



# National Child Measurement Programme

## *2007/08 school year headline results*

December 2008



department for  
children, schools and families

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# Summary

- This report summarises the key findings from the Government’s National Child Measurement Programme (NCMP) 2007/08. The report provides high-level analysis of the prevalence of “underweight”, “healthy weight”, “overweight” and “obese”<sup>1</sup> children, in Reception (aged 4–5 years) and Year 6 (aged 10–11 years), measured in the school year 2007/08. Where possible, comparisons have also been made with the 2006/07 NCMP results.
- In total, 973,073 valid measurements were received for children, in England, in Reception and Year 6 – approximately 88% of those eligible<sup>2</sup>. This represents an increased participation rate of eight percentage points compared with the 2006/07 programme, when the corresponding rate was 80%.
- The prevalence of underweight, overweight and obese children by year and sex in England for 2007/08 is summarised in table i.

**Table i: Prevalence of underweight, healthy weight, overweight and obese children by year and sex, England, 2007/08**

		Underweight	Healthy weight	Overweight	Obese	Overweight and obese combined	Number measured
Reception	Boys	1.5%	74.5%	13.6%	10.4%	24.0%	244,587
	Girls	1.0%	77.9%	12.3%	8.8%	21.1%	233,065
	<b>Both</b>	<b>1.3%</b>	<b>76.2%</b>	<b>13.0%</b>	<b>9.6%</b>	<b>22.6%</b>	<b>477,652</b>
Year 6	Boys	1.2%	64.5%	14.4%	20.0%	34.3%	255,302
	Girls	1.6%	67.6%	14.2%	16.6%	30.7%	240,119
	<b>Both</b>	<b>1.4%</b>	<b>66.0%</b>	<b>14.3%</b>	<b>18.3%</b>	<b>32.6%</b>	<b>495,421</b>

- In summary, the key findings are that:
  - In Reception, almost one in four of the children measured was either overweight or obese. In Year 6, this rate was nearly one in three;
  - The percentage of children who are obese is almost twice as high in Year 6 than in Reception;
  - The percentage of children who are overweight is only slightly higher in Year 6 than in Reception;
  - The overall percentage of children who are underweight is similar for both years. Differences between boys and girls were significant but very small for both years.
- When comparing obesity prevalence rates between 2006/07 and 2007/08, it is important to consider the impact of differing response rates for children in Year 6. The 2006/07 Year 6 obesity prevalence may have been underestimated by as much

<sup>1</sup> Prevalence rates have been calculated using the age and sex-specific UK National Body Mass Index (BMI) percentiles classification. This classification uses UK growth data from 1990 when a large representative sample of 37,700 children was constructed by combining data from 17 separate surveys. These data were then used to express BMI as a percentile based on the BMI distribution, adjusted for skewness (using Cole’s LMS method - *Growth monitoring with the British 1990 growth reference*. *Cole Arch Dis Child*.1997; 76: 47-49), age and sex.

- “underweight” is defined as less than or equal to the 2<sup>nd</sup> percentile;
- “overweight” is defined as greater than or equal to the 85th percentile but less than the 95th percentile;
- “obese” is defined as greater or equal to the 95th percentile;

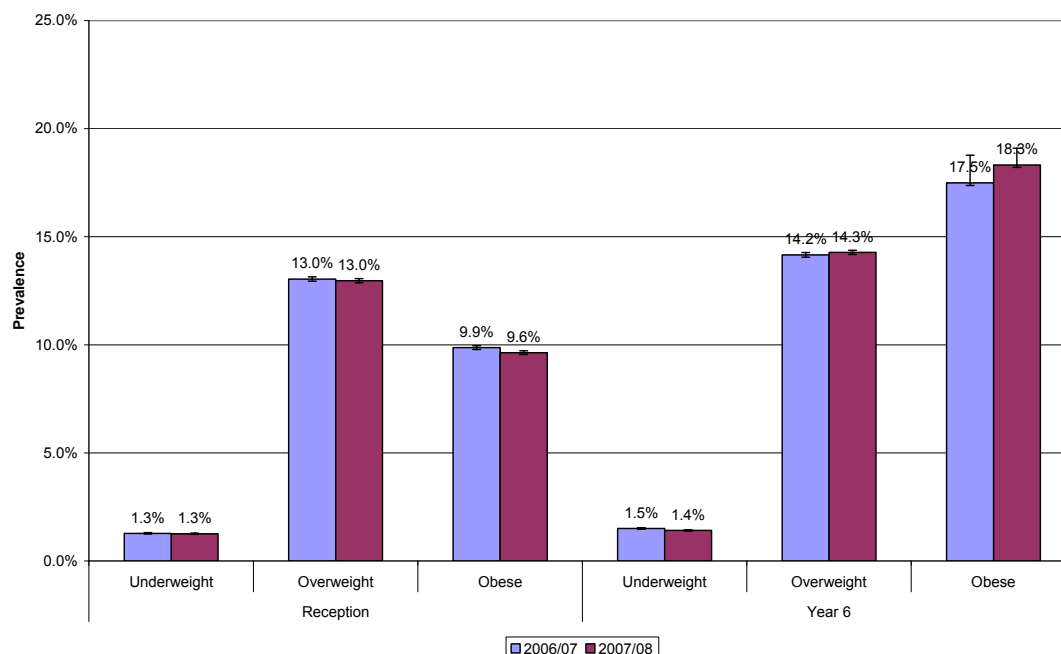
Note that “overweight” means “overweight but not obese”.

