# NATIONAL INSTITUTE FOR HEALTH AND CLINICAL EXCELLENCE

## Centre for Clinical Practice

## and Centre for Public Health Excellence

### *Review consultation document*

**Review of Clinical Guideline (CG43) – Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children: clinical assessment and interventions.**

# 1 Background information

Guideline issue date: 2006

3 year review: 2009

6 year review: 2011

This is a joint clinical and public health guideline developed jointly by National Clinical Guideline Centre (formerly NCC Primary Care) and NICE's Centre for Public Health Excellence

This clinical and public health considerations have been presented separately within this review document.

# 2 Consideration of the evidence

## *2.1 Literature searches*

### Clinical

From initial intelligence gathering and a high-level randomised control trial (RCT) search, new evidence was identified that related to the following clinical areas covered within the guideline:

- Identification and classification of overweight and obese

- Assessment
- Lifestyle interventions
- Pharmacology
- Surgery

(for Interventions to prevent obesity, please see sections under the Public heath review).

A sufficient number of studies were identified at this stage of the process to allow for an assessment for a proposed review decision and are summarised in table 1 below. All intervention studies that were related to children had a minimum of 6 month follow up, and intervention studies related to adults had a minimum of at least 12 months follow up.

No additional clinical areas were identified from initial intelligence gathering, qualitative feedback from other NICE departments, feedback from the NICE implementation team and the views expressed by the clinical Guideline Development Group that require further focused literature searches.

The results of the high level RCT search are summarised in table 1 below. All references identified through the high-level RCT search, and initial intelligence gathering can be viewed in Appendix 1.

**Table 1: Clinical evidence**

| **Clinical area 1: Identification and classification of overweight and obese** | | |
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| **Clinical question** | **Summary of evidence** | **Relevance to guideline recommendations** |
| **What is the optimal way of identifying and classifying overweight and obesity?**<br><br>Relevant section of guideline<br>Identification and classification of overweight and obese<br>**Recommendation**<br>1.2.2 | Through the high level RCT search 6 studies relevant to the clinical question were identified and assessed using the abstract.<br><br>The studies assessed various anthropometric measures, and no evidence was found to indicate that waist circumference or bioelectrical impedance was superior to body mass index for measuring adiposity change, and no evidence was found that body mass index was inferior to other methods of assessment for measuring adiposity change (1-6)<br><br>The Department of Health has recently asked NICE to assess BMI and waist circumference in adults in BME groups in the UK. This work is currently being undertaken by NICE's Centre for Public Health Excellence. | No new evidence was identified that would change current guideline recommendations. |

| **Clinical area 2: Assessment** | | |
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| **Clinical question** | **Summary of evidence** | **Relevance to guideline recommendations** |
| What are the common weight-related<br>comorbidities and how do they impact on<br>the health of the individual, both now<br>and in the future? | Through the high level RCT search 33 studies relevant to the clinical question were identified and assessed using the abstract.<br><br>Overall obesity was associated with an increased risk of CVD (7-11) pregnancy/conception issues (12-16), cancer (17-23), depression (24;25), diabetes (26;27), asthma (28), Barrett's oesophagus (29;30), decreased quality of life (31);(32) , kidney disease (33), pancreatitis *(34)*, low back pain(35), periodontis | No new evidence was identified that would change current guideline recommendations, but rather confirms them. |

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| **Relevant section of guideline**<br>Assessment<br>**Recommendation**<br>1.2.3 | (36), urinary incontinence (37).<br><br>No associations were found in studies considering obesity and CVD risk(38)' (39), or obesity in childhood and asthma (40). | |

| **Clinical area 3: Lifestyle interventions** | | |
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| **Clinical question** | **Summary of evidence** | **Relevance to guideline recommendations** |
| What organisational or professional<br>interventions are effective in improving<br>the management of overweight/obesity in<br>the clinical setting?<br><br>**Relevant section of guideline**<br>Lifestyle interventions – General , behavioural, diet, and physical activity.<br><br>**Recommendation**<br>1.2.4 | Through the high level RCT search 28 studies relevant to children, and 61 studies relevant to adults were identified and assessed using the abstract.<br><u>Adults</u><br>General lifestyle interventions were associated with moderate weight loss (41-49)<br>Support from family, friends or the internet was not associated with increased weight loss (50;51)<br>Hospital inpatient/outpatient intervention was successful at promoting weight loss (52)<br>Behavioural interventions were found to be successful at promoting weight loss (53-62), whereas 4 studies found that the behavioural intervention examined failed to show any additional benefit above usual care (63-66)<br>Cognitive based interventions were successful at promoting weight loss (49;67-70).<br>Motivational interviewing was a beneficial add on for treating obesity (71)<br>Two systematic reviews of the evidence concluded that behavioural interventions are successful at inducing weight loss(61) and that group based behavioural interventions are superior to individual interventions (72)<br>Exercise alone was found to be inferior to diet alone at inducing weight loss(73), but exercise in combination with diet was found to be beneficial in 2 studies | No new evidence was found that would change current guideline recommendations. |

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| | (74;75) and 1 systematic review (76)<br>Diets were found to be beneficial for weight loss, and it appears that adherence to the diet is more important than the composition of the diet (73;76-98).<br>Low carbohydrate diets were not superior to other diets in terms of weight loss, but may have improve cardiovascular risk factors and have additional benefits for people with insulin resistance (81;91-94).<br>One study found that dietary interventions with one spouse had a beneficial effect on the other spouse (77)<br>Very low Calorie Diets were unable to maintain weight loss over the longer term (99;100),<br><br><u>Children</u><br>Multi-component interventions were found to significantly reduce weight over the study period (101;102).<br>Parent only interventions were found to provide similar weight loss results to parent and child interventions in four studies (103-106), and may therefore be more cost effective. One study found that the active parental involvement in the weight loss intervention did not significantly improve weight loss in comparison to a child only intervention(107).<br>Slimfast (compared to conventional diet) improved short term weight loss in one study (108) but its continued use did not improve maintenance of lost weight.<br>Exercise was found to be effective for reducing weight gain in one study (109) but removing financial barriers to exercise did not lead to weight loss in another study (110).<br><br>Overall there is a large amount of new evidence, although none of it contradicts current guideline recommendations. Furthermore, the distinction between the various interventions is unclear, as the abstracts reviewed lacked a clear description of the components of the intervention(s) evaluated making summary of results difficult. Some of the general interventions describe a package of | |

