

Summary: Intervention & Options

Department /Agency: Department of Health	Title: Impact Assessment of CHPP Guidance	
Stage: Final	Version: 3	Date: 14 March 2008
Related Publications: National Service Framework for Children, Young People and Maternity Services, (Gateway ref:3779), Children's health, our future (Gateway ref: 9054)		

Available to view or download at:

<http://www.dh.gov.uk>

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What is the problem under consideration? Why is government intervention necessary?

The CHPP is the universal early intervention and prevention programme for children and families. The health promotion, screening, immunisation and surveillance are necessary for early detection of health problems & effective interventions. Obesity, as example can lead to a number of debilitating conditions including type II diabetes, cardiovascular disease & stroke. Reports suggest that the CHPP standard set in the NHS in 2004 is not being consistently delivered. Government intervention is required to raise the profile of the CHPP, strengthen the obesity prevention and focus on inequalities

What are the policy objectives and the intended effects?

The CHPP is a key service for delivering the 2008 -2011 Public Service Agreements for improving the health and well being of children, specifically the indicators for breast-feeding, obesity prevention and improving emotional health and well-being. The implementation of the updated CHPP will i)increase the detection of health problems and reduce health in-equalities ii) promote the use of cost-effective screening, health promotion and interventions iii)provide health professionals and parents with the required information to enable better health outcomes for children

What are the policy objectives and the intended effects?

Effective implementation of the updated CHPP should support the delivery of above PSA indicators and:

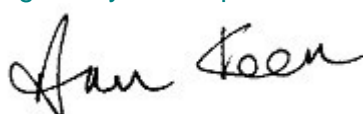
- integrate the service within Children's Centres
- increase access for disadvantaged groups
- raise the importance of the CHPP with commissioners

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects? This is the first step in a work programme to implement policy on prevention in early childhood. Will include evaluation of cost-benefit and outcomes of key programme elements. March 2011 latest.

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:



Summary: Analysis & Evidence

Policy Option: Implement obesity prevention	Description: Assess all pregnant women & children for obesity
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COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups' Costs of implementing obesity assessment and health promotion in CHPP, for health professionals to carry out the prevention work and other associated policies.
	One-off (Transition)	Yrs	
	£ 12/16/20m	10	
	Average Annual Cost (excluding one-off)		
	£ 20m		
Total Cost (PV)			£ 153m
Other key non-monetised costs by 'main affected groups'			

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups' Benefits measured as quality adjusted life years to children and monetised on the basis of estimate of social value of a QALY at £40,000 (at 10% of 670,000 live births in England per year, 2 percentage point reduction to 8% of potentially obese children) representing total value of 10 years of cohorts to age 65.
	One-off	Yrs	
	£	10	
	Average Annual Benefit (excluding one-off)		
	£ 787m		
Total Benefit (PV)			£ 7,873m
Other key non-monetised benefits by 'main affected groups'			

Key Assumptions/Sensitivities/Risks Based on cost-effective analysis on school based interventions in the USA, health outcome was measured as cases of adulthood overweight prevented and quality-adjusted life years (QALYs) saved. Cost-effectiveness ratio was measured as the ratio of net intervention costs to the total number of QALYs saved, 4.1 QALYs per pt.