<sup>2</sup> See The National Child Measurement Programme *Guidance for PCTs: 2007–08 school year* ([www.dh.gov.uk/healthyliving](http://www.dh.gov.uk/healthyliving)) for further information on which children were eligible for inclusion

as 1.3% due to the effect of children opting out of being measured; the 2007/08 obesity prevalence may be underestimated by as much as 0.8%.

- The prevalence of underweight, overweight and obese children by NCMP year in England for 2006/07 and 2007/08 is shown in figure i.

**Figure i: Prevalence of underweight, overweight and obese children by NCMP year, 2006/07 to 2007/08**



- The main findings when results from 2006/07 and 2007/08 are compared are:
  - In Reception, when comparing results for 2006/07 and 2007/08, there is little or no difference in the prevalence of underweight, overweight and obese children;
  - In Year 6, there was no significant difference in the prevalence of underweight, overweight and obese children in 2006/07 and 2007/08. The percentage of obese children showed an apparent increase of 0.8 percentage points between 2006/07 and 2007/08; however, much or all of this increase is likely to be due to the increased participation rate for Year 6 between the two years.
- Obesity prevalence is significantly higher than the national average in the North East, West Midlands and London SHAs for both age-groups as well as North West SHA for Reception children and Yorkshire and Humber SHA for Year 6 children.
- Obesity prevalence is significantly below the national average in the South East Coast, South Central, South West and East Midlands SHAs for children in both school years, as well as for Year 6 children in the East of England SHA.
- The 2007/08 SHA obesity patterns are similar to those observed in the 2006/07 NCMP.
- Obesity prevalence is significantly higher in urban areas than in rural areas, as was the case in NCMP 2006/07.
- As in the 2006/07 NCMP findings, a strong positive relationship exists between deprivation and obesity prevalence for children in Reception and Year 6.

# 1. Introduction

- 1.1. Established in 2005, the National Child Measurement Programme (NCMP)<sup>3,4</sup> weighs and measures children in Reception (typically aged 4–5 years) and Year 6 (aged 10–11 years). The findings are used to inform local planning and delivery of services for children and gather population-level surveillance data to allow analysis of trends in weight. The programme also seeks to engage with parents about the importance of healthy weight in children.
- 1.2. The NCMP is part of the government's Healthy Weight, Healthy Lives: a Cross-Government Strategy for England, published in January 2008<sup>5</sup> following the announcement in September 2007, of a new ambition: *to reverse the rising tide of obesity and overweight in the population, by ensuring that all individuals are able to maintain a healthy weight*. The government's initial focus is on children, and by 2020 they aim: *to have reduced the proportion of overweight and obese children to 2000 levels*.
- 1.3. The Government's strategy is implemented by the Cross-Government Obesity Unit, with the Department of Health (DH) responsible for overall policy on obesity and jointly responsible with the Department for Children, Schools and Families (DCSF) for policy on child obesity. Although the ambition covers a period of 12 years, progress from 2008-11 is being monitored through the inclusion of child obesity as one of the indicators in the child health Public Service Agreement (PSA).
- 1.4. Central collation and analysis of the NCMP data has been coordinated by the NHS Information Centre (the NHS IC) since the second year of the programme. Data are supplied locally by Primary Care Trusts (PCTs) with the support and cooperation of schools, in line with guidance from the Cross-Government obesity Unit.
- 1.5. This report presents the headline findings for the 2007/08 NCMP. The National Obesity Observatory will produce additional analysis in early 2009, and the anonymised national dataset will be made available to PHOs and others to allow regional and local analysis of the data.

<sup>3</sup> See [www.dh.gov.uk/healthyliving](http://www.dh.gov.uk/healthyliving) for more information about the National Child Measurement Programme, including guidance and resources for undertaking the exercise

<sup>4</sup> The National Child Obesity Database (NCOD) in 2005/06

<sup>5</sup> [http://www.dh.gov.uk/en/Publichealth/Healthimprovement/Obesity/DH\\_082383](http://www.dh.gov.uk/en/Publichealth/Healthimprovement/Obesity/DH_082383)