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| | elements that may include any combination of behavioural, diet, or physical activity related interventions.<br>Some studies relate to weight loss in obese patients and some to maintenance of weight loss.<br>Some evidence may partially address research recommendation 1. | |

| **Clinical area 4:Pharmacology** | | |
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| **Clinical question** | **Summary of evidence** | **Relevance to guideline recommendations** |
| What is the role of pharmacological interventions in the management of overweight/obesity in adults?<br><br>**Relevant section of guideline**<br>Pharmacological interventions<br><br>**Recommendation**<br>1.2.5 | Through the high level RCT search 7 studies relevant to children, and 30 studies relevant to adults were identified and assessed using the abstract.<br><br>Orlistat (*Licensed and recommended in current guideline*), 3 studies found a beneficial effect in adults (111-113) 2 studies found a beneficial effect in children (114;115)<br>Metformin (*licensed no recommendations in current guideline*) 4 studies found a beneficial effect in children (116;117) (118;119)<br>Phentermine/topirmate (*being considered for evaluation by Technology Appraisals programme. Phentermine is a US licensed appetite suppressant, topiramate is US and EU licensed anti-convulsant, with weight loss properties*.) One study found a beneficial effect in adults (120)<br>Lorcaserin hydrochloride (*being evaluated by Technology Appraisals programme*) one study found a beneficial effect in adults (121).<br>Naltrexone/brupropion (*unlicensed*) 2 studies found a beneficial effect in adults (122) (123).<br>Taranabant (*Unlicensed*) 3 studies found a beneficial effect and one study found adverse effects in adults (124-126).<br>Sibutramine (*License withdrawn, no longer recommended in the guideline*) 2 | No new evidence was identified that would change current guideline recommendations. |

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| | studies found a beneficial effect (127;128). 3 studies found a beneficial effect in children (54;129;130) 2010). One study found no beneficial effect when combined with metformin in adults (128)<br>Rimonabant (*License withdrawn*) 4 studies found a beneficial effect in adults (131-134) and one study found adverse effects in adults (135).<br>One study found that orlistat, sibutamine and metformin were cost effective (136).<br>The scope of the guidelines was to look at treating obesity in routine practice. Some of these drugs above will only be used in a small subgroup of patients / in specialist settings. | |

| **Clinical area 5: Surgery** | | |
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| **Clinical question** | **Summary of evidence** | **Relevance to guideline recommendations** |
| What is the role of surgical interventions in the management of severe obesity in adults?<br>**Relevant section of guideline**<br>Surgery<br><br>**Recommendation**<br>1.2.6 | Through the high level search 8 RCTs and 2 systematic reviews were identified.<br><br>2 studies (137;138) and 2 meta-analyses (139;140) found a beneficial effect of bariatric surgery on weight loss and mortality (via reduction of risk factors) in adults, and 2 studies found a beneficial effect in children (141;142). No evidence was identified to indicate that the recommended cut offs for referral for bariatric surgery should be changed.<br><br>Four studies found that bariatric surgery was cost effective, with two of the studies suggesting it is cost effective for all classes of obesity (143-146).<br><br>Some studies were identified that compared interventions prior to surgery to improve the outcome following surgery, and some studies were found comparing the effectiveness of different types of surgery. Both these issues were considered to be outside the scope of this guideline and so no further consideration was | No new evidence was found that would change current guideline recommendations. |

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| | given to them.<br><br>Some of these studies provide more (and higher quality) evidence to confirm effectiveness, which could make recommendations more robust.<br><br>NCEPOD are producing a report on bariatric surgery which is due for publication at the end of 2012 | |

## Public Health

The Centre for Public Health Excellence (CPHE) undertook a brief assessment of (1) key evidence known to the reviewers during the development of the original guideline and subsequently published and (2) evidence identified through quick, focused searches of particular aspects of the guideline where it was thought there may be new evidence. Focused searches were undertaken on:

- Recommendations to the public on strategies to maintain a healthy weight (in particular on portion size, energy density, sugar sweetened beverages, breakfast, sedentary behaviour and TV / screen viewing)
- Awareness of obesity / obesity strategies
- Workplace health – action by NHS, LA and large organisations
- Information of relevance to recommendations on children at risk of obesity (i.e. recommendations 1.1.2.16 and 1.1.2.18)

The results of these searches and feedback from the public health Guideline Development Group (see later section) have been assessed to inform the proposed review decision and are summarised in table 2 below. The study references are listed in Appendix 1.

Please note that the new pieces of public health guidance in development referred to in table 2 are listed towards the end of the document (see table 4), along with other related published NICE guidance.

**Table 2: Public health evidence**

| **Public Health area 1: Recommendations for the public** | | |
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| **Public health question** | **Summary of evidence** | **Relevance to guideline recommendations** |
| Achieving and maintaining a healthy weight<br><br>**Relevant section of guideline**<br>Recommendations for the public – everyone, including parents/ carers<br><br>**Recommendations**<br>1.1.1.1 to 1.1.1.4 and 1.1.1.6 | Box 1 and Box 2 (recommendations 1.1.1.2 and 1.1.1.6 respectively) – some new evidence is likely to be available that could add nuance to this table of best practice (from evidence of determinants of obesity rather than evidence about interventions). The recommendations are supported by a systematic review of long-term lifestyle interventions to prevent weight gain and morbidity in adults (45).<br><br>It may be possible to add additional advice about portion size and energy density, as well as more specific information on fat, sugar sweetened drinks and breakfast. More recent reviews have covered breakfast cereals (147) and sugar sweetened beverages (148).<br><br>There does not appear to be new evidence available that would substantially change the wording on alcohol.<br><br>Stakeholders have previously queried whether there is any more specific information on screen time, as practitioners often state a 2-hour limit for TV viewing for children aged 2 years and over. However, no specific interventions have been identified as providing evidence for a specific time period.<br><br>Stakeholders have previously queried the lack of information on sleep in children | No new evidence was found that would change current guideline recommendations. However, there is new evidence that could provide nuance to some of the existing recommendations. It is uncertain whether this is significant enough to warrant an update at this time. |

