Low income diet and health – next steps

A paper prepared to aid discussion at the
FSA stakeholder meeting on diet and low income, 5 November 2007

Dr Tim Lobstein
on behalf of
Sustain: the alliance for better food and farming.

Analyses and views expressed are those of the author and are not necessarily those of Sustain or of the Food Standards Agency.

This paper has been prepared to stimulate discussion at the FSA stakeholder meeting on diet and low income, following publication of the Low Income Diet and Nutrition Survey (LIDNS). The emphasis is on the next steps to be taken by the FSA to tackle inequalities and the links between food supplies, diets and health outcomes for people living on a low income, but other issues, such as food safety and hygiene, and the responsibilities of other government departments as well as non-governmental organisations should also be considered.

The paper uses the term *nutrition insecurity* as a term to describe the failure to meet the recommended dietary guidelines, and is intended to be used in the context of current concerns about the need for action to improve nutrition and reduce obesity for both low income groups and the wider population. The LIDNS survey and other NDNS surveys have shown that a failure to meet the recommended dietary guidelines extends across a broad range of lower and middle income households, suggesting that policies targeted only at lower income groups may be helpful but that 'upstream' measures may be needed to reduce nutrition insecurity – i.e. to remove barriers to achieving healthy diets.

The paper suggests that the Government has moved considerably in the last decade towards recognising its role in leading moves for better health and reducing health inequalities, and has acknowledged that cross-departmental policies and activities are needed. Further attention may need to be given to policy evaluation and to undertaking impact assessments of policies for their effects on reducing nutrition insecurity.

The main focus of the stakeholder meeting is to consider what action the FSA might consider in the light of the LIDNS survey. The section on policy opportunities makes some suggestions and asks for stakeholder views for discussion at the meeting. Subsequent sections provide some background material which participants may find helpful to familiarise themselves with the issues.

1. The LIDNS Survey

In July 2007 the FSA published the report of the Low Income Diet and Nutrition Survey (LIDNS) with a press release and full online publication of the three-volume report and a report summary document, and the report received national publicity. The FSA's press release, stated *"The findings suggest that the dietary pattern of people on low incomes is the same as that of the general population, although in some aspects it is slightly less healthy."* and then went on to acknowledge that the diets eaten by lower income families were falling well short of the diets recommended for health. However some headlines describing the results of the survey interpreted this as "Poor 'eating just as well as the rest'" (The Times 15/07/07)[1] and "The rich eat almost as much junk food as the poor" (The Independent, 15/7/07)[2] – a statement which was especially misleading as no comparisons had been made with high-income households, only with the average population as sampled in the 2000-2001 adult NDNS survey.

Setting aside the comparisons with other sections of the population, the principal results of the survey were recognised by most commentators as showing that low income households were failing by a wide margin to meet UK national dietary guidelines. As a Canadian columnist put it, *"low income adults eat about half the bare minimum of fruits and veg, while their kids eat one-third. Processed and salty meats, high-fat spreads, white bread and empty-carb treats are staples, all low-cost and easily hoovered."*[3] He added *"Not surprisingly, the subjects' iron levels are low, the likely explanation for almost epidemic levels of anaemia and exhaustion, what the privileged observe as laziness and lassitude."*

This latter comment bears further attention as the economic consequences of poor nutritional security, expressed through **below-par** health status, have been little explored for rich country economies, although estimates of the economic costs of ill health in poor countries show the considerable burden attributable to poor nutrition.[4] This theme needs to be explored in greater detail, following the leads taken by the National Audit Office,[5] the Foresight programme[6] and evidence of the considerable employment costs consequent upon obesity.[7]

For background information leading up to LIDNS see Annex 1.
For a summary of LIDNS findings see Annex 2.

2. LIDNS Policy issues

LIDNS set out to answer a series of questions of policy relevance, which can be summarised as follows:

- Provide quantitative data on the food and nutrient intakes, sources of nutrients and physical activity levels of the low income population and sub-sectors in that population.
- Provide data on height, weight and blood pressure for a representative sample of low income individuals and examine relationships between diet and risk factors in later life.
- Assess the diets of the low income population to determine the extent to which they are sufficiently nutritious and/or vary from expert recommendations, and assess factors associated with food choice.
- Assess the results in relation to other surveys of diet and food behaviour.

The information generated can then be fed into a process for monitoring and evaluating policies as well as helping to shape new policies. As indicated earlier, LIDNS provided sufficient evidence that:

- the dietary patterns of many low income households were indeed falling short of those recommended for health;
- there were reasons to be concerned about the health consequences (in LIDNS, 73% of older adults were overweight or obese);
- these conclusions might well apply to a large section of the national population, not only those on low incomes;

and as a result it is reasonable to conclude that the continued monitoring of national dietary patterns is justified and that policy interventions should continue to be developed and evaluated.

It can be argued that LIDNS provided evidence that we already had from earlier surveys, but that is no reason to dismiss its findings. The survey confirmed the existence of a considerable section of the population who are failing to meet population dietary targets, experiencing poor micronutrient intake, high BMI and blood pressure, and reporting low levels of physical activity, and such confirmation should serve as a further spur to action.

In previous reviews of health promotion interventions, the focus has sometimes been put on self-help, educational inputs and targeting 'high risk' groups. The present survey serves to emphasise that self-help is unlikely to be sufficient as a means of improving dietary health, even when accompanied by educational initiatives, and that targeting low income groups, or subsections within low income groups is also unlikely to provide an adequate response.

Put simply, there is no simply-defined high risk group to target. LIDNS has shown that members of lower-income households are eating a diet that fails to meet recommended standards, and that their diet is only marginally worse than that of much of the rest of the population. It follows that the most appropriate response is one which changes the dietary patterns across much of the British population. We shall return to this theme after noting the value of LIDNS as providing an indication of current problems and the need for policy responses in the future.

LIDNS as a snapshot of current conditions, especially for children

Dietary patterns and nutrient intake are also poor for these younger LIDNS children. Using key indicators of fruit and vegetables, NME sugars, saturated fatty acids and salt, the data for children aged 2-10 indicate a very poor diet:

Fruit
Boys: average 0.9 portions/day and 58% eat less than 1 portion/day
Girls: average 1.2 portions/day and 49% eat less than 1 portion/day
Vegetables
Boys: average 0.7 portions/day and 72% eat less than 1 portion/day
Girls: average 0.8 portions/day and 73% eat less than 1 portion/day
Fruit and vegetables combined
Boys: average 1.7 portions/day and 66% eat fewer than 2 portions/day
Girls: average 2.0 portions/day and 56% eat fewer than 2 portions/day
NME sugars
Boys: average 77g/day and at least 75% get more than 11% food energy from NME sugars
Girls: average 68g/day and at least 80% get more than 11% food energy from NME sugars
Saturated fat
Boys: average 27.5g/day and at least 85% get more than 11% food energy from sat fat
Girls: average 24.7g/day and at least 85% get more than 11% food energy from sat fat
Salt

Note that the figures exclude salt added during cooking and eating, and should be treated cautiously as they are not validated with urinary sodium analyses.

Boys: average 5.3g/day and 84% consume more than the recommended 3.7g/day*

Girls: average 5.0g/day and 77% consume more than the recommended 3.7g/day*

* Recommended target population mean intakes for children aged 2-10 range from 2g to 5g salt/day depending on age. The average across this age range is approximately 3.7g/day.[8]

Setting genetic influences aside, we can assume that in adults, poor diets and low levels of activity, along with the consequential obesity and dental disease, reflect the accumulated effects of behaviour patterns developed in changing environments over several decades. In children, however, dietary and activity patterns and consequential obesity and dental disease are influenced by relatively few years of development in a relatively recent environment. Younger children especially can show us what is happening at present and in the recent past, in contrast to what has been happening for over a generation or more.

