcashless.co.uk) is being rolled out in some schools to enable streamlined payment systems, but could be designed to record some individual level data on school meal customers. Data management uses direct interfaces with complementary systems including school MIS, reward schemes, nutritional analysis, financial and reporting software.

- *Procurement practice* could, at least in theory, be explored through requests to local authorities/schools regarding where their food is sourced, e.g. is food from within Scotland being purchased in greater quantities over time?

- *Health and nutrition inspection reports* could provide an indication of food quality over time, although they cannot provide quantitative information that allows comparison between schools/authorities or over time.

Routinely available survey data

- *School meals surveys* are annually conducted to provide school-level data on the current number of children who take up school meals and the number eligible for free school meals. Therefore, they provide an estimate of the proportion of children who take up free school meals. Currently the data are only broken down by type of school, but a P1 to P3/P4 to P7 split is planned for next year.

- *The Scottish Survey of Literacy and Numeracy* is conducted annually, with a focus on literacy one year and numeracy the next. It is only conducted at P4, P7

and S2 and would therefore only allow cohorts to be compared. Distinguishing impacts of FSM from secular trends in attainment would be difficult from these data.

- *Growing Up in Scotland* (GUS) includes three cohorts with a total of 14,000 children at inception who were/will be aged five years in 2007/08, 2009/10 and 2015. The youngest cohort will be entering P1 during the next wave of data gathering in 2015, so it should be possible to use cross-cohort comparisons to make inferences about the impact of FSM. A suite of questions (*Annex 2*) covering uptake of school meals by P1 children and their older siblings is currently being developed by the survey team. The survey also includes detailed questions on family circumstances and financial hardship.

- *Understanding Society* is a longitudinal study that includes approximately 40,000 households from across the UK. Therefore, the Scottish component that includes a P1 to P3 child is likely to be relatively small (at a guess, 300). However, more households could be included in the analysis (e.g. a geographical control from England, as well as Scottish families with children in P4 to P6) to investigate the potential for an impact on household financial difficulty, etc.

- *Scottish Health Surveys* include information about dietary behaviour of children. Again, the sample size is likely to be small (with a rough estimate of 300 P1 to P3 children per year). It may be possible to pool data from multiple years, but it would then take several years to accumulate an adequate number of post-implementation observations.

Primary data collection

- *Monitoring the behaviours of school children* (e.g. a systematic social observation approach) could provide information on FSM uptake, dietary choice and behaviours of children around lunchtime (including P4–P6 children). This would be very expensive and could not be pursued across all schools, with a sample of volunteer schools required.

- *Surveys with children* themselves would be very expensive and difficult to arrange in the timescale required.

- *School catering self-evaluations* could provide information about the quality of school meals, use of sustainable (Scottish) food sources and food wastage. It is unclear if such self-evaluations are routinely conducted and if a relatively systematic approach to data collection could be adopted.

- *Qualitative research* with providers, children and parents could provide data regarding potential mechanisms and experiences by which positive and negative impacts of FSM could occur.

- *Nutritional analysis of school meal menus pre/post implementation of FSM for all P1 to P3.* Analysis of school menus in the 32 local authority areas before the implementation of FSM and after. This analysis may help determine whether the introduction of FSM has an impact (positively or negatively) on the nutritional content of the meals that are provided. It could also describe the variations in different areas (see below). There are positive ongoing discussions with Queen Margaret University to determine if students studying for a MSc in Public Health Nutrition could undertake some of these analyses for their dissertations.

Variations in the implementation of FSM in primary schools

It is generally recognised that there will be considerable variation across local authority areas in how the new FSM policy is implemented. The key variations will be factors that impact on the early outcomes of school meal uptake and dietary benefits. Most importantly these are:

- Nutritional quality of the school meals provided.
- The extent to which children eat what is provided, which is strongly influenced by the time allowed for P1 to P3 mealtimes.
- Parental support for their children having school meals.