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| | and adults. A review by Marshall et al (149) suggests that the relationship between sleep pattern and BMI is unclear in adults but clearer in children. There is growing evidence from observational studies but no interventions were identified. It may be possible to recommend adequate sleep / healthy sleep pattern, particularly in children, as a prevention measure. There is unlikely to be evidence available to be able to provide specific guidance on hours of sleep to prevent obesity.<br><br>It has been queried whether the guidance includes sufficient information on role modelling (peer, parents, carers) and parental perceptions on behaviours and body weight (for example, see review by Pocock et al (150).<br><br>Other issues to note:<br>Start active, stay active: a report on physical activity from the four home countries' Chief Medical Officers published July 2011 can be added as a technical amendment without the guideline being updated.<br>Box 1 and box 2 in recommendations 1.1.1.2 and 1.1.1.6 have been quoted and further edited in subsequent NICE guidance (eg PH35). This text could be edited for consistency even if the guideline is not updated (a technical amendment).<br>Reliable sources of information are flagged in appendix D (noted in 1.1.1.4) – this can be updated as a technical amendment without the guideline being updated. | |
| **Relevant section of guideline**<br>Recommendations for the public – adults who wish to lose weight | New evidence is available or forthcoming on the efficacy of commercial groups and meal replacements for adults (please see section 1.1.7 below). However, this issue is likely to be covered by public health guidance in development (see table 4).<br><br><u>Other issues to note:</u> | New evidence is available, but commercial groups will be covered by public health guidance in development. |

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| (see also Table 1 clinical recommendation 1.2.4, which specifically relate to interventions for people who are already obese)<br><br>**Recommendation**<br>1.1.1.5 | Stakeholders have previously queried the statement re losing no more than 0.5-1kg week; the public health GDG noted that this is considered best practice for lifestyle weight management in non-clinical settings. Issue re 'very low calorie diets' (VLCD) or surgery where initial losses much higher addressed in other parts of the guideline.<br>The guideline does not explicitly state which popular diets or remedies do not work (this *may* be covered by public health guidance in development). | |

| **Public Health 2: Recommendations for the NHS** | | |
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| **Public health question** | **Summary of evidence** | **Relevance to guideline recommendations** |
| The role of the NHS<br><br>**Relevant section of the guideline:**<br>Recommendations for managers and health professionals in primary care<br><br>**Recommendation:**<br>1.1.2.1 | The ongoing structural changes to the NHS are important for this section; it may be more appropriate to direct some recommendations to local authorities in future. The NICE Pathways on diet and physical activity (see http://pathways.nice.org.uk/ ) have already made some technical amendments to the wording of recommendations and it may be possible to include these in the guideline without the need for an update. | It is probably not appropriate to make major changes to the layout of the guidance at this time, due to the continuing uncertainty about structural changes to the NHS (response to the Public Health White Paper consultation awaited and Health and Social Care bill 2011 going through Parliament). |

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| **Relevant section of the guideline:**<br>Recommendations for senior managers and budget holders; all health professionals; health professionals in primary care; health professionals in broader community settings.<br><br>**Recommendation:**<br>1.1.2.2 to 1.1.2.16 | There may be some new evidence that would provide nuance to recommendations but would not change the spirit of recommendations. This section is supported by a range of subsequent public health guidance (particularly PH8, PH11, PH13, PH25 and PH35).<br><br>Recommendation 1.1.2.3 that primary care settings "ensure systems in place" is covered by forthcoming guidance on *Obesity: working with local communities*.<br><br>1.1.2.3 and 1.1.2.5 will need updating when there is clarity about the structure of NHS / public health delivery.<br><br>Recommendations for health professionals working in community settings (1.1.1.12 to 1.1.2.16) covered by new guidance on prevention of type 2 diabetes (PH35) and forthcoming guidance on *Obesity*: *working with local communities*, as well as further guidance on *Type 2 diabetes*: *individual and group interventions for high risk adults* (see below).<br><br>There may be some new evidence in relation to parental involvement / family programmes of relevance to recommendation 1.1.2.16 but this may be covered by public health guidance in development.<br><br>There is some new evidence that would add nuance to recommendation 1.1.2.11 on interventions to support smoking cessation. The recommendation is not at odds with a 2009 Cochrane review, but the review also stresses the importance of tailored behavioural interventions, both in success in long term quitting success and long term effect on limiting weight gain (151). | No new evidence was found that would change current guideline recommendations. However, there is new evidence that could provide nuance to the existing recommendations. |

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| **Relevant section of the guideline:**<br>Recommendations for health professionals working with children and family<br><br>**Recommendation:**<br>1.1.2.17 to 1.1.2.18 | New UK based evidence is available eg from MEND(152), WATCH IT (see below) and HENRY (see below). Also newer work on parenting styles (such as http://www.noo.org.uk/uploads/doc/vid_4865_rudolf_TacklingObesity1_210110.pdf)<br>The DH framework for weight management providers and trainers was also published after the guideline was issued. These issues are likely to be covered by public health guidance in development (see table 4).<br><br>Some concern has been raised about the wide age range for this recommendation – more recent evidence suggests that the effectiveness of interventions varies between primary and secondary school children | New evidence is available, but, for the most part, covered by public health guidance in development. |
| **Relevant section of the guideline:**<br>Recommendations for health professionals working with workplaces<br><br>**Recommendation:**<br>1.1.2.19 | No new evidence identified. Also addressed by recommendations in subsequent public health guidance (PH13 and PH22). | No new evidence was found that would change current guideline recommendations. |

| **Public Health 3: Local authorities and partners in the community** | | |
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| **Clinical question** | **Summary of evidence** | **Relevance to guideline recommendations** |
| The role of local | Updated by subsequent public health guidance (PH8, 25 and 35) and forthcoming | It is probably not appropriate |