The LIDNS data for younger children provide serious grounds for concern. Anthropometry for this group indicates significantly high levels of overweight and obesity in children. Due to small sample sizes, comparisons with previous surveys should be treated with caution, and the figures are provided for information only.

Table: Percentage of children age 2-10 with excess bodyweight*

	Boys	Girls
LIDNS overweight	37	34
of whom obese	*21*	*22*
Health Survey for England 2004 overweight	30	26
of whom obese	*16*	*12*
Scottish Health Survey 2003 overweight	32	29
of whom obese	*16*	*14*

* overweight is >85th centile, and obese >95th centile of the UK 1990 BMI reference values.

Physical activity levels are particularly low among LIDNS children compared with those reported in the general population. In the Scottish Health Survey 2003, 74% of boys and 63% of girls aged 2-15 participated in physical activity for 60 minutes or more on all seven days prior to interview.[9] Levels were a little lower in the Health Survey for England 2002, which found 70% of boys and 61% of girls categorised in the high activity level.[10] For comparison, only 28% of boys and 34% of girls aged 2-15 in LIDNS were in the high activity level.[11] Indeed over half of younger children in LIDNS were virtually inactive all day, with 52% boys and 49% girls aged 2-10 reported to be getting less than 30 minutes activity daily.[12]

These results are properly attributable to the environments experienced by the children in the decade leading up to the survey, i.e. 1994-2002. Genetic and foetal conditions will have an influence, but interventions to change genetic make-up are not realistic, and foetal conditions are likely to be improved by much the same policies as would improve the environments for children, and indeed the rest of the population generally. The evidence from LIDNS surely confirms the urgent need to act.

3. Opportunities for policy development

Opportunities within and outside the FSA exist for further policy development. Indeed a wide range of possible initiatives could be conceived of which those listed here are indicative only. It should be noted that some of the proposals are already being acted upon while others may be considered beyond the FSA's current remit, but this should not preclude discussion.

Targeting poverty and inequality

Inequalities remain in Britain and in some respects the income gradient is increasing. Further improvement to the minimum wage, social support schemes such as Sure Start and improved benefit levels may be required. To improve nutrition security, Sure Start schemes might be encouraged to include explicit health promotion content, both in its educational roles and its daily practices. Guidance and pilot schemes for better diets (and ensuring food safety) may be introduced.

- *Is there a role for the FSA in supporting such interventions?*

Recently-published data from Ireland show that single-parent families would have to spend 80% of their household income on food if they were to meet national dietary recommendations.[13] Data on the cost of purchasing a modest-but-adequate basket of foods consistent with dietary recommendations (and not just the average cost but the cost that would be sufficient for 95% of those eligible, taking into account personal and cultural differences) could be developed to establish the adequacy of benefit levels. Benefit levels for single parents aged under 25 are particularly low and likely to remain so[14], yet this is a key age for reproduction among women.

- *Is there a role for the FSA in estimating the costs of eating modestly but healthily as a contribution to benefit level reviews?*
- *How might the FSA reduce nutrition insecurity for women aged under 25 on state benefits?*

Availability, access and price

Whilst the availability of foods may have generally improved, price and access issues remain, especially for the more nutritious items recommended in national dietary guidelines, such as fruit and vegetables, oily fish and wholegrain cereal products. Price trends have shown a continued trend for processed foods generally and fatty, sugary and less nutritious foods particularly to show lower price increases than the healthier items, and for the healthier items to remain more difficult to find in poorer neighbourhoods, and to suffer a greater price differential against less healthy foods when they are found in such neighbourhoods. A series of measures are possible, including community provisions supplied by non-profit or social enterprise bodies, delivery schemes, transport schemes to aid access, and planning controls to use economic incentives to determine the nature of food provision in a neighbourhood (e.g. controls on fast food outlets, encouragement of street markets).

- *Should the FSA play a continuing and increased role in sponsoring the initiation, monitoring and evaluation of such schemes and the dissemination of the results of evaluation?*

At a broader level the questions of cost and distribution have been addressed in other European countries through subsidised distribution of fruit and vegetables to remote areas, and through consideration of sales taxes imposed on less healthy products – a move that is likely to be widely opposed by commercial producers in many European member states[15] but which – in the form of a readjustment of VAT categories and levels – has received a surprising degree of support in Denmark[16]. There is theoretical evidence that it could effectively reduce the burden of disease caused by poor diets in the UK.[17]

- *Can the FSA contribute to this debate through modelling of the impact of tax and subsidy schemes, for example using nutrient profiling approaches to re-align VAT?*

Eating in

Cooking skills as well as storage and cooking facilities and equipment have long been considered an issue for low income households (although see LIDNS results), with people in temporary accommodation especially affected but also those with limited capacity such as people with disabilities and older people. Ready-prepared foods and snacks are often preferred, but these rarely contain sufficient fruit, vegetables, oily fish etc, to meet dietary guidelines. A combination of income adequacy and food pricing and availability measures may reduce the risk of nutrition insecurity in the domestic setting. Skills and educational measures are of value only where they can be easily put into practice.
Does the FSA have a role in investigating and promoting interventions at individual household level to promote skills and knowledge about healthy eating, such as distributing recipe information?

The FSA has shown that it is possible to encourage reformulation of foods to reduce the salt content through target setting, and is currently considering other nutrients of which consumers could also benefit from reduced levels in processed foods.

- *Does the FSA continue to have a role in encouraging the manufacturers of popular ready meals and other processed foods to re-formulate their products by suggesting nutritional standards and other criteria that the products should meet?*

Eating outside the home

School meals standards have been introduced and will be evaluated by The School Food Trust. They also need better take-up if the meals are to provide a nutritional benefit to the majority of children, and this requires a better understanding of the barriers to taking school dinners, including food quality, sales price, queues and dining environments, competing vendors outside the school premises and parents' and staff attitudes – and the means of addressing them. The provision of healthy breakfasts may also confer benefits especially to children from lower-income families – not only for nutrition, but also for school attendance and attainment. Caterers also need to do more to promote the school meals they serve, and schools can do more to raise awareness of the meals service among parents whose children are eligible for free meals.

- *What role is appropriate for the FSA to help encourage greater uptake of school meals, especially among lower income families?*

Ofsted inspectors now include the school food services as part of their evaluation of a school's parochial care. Services for under-fives do not include such standards, although registered child care centres, nurseries and kindergartens are supposed to benefit from inspection by local authorities.

- *Could the FSA play a role supporting the introduction of appropriate nutrition and hygiene standards for under-fives facilities that could be incorporated into the registration and inspection service?*
- *Should the FSA, in conjunction with SACN, develop guidelines for nutrient intake for under-5's, e.g. in regard to energy, saturated fats, salt and sugars (and/or endorse the CWT guidelines)?*

Other institutionally-provided meals which are eaten by people on low incomes (among others), such as food served in hospitals, prisons, military establishments, care homes etc, as well as work-place canteens could also benefit from quality and take-up reviews of this nature. Sustain's experience of working with hospitals and the care sector over several years is that caterers in such organisations are

not subject to the same legislative, policy or cultural pressure as caterers serving the school market, and may have less commitment than the schools sector to providing healthy and sustainable food. The national Public Sector Food Procurement Initiative run by the Department for the Environment, Food and Rural Affairs (Defra) provides a loose policy framework for promoting healthy and sustainable food, but is a voluntary process, characterised by one leading academic as "islands of good practice in a sea of mediocrity". Sustain runs a replication network of practitioners and other interested parties, which is currently discussing what action is now needed to make healthy and sustainable food the norm in routine public sector catering. FSA, working with NICE, is in the process of developing guidance to groups such as NHS, other government departments, local authorities and the work place etc.