Price Base Year 2008	Time Period Years 10	Net Benefit Range (NPV) £ 3,784 – 7,720m	NET BENEFIT (NPV Best estimate) £ 7,720m
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What is the geographic coverage of the policy/option?	Universal				
On what date will the policy be implemented?	April 09				
Which organisation(s) will enforce the policy?	PCT and LA				
What is the total annual cost of enforcement for these organisations?	£				
Does enforcement comply with Hampton principles?	Yes				
Will implementation go beyond minimum EU requirements?	No				
What is the value of the proposed offsetting measure per year?	£				
What is the value of changes in greenhouse gas emissions?	£ n/a				
Will the proposal have a significant impact on competition?	No				
Annual cost (£-£) per organisation (excluding one-off)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Micro</td> <td style="width: 25%; text-align: center;">Small</td> <td style="width: 25%; text-align: center;">Medium</td> <td style="width: 25%; text-align: center;">Large</td> </tr> </table>	Micro	Small	Medium	Large
Micro	Small	Medium	Large		
Are any of these organisations exempt?	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes/No</td> <td style="width: 25%; text-align: center;">Yes/No</td> <td style="width: 25%; text-align: center;">N/A</td> <td style="width: 25%; text-align: center;">N/A</td> </tr> </table>	Yes/No	Yes/No	N/A	N/A
Yes/No	Yes/No	N/A	N/A		

Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)
Increase of £	Decrease of £	Net Impact £

Key: Annual costs and benefits: Constant Prices (Net) Present Value

Evidence Base (for summary sheets)

[Use this space (with a recommended maximum of 30 pages) to set out the evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Ensure that the information is organised in such a way as to explain clearly the summary information on the preceding pages of this form.]

Evidence Base: Child Health Promotion Programme

Introduction

1. This document sets out the evidence base in support of implementing the updated CHPP, including reasons for policy intervention, the options considered, and details of a cost-benefit analysis. As there is limited data and studies on obesity prevention which is one core element of the CHPP, the implementation of the CHPP would provide the opportunity to monitor and evaluate the most cost-effective interventions to support the most vulnerable children and their families.

What is the problem under consideration?

2. Antenatal, newborn & child health promotion and surveillance are necessary for early detection of health problems & effective interventions. Obesity, as example can lead to a number of debilitating conditions including type II diabetes, cardiovascular disease & stroke. More than half of women who die in pregnancy or shortly after birth are overweight or obese, (CEMACH).
3. Early detection through the assessment at 12 weeks of pregnancy allows health professionals to provide advice on general health and well-being including identifying mothers who are already obese or overweight, and to give them advice on healthy weight gain in pregnancy. This is crucial for their baby's development, safety of mother and child and ease of delivery. There is evidence that those who breastfeed not only provide their child with protection against infectiious disease, they also reduce the excess weight in later life.
4. There are approximately 11m children in England, and 635,748 live births per year. The Health Survey for England 2005 showed that 30% of children are either overweight or obese, and work by the Government Office for Science's Foresight programme suggests that, without clear action, this could rise to 40% of children by 2020. The Government's PSA on Child Health and Well-Being aims to reduce levels of overweight and obesity in children by 2020 to 26-27% to match 2000 levels.
5. The report of the Foresight Programme suggests that the increasing levels of BMI predicted by their model are projected to add £5.5 billion (at current prices) to the annual total costs of the NHS by 2050.
6. In 2001, the National Audit Office concluded that an estimated 30,000 people in England alone had died as a consequence of their weight, that obesity resulted in 1.8 million days of sickness absence and a total cost of £2.5 billion to the NHS and the economy as a whole. If obesity continues to increase at current levels, its estimated impact by the year 2023 is will be increases in incidence of the following diseases (from 1998 baseline): stroke 5%, angina 12%, heart attacks 18%, hypertension 28% and type 2 diabetes 54%.
7. Scheduled health reviews of newborn through age five provides the opportunity to review the child's progress and ensure that health & developmental needs are being addressed. Children identified at higher risk may require more intensive support. Children with

developmental delay or health problems should receive early interventions to address their needs.