## 2. Methodology

### **Data collection and validation**

- 2.1. Measurement of children's heights and weights, without shoes and coats and in normal, light, indoor clothing, was overseen by healthcare professionals and undertaken in school by trained staff. PCT staff entered these data into specially designed spreadsheets: the NCMP data-capture tool. Measurements could be taken at any time during the 2007/08 academic year. Consequently, some children were almost two years older than others in the same school year at the point of measurement.
- 2.2. The data that PCTs uploaded to the NCMP database underwent a series of data quality checks before being included in the national dataset. Full details of these checks can be found in: *National Child Measurement Programme: NHS Information Centre validation process for 2007/08 data* (annex 7). This document was provided as guidance for PCTs. The validation process is summarised below.
- 2.3. Checks were done at each stage of the data submission:
  - i. *As the PCT entered data:* the data-capture tool checked that each variable met certain required conditions. For example, the height and weight were checked for extreme values;
  - ii. *Before the PCT uploaded data to the NCMP database:* the tool provided a data quality report to highlight if there were any possible areas of concern for the PCT to check and correct. For example, the percentage of duplicate records was calculated;
  - iii. *After the PCT uploaded data:* PCTs were given access to a secure website providing data quality information about their uploaded data. For example, PCTs were provided with a list of schools, within their boundary, for which no data had been returned. PCTs were able to review this information and correct their data or, if they were satisfied with data quality, they could confirm this and "finalise" their data;
  - iv. *After the PCT had "finalised" their data:* the NHS IC carried out further validation through, for example, comparing data across PCTs and over time. The NHS IC contacted a number of PCTs to query unexpected findings and, where necessary, requested that data be corrected.
- 2.4. PCTs' participation rates were assessed (annex 5). As discussed above, low participation rates may bias prevalence if the "missing" data are atypical (section 3).

### **Definitions of underweight, healthy weight, overweight and obese**

- 2.5. Prevalence rates were calculated by deriving every child's Body Mass Index (BMI)<sup>6</sup> and referencing the age and sex-specific UK National BMI percentiles

<sup>6</sup> Body-mass index (BMI) is an indicator of body fat based on height and weight.  $BMI = \text{weight}(\text{kg}) / \text{height}(\text{m})^2$

classification to count the number of children defined as underweight, healthy weight, overweight or obese.

- 2.6. The following thresholds for defining underweight, healthy weight, overweight and obese children were then used:
- **Underweight** is defined as a BMI less or equal to the 2<sup>nd</sup> percentile;
  - **Healthy weight** is defined as a BMI greater than the 2<sup>nd</sup> percentile but less than the 85<sup>th</sup> percentile;
  - **Overweight** is defined as a BMI greater than or equal to the 85<sup>th</sup> percentile but less than the 95<sup>th</sup> percentile (i.e. overweight *but not* obese);
  - **Obese** is defined as a BMI greater than or equal to the 95<sup>th</sup> percentile.

It should be noted that the above thresholds are those conventionally used for population monitoring and are not the same as those used in a clinical setting (where overweight is defined as a BMI greater than or equal to the 91<sup>st</sup> but below the 98<sup>th</sup> percentile and obese is defined as a BMI greater than or equal to the 98<sup>th</sup> percentile).

### **Participation**

- 2.7. Pupils eligible for inclusion in the NCMP were all children in Reception and Year 6 attending non-specialist maintained state schools in England<sup>7</sup>.
- 2.8. Numbers of pupils at each school were provided by DCSF, but PCTs could edit these figures if necessary. The PCT could also add or remove schools from their geographically assigned list if, despite being within their PCT boundary, another PCT had undertaken measurement in that school. PCT changes to DCSF pupil numbers and schools were validated by the NHS IC to ensure accuracy.
- 2.9. The participation rate is the proportion of eligible pupils who were measured (annex 5). Participation rates are estimates and should be treated with caution, particularly at smaller geographical levels, because of the difficulty in calculation of the number of pupils eligible for measurement. For example, in Reception, pupils might join the school throughout the year.
- 2.10. Records were assigned to a PCT, and thereby SHA, based on the PCT that returned the data. Geographical analyses, showing results by PCT, SHA and upper-tier Local Authority (LA), are based on the location of the child's school rather than their home address, as home postcode was not provided for all child records.
- 2.11. Child's home postcode became a mandatory variable for the 2007/08 NCMP and 97% of uploaded records included a valid child postcode. These data were mapped to lower super output area to anonymise the data on upload

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<sup>7</sup> The following institutions were excluded from the prevalence and participation rate calculations: 'Private', 'Academy', 'Community Special', 'Foundation Special', 'Independent School Approved for SEN Pupils', 'Non-Maintained Special', 'Other Independent', 'Other Independent Special School', 'Pupil Referral Unit'. PCTs were encouraged, but not obliged, to include independent schools and special schools in their NCMP measurements. Numbers of independent school pupils were not, however, included in participation rates used for performance management purposes.