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| authorities and partners in the community<br><br>**Relevant section of the guideline:**<br>Recommendations for local authorities and partners in the community<br><br>**Recommendation:**<br>1.1.3.1 to 1.1.3.9 | guidance Obesity - working with local communities. Structural changes to the NHS and local authorities are fundamental to this section. It would be helpful to flag obesity as a priority for the new Health and Well-being Boards and their strategies, which will be replacing the local authority agreements and local strategic partnerships. | to make major changes to the layout of the guidance at this time, due to the continuing uncertainty about structural changes to the NHS and the public health role of local authorities |

| **Public Health 4: Early years settings** | | |
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| **Public health question** | **Summary of evidence** | **Relevance to guideline recommendations** |
| The role of early years settings<br><br>**Relevant section of the guideline:**<br>Recommendations for directors of children's services;<br>children and young | New evidence likely to add nuance rather than change the spirit of recommendations. Systematic review by Hesketh and Campbell (2010) (153) supports the direction of recommendations. This area is also covered by subsequent public health guidance on maternal and child nutrition (PH11, reviewed in 2011).<br><br>There is probably now more information available on role modelling and parenting skills and styles (106;154).<br>These issues are also covered by subsequently published UK based interventions | No new evidence was found that would change current guideline recommendations. There is new evidence that could provide nuance to the existing recommendations. Community based programmes for 2 to 5 year olds who are overweight or obese will be covered by |

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| people's strategic partnerships;<br>senior managers and staff in childcare and other early years settings; children's trusts, children's centres, Healthy Start and Sure Start teams;<br>trainers working with childcare staff, including home-based childminders and nannies.<br><br>**Recommendation:**<br>1.1.4.1 to 1.1.4. 4 | such as WATCH IT (155) and HENRY (156) of relevance. These may be picked up by public health guidance in development (see table 4).<br><br>Other issues to note:<br>Current guideline from age 2 onwards. Stakeholders have asked for guidance below 2 years of age but systematic review suggests the evidence limited. A recent review by Ciampa et al (157) concludes that "Limited evidence suggests that interventions may improve dietary intake and parental attitudes and knowledge about nutrition for children in this age group". This age group is also covered by existing public health guidance on maternal and child nutrition (PH11). | public health guidance in development. |

| **Public Health 5: Schools** | | |
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| **Public health question** | **Summary of evidence** | **Relevance to guideline recommendations** |
| The role of schools and those working with them<br><br>**Relevant section of the guideline:**<br>Recommendations for directors of children's | Brown and Summerbell published update to NICE review in 2009 (158). The conclusions are consistent with the recommendations, stating "The findings are inconsistent, but overall suggest that combined diet and physical activity school-based interventions may help prevent children becoming overweight in the long term. Physical activity interventions, particularly in girls in primary schools, may help to prevent these children from becoming overweight in the short term." | While there is likely to be more evidence on the effectiveness of school based interventions, this would add weight and nuance rather than change current guideline |

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| services;<br>senior managers and staff in schools; school governors;<br>health professionals working in or with schools; children and young people's strategic partnerships; children's trusts.<br><br>**Recommendation:**<br>1.1.5.1 to 1.1.5.9 | There is some additional evidence on lack of harm. A systematic review by Carter and Bulik (2008) (159) concludes "The existing evidence does not support the view that childhood obesity prevention programs are associated with unintended psychological harm. However, because these variables have been so poorly assessed, conclusions about the possible iatrogenic effects of these programs are premature".<br><br>Children's own views limited in the guideline – there is an EPPI centre systematic review of relevance (160), though probably adds nuance rather than changing the existing recommendations (see http://eppi.ioe.ac.uk/cms/LinkClick.aspx?fileticket=EKBQaBQeVgs%3D ).<br><br>The evidence base re vending machines and availability of drinking water in schools may still be weak.<br><br>The National Child Measurement Programme was launched after publication of the guideline and is therefore not currently mentioned. | recommendations. Public health guidance in development on lifestyle weight management of children who are overweight or obese may consider community based interventions that include a school based element. |

| **Public Health 6: Workplaces** | | |
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| **Public health question** | **Summary of evidence** | **Relevance to guideline recommendations** |
| The role of workplaces<br><br>**Relevant section of the** | Subsequent public health guidance of relevance (PH13, PH25).<br><br>There may be some additional evidence that can add some nuance to existing recommendations but more recently published systematic reviews suggest that | No new evidence was found that would change current guideline recommendations. However, there may be some |

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| **guideline:**<br>Recommendations for senior managers;<br>health and safety managers;<br>occupational health staff; unions and staff representatives; employers' organisations and chambers of commerce; health professionals working with businesses.<br><br>**Recommendations**<br>1.1.6.1 to 1.1.6.5 | the recommendations still stand. For example, Archer et al (2011) (161) concluded that "The following six promising practices were identified: enhanced access to opportunities for physical activity combined with health education, exercise prescriptions alone, multicomponent educational practices, weight loss competitions and incentives, behavioral practices with incentives, and behavioral practices without incentives."<br>There is also a review of workplace nutrition and physical activity interventions by Anderson et al (2009) (162).<br><br>Other issues to note:<br>Workplace weight loss programmes were excluded from the original guidance. Lifestyle weight management is covered by public health guidance in development (see table 4), but not specific to workplaces. A 2008 systematic review (163) concludes that "Worksite-based weight loss programs can result in modest short improvements in body weight; however, long-term data on health and economic outcomes are lacking."<br><br>Stakeholders have previously raised the issue of shift working (and see earlier comment re sleep), but there are few interventions studies that demonstrate effective diet or activity interventions (164). | new evidence that could provide nuance to the existing recommendations. |

| **Public Health 7: Self help, commercial and community programmes** | | |
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| **Public health question** | **Summary of evidence** | **Relevance to guideline recommendations** |
| The role of self help, | Significant new evidence has been published since the guideline was issued that | New evidence available but, |