These are all dimensions of school life that are included within the scope of Health & Nutrition Inspectors. They have expressed a willingness to encourage and support the evaluation of FSM in primary schools by:

- Providing a report on the impact of the extension of FSM to all P1 to P3s based on their school visits before/after January 2015.
- Specifically requesting discussions with parents focused on the impacts of extending FSM to all P1 to P3, as part of their programme of planned school visits.
- Encouraging school catering teams to conduct self-evaluations (using BEBL self-evaluation process), although their main interest, motivation and attention would be on assessing the service delivery aspects of implementing the policy rather than outcomes for children. There have been positive discussions with the two main local authority professional organisations (ASSIST and Association for Public Service Excellence [APSE]). Both have expressed a willingness to co-operate in this. They would welcome an opportunity to discuss the implementation issues that it would be most valuable to address in any evaluation and the logistics of gathering information from schools.

The key outcomes and other data sources are summarised in *Box 3*.

Box 3 Key outcomes and data sources

Theory of change	Key evaluation question	Data source	Proposed lead
Schools will prepare for universal FSM with new P1 intake in August 2014	What are the key variations in how FSM is implemented across local authorities/schools, including the costs, quality of meals and food waste?	Work with the APSE, ASSIST and HM Inspectorate (Education Scotland) to enhance data gathering in a sample of local authorities and schools on implementation	NHS Health Scotland with Scottish Government and Education Scotland
School meal uptake will increase and most benefit • those with low/insecure household income and previously not eligible for FSM • those with poor dietary status	Does school meal uptake increase? Who benefits most/least in terms of household finances and diet?	• Existing routinely collected survey data on school meal uptake (Annual Healthy Living Survey) • Administrative data, e.g. cashless payment systems • Take-up of school meals (families) – *Growing Up in Scotland* survey • Possible qualitative study exploring impact on families regarding decision-making around FSM; choice of school lunch for older siblings; influence on food purchasing, preparation and consumption; perceived financial savings and how they are used.	Scottish Government Analytical Services Division(ASD) SPHSU NHS Health Scotland
Children's diets are healthier	Are school meals healthier than what children had before? What are the impacts of having school meals on P1 to P3 children's diets? • Children try new foods • Children have healthier diets • Home cooking and shopping changes • Impacts on overall diet • Impacts on habit of school meal	• Nutritional analysis of school meals pre/post FSM implementation • *Growing Up in Scotland* survey – proposed Qs o main reasons for school meal take-up/not having FSM o changes in household diet o school meal take-up by older sibling • Possible qualitative study exploring impact on families regarding decision-making around FSM; choice of school lunch for older siblings; influence on food	SCPHRP with Queen Margaret University College SPHSU NHS Health Scotland

	uptake in later years (pupils, family)	purchasing, preparation and consumption; perceived financial savings and how they are used	
Better school attendance and behaviour including socialisation	What are the impacts of introducing FSM for all P1 to P3 on school life and classroom behaviours?	Behaviour in Scottish schools Possible focus groups with staff and parents	Education Scotland Schools Inspectorate nutrition inspectors
Improved educational attainment	Do those who stand to benefit the most from FSM (i.e. children eligible but previously not registered and those from families on low/insecure incomes) have better educational outcomes?	SEEMiS	Scottish Government ASD

4. Evaluation options

The basic requirements for any evaluation are data on exposure and outcomes, both for the population who receive to the intervention of interest ('exposed') and for a suitable comparator or 'control' population. Comparisons can be drawn within one population before and after the intervention is implemented, or by using planned or unplanned variation in exposure pre and post implementation. No method is perfect, and conclusions about impact may be strongest when several are used together and the results assessed for consistency. The theory of change exercise suggests that the evaluation should focus on uptake; benefits resulting from savings for families; and changes in dietary and educational outcomes. With this in mind, the choice of evaluation options is constrained by three sets of factors.

The first is that there is strong political and popular support for the introduction of free school meals, and many families stand to gain financially, regardless of whether the wider benefits of the policy are realised. It is unlikely, therefore, that an experimental approach, in which implementation is deliberately phased (e.g. by rolling out the policy council by council, with the order decided at random), would be politically or ethically acceptable. All the remaining options depend on the use of 'natural' variation in exposure, such as differing rates of take-up or standards of provision between schools or education authorities.