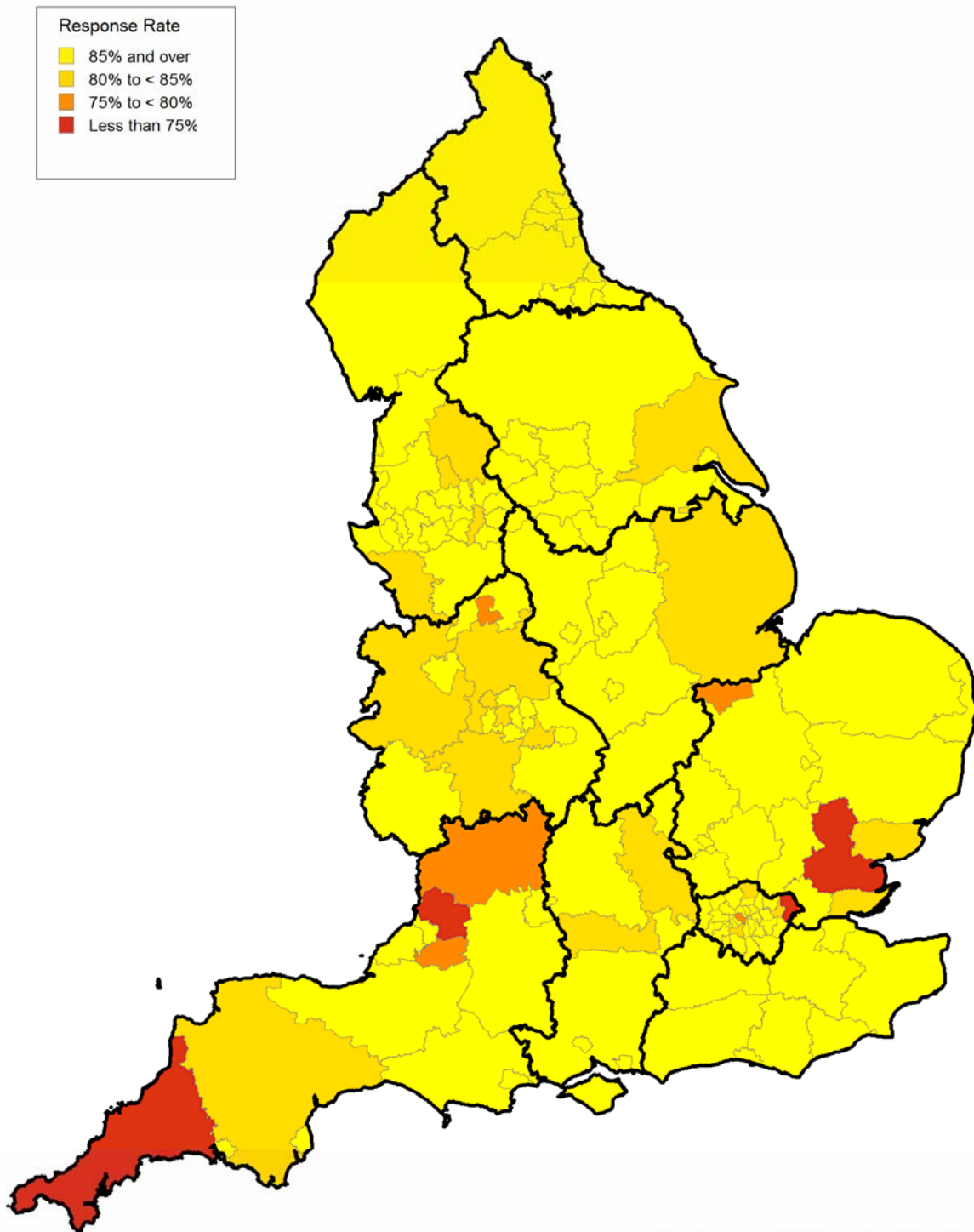
and will be a valuable asset for local-level analyses by Public Health  
Observatories (PHOs) and PCTs.

## 3. Results

### *Participation*

- 3.1. The percentage of eligible pupils who were measured is known as the participation rate. For NCMP 2007/08, PCTs were set a participation rate target, for each school year, of 85%. The combined participation rate, across all PCTs, was:
  - 89% for Reception (477,652 children measured): a six percentage point increase since 2006/07;
  - 87% for Year 6 (495,421 children): a nine percentage point increase since 2006/07;
  - 88% for Reception and Year 6 combined (973,073 children): an eight percentage point increase since 2006/07
  
- 3.2. All 152 PCTs provided data for NCMP 2007/08. Participation rates varied by PCT:
  - Over 80% of PCTs (123) achieved a combined participation rate of over 85%;
  - 125 PCTs exceeded the 85% target for Reception;
  - 112 PCTs exceeded the 85% target for Year 6;
  - Only 13 PCTs did not achieve a participation rate of at least 80% for Reception, and the lowest was 74%. This is a considerable improvement on 2006/07, when the Reception year participation rate was lower than 80% in 36 PCTs and the lowest was 44%.
  - The picture is similar for Year 6, where only 15 PCTs did not achieve a participation rate of at least 80%, and the lowest was 63%. This is a major improvement on 2006/07, when the Year 6 participation rate was lower than 80% in 62 PCTs and the lowest was 40%.
  - Annex 1 shows participation rates (by year and combined) for all 152 PCTs.
  