- *Does the FSA have a role in further assisting the development of a set of measures that hospitals, Strategic Health Authorities and regional development agencies could take to improve food in care situations, including training to ensure staff have the skills and confidence to handle fresh food, and menu improvement?*

Such measures could be developed and encouraged nationally, supported by nationally applicable performance targets, integration of food into procurement rules (e.g. national and regional green procurement policies). Menu labelling schemes akin to front-of-pack nutritional signalling could be introduced for all but the smaller institutions.

- *Should the FSA consider extending food labelling to menu labelling, for example using traffic lights as an interpretative guide?*

The over 65 age group is the fastest-growing sector of the population, and despite significant advances 17% still live in poverty, and the age group suffers declining health, poor nutritional status – identified in LIDNS and other surveys[18] – and social isolation. Meals on Wheels schemes should cater for their needs: deliveries should be frequent, the meals should meet high nutritional standards, and consideration could be given to extending the service to allow meals to be provided by local private-sector caterers, e.g. in cafés and canteens, serving a good choice of culturally appropriate foods. To reach some of the most disadvantaged groups, the model rolled out by FareShare, the surplus food redistribution organisation, demonstrates that food provision can be delivered cost-effectively and take into account sustainability, acceptability and health issues.[19] There are also many community schemes that provide choice and culturally appropriate food: The Camden Chinese Community Centre has a daily lunch club and also delivers lunch via a tricycle in the local area.

- *What is an appropriate role for the FSA in supporting, evaluating or disseminating information about novel schemes such as these?*
- *Can nutrient profiling assist in the assessment of community schemes?*

Education and training

The provision of information in a consistent and easily assimilated form is also essential. The FSA's moves to improve food labels so that their nutritional benefits can be quickly interpreted e.g. front of pack signpost labelling, and the Ofcom moves to limit advertising to reduce the inconsistency of food and health messages to children are to be welcomed, although further evaluation is required.

- *Should the FSA continue to play an active role in providing tools such as nutrient profiling and demonstrating their applicability to other sectors – e.g. non-broadcast advertising, menu labelling, health claims, taxation and subsidy schemes, product re-formulation?*

While all members of the population benefit from budgeting, preparation and cooking skills, those on low income may gain the most value (especially if they are in circumstances where their skills can be easily put into practice). Interventions to increase skills and understanding have been undertaken in many community-based projects and are included in some aspects of the school curriculum.

- *Can the FSA contribute usefully to the provision of educational material in the school curriculum, including both nutrition and hygiene information?*
- *Should the FSA play a role in monitoring the adequacy and appropriateness of other material – e.g. from commercial sources – that is offered to schools?*

Specific training is required to improve food quality in mass catering. Initiatives from the School Food Trust[20] and, for example, the London Development Agency (Good Food Training for London project[21]), are promising and due to be evaluated shortly. The results of such programmes could be integrated into catering training as standard. Funding could be provided by, for example, a partnership of DH, regional development agencies and catering organisations, prompted by performance targets and procurement requirements for all public sector catering, to encourage routine uptake.

- *Is there a need for national standards?*
- *What additional role might the FSA usefully contribute to these developments?*
- *Should the FSA provide input into catering training programmes?*

Training of health workers to ensure consistency of advice, especially when advising those responsible for the care of children, is essential. A renewed campaign to ensure all maternity services promote breastfeeding, through e.g. baby-friendly hospital schemes, is also recommended. (Besides providing an infant with the optimum nutrition from birth, breastfeeding reduces the risk of subsequent child obesity[22] and helps with maternal post-partum weight loss.[23])

- *What added value might be gained from involvement by the FSA?*
- *Are there food hygiene or nutritional issues that the FSA should investigate in respect of the training of health workers?*

Farming

The prevalence of excessive fats, oils, sugars, and meat and dairy ingredients in processed foods is in some part due to their relative low cost and abundant supply as a result of European agricultural policies and subsidies. Reform of the Common Agricultural Policy (CAP) in favour of a better distribution of fruits and vegetables is to be welcomed. Fishery policies remain in need of attention to ensure sustainable and adequate supplies, so that their health benefits can be enjoyed by all. Food wastage due to the imposition by supermarket purchasers of high cosmetic standards may need review, and horticulture producers might benefit from gaining greater access to competitive distribution channels, especially those meeting the needs of lower income and different ethnic groups, e.g. to street markets and to caterers (including school, hospital and care caterers).

- *What role, if any, might the FSA have in encouraging better distribution of fruits and vegetables under the CAP?*
- *Can the FSA play a role in encouraging access to low-cost fruit and vegetable retailers such as street markets, e.g. by contributing to planning policy development?*

It should not be forgotten that one of the founding principles of the CAP was to ensure a thriving economy in agriculture, and this included decent wage rates among rural workers – the absence of which causes local poverty. Deprivation in rural areas may be hidden behind a veneer of second homes and affluent land-owners. Enforcement of minimum wage legislation and stronger trade union protection for all agricultural and rural workers should be sought, not only to improve health and economic development in rural communities but as a matter of human rights.

- *Does the FSA have a legitimate role in looking at the working conditions in primary food production?*
- *Can the FSA play a role in influencing planning policies for rural development in terms of access for rural residents to adequate nutritional security?*

Manufacturing and retailing

Apart from the food provided through public sector catering, most of the UK population's food is supplied through private sector commercial operators. In the UK especially, the food supply is controlled by remarkably few large-scale companies in processing and retailing sectors. After several decades of de-regulatory approaches to food standards, the FSA has undertaken a review of salt levels in commonly consumed foods and set levels which it is urging industry to adopt voluntarily, and is working with industry on a programme to reduce saturated fat content and caloric content of processed foods.

At the same time, consumer and environmental groups have taken a number of steps to keep these operators under scrutiny and to encourage greater responsibility in terms of health and sustainability. Manufacturers and retailers need to continue to be monitored and the standards being proposed should be strengthened through regulation as has been and is currently being done for salt by FSA e.g. salt commitments table, processed food databank and self-reporting framework. Commercial operators have considerable influence on food choices, through formulation, pricing, portion sizes and a wide range of other marketing techniques, and methods need to be found to ensure that companies are required to take due responsibility for their marketing, so that the notion of healthy choices being the easiest choices applies in practice, especially for lower income groups. The FSA has shown that it can set standards for the salt content of processed foods as well as influence the labelling of such foods.

- *What additional roles may the FSA legitimately adopt in order to further the improvement of the nutritional standard of commercially produced foods, especially those products commonly eaten by low income groups? For example, is there a role for setting portion control standards?*
- *Or for ensuring that low income shoppers are not disadvantaged if they cannot benefit from buying in bulk?*

Community support

The voluntary sector has suffered many years of attempting to improve community-based food services on scarce and uncertain funding. The integration of these initiatives into Local Development Plans and strategic partnerships provides only part of the solution, as these too are limited and have a degree of bureaucracy which can deter voluntary action. Community projects can only flourish where the infrastructure is able to support and sustain the changes being sought, and the integration of such projects into social housing activities and local authority commitments to retail and economic development may be preferred.

- *Does the FSA have a role in participating in the development of planning strategies that shape the development of neighbourhoods?*
- *Can they be involved in planning decisions?*
- *For example, could nutrient profiling be adapted to assist in the granting of planning permission for fast food outlets?*

The next generation

The nutritional status of adults reflects the physical effects of decades of varying environmental contexts and learnt behaviour, whilst the status of children reflects only the more recent effects. The LIDNS report shows children to be consuming poor diets significantly at odds with current dietary guidelines and in some respects worse than their elders, although see results from LIDNS.

Although there is some evidence that effective nutrition and physical activity interventions in middle age can reduce the risk of chronic disease such as type 2 diabetes, the main emphasis of government policy continues to be directed at preventing the further rise in child obesity (especially if the PSA target or a similar target remains in place). There is a clear need to continue to review and improve school food provisions, nursery food standards, maternity services and the nutritional status of women before and during reproductive age. This needs to be matched with an explicit policy of ensuring the next generation of children are born and grow up in an environment offering high levels of nutritional security for all.