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| commercial and community programmes<br>**Relevant section of the guideline:**<br>Recommendations for health agencies and local authorities; and health professionals in primary and secondary care, and community settings<br><br>**Recommendations**<br>1.1.7.1 to 1.1.7.4 | could add nuance to the existing recommendations about what works best (165-168), for both "self help" and referral schemes.<br>There are various papers related to the Counterweight programme (see http://www.counterweight.org/Publications). New evidence may also support the development of more detailed guidance on commissioning weight management programmes. Further trial data is expected.<br><br>This will be addressed by public health guidance in development (see table 4).<br>Other issues to note:<br>There are differences in the wording in the "best practice" list and the wording of clinical recommendations in relation to medical support (the best practice list states: "recommending and/or providing ongoing support", whereas recommendation 1.2.3.44 states: "under clinical supervision"). While these recommendations are aimed at different groups and have different purposes (recommendation 1.2.3.44 is concerned with very low calories diets, whereas the best practice list is aimed at a general population), it may be helpful to clarify this for practitioners and the public.<br>The House of Lords Science and Technology report on Behaviour change (2011) recommends that NICE should compile a list of approved weight management services that meet best practice guidance | for the most part, covered by public health guidance in development. |

## *2.2 Summary of the evidence*

### Clinical

A large number of ongoing clinical trials (publication dates unknown) were identified which focus on:

- Pharmacology (43 studies)
- General lifestyle interventions (30 studies)
- Diet (12 studies)
- Exercise (6 studies)
- Surgery (4 studies)
- Alternative therapies (4 studies)

Some of these ongoing studies are in an UK adult population.

Some new evidence was identified that was relevant to three of the research recommendations that were included in the original guideline:

- What are the most effective interventions to prevent or manage obesity in children and adults in the UK?
- How does the effectiveness of interventions to prevent or manage obesity vary by population group, setting and source of delivery?
- What is the cost effectiveness of interventions to prevent or manage obesity in children and adults in the UK?

However, the new evidence identified is unlikely to fully address the questions posed in the research recommendations and more research is still needed. In conclusion, no identified new evidence contradicts current guideline recommendations. New evidence could make recommendations more specific and directive but are unlikely to alter what interventions are recommended. This is particularly pertinent to treatment in the primary care setting, and the role of bariatric surgery.

### Public health

It is known that there are many ongoing trials and interventions that may add nuance to the existing recommendations, particularly in the fields of community based prevention and management of child obesity and commercial weight management.

The guideline highlighted a range of areas where the evidence was uncertain, contradictory or absent. As far as we are aware there have not been any key papers which substantially change this position. New evidence was identified that was relevant to research recommendations in the original guideline. However, the research recommendations are considered to still be of relevance.

In conclusion, no identified new evidence contradicts current public health recommendations in the guideline. Some new evidence is available that could add nuance to the existing recommendations, but this does not appear to change the direction or substantially change the spirit of the recommendations. For the most part, this evidence will be considered by public health guidance in development (see table 4). Where this isn't the case, it is uncertain whether this new evidence is significant enough to warrant an update at this time.

# 3 Guideline Development Group and National Collaborating Centre perspective

## *Clinical*

A questionnaire was distributed to the clinical GDG members and the National Collaborating Centre to consult them on the need for an update of the guideline. Three responses were received with respondents highlighting:

- Obesity in children is currently poorly defined and best practice guidelines would be useful for assessing childhood risk factors. No new evidence was found relating to risk factors (in adults or children) that would alter recommendations in this area.

- The current scope of the current guideline could be expanded to include obesity associated with pregnancy, learning difficulties and mental illness. This would, however, encroach into the area of specialist management.
- New published literature relating to interventions for obesity.

All three respondents felt that the guideline should be updated at this time. Any such update would be unlikely to alter substantial sections of the guideline in light of the new evidence available.

Issues relating to the guideline but not within the original scope of the guideline:

- The GDG clinical lead highlighted that screening was outwith the original remit of the guideline, however there has been some research (particularly in the US) and particularly in relation to children – this would relate to the public health aspect of the guidance.

### *Public health*

A questionnaire was distributed to the public health GDG members, several members of the clinical GDG who had been involved in aspects of the public health work, the collaborating centre lead at the University of Teesside, and the Chair of NICE guidance under development on *Obesity working with local communities*. Nine responses were received with respondents highlighting:

- The uncertainty in the public health system with the *Health and social care bill* means that this is not an ideal time to update the public health aspects of the guidance, though it is recognised that substantial changes to layout and wording of recommendations will be required once changes to the system have been finalised. Technical amendments should be made (for example, removing references to organisations which no longer exist), in line with changes already made to recommendations in the *NICE Pathways* on diet and activity (see http://pathways.nice.org.uk/).
- Respondents recognised that no new evidence was available that contradicted any of the recommendations. Any new evidence would strengthen and add nuance to the existing recommendations. There is

uncertainty whether this is sufficient new evidence to warrant a review to all or parts of the public health aspects of the guideline.

- New intervention evidence is clearly available on “lifestyle” management of obesity in non clinical settings for children and adults, particularly in relation to commercial weight management programmes. These areas are covered by public health guidance in development (see table 4). Respondents noted that the current guideline included insufficient information on the maintenance of weight following weight loss. They noted that while there are few formal trials addressing this issue, there is now more data available from trials extending beyond 1 year.
- Respondents noted that children under 2 years had been excluded from the scope of the current guideline. There was agreement that there is insufficient new intervention evidence to warrant including this group in any update to the guideline at this time.
- Any new evidence relating to the recommendations for local authorities and their partners in the community has been more recently covered by public health guidance on the *Prevention of cardiovascular disease* and *Type 2 diabetes*; and there is public health guidance under development on *Walking and cycling*. Any new evidence relating to early years settings has been covered by newer public health guidance on maternal and child nutrition (itself the subject of review in 2011). Pregnancy was excluded from this guideline but is partially covered by newer public health guidance on the *Prevention of obesity before, during and after pregnancy*.
- Respondents noted that the *National Child Measurement Programme* had been implemented since the publication of the guideline but it was unlikely that detailed, long term evaluation was yet available that would result in amended or new recommendations. New evidence is available that adds strength to the recommendation that school-based interventions were unlikely to result in harm – respondents were of the view that this might be an area where the current recommendation could be strengthened.
- Respondents noted that the public health aspects of the guideline had not been well implemented and that this was a cause for concern.

The majority of respondents felt that, while there was new evidence that could add nuance to the existing recommendations and may aid their implementation, the uncertainties surrounding changes to the NHS and public healthy system more widely meant that it would not be sensible to update the public health aspects of the guideline at this time.