- 3.3. Of the pupils measured, 51% in Reception were boys and 52% in Year 6 were boys. It is not possible to calculate the participation rates by sex since the numbers of eligible boys and girls were not collected.
  
- 3.4. Figure 1 shows the overall participation rates by PCT:

Figure 1: Overall participation rate for NCMP 2007/08, by PCT



Data Sources: ONS Boundary Files 2006,  
National Child Measurement Programme data

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### ***The effect of participation rates on prevalence***

- 3.5. For NCMP 2007/08, **88%** of all eligible pupils in Reception and Year 6 combined were measured. It follows that 12% of eligible pupils were not measured. This section investigates whether results could have been biased through not including measurements from these “missing” pupils, and looks at the possible effect of participation rate on the reported prevalence of overweight and obese children.
- 3.6. Past analysis has shown that, for Year 6, PCTs with lower participation rates tended to have lower levels of prevalence than those with a high participation rate. This would suggest that there might be higher levels of opting out among children with higher BMIs. If such opting out had occurred then we would expect to see a link between participation rate and prevalence: where participation rate was low we would expect prevalence to be underestimated due to the “missing” data from heavier children. As participation rate increases we would expect prevalence to approach its true value, due to the increasing inclusion of data from heavier children.
- 3.7. Annex 6 contains regression analysis and concludes that a **lower participation rate may lead to an underestimation of prevalence of obese children for Year 6.**
- 3.8. **Participation rate is shown to have little or no effect on prevalence for Reception children.** However, other confounding factors might exist which may disguise any effect on prevalence and which have not been examined.
- 3.9. When comparing prevalence rates between 2006/07 and 2007/08, it is important to understand the effect of differing response rates for children in Year 6. Annex 6 shows that it is likely that the true Year 6 obesity prevalence estimates for 2006/07 and 2007/08 were underestimated by 1.3 and 0.8 percentage points respectively. This is discussed further in this report in the section comparing the 2006/07 and 2007/08 headline findings.

### ***Prevalence of underweight, healthy weight, overweight and obese children: national findings***

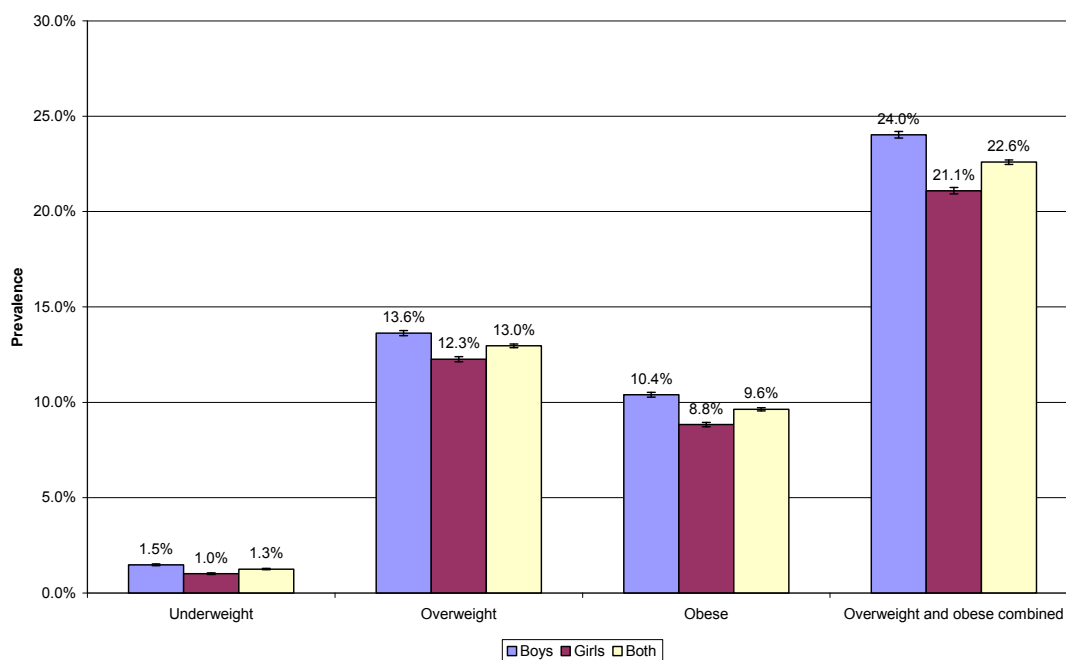
3.10. Prevalence rates have been calculated by first deriving every child's BMI and referencing the age and sex-specific UK National BMI percentiles classification to count the number of children defined as underweight, healthy weight, overweight or obese according to the population monitoring criteria<sup>1</sup>.

3.11. Since the NCMP sample size is so large, the confidence intervals (annex 3) of the prevalence estimates are very narrow. Where 95% confidence intervals for prevalence estimates do not overlap, it can be deduced that differences are statistically significant.