- *How can the FSA best support the review and evaluation process to ensure the appropriate policies are chosen and implemented?*
- *What forms of nutrition impact assessment can be devised to evaluate policies? Does the FSA have a role in developing the necessary expertise for undertaking nutrition impact assessments of government policies?*

Research funding policies

Both within the UK and at European level, considerable amounts of public money are devoted to supporting generic and enterprise-specific research programmes and these should be reviewed for their health benefits. We are aware of no health-related criteria for guiding government funding for industrial research and development programmes. As already indicated, the FSA's development of nutrient profiling for the Ofcom measures on advertising to children raises the possibility of extending the model to be used as part of the criteria for allocating government funds for food industry research.

- *Can the FSA develop criteria for a "dietary health assessment" of government research funding?*

General policy needs

The Government has recognised its role in leading moves for better health and reduced health inequalities, and acknowledged that cross-departmental policies are needed. Impact assessments of policies for their effects on health have been discussed for several years and some pioneering research undertaken. Moves to institute policy assessment (Health in all policies) have been started at European Commission level and may need support and guidance. To date, health impact assessment has not specifically considered nutritional security and there are no specific tools for undertaking such nutrition security impact assessments of policies.

- *What role can the FSA play in supporting wider moves to develop health impact assessment?*

Potential further analyses within the LIDNS survey.

The LIDNS survey provided a valuable insight into the dietary patterns of lower income groups. However, there are a number of caveats and cautions in the interpretation of the results that need to be considered.

- Besides looking at the average dietary intake, the distribution around the average needs to be fully appreciated, and to look at multiple criteria simultaneously: e.g. what proportion of the population meet several dietary recommendations simultaneously? The UK national survey of 1986/7 found only one person out of 2,200 was actually eating a diet that simultaneously met four targets (for fat, saturated fat, NME sugars and dietary fibre).[24] The later adult NDNS did not report on

multiple targets although informal estimates suggest the numbers were still remarkably small[25] and are likely to be small among the LIDNS respondents.

- The under-reporting of food intakes was estimated to be around 20%. Under-reporting was unequally distributed across food types, giving a possible bias to the estimates of different nutrient intakes. Snacks, soft drinks and confectionery are more likely to be under-reported than main-meal dishes. The survey analyses also found that those most likely to be under-reporting were also more likely to be overweight or obese compared with those likely to be 'fair' reporters of dietary intake. There is scope to undertake further analyses of under-reporting of specifically energy-dense, nutrient-poor foods such as soft drinks and confectionery and comparing LIDNS and NDNS results with, for example, industry sales figures.[26]

- The LIDNS report includes data on the distribution of intakes of foods and nutrients. For example, the average amount of oily fish eaten by those that ate such food was 37g (men) and 42g (women), but 85% of adults did not eat this food, and nor did 97% of children. For fruit and vegetables, the data show nearly half of adult men eat under two portions per day, but that 16% eat four or more portions. NME sugars provide the average adult man with 14-15% of dietary energy, but among a small proportion of younger men NME sugars provide an extraordinary 55% of dietary energy. Even higher figures – 59% of dietary energy – are found among a small proportion of women in Wales and girls in Scotland. Further analyses of the pockets of very high consumption may be useful in identifying risk factors and health correlates.

- Household food insecurity is marked by missing meals, and missed meals are often replaced with sweetened beverages and sweet snacks (e.g. tea and biscuits) and controlled by appetite-suppressing behaviour such as cigarette smoking. The result would be a large proportion of food energy in from sweet, fatty foods. LIDNS found that reported food insecurity *and* smoking levels were especially high among single men, and among women in Wales and Scotland. Links between these factors may deserve further analysis.

- Even those with excess bodyweight may be undernourished in terms of specific nutrient intakes. LIDNS data does not specify this, but in the USA welfare programme for women, infants and children, WIC program data show that a majority of overweight WIC children have additional nutritional risks. Sixty-five percent of overweight children were identified as receiving inadequate or inappropriate nutrient intake at the time of their most recent WIC certification, and 24 percent of overweight WIC children had low blood iron levels. [27] LIDNS data may be further analysed for these relationships.

- The LIDNS survey covered a wide range of lower income families: e.g. 90% of LIDNS households had a gross weekly income below £300, compared with 38% of the general population[28], implying that the LIDNS survey was spanning the lower 40%-45% of households ranked by income. The results could be further analysed to examine dietary patterns among the LIDNS respondents who were experiencing the very lowest levels of income or greatest degree of deprivation.

ANNEX 1

Background: the context of the LIDNS survey

There has been a large and growing amount of evidence which demonstrates the poorer health experiences of people in lower social class households (whether defined by educational attainment, income or employment status) compared with those in higher social class households. This social gradient in health can be attributed to a range of closely-linked factors, including parental social class, educational abilities, prevalence of smoking, housing and neighbourhood environments, access to health-promoting diets and environments that promote physical activity, and access to health services, as well as possible 'reverse causality' of downward social mobility due to poorer health.

Comparing different national populations, there is evidence that disease prevalence patterns change with economic development and, in the richer economies, that the levels of non-communicable disease such as obesity and diabetes are associated with the degree of relative poverty, or inequality of income distribution, experienced by that population.[29]

Inequalities can be remarkably sharp even within a small distance: the London Health Observatory calculates that, of the eight stations between Westminster and Canning Town on the Jubilee Line, there is a decrease in life expectancy of nearly one year with each stop eastward.[30] Within the London Borough of Brent there is a three-fold difference in the risk of death from heart disease for men in wards separated by barely one mile but of very different social status, measured by education and income.[31]

It is also well accepted that nutrition through various stages in the life cycle plays an important role in determining health status and disease risk, and it is therefore not surprising that the links between social class and the consumption of an optimal diet has been the focus of attention of many surveys and research studies. The most recent contribution to the accumulated evidence on these issues in the UK is the report of the *Low income diet and nutrition survey* (LIDNS) published by the FSA in July 2007.

The association between lower educational attainment or lower income and dietary pattern may be mediated through a number of different influences. Multiple factors determine the range of foods available to be eaten and the consequent nutrient intake, and this has been shown graphically in several formats, such as that shown in Figure 1 overleaf.

As noted before, the term *nutrition insecurity* is used to reflect the likelihood that, although sufficient food energy may be available to assuage hunger, the nutrient content may be poor: a full range of micro-nutrients may not be so readily available while they may contain unhealthy levels of, for example, saturated fat, salt and non milk extrinsic sugars. Nutrition insecurity occurs when there are restrictions in an individual's ability to obtain and consume a nutritionally optimal diet. It is possible that members of lower income households may experience limitations in nutrition security due to a range of factors, such as lack of access to a car to get to a source of low cost healthy foods, reduced ability to store and prepare foods purchased, less knowledge or motivation to make healthy food choices, less money to spend on food *per se*, as well as bringing historical disadvantages such as unhealthy birth weight or inappropriate rates of growth in infancy and childhood.