8. All children should receive vaccination against major vaccine-preventable infectious diseases. Child health screening provides the opportunity to check the immunisation status of children

Policy objectives and intended effects

9. We are publishing a new Child Health Promotion Programme (CHPP) guidance to update the National Service Framework for Children, Young People and Maternity, Standard One published in 2004.
10. This updated version has been produced to raise awareness of the CHPP in pregnancy and the first 5 years of life and its importance to delivering of 2008 -2011 Public Service Agreements for reducing inequalities, improving the health and well being of children, specifically the indicators for breast-feeding, obesity prevention and improving emotional health and well-being. It also provides additional information on the NSF standard (2004) and promotes the integration of the services with Children's Centres.
11. The guide is for commissioners and providers of children's services in pregnancy and the first years of life, including general practice and Local Authorities. It updates the existing standard for the Child Health Promotion Programme (CHPP) linking it with policy initiatives supporting the health and wellbeing of children, such as delivery of Public Service Agreement indicators, with a particular focus on obesity prevention.
12. The CHPP has been a core NHS service for over 50 years. The goals of the programme are to:
 - Promote strong attachment and positive parenting resulting in better social and emotional well-being
 - Support care that helps keep children healthy and safe
 - Improve healthy eating and increased activity, leading to reduction in obesity
 - Prevent some serious and communicable diseases through immunisation
 - Increase rates of initiation of and continuation of breast feeding
 - Improve school readiness and learning
 - Identify growth disorders and risk factors for obesity early
 - Identify and take action to address developmental delay, abnormalities and ill health
 - Identify safeguarding concerns
 - Improve the short and long term outcomes for children at risk of social exclusion
13. The CHPP is in line with:
 - NICE guidance for midwives, health visitors, pharmacists and other primary care services to improve the nutrition of pregnant and breastfeeding mothers and children in low-income households. It says: "Ensuring good nutrition for children in the early years is very important. It can modify the risk of chronic adult diseases (for example coronary heart disease and obesity)" and "The pre-school years are also a crucial time for establishing dietary patterns and food intake."
 - Studies which show that breast fed babies have a reduced risk of obesity later in life
 - The Foresight Tackling Obesities: Future Choices report: "These future developments (in finding solutions to obesity) will require the creation of a supportive environment and, critically in the case of children, parental engagement."
 - The NICE guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children. It says that in clinical care: "Multicomponent interventions are the treatment of choice. Weight

management programmes should include behaviour change strategies to increase people's physical activity levels or decrease inactivity, improve eating behaviour and the quality of the person's diet and reduce energy intake. Interventions for childhood overweight and obesity should address lifestyle within the family and in social settings".

Policy Options

14. In order to facilitate policy options, an assessment of the evidence base available was undertaken, including NICE guidelines. All screening programmes are undertaken in accordance with the UK National Screening Committee's recommendations on what constitutes safe, effective, evidence-based child health screening. (www.nsc.nhs.uk) The universal core schedule is that recommended by *Health for All Children* which forms the basis of NSF Standard One. *Health for All Children* is a systematic review of research and analysis of the options for the screening, surveillance and health promotion elements of the CHPP.
15. There is limited cost-benefit analysis on areas of the CHPP such as obesity prevention, however studies in the USA and UK have made a strong case for implementing a cross-cutting, comprehensive and long term community-based interventions. What is known is that modest weight loss (by 5-10% of initial weight) reduces the risk of type II diabetes, improves blood pressure and reduces total cholesterol.
16. The NICE Obesity guidance finds that there is little evidence on the cost-effectiveness of interventions, partly because of a lack of outcome measures that are amenable to health economic evaluations. Although considerable action is being taken at a local level that could have an impact on the prevention or management of obesity, little evaluation is being undertaken. It recommends that all local action be rigorously monitored and evaluated with the potential impact on health in mind.
17. The Foresight report finds that the evidence relating to obesity is heavily biased towards its causes rather than strategies for prevention or treatment. There are few controlled studies, and few interventions have been successful in reducing the prevalence of obesity. It finds the current lack of evidence for success not surprising since any such undertaking would require several years of evaluation.

"Given the pressing need to tackle obesity, it is likely that interventions to prevent obesity will have to take place when the evidence is neither complete nor perfect. Instead, the evidence base needs to develop alongside the delivery of novel interventions, informed by the available evidence and strengthened by expert advice. This approach establishes a virtuous circle of policy development, implementation and evaluation. Importantly it builds practical experience and allows interventions to be refined over time. However, it also requires willingness to accept the risk that some interventions may fail or need to be refined and enhanced as their effects become better understood."