The second is the expected size of effect. Take-up of school meals may rise rapidly among those newly eligible following the introduction of the policy, but will be much smaller among children who are already eligible. The effects on take-up of school meals among P4–7 pupils, and on wider diet, behaviour in school and educational

attainment outcomes may also be relatively small and take longer to appear. Large, rapid changes are much easier to measure and attribute to a specific intervention than small, gradual ones. The smaller (or slower) the change, the harder it is to exclude alternative explanations – an important consideration in a 'busy' policy area such as this one.

The third set of constraints is the availability of routinely collected or existing survey data on the exposure and outcomes of interest, and the feasibility of making changes to administrative data systems or of gathering new survey data primarily for the purposes of evaluation, given the short lead times before the policy is implemented. As discussed in section 3, there are a number of potential sources of data for monitoring the outcomes in the theory of change, although each has limitations of either cost, coverage or both. We understand that there is no scope for Scottish Government to require councils to put in place additional routine data collection. However, it is likely that there would be scope to combine use of the existing routine data collected with data derived from primary data collection from councils or schools willing to take part in research.

Discussions with school inspectors established that there are councils and schools that are both keen to understand the impacts of free school meals and that expect they will be required to demonstrate impact given the investment being made in the policy. Further discussion would be required to establish in more detail the sorts of outcome data they would be interested in and that they would be willing and able to collect. Councils and schools may be more interested in data relating to operational matters that would inform operational management, service improvement and efficiency initiatives, rather than longer-term health and educational outcomes.

It would also be important to consider the representativeness of the councils and schools willing to be involved in primary data collection. Willingness to participate might reflect particular concerns on the part of some areas regarding delivery of FSM with the resources being provided, or particular aspirations to demonstrate the quality and efficiency of services being provided. Although this clearly has the potential to provide useful lessons on both positive and negative outcomes arising from FSM for all P1 to P3 children and on operational issues, it equally has the potential to generate a non-representative sample of respondents. This would limit the inferences that could be drawn about the overall outcomes of the policy.

The ideal is to have individual-level data on consumption of school meals and on dietary and educational outcomes. Uptake is a population-level, rather than an individual-level, attribute and must be measured with aggregate data. To some extent variations in take-up can be compared with other aggregate outcomes, such as rates of absenteeism, etc. Individual-level data allows for much more precise estimates of impact and better control for confounding variables – i.e. factors that are associated with uptake and with the outcomes of interest. But collecting new survey data is expensive and burdensome, and is generally harder amongst the families on

lower incomes, who are of greatest interest to the evaluation. Quite apart from the cost, the short timescale means that adapting existing surveys is a more feasible option than establishing a new one.

The options for evaluation, given these considerations, can be summarised as follows:

1. **Rely on existing routinely collected survey and administrative data** on uptake of school meals and educational outcomes, and estimate the impact of FSM for all P1 to P3 children, using cross-cohort school-level comparisons.

   Pros: cheapest option; easiest to implement.

   Cons: limited range of outcomes; cross-cohort comparisons may be confounded by other influences that vary between successive cohorts.

2. **As option 1 but also gather additional data** by (a) working with the schools inspectorate to enhance data gathering in a sample of schools; (b) gathering data in the *Growing Up in Scotland* survey on uptake of free school meals, and effects on older siblings and meals eaten at home;[1] (c) collecting qualitative data to explore families' responses to FSM in terms of decision-making about uptake of school meals, how they use savings, and changes to their food buying, preparation and overall diet; (d) explore the possibilities of linking FSM uptake with other educational data from the SEEMiS system.[2]

   Pros: efficient way of widening the range of impacts that can be measured

   Cons: may be difficult to obtain a representative sample of schools, limiting generalisability; may not be feasible to adapt existing surveys very much; range of dietary, educational and financial outcomes that can be measured may still be quite limited.

3. **Enhance routine data gathering, as in option 2, but also conduct a new survey** of families in participating schools to explore pupil and family-level outcomes.