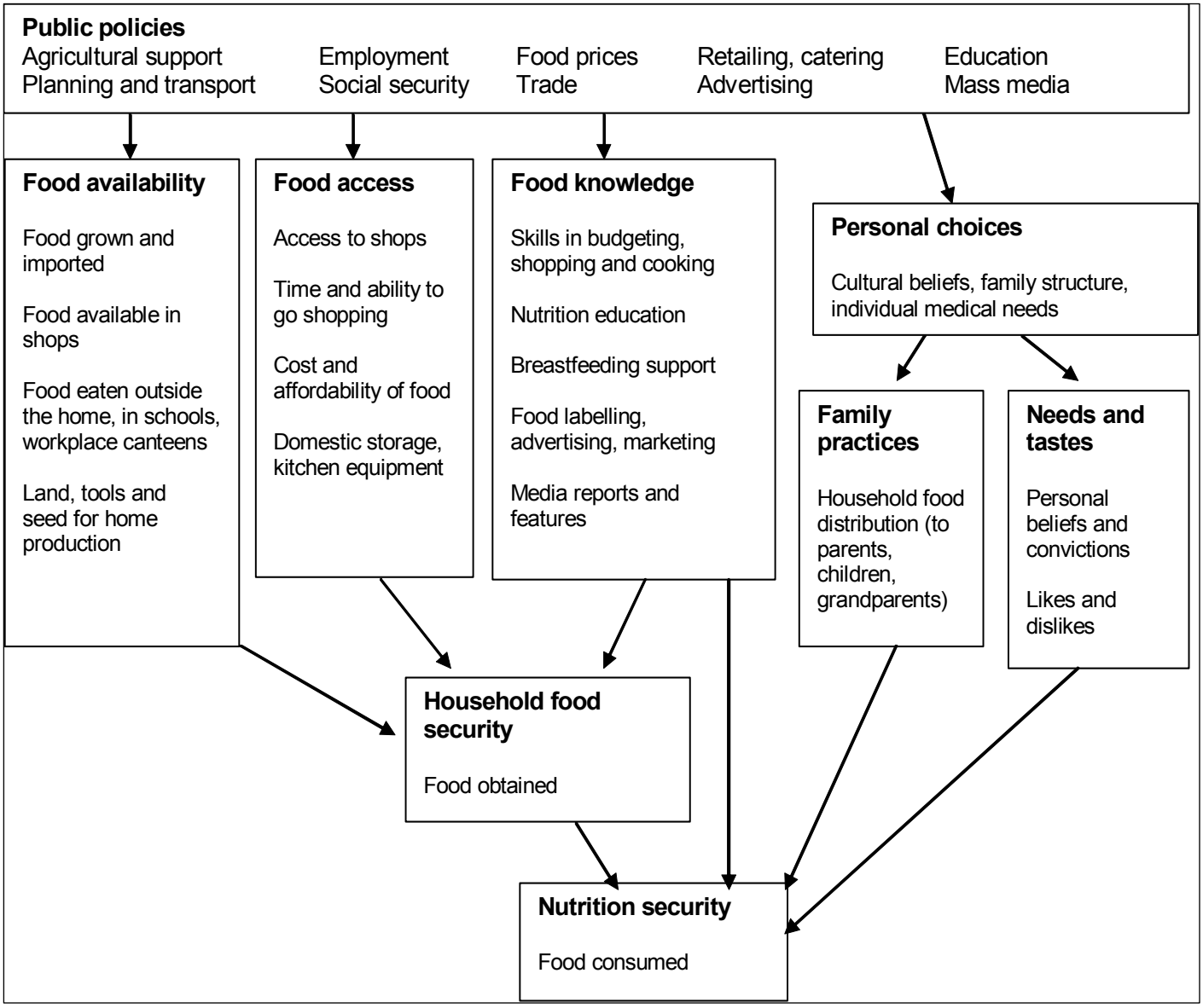

Fig 1. Influences on food consumption
Source WHO 2004[32], based on earlier versions e.g. Williams and Dowler 1994.[33]

It should not be forgotten that low income households are very diverse, and include families with many or few children, single parent families, young single persons, elderly people, families from different ethnic backgrounds, of recent or long-standing immigrant status, and located in both urban and rural areas. The absolute number of low income households increased between the years 1980 and 2000 (as did the number of higher income households) to create the largest gap between richest and poorest households for forty years.[34] There were also substantial regional differences across the United Kingdom.

Overall, the distribution of wealth became more polarised in the period (see figure below). According to a recent Joseph Rowntree Foundation report, subsequent improvements have been noted for some population groups, including children and pensioners, but income inequalities have widened with three-quarters of the increase in prosperity going to those with above average incomes (and a third of it going to the top 10 per cent of the population).[35] The report notes that health inequalities associated with class, income or deprivation are pervasive and continue to be found in all aspects of health, from infant death and the state of children's teeth to the risk of mental ill-health. The limited information on progress over time 'shows no sign that inequalities are decreasing'.

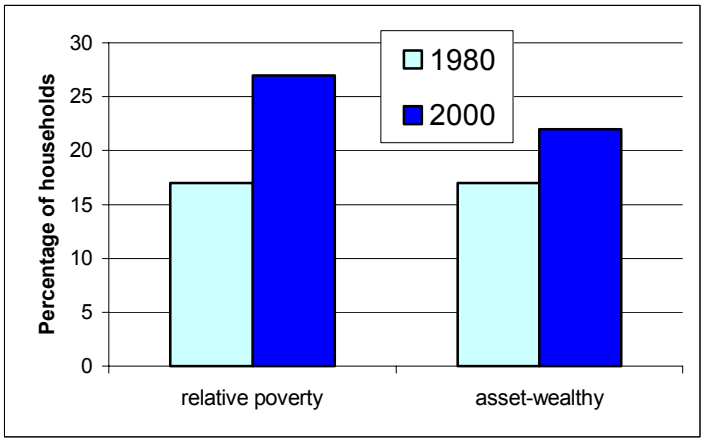

Fig 2. Increasing polarisation of wealth 1980-2000
Source: Dorling *et al*, 2006[36]

Studies in the 1980s and 1990s confirmed the view that lower-income households were likely to be suffering nutrient insecurity. James *et al* (1997) summarised the excess disease risks and dietary contributors, noting the reduced levels of nutrient intake typically consumed by members of lower income households despite their greater purchasing efficiency (in terms of food quantities, food energy and nutrients purchased per pound) compared with members of higher income households.[37] Trends in the period 1980-1995 indicated a widening of the nutrient intake gap, so that even where lower income households increased intake (e.g. of total fruit and fruit products) this was a smaller rise than that enjoyed in higher income households. In the case of some nutrients (e.g. carotene – the precursor to vitamin A) intakes fell for higher and lower income groups, but markedly more for lower income groups. Consumption per 1,000 kcal showed similar trends, indicating a widening of the difference between higher and lower income households in terms of the energy density of the diet.

Other surveys indicated that low income families in the 1990s were attempting to manage their budgets using a variety of strategies, although at some cost in terms of self-denial and family stress. Within their budgets, the evidence suggests that families spend efficiently in terms of the quantities of food and the avoidance of hunger, but that dietary variety is often limited. A low income is a barrier to making dietary changes or experimenting with unfamiliar or perishable fresh foods. Furthermore, in order to preserve self-esteem and avoid stigmatisation, branded goods are sometimes preferred to cheaper options, children are given snacks and drinks to match their peers, and available free school meals are sometimes not taken up.[38]

In a detailed study of single-parent families living on low incomes, Dowler and Calvert showed clear evidence for a strong gradient in nutrient intake within three levels of deprivation.[39] Using a series of indicators to generate a poverty index (based on unemployment history and whether benefits were subject to deductions for rent and fuel arrears) the intake of key nutrients such as iron, calcium and vitamin C were strongly associated with the degree of poverty.