# 4 Implementation and post publication feedback

In total, 451 enquiries were received from post-publication feedback relating to both the clinical and public health aspects of the guideline. Most enquiries were routine. Key themes from the enquiries relating to the clinical aspects of the guideline were:

- Inconsistency in access to bariatric surgery as recommended within the guideline
- Lack of clarity in the wording of recommendations relating to very low calorie diets, and a change in legal status relating to the definition of very low calorie diets.

Feedback from the implementation team revealed that pharmacological and surgical interventions have increased in line with recommendations in the NICE guidance.

The feedback document can be viewed in appendix 2.

In addition, NICE has received some criticism that the guidance focuses too much on physical activity and that it should have a greater emphasis on energy restricted diets for people who are *severely* obese. NICE is of the view that the guideline is sensitive to the needs of severely obese people and that weight maintenance or loss is problematic for many people. The guideline states that the BMI and co-morbidities, along with personal preference and circumstance, need to be considered in treatment choice. Specific details on energy reducing diets are included in recommendations 1.2.4.26 to 1.2.4.37.

In summary, no new evidence was identified through post publication enquiries or implementation feedback that would indicate a need to update the guideline.

# 5 Relationship to other NICE guidance

The following NICE guidance is related to the clinical aspects of CG43:

**Table 3 Related Clinical Guidelines**

| Clinical Guidelines | Review date |
|---|---|
| CG9 Eating disorders: core interventions in the treatment and management of anorexia nervosa, bulimia nervosa and related eating disorders (2004). | Jan 2014 |
| GC66 Type 2 diabetes: the management of type 2 diabetes (updated 2008) | Review decision to update |
| CG87 Type 2 Diabetes - newer agents (partial update of CG66) | Review decision to update |
| CG32 Nutrition support in adults: oral nutrition support, enteral tube feeding and parenteral nutrition (2006). | Feb 2014 |

The following NICE guidance is related to the public health aspects of CG43:

**Table 4 Related Public Health Guidance**

| Published public health guidance | Review date |
|---|---|
| PH2 Four commonly used methods to increase physical activity | Partial update due May 2013/ Next complete review due March 2013 |
| PH6 Behaviour change | October 2011 |
| PH7 School based interventions on alcohol | No plans to review |
| PH8 Physical activity and the environment | February 2014 |

| | |
|---|---|
| PH9 Community engagement | June 2013 |
| PH11 Maternal and child nutrition | July 2014 |
| PH13 Promoting physical activity in the workplace | July 2014 |
| PH17 Promoting physical activity in children and young people | January 2012 |
| PH22 Promoting mental wellbeing at work | November 2012 |
| PH24 Alcohol use disorders – preventing harmful drinking | June 2013 |
| PH25 Prevention of cardiovascular disease | June 2013 |
| PH35: Preventing type 2 diabetes – population and community interventions | May 2014 |
| **Related NICE guidance not included in CG43** | |
| PH27: Weight management before, during and after pregnancy | July 2013 |
| **Related NICE guidance in progress** | |
| | **Expected publication date:** |
| Prevention of type 2 diabetes – individual and group interventions for high risk adults | May 2012 |
| Obesity: working with local communities | November 2012 |
| Walking and cycling | October 2012 |
| BMI and waist circumference – black and minority ethnic groups | TBC |
| Overweight and obese adults – lifestyle weight management | TBC |
| Overweight and obese children – lifestyle weight management | TBC |

# 6 Anti-discrimination and equalities considerations

No evidence was identified to indicate that the guideline scope does not comply with anti-discrimination and equalities legislation. The original scope is

inclusive of the cclinical management of overweight and obesity in adults and children aged 2 years or older.

# 7 Conclusion

Through the process no additional areas were identified which were not covered in the original guideline scope or would indicate a significant change in clinical practice. There are no factors described above which would invalidate or change the direction of current guideline recommendations. The guideline should not be updated at this time.

# 8 Review recommendation

The guideline should not be updated at this time.

The guideline will be reviewed again according to current processes.

Centre for Clinical Practice and Centre for Public Health Excellence

12 September 2011

# Appendix 2 – References


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# Appendix 2 – NICE Implementation team feedback

## 1. Routine healthcare activity data

*NICE implementation uptake reports provide information on national trends and activity associated with recommendations in NICE guidance.*

NICE implementation uptake report: **Surgical and pharmacological interventions for obesity** (available from: http://www.nice.org.uk/media/899/9C/UptakeReportObesityFinal.pdf)

***Summary***

There was a rapid uptake of orlistat and sibutramine following publication of the NICE technology appraisals in March 2001 and October 2001 respectively. Following publication of the NICE clinical guideline on obesity in December 2006, uptake increased over the first six months of 2007, followed by a decrease. This pattern was repeated for the subsequent 2 years. Analysis of prescribing in relation to specific age groups shows very low levels of prescribing in the under 18 age groups. This appears to be in line with NICE guidance. A high proportion of patients (92.62%) who received orlistat in 2009 had a BMI over 30 which is in line with NICE recommendations. The rate of bariatric surgery procedures carried out in NHS Hospitals in England is increasing. In 2008/2009, 3,686 Finished Consultant Episodes for bariatric surgery were performed compared to 566 in 2005/06.

## 2. Implementation studies from published literature

Information is taken from the ERNIE website

- **2.1** NHS Information Centre for Health and Social Care (2009) Use of NICE appraised medicines in the NHS in England-Experimental Statistics

- Estimated numbers of eligible patients were derived from NICE costing templates. Data for orlistat and sibutramine was obtained from: Prescription Cost Analysis database (PCA), Prescription and Cost system (ePACT), Hospital Pharmacy Audit Index. The NICE costing template expected an annual number of 311.3 thousand patients. The observed use in 2008 was 40,676.9 thousand defined daily doses, a ratio of 0.5 to 1.

- **2.2** Office of Health Economics (2010) Shedding the pounds: obesity management, NICE guidance and bariatric surgery in England

  Questionnaires were sent to all 152 PCT's. Of these 93 returns were received by August 3rd 2010. PCT's were invited to assess whether they follow the NICE guidelines for obesity. Nearly 4 in 10 reported that their referral guidelines were in line with NICE in all

respects. Nearly half responded by stating that elements of their local guidelines matched NICE. One in ten PCT's responded that they do not follow the NICE guideline at all.