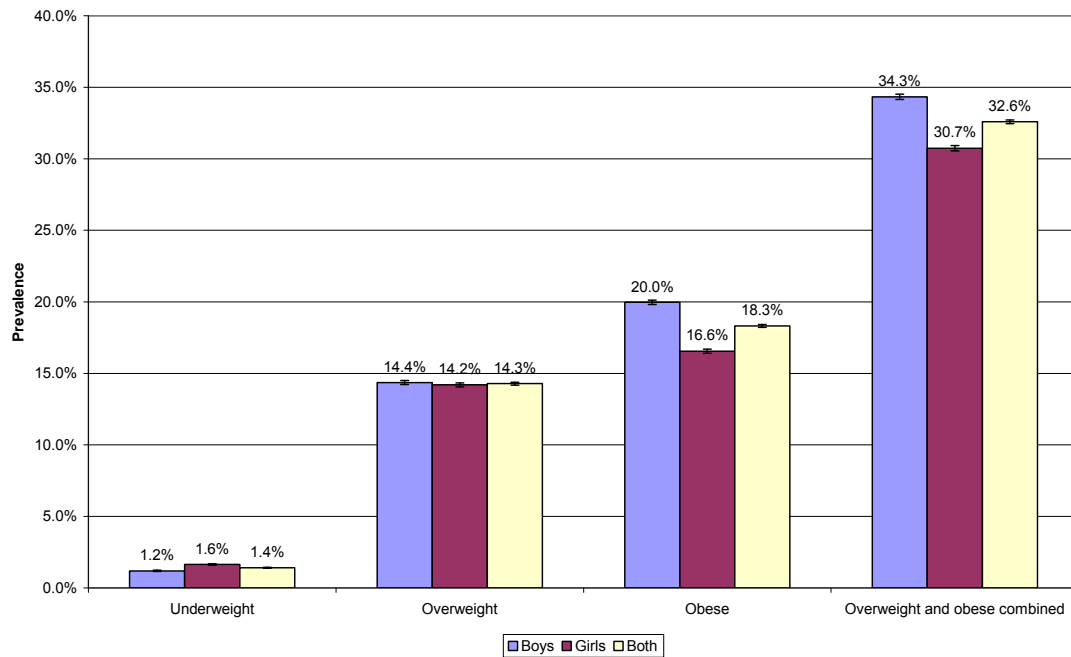
3.12. Tables A-C in annex 1 show underweight, overweight, obese and combined prevalence, with associated 95% confidence intervals, by year, at PCT, SHA and upper-tier LA level.

3.13. Figures 2 and 3 show the prevalence of underweight, overweight and obese children, with associated 95% confidence intervals, by sex, in England, 2007/08.

**Figure 2: Prevalence of underweight, overweight and obese children in Reception, by sex, England, 2007/08**

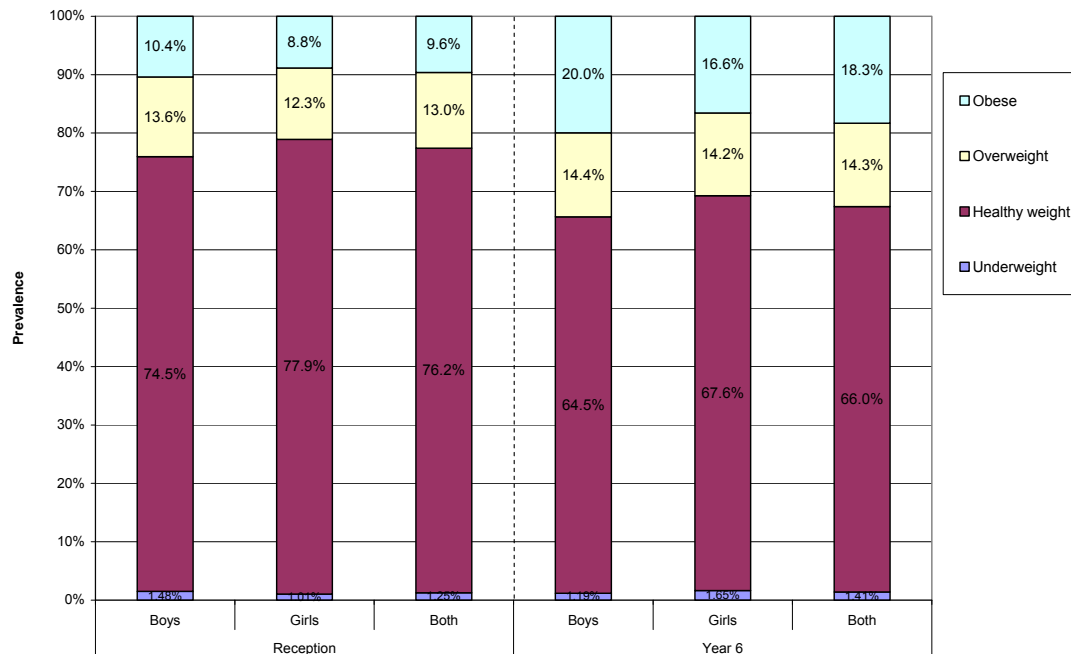


**Figure 3: Prevalence of underweight, overweight and obese children in Year 6, by sex, England, 2007/08**



3.14. Figure 4 shows the 2007/08 prevalence breakdowns including healthy weight.

**Figure 4: Prevalence of underweight, healthy weight, overweight and obese children in Reception and Year 6, by sex, England, 2007/08**