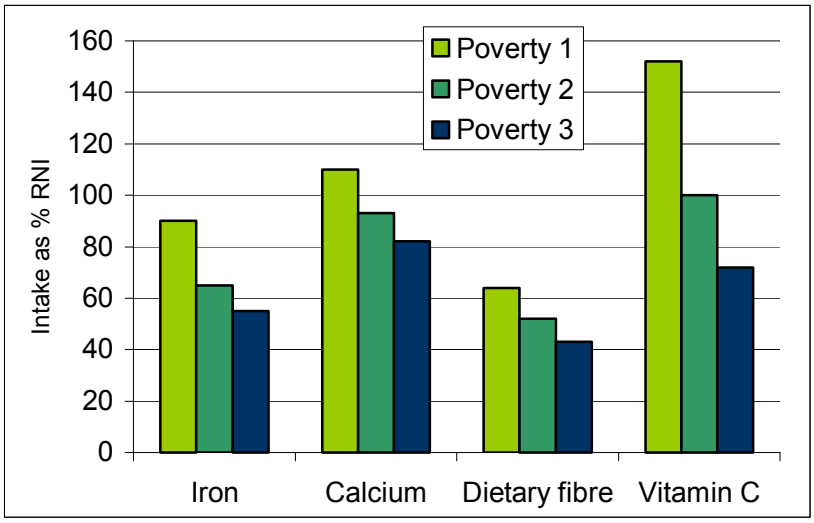

Fig 3. The gradient in nutrient intake according to degree of poverty
[1 = Not long-term unemployed, not having deductions to benefits; 2 = long-term unemployed *or* having deductions to benefits; 3 = both long-term unemployed *and* having deductions to benefits]
Source: Dowler and Calvert, *op cit*.

Continuing concerns over possible nutrition insecurity arose following the National Diet and Nutrition Survey (NDNS) series showing social class gradients in the intake of nutrients for adults, elderly people and children. These do not need re-examination here, although one of the headline results for the adult survey was that consumption of fruit and vegetables is lower in households in receipt of benefit than in others, with 35% of men and 30% of women in this group eating no fruit during the survey week.[40] The report gave information on social differences based on whether or not someone in the household was in receipt of benefits, which indicated lower fruit and vegetable consumption among households receiving benefits and tended to have lower vitamin and mineral intakes.[41]

Food expenditure patterns also reflected the concerns expressed in the 1990s, with lower income households spending more of their income, though less overall, on food purchases.[42] Eating out of the home became more popular, but again this was found more among those on higher incomes (the richest 20% spent 34% of their total food expenditure on eating out) than those on lower incomes (the poorest 20% spent under 17%).

Additional evidence of nutrient insecurity has been shown in terms of infant feeding practices and infants' access to breastmilk. Defining social class by partner's occupation, 40% of mothers in social class V (lowest class) did not initiate breastfeeding in a 2000 survey, compared with 10% in social class 1 (highest class).[43] This had improved somewhat by 2005, but even in the later survey the social gradient remained well-defined, and was also reflected in breast-feeding duration: at 6 months old, only 16% of infants in lower income households were receiving any breast milk, while 35% of infants in higher income households continued to benefit from breast milk.[44]

European health ministries agreed to improve nutritional surveillance and develop appropriate action plans in 2001 in a five-year strategy,[45] backed up by a World Health Organization (WHO) review which called for improved national efforts to collect dietary information, adding '*The surveillance of food availability and nutrition status should be improved to monitor the conditions and outcomes in households vulnerable to poverty and inequality'* and adding that '*More attention should be paid to how people manage when their social and economic circumstances deteriorate'*.[46] The document recognised surveillance was a necessary but not a sufficient component of a successful strategy, and that a wide range of policy responses would be required, from a range of sectors and governmental departments, if the problems of food poverty and nutrition insecurity were to be properly addressed.

In the UK, tackling health inequalities was the subject of a cross-cutting review, and an all-government action plan on tackling health inequalities was published in 2003.[47] Reducing health inequalities was a priority area in the Department of Health's Priorities and Planning Framework 2003-2006, with an objective that the NHS should narrow the health gap by tackling the wider determinants of health, agreeing a single set of local priorities with local authorities and other partners, contributing to regeneration and neighbourhood renewal programmes, and ensuring that the NHS makes a full contribution to support the Sure Start programme. It also proposed building capacity for public health improvement and protection in primary care trusts.

In England, primary care trusts (PCTs) have become the lead NHS organisation in assessing need, planning and securing all health services and improving health. They form partnerships with local communities and lead the NHS contribution in work with local government and other partners. Strategic health authorities will lead the strategic development of the local health service and manage PCTs' performance. Since April 2003, nine regional directors of public health and their teams have been co-located in each of the government offices for the regions. Their work includes developing an integrated approach to tackling the wider determinants of health at regional level, and providing an overview of the health contribution to the development of action plans in their region.

In the wider context the European Community has been concerned to develop policies consistent with its Lisbon Agenda for economic and social development, which includes a commitment to reduce social exclusion.[48] National policies have been developed to tackle poverty, but these are not necessarily including food and nutrition security concerns. Most recently, the European Commission's DG Sanco has included health inequalities among its action areas, and has commissioned reports on nutrition, obesity and inequalities, due this autumn. It is expected that the data will show continuing and, in some Member States, increasing social gradients in obesity prevalence, and consider the life cycle aspects such as maternal obesity and infant and child growth concerns.

Meanwhile other Commission departments are recognising the role they may have in food and nutrition policies, with DG Agriculture becoming interested in fruit and vegetable promotion through schools. Such interdepartmental initiatives are to be welcomed, even though the evidence may need strengthening to ensure the correct policies are followed.

ANNEX 2

LIDNS results summary

In this section we review the summary results reported in the LIDNS documentation and add some commentary to promote discussion.

Key results (adapted from LIDNS home page):

Food consumption

- The average number of fruit and vegetable portions eaten daily was: men 2.4, women 2.5, boys 1.6, girls 2.0.
- Compared with adult NDNS data, adults in LIDNS were less likely to eat wholemeal bread and vegetables. They tended to drink more soft drinks (but not more low-calorie diet drinks) and eat more processed meats, whole milk and sugar.
- For men and women, consumption of pasta, pizza, burgers and kebabs, chips, fried and roast potatoes, crisps and savoury snacks and carbonated soft drinks (not diet) decreased with increasing age. Consumption of wholegrain and high fibre breakfast cereals, tended to increase with increasing age.
- The majority of fat spreads used by the low income population were not polyunsaturated.
- Children were more likely than adults to eat sausages, coated chicken and turkey and burgers and kebabs.

Nutrient intakes

Sugar

- Non-milk extrinsic sugars (NME sugars) accounted for 14% and 17% of reported food energy for adults and children respectively – in excess of the recommendation of not more than 11%.
- In adults, the main sources of NME sugars were table sugar, preserves and confectionery (35%, of which table sugar contributed 22%). In children, the main source of NMES was soft drinks (not low-calorie diet drinks) which provided over one-quarter of intake in children aged 2–10 and over one-third in children aged 11–18.

Fat

- Mean daily intake of total fat was 79.1g for men, 59.4g for women, 76.7g for boys and 67.0g for girls. These correspond to percentages of food energy from total fat of 35.9%, 35.2%, 36.1% and 35.7%, respectively.
- The main contributors to total fat intake in adults' diets were meat and meat products (24%), cereals and cereal products (18%), milk and milk products (15%), fat spreads (15%), potatoes & savoury snacks (9%).
- In contrast to adults, children obtained a higher proportion of fat intake from potatoes and savoury snacks (19% vs 9%) and confectionery (6% vs 3%) but a lower proportion from fat spreads (10% vs 15%).

Saturated fat

- As in the general population, mean intakes of saturated fat exceeded the recommendation of not more than 11% of food energy in all age groups. This was most noticeably in adults aged 65 and over and children aged 2–10 years.

Trans fatty acids

- Intakes of trans fatty acids as a percentage of food energy were below the recommendation of not more than 2% in adults and children.

Fibre

- Cereal and cereal products were the largest source of non-starch polysaccharides (NSP) for adults and children, providing 37% and 38% of intake respectively. Among adults, 51% of men and 69% of women fell short of the minimum recommended intake 18g per day.