   Pros: great flexibility in range of outcomes that can be measured at individual pupil and family level, and good control for confounding factors.

   Cons: expensive; probably not feasible to obtain good-quality baseline data before FSM for all P1 to P3 children is implemented.

[1] A set of questions has been agreed for inclusion in the pilot for GUS, Birth Cohort 2 Wave 3, in which children will be interviewed around their fifth birthday.

[2] SEEMiS is a school level educational data management system which is being rolled out across all Scottish local authority schools. It allows the collection and management of administrative data and data on pupil behaviour and attainment.

5. Recommendations

Given the tight constraints on evaluation design, **we recommend option 2**, making the best use of routinely gathered data, supplemented by new primary data gathering for key outcomes which cannot be addressed using existing administrative data. This would enable us to describe trends in a wider range of key outcomes than possible with routine data, explore variations in outcome between areas and possible associations between the outcomes observed, and look at aspects of implementation, such as uptake and the level of commitment of the school to the wider goals of the policy. It would not enable us to say definitively that the outcomes observed were due to the introduction of FSM for all children in P1 to P3 due to the absence of comparator groups and the likelihood that effect sizes will be small.

How this is taken forward depends critically on the availability of resources. With existing resources, but no additional funding, we could undertake the following elements of option 2:

- Work with the APSE, ASSIST and Education Scotland (HM Schools Inspectorate) to enhance data gathering in a sample of local authorities and schools.
- Conduct a nutritional analysis of school meals pre/post FSM implementation, by working with nutritionists at Queen Margaret University College.
- Conduct secondary analyses of the additional school meals data in GUS, including analyses of differences in the financial and other characteristics of families whose children take up school meals before and after implementation of FSM for all P1 to P3 pupils.

If additional resources were made available, we could extend the above by, for example,

- Undertaking a qualitative study of families' responses to FSM in terms of decision-making about school meals, how they use the savings, and changes to their food buying, preparation, and overall diet.

- Exploring the possibility linking data on school meal uptake with changes in educational outcomes.

Whichever option is chosen there would need to be further discussion about the focus of the evaluation in terms of outcomes, and which components of the overall package are of most interest. **We recommend that a project group and an advisory board,** comprising stakeholders from local authorities and Scottish Government, are set up to develop a more detailed evaluation proposal. The introduction of FSM for all children in P1 to P3 is a significant policy change and a very substantial investment by the Scottish Government, so **we further recommend that the possibility of finding extra resources is explored**.

Annex 1: Review of existing evidence on the impacts of free school meals

Maura Beaton, Andrew Williams, Erica Wimbush

As part of this evaluability assessment, we have undertaken a brief review of the evidence around school meals. It is intended that this review informs the development of a theory of change (logic model), which will in turn guide whether evaluation is feasible and what form it would need to take. The review is split into four sections covering the process measures and short-term, long-term and economic outcomes. We begin with a brief note about the context of this policy.

Key studies

Scottish pilot study (MacLardie et al., 2008)
English pilot study (Department for Education, 2013)
School Food Trust report (Harper and Wood, 2009)
Child Poverty Action Group and British Youth Council report (Child Poverty Action Group and British Youth Council, 2012)

Context

The change in policy around school meals in Scotland and England has arisen from and is possibly due to the current complex health, economic and political climate. Based on the statement given when the Scottish policy change was announced earlier this year, it would appear that the economic climate has primarily prompted this policy. Reducing child poverty and specifically saving families money (around £330 per child per family per annum (BBC News Scotland, 2014) were the expected outcomes announced alongside intimation to general improvement in health. This comes at a time when the public health priorities in Scotland are shifting from general health promotion to a focus on health inequalities and the social and economic determinants.