**3.15. Key findings:**

- in Reception almost one in four of the children measured were classified as either overweight or obese: in Year 6 this rate was nearly one in three;
- the prevalence of obesity is significantly higher in boys than in girls in both age groups<sup>3</sup>;

- the prevalence of obesity is significantly higher in Year 6 than in Reception<sup>3</sup>;
- the prevalence of underweight in Reception is very slightly higher in boys than in girls. The rate in Year 6 is very slightly higher for girls;
- the percentage of children who are overweight is slightly higher in Year 6 than in Reception;
- the percentage of children who are overweight is similar for boys and girls in Year 6: in Reception, this rate is slightly higher for boys than for girls;
- in Reception the prevalence of overweight children is greater than the prevalence of obese. In Year 6, the opposite is true.

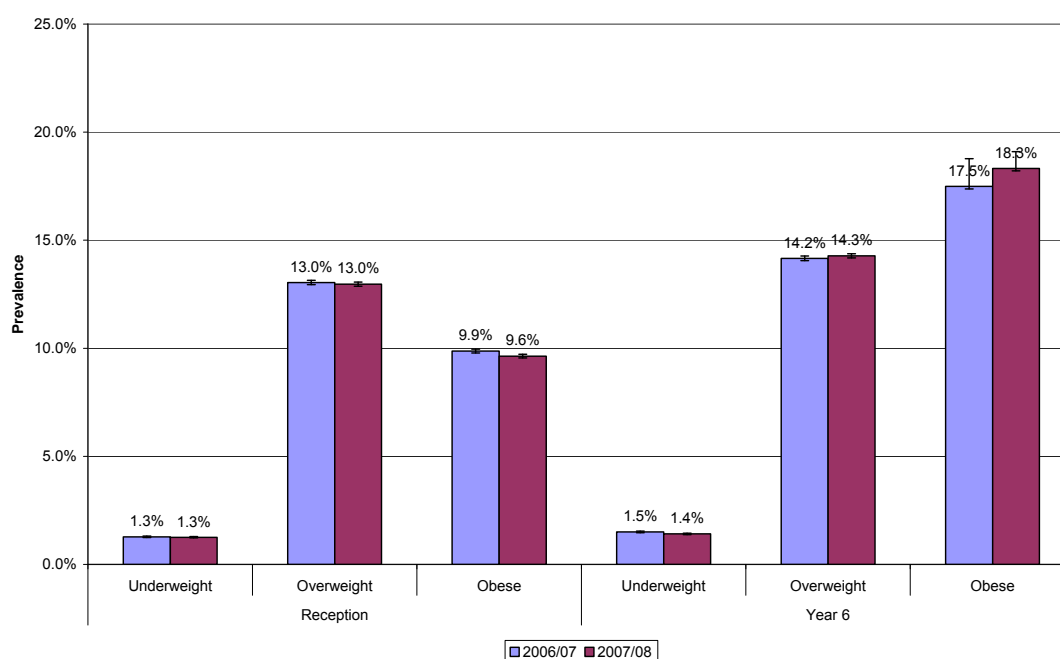
## Comparisons of 2006/07 and 2007/08 Headline Findings

3.16. 2007/08 is the second year for which reliable data, with an overall response rate of 80% or higher, have been collected. For the first time, assessment of year-on-year changes in child obesity prevalence is possible.

3.17. Before making year-on-year comparisons, it is important to note the impact of participation rates on the Year 6 obesity prevalence estimates (note: none of the other prevalence estimates are shown to be affected by participation rates). Annex 6 contains detailed statistical analysis and shows that for each 10 percentage point increase in the Year 6 participation rate, the true Year 6 obesity prevalence estimates will increase by 0.6 percentage points on average.

3.18. Figure 5 compares the results from NCMP 2007/08 with those from NCMP 2006/07. The confidence intervals around the Year 6 obese figures take into account the possible effect of response bias discussed above for each year of the NCMP.