Vitamins and minerals

- Average daily intakes of all vitamins from food sources, with the exception of vitamins A and D, were above or close to the required recommended intake for men and women in all age groups.
- Intakes of many minerals also met recommendations. However, average intakes of total iron, magnesium, potassium and zinc fell below requirements for a large proportion of respondents (mostly women for iron).
- There was evidence of inadequate levels of iron, folate and vitamin D.
- This pattern of intakes is broadly similar to the wider population.

Sodium intake

- Adults and children both got one-third of their sodium intake (excluding salt added at the table or in cooking) from cereals and cereal products, the largest single contributor to which was white bread (12%)..

Anthropometry and physical activity

- The numbers of underweight people were low (2%). However, large percentages (62% of men and 63% of women) were overweight or obese, in about the same proportion as in the population at large.
- Among children, 35% were overweight of whom the majority were obese, a higher proportion than in the general population.
- Over half of older adults (aged 65+) had raised waist-to-hip ratios indicating increased risk of chronic disease.
- 42% of men and 35% of women had hypertension, rising to over 60% in both genders among those aged 65 or over.
- The majority of adults undertook little physical activity: barely one quarter of adults undertook as much as 30 minutes of moderate or vigorous activity per week.
- Half of younger children, and a third of older children, also showed low levels of physical activity (active for less than 30 minutes per day).

Dentition

- Over half of adults aged 65 and over in the LIDNS survey had no natural teeth, a higher proportion than in the over 65s in the general population. As in other surveys, reliance on artificial dentition was associated with a reduced intake of fruit and vegetables.

Social factors affecting food choice

A number of points emerged, although there were no consistent associations between these and overall diet:

- About 80% of this group did their main shopping at a large supermarket. About 50% had access to a private car for shopping
- Men and women with a lower level of educational achievement tended to have a ‘less healthy’ diet than men and women with more education. Men and women with less education ate fewer vegetables and more chips, fried and roast potatoes. Less educated women also consumed less fruit and fruit juice.
- 30% of men and 29% of women reported that price/value/money available for food was the most important influence on their choice of food. Thirty-five percent of men and 44% of women wanted to change their diet. 60% of parents/carers wanted to change their children’s diet.
- 91% of women reported they could cook a meal from basic ingredients without help; for men this was 64%.

- Approximately 80% of boys and girls aged 11–17 reported they had cookery lessons at school, during which most of them had prepared food.

Food spending and food insecurity

- Mean weekly spending on food and drink (including eating out, but excluding alcoholic drinks) was just under £30 for one-adult households, just over £50 for households containing two or more adults, £55–£65 for households with one adult and one or more children, and £80–£90 for households with two or more adults and one or more children.
- The median was comparable to the findings of DEFRA's Expenditure and Food Survey (2004/05) which reported spending of £28 per person per week.
- 39% of LIDNS respondents said they had been worried they would run out of food before more money came in, and 36% said they could not afford to eat balanced meals.
- 22% of LIDNS respondents reported reducing or skipping meals and 5% reported not eating for a whole day because they did not have enough money to buy food.

ANNEX 3

Current responsibilities and activity

In the introductory section of this document we referred to the multiple 'upstream' policy determinants of food and nutrition security. This approach was taken in the report of the Low Income Project Team (LIPT) in their review of policy needs for diet and health in the Health of the Nation initiative of the mid-1990s.[49] That report, and the work of several non-governmental organisations (NGOs) including the then National Food Alliance (now Sustain, the alliance for better food and farming), identified a number of policy options [50],[51] which were reviewed and updated in 2001, in Sustain's report *Food Poverty: Policy Options for the new Millennium.*[52]

Subsequent policy work has been undertaken through a number of avenues, including:

- The Wanless commission's work for the Treasury identifying public health interventions as a key element for preventing excessive expenditure on national medical services;[53]
- The review of food and farming strategies undertaken by the Policy Commission on the Future of Farming and Food;[54]
- The Department of Health's initiative on health inequalities,[55] reviewed during the UK's presidency of the European Union,[56] and fulfilling in part the duty of member states in Europe to increase social cohesion and reduce inequalities under the Lisbon Agenda.[57]
- The acknowledgement in the European Union's Amsterdam Treaty that "[a] high level of human health protection shall be ensured in the definition and implementation of all community policies and activities" (Article 152), a move that was further developed under the recent Finnish presidency of the EU in their *Health in All Policies* proposals. [58]

In the UK, the government's strategy for tackling health inequalities has acknowledged the need for cross-departmental collaboration, with a lead taken in public health.[59] Initial targets related to life expectancy and infant mortality disparities. Health sector strategies to increase life expectancy included reductions in smoking and road accidents and improvements in housing, along with "Prevention and effective management of other risk factors in primary care, e.g. through early identification and intervention on poor diet, physical inactivity, obesity and hypertension through lifestyle and therapeutic interventions, including use of statins and anti-hypertensives according to need" (page 4). Infant mortality targets were to be met through strengthening the Sure Start scheme, reducing teenage pregnancy rates, reducing smoking in pregnancy, improved housing and action within the NHS to increase immunisation rates and breastfeeding and improve diet.

Cross-departmental responsibilities relevant to food and nutrition security and physical activity were identified as follows (department acronyms according to 2002 definitions):

Note: Abbreviations are as follows – DCMS (Department for Culture, Media and Sport); DEFRA (Department of the Environment, Food and Rural Affairs); DfES (Department for Education and Skills); DH (Department of Health); DfT (Department for Transport); DTI (Department for Trade and Industry); DWP (Department for Work and Pensions); FSA (Food Standards Agency); HO (Home Office); LAs (Local Authorities); LEAs (Local Education Authorities); NHS (National Health Service); ODPM (Office of the Deputy Prime Minister).

- Reducing poverty, and especially child poverty, through measures in the tax and benefit systems. [HM Treasury, DWP]
- Narrowing the gap in the educational attainment of disadvantaged children compared to the population as a whole. [DFES, LEAs]
- Providing high quality antenatal and maternal and child health services and screening programmes, including greater focus on women from low income backgrounds and the needs of black and minority ethnic groups. [DH]

- Improving the educational, social and emotional development of children from disadvantaged backgrounds during their early years to help them take full advantage of opportunities – e.g. through education and mainstreaming the lessons from Sure Start – for later life. [DH, NHS, DFES (Early years, Childcare and Sure Start)]
- Improving rates of breastfeeding and maternal and infant nutrition. [DH, NHS, FSA]
- Providing supported housing for teenage parents who would otherwise live alone, and supporting teenage parents to return to study or work. [DH (Teenage Pregnancy Unit), DFES, DWP, ODPM]
- Promoting healthy schools, especially in disadvantaged areas, as a means of reducing risk-taking behaviour and encouraging healthy, active lifestyles. [DFES, LEAs, DH, FSA, DfT]
- Improving diet and nutrition of children (to establish healthy eating patterns early in life) and among disadvantaged groups, especially through increased consumption of fruit and vegetables. [DH, NHS, DEFRA, FSA]
- Promoting greater physical activity, especially among children and disadvantaged groups. [DCMS, DH, NHS, DfES]
- Improving access to sport and leisure facilities (e.g. swimming pools) in deprived areas and promoting their use – and also increasing uptake of walking and cycling among groups with low participation. [DCMS, LAs, DfT]
- Improving the quality of preventive and treatment services for Coronary Heart Disease (CHD), stroke, diabetes and cancer through NSF implementation, and levelling up access for groups and areas which have been under-served. [DH, NHS]
- Improving access to healthy affordable food. [DH, FSA, LAs, DEFRA, DfT, ODPM, DTI]
- Improving accessibility of disadvantaged groups to core facilities (public services, retail outlets), through improved mainstream and targeted public transport links and through better land use planning. [DfT, ODPM, LAs, DH]
- Neighbourhood renewal of deprived areas, including action on work and enterprise, crime, education and skills, health, housing and the physical environment. [Neighbourhood Renewal Unit leading a wide range of other Government Departments and LAs]
- Tackling crime and promoting environments in which people feel safe to go out and which promotes community networks and activity. [HO, LAs, DfT, regional government offices]
- Assisting with the regeneration of disadvantaged areas through the location of public service facilities there, the promotion of local employment policies and local purchasing of goods and services. [LAs, NHS]

However, for several more years government policy continued to be focused on ‘good local practice’, particularly community activities and support for networks of community action, which were made possible through government, Lottery, commercial and voluntary agency funding and support. Much of the experience of tackling ‘food poverty’ and the identification of ‘food deserts’ (areas where nutrition security is low due to difficulty accessing healthier foods) developed through this community action, and as a result in the early 2000s additional players became involved, notably city authorities and strategic health authorities.