- **2.3** Burns E et al (2010) Introduction of laparoscopic bariatric surgery in England: observational population cohort study *British Medical Journal* 341:c4296

  The authors conducted an observational population cohort study. 6953 primary bariatric procedures were carried out during the study period. A marked increase occured in the numbers of bariatric procedures done, from 238 in 2000 to 2543 in 2007, with an increase in the percentage of laparoscopic procedures over the study period (285 (66/238) in 2000 compared with 74.5% (1894/2543) in 2007.

- **2.4** Haboubi NY et al (2010) Effectiveness of multi-disciplinary weight management clinics *Obesity reviews* 11 (Suppl. 1) 1-472

  A retrospective case controlled study was carried out on 114 randomly selected patients who have attended a clinic for at least 12 months. 91.2% of the study population lost on average 14.8kg relating to 6.9% of their initial body weight. 87.7% of those achieved the guidelines maintained there weight loss up to 12 months as compared to 70.8% of those who exceeded the NICE guidelines.

- **2.5** O'Callaghan M et al (2010) Management of obesity in medical clinics within Children's Community Health Service in relation to recently published NICE guidance *Journal of Clinical Audits* Vol 2(2); p11-22

  Identification of overweight and obese children under the direct care of Children's Community Health Service (CCHS) by Single Point Access referrals and Patient Audit Tracking forms. The ultimate cohort was 25 cases. Results found that recorded family history was not taken in 20 cases, case histories of recorded psychosocial distress was not taken in 19 cases. Height and weight were recorded in all cases but was rarely converted and plotted to give BMI.

- **2.6** Royal College of Physicians (2011) Implementing NICE public health guidance for the workplace: a national organisational audit of NHS trusts in England

  282 trusts in England participated in the audit. This comprised 91% of ambulance trusts, 73% of acute trusts, 67% of mental health trusts and 52% of primary care trusts.Participating trusts employ nearly 900,000 NHS staff. Results found 32% of trusts had a policy to encourage and support employees to be more physically active. Only 15%

of trusts had a plan or policy to help reduce obesity amongst their staff. 73% of trusts had a plan or policy to encourage and support employees to stop smoking.

- **2.7** Puttha R et al (2010) Management of childhood obesity and overweight in a paediatric out-patient setting *Archives of Disease in Childhood* 95 Suppl 1

  Clinical notes and letters of patients attending paediatric out-patients over a selected time period were reviewed. Of the 105 children audited in a district general hospital (DGH) 21% were obese and 10% overweight. At the children's hospital (CH) 24% were obese and 5% overweight, out of 42 children. No overweight children (both hospitals) were identified as overweight and did not have tailored intervention or assessment. 47% and 62% of DGH and CH obese patients respectively had an assessment.

## 3. Qualitative input from the field team

The implementation field team have recorded the following feedback in relation to this guidance:

| Subject | Notes |
|---|---|
| Topic selection | Could we also look at Rimonobant for obesity? |
| Clinical guidelines | The obesity guideline was taken to the scrutiny committee who couldn't use it (did not know where to start) then it was taken to LSP but they had a similar experience. Could not find a home for obesity guideline. |
| Clinical guidelines | The size of the guidance is a barrier – obesity was hundreds of pages long. If the guidance is huge it makes it more difficult to implement especially across different settings. |
| Clinical guidelines | CG43 Obesity – bariatric surgery. The SCG was critical of the perverse incentive offered by the guideline that recommends surgery for those with a BMI of 50+, suggesting that some people may be encouraged to put on weight in order to qualify for surgery. |
| Clinical guidelines | Not much new evidence on obesity and the focus tends to be on the surgical end, but they are trying to do the right thing in primary care and about to commission Weight Watchers services. |
| Clinical guidelines | DPH are disappointed by the Obesity clinical guideline. Apparently it contained nothing new and should have concentrated on a programme rather than an intervention approach. |
| Topic selection | Currently writing a local guideline on obesity in pregnancy - finding little or conflicting evidence - would welcome a full NICE review. |
| Clinical guidelines | The Director of Commissioning felt that the scope of the obesity guidance didn't go far enough to help them with strategies to prevent people becoming overweight e.g. fitness campaigns, and attaining the criteria for bariatric |

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| | surgery. Generally, clinical guidelines are good but the scope doesn't cover the earlier parts of the pathway, which is prevention. |
| Legacy feedback - unspecified | Hope that the new obesity guidance covers new ground. It would help to have the evidence base for schemes nationally and their targets e.g. Sport England, increase physical activity by 1%. |
| Legacy feedback - unspecified | Felt disappointed in the first two PH guidance - felt that they did not add any new evidence based practice to the existing HDA and other guidelines. Already had very good smoking cessation services. Hope that the next tranch of PH guidance will be more cutting edge with greater evidence based activities, particularly in the area of obesity management as this is a high priority for the health community. |
| Clinical guidelines | Obesity - they have altered the threshold for bariatric surgery to a BMI >50 in order to make this affordable. |
| Pathways | She was keen that the pathways should incorporate prevention where appropriate (diabetes was given as an example of something that could have a huge negative impact on a child's education due to illness and hospital attendance and so was seen very much as a LA issue as much as a health issue. Recommendations re: obesity, physical activity etc should fit within the diabetes pathway). |
| Public health guidance | Health Impact Assessment is going to be central to the new public health function within local authorities - so has NICE engaged with: 1) Marmott - "our authority uses Marmott as the bible" 2) Local Government Improvement and Development (LGID). This LA has true integrated commissioning. DPH has moved all the obesity monies in to public health and commissioned a complete pathway of care. People can self refer to the "lose weight, feel great" pathway where they will be offered support. Have used social marketing to engage hard to reach through community engagement (sport and leisure). Bariatric surgery commissioned from Aintree but this entire programme has actually decreased the need for surgery by 73% and improved outcomes. Independent evaluation currently being written up (hope to secure this example for shared learning and QIPP databases) "To engage local authorities, NICE needs to focus more on places as well as population" and needs to support health impact assessment as this will become key for authorities and their new public health role. |
| Legacy feedback - unspecified | The LA Director was aware of the obesity guidance, but had not associated the guidance with NICE. Upon looking quickly at it he said 'it's what we do all the time and sometimes hear it as just carry on. So it needs to include a minimum standard or some quantification, or some ideas we hadn't thought of before'. |