The provision of universal free school meals is relatively rare; in Europe only Estonia, Finland and Sweden have this policy. The provision of school meals was introduced in the United Kingdom (UK) prior to the world wars (Harris, 1995). At that time the concern was that the population were becoming too sickly to fight and maintain British dominance (Harris, 1995). Undernourishment, physical deterioration and the inability to learn were the outcomes school meals were intended to tackle (Harris, 1995). However, until now the provision of free school meals has always been targeted. In the United States of America (USA) school meals were introduced to support agriculture by ensuring a customer for the produce, and the policy remains targeted rather than universal. Consequently, although the intention of the policy remains to ensure that children are able to participate and gain from their education, the modern concern is over nourishment. The majority of the evidence reviewed relates to the targeted policies in the UK and USA, with additional evidence from the UK pilots of universal provision. Whether it is appropriate to extrapolate the outcomes of the targeted programme to the whole population needs to be considered. Heckman (2006) demonstrated that intervening early for ‘disadvantaged’ children is most cost-effective, but universal provision might appear to assert that all children are to be considered disadvantaged.

Process measures – *school meal uptake*
It is necessary to participate in the school meal in order to be effected by it. However, 100% uptake among those eligible for free school meals is practically unknown; consequently, there has been much research into what affects uptake.

Factors which increase uptake

- Improved school food (nutritional content and choice) (Adamson *et al.*, 2013; Cluss *et al.*, 2014; Harper and Wood, 2009; Lulfs-Baden and Spiller, 2009; Meyer and Conklin, 1998; Sahota *et al.*, 2013)
- Universal provision – among those previously eligible as well as those previously ineligible (Department for Education, 2013; Harper and Wood, 2009; Leos-Urbel *et al.*, 2013; MacLardie *et al.*, 2008; Murphy *et al.*, 2011; Ribar and Haldeman, 2013)
- Improved physical dining environment (Adamson *et al.*, 2013; Bartfeld and Kim, 2010; Haesly *et al.*, 2014; Harper and Wood, 2009; Meyer and Conklin, 1998)
- School culture (Child Poverty Action Group and British Youth Council, 2012; Haesly *et al.*, 2014)
- Economic vulnerability (Bartfeld and Kim, 2010)
- Parents being in employment (Datar and Nicosia, 2012)
- Better customer service (Meyer and Conklin, 1998).

Factors which decrease uptake

- Social norms/stigma (Bartfeld and Kim, 2010, 2012; Harper and Wood, 2009; Lulfs-Baden and Spiller, 2009; Sahota *et al.*, 2013)
- Time constraints (Bartfeld and Kim, 2010; Haesly *et al.*, 2014; Harper and Wood, 2009; Lulfs-Baden and Spiller, 2009; Zandian *et al.*, 2012)
- Cost (Colquhoun *et al.*, 2008; Harper and Wood, 2009; Ribar and Haldeman, 2013)
- Parental concerns/perceptions (Goranzon and Fjellstrom, 2010; Harper and Wood, 2009; Ohri-Vachaspati, 2014)
- Long queues (Child Poverty Action Group and British Youth Council, 2012; Harper and Wood, 2009)
- Not being able to eat with friends (Child Poverty Action Group and British Youth Council, 2012; Harper and Wood, 2009)
- Child expectations (Lulfs-Baden and Spiller, 2009; Spence *et al.*, 2013)
- Age, e.g. freedom to leave school at lunchtime (Harper and Wood, 2009).

There appears to be a ceiling effect regarding uptake, meaning that 100% uptake is unachievable. MacLardie *et al.* (2008) describe those who will not take up school meals as 'fussy eaters'.

Short-term outcomes

Diet
The impact of the school meal on a child's diet is dependent on the nutritional content of the food the school provides, what the child chooses and what they actually eat. Consequently, the evidence on the impact of school meals on children's diet is mixed, with both positive and negative impacts reported.