Examples of city and area authorities can be given, of which the most developed is probably London’s Mayoral Food Strategy (launched May 2006), which involves the region’s strategic planning, its institutional catering, its support for small and medium enterprises and its community development and empowerment, acting through social housing, community retail outlets and social enterprise food distribution organisations, as well as primary health care. Such plans to integrate policy across a wide range of services are ambitious, but such ambition is needed to tackle problems with multiple social and environmental determinants. The fact that a growing number of local authorities have taken a strategic approach to food access underlines the emerging understanding of how important this is to achieving local health and sustainability objectives, and to tackle social and health inequalities.

Strategic health authorities, and their subsidiary authorities and trusts, were brought into the equation following the Department of Health inequalities review and the targets for health set in the white paper *Choosing Health.* This outlined the need for specific, targeted programmes by health trusts working with local authorities and others in Local Strategic Partnerships, and responsible for fulfilling Local Delivery Plans (LDPs) in order to meet specified goals, with resources allocated according to Local Area Agreements. The goals include the Public Service Agreement identified in *Choosing Health* to halt the increase in obesity prevalence among children aged under 11 years, by the year 2010 as well as a number of targets for reducing health inequalities as indicated by infant mortality, life expectancy and mortality due to several specified diseases, for which significant social gradients are apparent. The obesity target would presumably also be likely to require attention to inequalities, given that much of the likely increase in child obesity over the next few years is likely to be found among children in lower income households.

The Department of Health has issued guidance to Primary Care Trusts (PCTs) and Strategic Health Authorities (SHAs) on how they should proceed. LDPs will have two main elements: contributions to national targets and to locally agreed targets. Contributions to national targets will be in the form of three-year trajectories that PCTs will agree with their SHA and the SHA will, in turn, agree a trajectory with the Department for Health. A PCT's local targets, set in partnership with local authorities, will be agreed and monitored by its SHA, and will conform to the principles set out in a guidance document *National Standards, Local Action*.[60]

A review by the National Audit Office (NAO) suggested that the policy chain for the child obesity target was possibly too complex[61] and liable to create high levels of administrative and co-ordination costs while allowing "…leakage of monies through unnecessarily complex tiers of administration or poor coordination of activities". The NAO called for greater central and regional clarity of roles and responsibilities, stronger local partnerships, better support for frontline staff and greater involvement of parents and children.

The report did not, however, consider the 'upstream' approaches to meeting the Public Service Agreement (PSA) target, such as controls on advertising obesogenic[i] foods to children and improved school meals standards, and the report did not question the DH's faith in 'evidence-based' practices when the problem is likely to need new, possibly untested initiatives if it is to be effectively tackled.[62]

To be fair, obesity will always be likely to require multiple agencies and complex management if it is to be tackled through local programmes. Perhaps more salient is the lack of national responsibility. Only the National Institute of Clinical Excellence (NICE) was identified by the NAO as influencing the DH, and NICE's review of obesity prevention also explicitly excluded upstream, population based public health initiatives and focused on controlled interventions – e.g. in schools, nurseries and clinics in the case of children. Indeed this is where most of the evaluation data is available, although NICE also looked at the "grey" (unpublished) literature: it is far easier to run a controlled trial on tackling obesity using schools and clinics than it is to run a trial involving the whole population where changes in obesity levels may not be clearly attributable to an intervention (e.g. advertising controls). Thus most of the 'hard' evidence relies on data collected from easily controlled settings, creating a serious 'settings bias' in the evidence base for public health interventions. To put it bluntly, there is a danger of looking for answers where it is easy to look, not necessarily were the best answers can be found.

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[i] The term 'obesogenic' refers to environmental and social conditions, behaviours or food products, that tend to lead to people putting on weight.

Meanwhile local implementation of anti-poverty strategies through community and voluntary schemes continue to be frustrated by short-term funding, a lack of long-term evaluation and a lack of feed-up and feed-forward mechanisms to allow local initiatives to influence national policy or subsequent programme development. This lack of integrated linkage between local actors, their authorities and their successors has led to poor strategic policy development, highlighted in a report to the FSA in 2003[63] The report also criticised the tendency for local projects – especially those run as statutory initiatives in the health sector – to focus on individual behaviour change, which were rarely achieving actual changes and were widely deemed to be 'tickling the edges' when more structural factors affecting food access needed addressing.

The Food Standards Agency has worked on several initiatives in this area, working with the Local Authority Coordinators of Regulatory Services to document these initiatives on the FSA's Food Vision website, (see http://www.foodvision.gov.uk/); funding the UK Liaison project of the Food Access Network to disseminate advice and information (see http://www.sustainweb.org/page.php?id=50) and appointing an Advisory Committee on Consumer Engagement (ACCE) to monitor and evaluate the FSA's continuing involvement.

This work acknowledges the role community food projects play in addressing health and income inequalities and ensuring better access to healthy food. The FSA has also continued with a MAFF-initiated programme of research on the influences which determine food choices. A series of research projects, including a major piece of work by the British Nutrition Foundation (BNF), have been undertaken and others are underway. The 700-page BNF review was published in 2005 and concluded that, of the approximately 250 intervention studies reviewed, many common problems of study design were identified, few studies used validated measurement tools and few ran for long enough to be effective or to allow for proper evaluation of sustainability.[64] The project did not look at the techniques used commercially to encourage food purchases, and it might be suggested that examination of market-oriented research might provide a wealth of information on successful opportunities to influence food choices, stratified by different target audiences.

The FSA has also undertaken several activities which potentially reduce social inequalities in nutrition security on a population-wide basis. These include the moves to provide 'traffic light' front-of-pack nutrition signalling which has already led some manufacturers to re-formulate their products to achieve better traffic light signals, and which has been praised by consumer groups for being easier to use and not requiring numeracy skills.[65]

Similarly, the support given by the FSA to develop nutrient profiling models suitable for regulatory bodies such as the UK's broadcast regulator Ofcom can have significant value, not only in limiting advertising of unhealthy foods to children but the method may be useful for health impact assessments, for setting standards in (for example) institutional catering; for possible taxation or subsidy schemes and other population-wide applications which can reduce consumption of unhealthy foods among lower income groups. School meal standards, supported by the FSA, have been introduced, and the DH initiative to provide free fruit to primary school children aged 4-6 is likely to be continued and possibly extended as the European Commission DG Agriculture has stated it will allocate at least €8m to such schemes.[66]

Further, the FSA's moves to persuade manufacturers to reduce the salt content of a wide range of products may have beneficial effects for all sections of the population, and especially having a potential impact on those who are less conscious of the amounts of salt they routinely consume. This has run alongside a series of consumer awareness campaigns aimed in particular at socio-economic classes C1, C2, and D households.

The FSA's Strategic Plan includes several further proposals which may assist low income nutrition security. The salt programme is to be supplemented with a similar programme on reducing saturated fat levels, and a "strategy for calorie intakes" will be implemented in conjunction with other departments. A commitment is also made to support local, regional and national bodies across the UK to implement effective, locally-based programmes for the community. The FSA is also committed to provide guidance on food provision in public institutions and to support the adoption of a whole-of-school approach to food policies.

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