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| Legacy - Field Visit Overview | The default position towards guidance is "comply or explain" - sometimes they do explain and agree not to implement parts of the guidance e.g. with respect to maternity guidance and obesity they adopt an upper figure of 35 rather than NICE's 30 BMI. |
| Technology appraisals | Morbid obesity surgery - felt that a major issue was omission of prevalence data in the health economic modelling. This has been brought up with NICE previously and they were informed that the unpublished assumption was that the prevalence pool would be offset by 30 years. This omission has necessitated a local approach to development of access criteria. They would like more detailed feedback on why prevalence was omitted from the analysis. |
| Public health guidance | Director of HR raised the issue that NICE guidance does not take account of size and complexity of the organisations when making recommendations. For example, obesity guidance – to have healthy food in all canteens. The Trust has over 120 sites and not all have food provision services or ability to control what is offered. |
| Legacy feedback - unspecified | New DPH felt that smoking and physical activity guidance were useful and were being implemented locally. However, disappointed in the obesity guidance feeling that it did not go far enough. |
| Topic selection | New topic suggestion - obesity in pregnancy. Although aware that this will present some major implementation challenges. |
| Clinical guidelines | Obesity recommendations were “too vague” to be turned into a useful action plan. |
| Clinical guidelines | Obesity - useful piece of guidance but preferred the Foresight Report (www.foresight.gov.uk) which was more accessible and more focussed on practical aspects of implementation. |
| Clinical guidelines | Obesity guidance was very much appreciated and led to the redesign of the Trust's approach to tackling the issue within the workplace. However there is a suspicion that many trusts will have developed similar approaches and plans and it would be very helpful if NICE could take the guidance a step further and produce what are in effect a range of end-user (i.e. member of staff) tools - perhaps in the form of DVDs or dedicated web pages. |
| Topic selection | Obesity in pregnancy: "an increasing problem". Prevention and management of pressure damage in pregnancy (linked to obesity). |
| Costing tools | The DPH had used the costing tool for the obesity guideline, but the HRG bandings were apparently incorrect (gastric banding was off tariff). The DPH said that she had reported this to NICE. |

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| Public health guidance | The group agreed to use the guidance in two ways, firstly for ideas for improving existing services and secondly for benchmarking current services/processes. The group said they were particularly struggling with 'obesity models' (i.e. ways to reduce staff obesity) and hoped that some of the NICE guidance might be able to help provide practical models. It's finding practical models that people seem to be struggling with. |
| Clinical guidelines | This Council director felt that NICE should take the 'beyond the NHS' partners more into account when preparing guidance, and that if this was seen to happen, then more local authorities would recognise the importance of the guidance when it was issued. Discussed Obesity as a good example of recognising the need to address a wider audience. |
| Topic selection | Topic – CEMACH is currently doing an audit on obesity in pregnancy. They have very high c-section rates, foetal monitoring issues, general care arrangements. etc. |
| Topic selection | Topics: pregnancy and obesity. NSF says all obese women should have preconception advice. There is guidance in the Trust on advice, handling, risk issues. They have a new obesity service and this meeting has highlighted the need to make the links with maternity services. For other topics look at NPSA data, e.g. iron infusions is risky for anacaphalis, but evidence is sparse. |

***Information is taken from the field team CRM database.***

## 4. Implementation issues from tool development

Implementation issues raised at the time of guidance publication

The key areas of resource impact identified were:

**Training and development**

Training in referral to non-pharmacological interventions, knowledge of healthy nutrition and how to overcome barriers to behaviour change is required. This could have a significant resource impact.

**Weight management clinics**

The establishment of weight management clinics will have an impact on resources. Initial research has found that not all PCTs have set these up.

**Pharmacological and surgical interventions in children**

If physical or severe comorbidities are present, the guidance recommends treatment of Orlistat or Sibutamine in children aged 12 and older. It should be started in a specialist paediatric setting by multidisciplinary teams with expertise in prescribing to this age group. This will incur cost for additional prescribing and the specialist input.

**Savings and benefits**

There are clear benefits to reducing the number of obese people in the population, and the report will highlight these. However, the data on which to make assumptions regarding long-term improvement and quantify impact on costs to treat obesity is limited.

**Other implementation issues:**

A number of complex communication needs were identified such as the need to tailor advice for patients, how to enable patients to make informed decisions about their care, how to address language and other barriers and the need for written evidence-based information.

Obesity is an area where a wide range of initiatives and actions were taking place, so we took the opportunity of using the publication of the guidance to signpost to relevant resources and try and pull these together. Sources of external support identified were;

Healthy Start, Healthy Schools Programme and Investors in People that support implementation in schools, workplaces and other settings. Specific sources of external support for implementation included:

- Lightening the Load: Tackling Overweight and Obesity. A toolkit for developing local strategies to tackle overweight and obesity in children and adults tackling overweight and obesity lightening the load: Produced by the National Heart Forum in association with the Faculty of Public Health (2006). We worked jointly with the NHF to update the toolkit and endorse it.

- 2005 Directory of Obesity Training Courses for Primary Care. Produced for the Department of Health by representatives from: Dieticians in Obesity Management DOM UK, National Obesity Forum (NOF) and The Association for the Study of Obesity (ASO)

- Quality and Outcomes Framework

- Central Office of Information for the Department of Health (2006). Obesity Care Pathway and Your Weight, Your Health.

- Obesity social marketing campaign Autumn 2006 onwards

The action we took to support the guideline was five implementation tools at the point of launch:

- a slide set to support awareness raising activities, outlining key messages for local discussion
- a guide to resources to signpost users to resources and national initiatives that support this locally
- audit criteria – to assist organisations in reviewing and monitoring practice against NICE guidance
- costing tools to assess cost impact and potential savings.

The CQC added compliance with the obesity guideline to their list of indicators which form part of the annual health check in 07/08. The following website provides documents for the annual health check for all years.
http://www.cqc.org.uk/guidanceforprofessionals/nhstrusts/annualassessments/annualhealthcheck2005/06-2008/09.cfm