18. Studies of the cost-effectiveness of obesity programmes:

Two studies have been carried out in the USA to calculate cost-effectiveness of school-based obesity programmes in terms of cost per QALY:

1. Wang et al. 2003 (Economic analysis of a school-based obesity prevention program) used a programme called *Planet Health* in 1,200 children of middle school age in a randomised control trial in 10 different schools. The intervention focussed on decreasing television viewing, decreasing consumption of high-fat foods, increasing fruit and vegetable intake and increasing moderate and vigorous physical activity. They found that the prevalence of obesity among girls in the intervention schools was reduced

significantly compared with girls in the control schools. They found that the incremental cost per QALY gained over a period of 25 years was \$4,305 when Planet Health was compared to no intervention.

2. A similar study in 2007 by Shelton Brown III et al. (The cost-effectiveness of a school-based overweight program) found that the CATCH program was even more cost-effective than the *Planet Health* programme in the Wang study.

3. A study by JJ Reilly on 'Obesity in childhood and adolescence: evidence based clinical and public health perspectives' concludes that there are four behaviours which should be regarded as the highest priorities for interventions aimed at prevention of paediatric obesity:

- Formula feeding during infancy
- Consumption of sugar sweetened drinks
- Excessive television viewing
- Low physical activity

He came up with the following evidence-based "best bets" in treatment of childhood obesity:

- Treat the motivated child/family
- Modify diet
- Encourage reduced television viewing and media use
- Encourage increased physical activity
- Treat the family, not the child
- Encourage families to self-monitor their lifestyle
- Provide more time for consultations with families, and more consultations

19. The three options considered are:

- Status quo; Leave services as they currently operate
- Assess all pregnant women at 12 weeks and all children by one year and at 2 to 2 1/2 yrs
- Impose a minimum threshold for assessment, such as obesity

Status quo

20. More than half of women who die in pregnancy or shortly after birth are overweight or obese. Not all children are immunised and protected against infectious diseases, not all health and developmental problems in children are detected early. There is a strong correlation between health inequalities and poverty and deprivation that begin at birth and continue throughout life is not addressed early.

21. Some pregnant women and children may have obesity and other health problems detected by physical examination in the course of other medical care, however this would not systematically pick up the majority of problems at an early stage or consistently for the population.

Assess all pregnant women and all children

22. The aim of this option is to improve the outcomes for maternal and child health. The purpose of these assessments is to allow early identification of health problems (physical, emotional or developmental) for an individual, to identify families who may require additional support and are at higher risk, and to ensure parents have sufficient support in their parenting role and positive health promotion.

Impose a minimum threshold for assessment, such as obesity

23. This option would narrow the focus and patient load, however it would be in conflict to the aim of progressive universalism on which the CHPP is based, and could be detrimental to large areas of the population. The CHPP is the universal public health prevention and

early intervention programme for children and families. Routine childhood immunisations as example, have had a significant impact on the rate of preventable infectious diseases in England. In 1987 (the year before MMR was introduced in England) 86,000 children caught measles and 16 died. Effort is needed to maintain vaccinations and at times boost coverage within the population, particularly during times when immunisation levels drop below the peak coverage such as during the negative publicity of the MMR vaccine.

Costs

24. The costs of assessing all pregnant women at 12 weeks and all children (looking specifically at obesity prevention and screening) are modelled on the number of health visitors or health professionals needed to deliver the outcomes. Total costs discounted 3.5%.