- *Positive effect* (Department for Education, 2013; Dubuisson *et al.*, 2012; Gleason and Suitor, 2003; Ishdorj, Crepinsek and Jensen, 2013; MacLardie *et al.*, 2008; Murphy *et al.*, 2011; Shemilt *et al.*, 2004a; Spence *et al.*, 2013; Stevens *et al.*, 2013)
- *No effect* (Crepinsek *et al.*, 2006)
- *Negative effect* (Muller *et al.*, 2013; Nelson, Lowes and Hwang, 2007; Ray *et al.*, 2013)

    - The nutritional content of school lunches tends to be better than packed lunches (Colquhoun *et al.*, 2008; Evans *et al.*, 2010; Muller *et al.*, 2013; Pearce, Wood and Nelson, 2013; Spence *et al.*, 2013; Stevens *et al.*, 2013).
    - School meals impact on both micro and macro nutrients (Gleason and Suitor, 2003; Nelson, Lowes and Hwang, 2007; Spence *et al.*, 2013; Stevens *et al.*, 2013).
    - School food standards improve the nutritional content of the meals (Adamson *et al.*, 2013; Cluss *et al.*, 2014; Nelson, Lowes and Hwang, 2007; Spence *et al.*, 2013; Stevens *et al.*, 2013).
    - Children/families may compensate, seeing the healthy school meal as an excuse to eat less healthily at home (Colquhoun *et al.*, 2008; Crepinsek *et al.*, 2006; Murphy *et al.*, 2011).
    - The effects can extend to the home (Adamson *et al.*, 2013; Ishdorj, Crepinsek and Jensen, 2013; MacLardie *et al.*, 2008; Murphy *et al.*, 2011).
    - Children who rush eating their lunch eat less healthily (Zandian *et al.*, 2012).
    - Schools providing breakfasts reduce the number of children skipping breakfast (Bartfeld and Ryu, 2011).

School-based behaviour

Through its nutritional contribution, the school meal may directly affect children's behaviour in school and the classroom. The social aspects of the meal may also indirectly contribute to behaviour inside and outside school. Listed below are the school-based behaviours which have been found to be associated with school meal participation.

- On-task behaviours (Adolphus, Lawton and Dye, 2013; Golley *et al.*, 2010; Shemilt *et al.*, 2004a; Storey *et al.*, 2011).
- Off-task behaviours (Golley *et al.*, 2010 [increased]; Storey *et al.*, 2011[decreased])
- Pupils more satisfied with schoolwork (Ask *et al.*, 2010).
- School attendance – Belot and James (2011), Shemilt *et al.* (2004a) report reduced authorised absence, while Ribar and Haldeman (2013) found no effect on attendance.
- Improved school community (Colquhoun *et al.*, 2008; Haesly *et al.*, 2014).
- Dunifon and Kowaleski-Jones (2003) and MacLardie *et al.* (2008) report that participation in school lunch had no effect on child behaviour above the effect of food insecurity.

Other behaviours

- Reduced sedentary behaviour (Belot and James, 2011; Dubuisson *et al.*, 2012)
- Reduced delinquency (Nichols *et al.*, 2009)
- Reduced substance use (Nichols *et al.*, 2009).

Long-term outcomes

As previously identified, the primary intentions of school meals are to improve health and educational attainment. The impacts of school meals on a variety of measures of educational attainment have been evaluated; however, pupil weight status is the primary index of health to have been evaluated.

Educational attainment

- *Positive effect* (Adolphus, Lawton and Dye, 2013; Belot and James, 2011; Department for Education, 2013; Hinrichs, 2010)
- *No effect* (Dunifon and Kowaleski-Jones, 2003; Leos-Urbel *et al.*, 2013; Murphy *et al.*, 2011; Ribar and Haldeman, 2013)
- *Negative effect* – no studies identified.

Child weight status

- *Positive effect* (Ask *et al.*, 2010; Chang, 2014; Jones *et al.*, 2003a)
- *No effect* (Baxter *et al.*, 2010; Department for Education, 2013; Gleason and Dodd, 2009; Hinrichs, 2010; Ramirez-Lopez *et al.*, 2005; Williams *et al.*, 2013)
- *Negative effect* (Henry, 2006; Hernandez, Francis and Doyle, 2011; Li and Hooker, 2010; Miller, 2011; Millimet, Tchernis and Husain, 2008)
    - Given children longer to eat their lunch reduced the probability of them being overweight (Bhatt, 2014)
    - School breakfasts appear to be protective (Gleason and Dodd, 2009; Jones *et al.*, 2003b; Millimet and Tchernis, 2009; Millimet, Tchernis and Husain, 2008; Williams *et al.*, 2013)

Other long-term outcomes

- Both positive (Colquhoun *et al.*, 2008) and negative (Abasaeed, Kranz and Rozier, 2013) effects on children's teeth have been reported.