Benefits

25. The benefits for this option are modelled on the benefits measured as quality adjusted life years to children and monetised on the basis of estimate of social value of a QALY at £40,000 for UK (at 670,000 live births with 2% reduction in obesity over 10 cohorts, benefits counted for the 25 years from 40-65 years of age where the greatest health impact would be seen.) A discount of 1.5% applied.
26. Based on cost-effectiveness analysis of school based interventions in the USA, health outcome was measured as cases of adulthood overweight prevented and quality-adjusted life years (QALYs) saved. Cost-effectiveness ratio was measured as the ratio of net intervention costs to the total number of QALYs saved. The number of QALYs saved due to the intervention was 4.1 QALYs per pt. The analysis of the UK Governments Foresight Programme (March 2008) projects that nearly 60% of the UK population could be obese by 2050, representing a seven fold increase in the direct healthcare costs of overweight and obesity, with the wider costs to society and business reaching £45.5b at today's prices. Up to 40% of the children in the UK will be obese by 2050 if trends continue.
27. There is some uncertainty that interventions of this type would yield the potential benefits forecast in this impact assessment. There is some evidence that early intervention in pregnancy and childhood can effectively reduce the risk of illness such as type II diabetes. "Childhood Obesity and Metabolic Imprinting," *Diabetes Care*, September 2007, study shows that pregnant women with untreated gestational diabetes greatly increase their children's chances of become obese. Researchers analysed blood sugar levels — used to detect diabetes — of 9,439 pregnant women, then looked at their kids' weights 5 to 7 years later. Findings were that children of women who had high blood sugar levels but were never treated for diabetes during pregnancy were nearly twice as likely to be overweight and obese than the kids whose mums had normal levels. But the mothers with gestational diabetes who were treated were no more likely to have overweight children than the mums who'd had normal blood sugar readings.
28. A preschool-based intervention program helped prevent early trends toward obesity and instilled healthy eating habits in multi-ethnic 2- to 5-year-olds, in an American Heart Association Study. This studied 2- to 5-year-old children from ethnically diverse, low-income families in eight subsidized childcare centers in Miami Dade County, USA. Intervention group received a six-month home- and school-based obesity prevention program with two tiers. The family-based (tier two) program reinforced what the children learned at childcare. 68.4 percent of children were at normal weight at the start of the study, this increased to 73 percent at follow-up. The percentage of children who were at risk for overweight decreased from 16 percent to 12 percent. Ruby Natale, Ph.D.,

Psy.D., author of the study and assistant professor of clinical pediatrics at the University of Miami, Miller School of Medicine in Miami, Florida, 2008, Children's Trust of Miami Dade funded the study.

29. Other studies illustrate that family based programmes for weight reduction can prove to be effective. The earlier the intervention the better, and much research has therefore focused on children aged 5-12. The results of relevant clinical trials are summarised in reviews of the literature. In most of these trials the children were followed up for about a year (range 0-10 years). Each review documents the importance of diet, activity, and behaviour change as components of management of obesity. One review also considered the benefits of treatment on metabolic variables and psychological wellbeing. Several different dietary approaches successfully reduced calorie intake and improved eating behaviour. The addition of activity (both supervised and unsupervised) improves long term chances of weight control. *BMJ* 2001;323:916-919 (20 October)Clinical review *Evidence Based Paediatrics*

30. The RCPCH explored the impact of obesity on children. The most obvious and common consequences of obesity in childhood are emotional and psychological. There is evidence that children and their families suffer greatly from negative attitudes, bullying, teasing etc. This affects emotional well being and may contribute to mental health problems in childhood and adulthood. Childhood obesity also leads to serious medical consequences in childhood. Many obese children (up to 50% in some selected groups) have biochemical abnormalities such as impaired glucose tolerance or abnormal liver function tests. Up to 20% have sleep apnoea. The increase in obesity has now led to the occurrence of type 2 diabetes in childhood in UK. Information from North America indicates that this is likely to continue to increase as obesity increases and that the consequences of the childhood Type 2 diabetes are very serious, even in early adult life. American studies have shown that up to 25% of obese children have impaired glucose tolerance (a probable precursor of Type 2 diabetes). 30% of obese children in a US community study were hypertensive.

Quality Assurance and incremental pilots

31. The primary source of data that will enable local areas to understand the prevalence of child obesity in their area is the National Child Measurement Programme. PCTs lead this programme, working closely with schools, to collect data on the height and weight of children in Reception (4-5 year olds) and Year 6 (10-11 year olds). The purpose of the programme is to inform local planning and delivery of services for children and gather population-level surveillance data to allow analysis of trends in growth patterns and obesity.

32. Once the data has been collected, it is helpful for PCTs to work with the local authority and other local partners to use these data to identify where to target resources locally both geographically and most at risk groups). One way to doing this is to convert postcode information to Super Output Area¹ used to analyse patterns within the PCT/LA boundaries and identify areas with the highest prevalence.

Equality & Fairness

¹ Super Output Areas (SOAs) are a geographic hierarchy designed to improve the reporting of small area statistics in England and Wales. One of their main attributes is that their boundaries have remained constant, enabling comparisons to be made over time. See: www.statistics.gov.uk/geography/soa.asp

We believe there will be an impact on the equality strands, and Equality Impact Assessment has been completed.

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	<i>Results in Evidence Base?</i>	<i>Results annexed?</i>
Competition Assessment	No	No
Small Firms Impact Test	No	No
Legal Aid	No	No
Sustainable Development	No	No
Carbon Assessment	No	No
Other Environment	No	No
Health Impact Assessment	No	No
Race Equality	Yes	Yes
Disability Equality	Yes	Yes
Gender Equality	Yes	Yes
Human Rights	No	No
Rural Proofing	No	No

Annexes

Child Health Promotion Programme

**Table 1-Cost-Benefit Summary
Option 2**

Assess all pregnant women and all children – intervention reduces obesity by 2%

Cohort
Starting Year

£m	Cohort of annual live births (670,000 per year estimate) - 2% saved from being obese by intervention		At 65 years (4.1 QALYs per person saved from being obese based on costs associated with life-years lost over a period of 25 years from 40 to 65 years of age)		
	Total Costs (£m)	Total Costs discounted (3.5%) (£m)	QALYs	QALYs discounted (1.5%)	Benefits discounted (1.5%) (£m)
2008/09	12	12	55,342	21,026	841
2009/10	16	11.59	55,342	20,716	829
2010/11	20	14.94	55,342	20,409	816
2011/12	20	18.04	55,342	20,108	804
2012/13	20	17.43	55,342	19,811	792
2013/14	20	16.84	55,342	19,518	781
2014/15	20	16.27	55,342	19,229	769
2015/16	20	15.72	55,342	18,945	758
2016/17	20	15.19	55,342	18,665	747
2017/18	20	14.67	55,342	18,389	736
Total NPV (£m)	188	152.69	553,420	196,817	7,873
	7,720				

**Table 2-Cost-Benefit Summary
Option 2**

Assess all pregnant women and all children – intervention reduces obesity by 1%

£m	Cohort of annual live births (670,000 per year estimate) - 1% saved from being obese by intervention		At 65 years (4.1 QALYs per person saved from being obese based on costs associated with life-years lost over a period of 25 years from 40 to 65 years of age)		
Year	Total Costs (£m)	Total Costs discounted (3.5%) (£m)	QALYs	QALYs discounted (1.5%)	Benefits discounted (1.5%) (£m)
2008/09	12	12	27,671	10,513	421
2009/10	16	11.59	27,671	10,358	414
2010/11	20	14.94	27,671	10,205	408
2011/12	20	18.04	27,671	10,054	402
2012/13	20	17.43	27,671	9,905	396
2013/14	20	16.84	27,671	9,759	390
2014/15	20	16.27	27,671	9,615	385
2015/16	20	15.72	27,671	9,473	379
2016/17	20	15.19	27,671	9,333	373
2017/18	20	14.67	27,671	9,195	368
Total NPV (£m)	188	152.69	276,710	98,408	3,936
	3,784				