Economic factors

The majority of studies which have investigated the economic feasibility of free school meals to date tend to report that developing a financially sustainable programme is an incredible challenge. Identified studies have outlined a series of factors which are likely to have an impact on the value of providing of free school meals:

- Additional costs – Administrative costs, food costs (Colquhoun et al., 2008; MacLardie et al., 2008; Shemilt et al., 2004b)
- Deadweight costs and plate waste (Department for Education, 2013; Ralston et al., 2008)
- Perceived value of the programme and user support (Jensen et al., 2013)

- Quality of planning and leadership (Jensen et al., 2013; Ralston et al., 2008)
- Size of school/number of participants (Jensen et al., 2013; MacLardie et al., 2008)
- Alternative programmes which could achieve similar benefits (Department for Education, 2013)

It is important to note that due to difficulties in identifying and measuring both costs and benefits, no study has been able to capture a true estimate of cost-effectiveness to date.

New studies

Two new evaluation studies have been identified; one evaluating universal provision of free school meals in England using the Born in Bradford cohort and one evaluating free school breakfasts in New Zealand (Ni Mhurchu *et al.*, 2010).

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Annex 2: Questions to be included in pilot of GUS, Birth Cohort 2, Wave 3, 2015

Questions asked of parents of five year olds who have not started school yet

[If child not started school]
Q1. As you may know, from January 2015 the Scottish Government is introducing free school meals for all children in P1–P3. How likely is it that ^ChildName will take up this entitlement and have school meals when they start school, even if it is just on one day?

1. Very likely
2. Quite likely
3. Not very likely
4. Not at all likely
5. Don't know

[If very/quite likely at Q1]
Q2. What would you say are the main reasons why you think ^childname is likely to have school meals for lunch?

Open text for pilot

[If not very/not at all likely at Q1]
Q3. What would you say are the main reasons why you think ^childname is not likely to have school meals for lunch?

Open text for pilot

[If child has an older sibling at school]
Q4. Which of the following does [older sibling] do for ^his lunch at school on a typical day?
Interviewer: read out
If varies, answer should be what child did most often in the last week

1. Has a school meal (hot or cold meal provided by the school)
2. Takes a packed lunch
3. Goes home for lunch
4. Does something else at lunchtime? (please say what)

Questions asked of parents of five year olds who've started school

Q1. I'd now like you to think about ^childname's lunch when ^he is at school. On a typical school day, does ^he usually…
Interviewer: read out
if varies, answer should be what child did most often in the last week

1. Have a school meal for lunch (hot or cold meal provided by the school)
2. Take a packed lunch

3. Go home for lunch
4. Or do something else at lunchtime? (please say what)
5. (Not applicable – half day only)

[If does not take a school meal on a typical day]
Q2. Has ^childname ever had a school meal for lunch?

1. Yes
2. No

[If coded 2 at Q2]
Q3. Why not?
Open text for pilot

[Asked of those who take school meals on a typical day or have ever taken school meals?]
Q4. What would you say are the main reasons why ^childname has school meals for lunch?

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[Asked of those who don't take school meals on a typical day]
Q5. What would you say are the main reasons why ^childname does not take a school meal for lunch on a typical day?

Open text for pilot

[Asked of those who take school meals on a typical day or those who ever take school meals?]
Q6. When ^childname has a school meal for lunch, what changes if any, do you make to what ^he is given for breakfast or evening meals?

Open text for pilot

[Asked of those who take school meals on a typical day or those who ever take school meals and have an older sibling]
Q7. When ^childname has a school meal for lunch, what changes if any, do you make to the lunch arrangements for any older siblings at school?

1. No changes
2. Started to have a school meal for lunch when ^childname started having a school meal for lunch
3. Started to have a school meal for lunch for other reasons

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