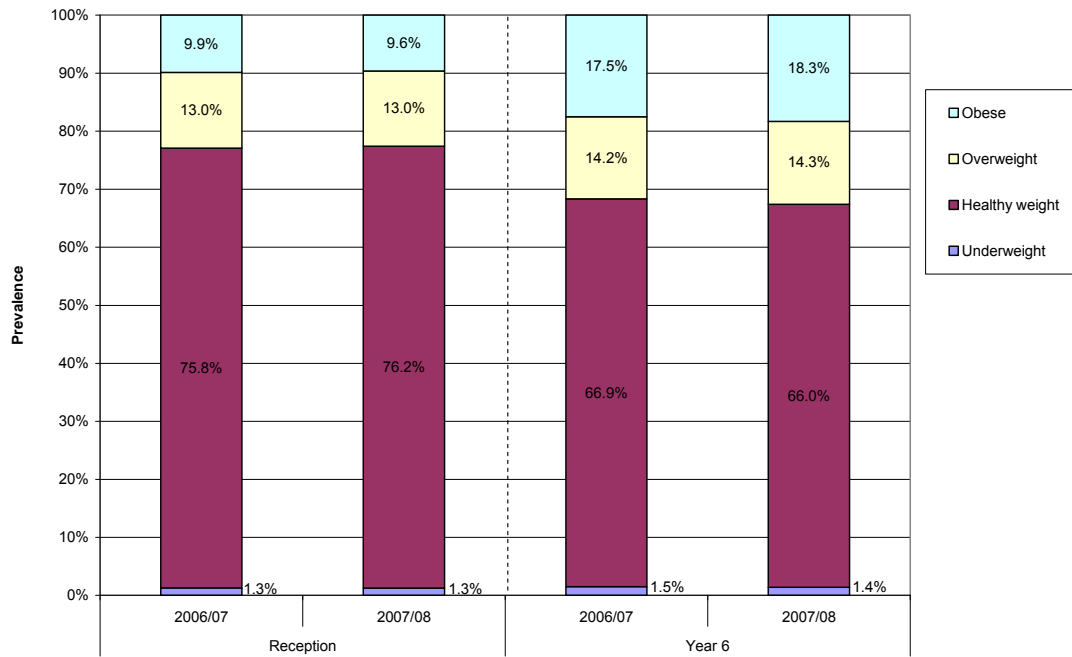
Figure 5: Prevalence of underweight, overweight and obese children by NCMP year, 2006/07 to 2007/08



3.19. Figure 6 compares the 2006/07 and 2007/08 prevalence breakdowns including healthy weight.



**Figure 6: Prevalence of underweight, healthy weight, overweight and obese children by NCMP year, 2006/07 to 2007/08**



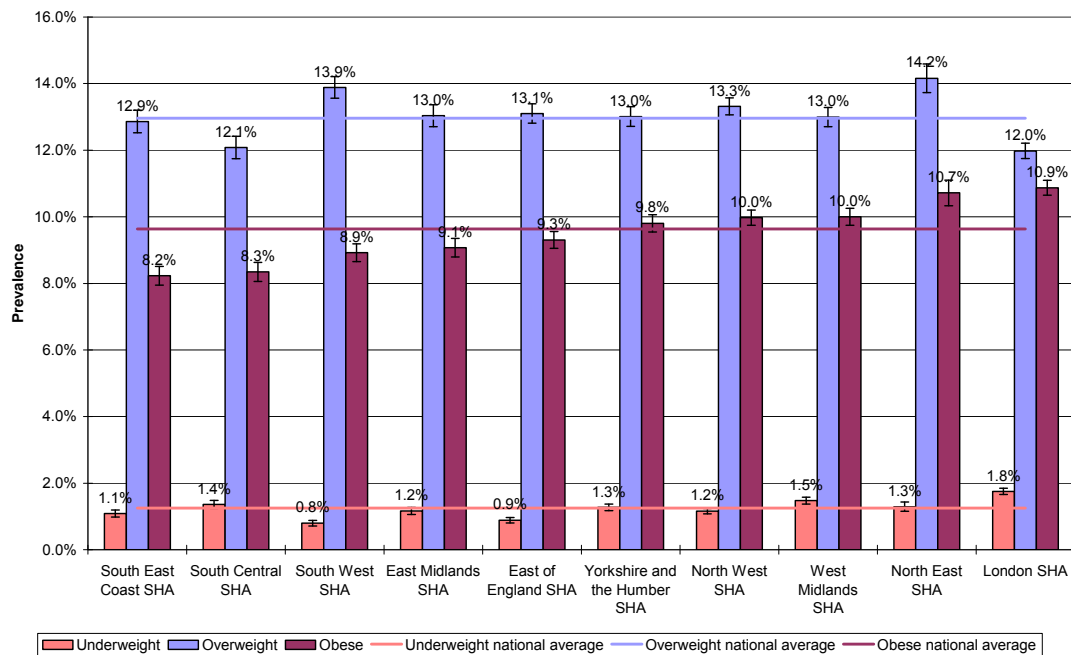
3.20. The key findings are as follows:

- In Reception, when comparing results for 2006/07 and 2007/08, there is little or no difference in the prevalence of underweight, overweight and obese children;
- In Year 6, there was no significant difference in the prevalence of underweight, overweight and obese children between 2006/07 and 2007/08. The percentage of obese children showed an apparent increase of 0.8 percentage points between 2006/07 and 2007/08; however, much or all of this increase is likely to be due to the increased participation rate for Year 6 between the two years. This is shown by the confidence intervals in figure 5.

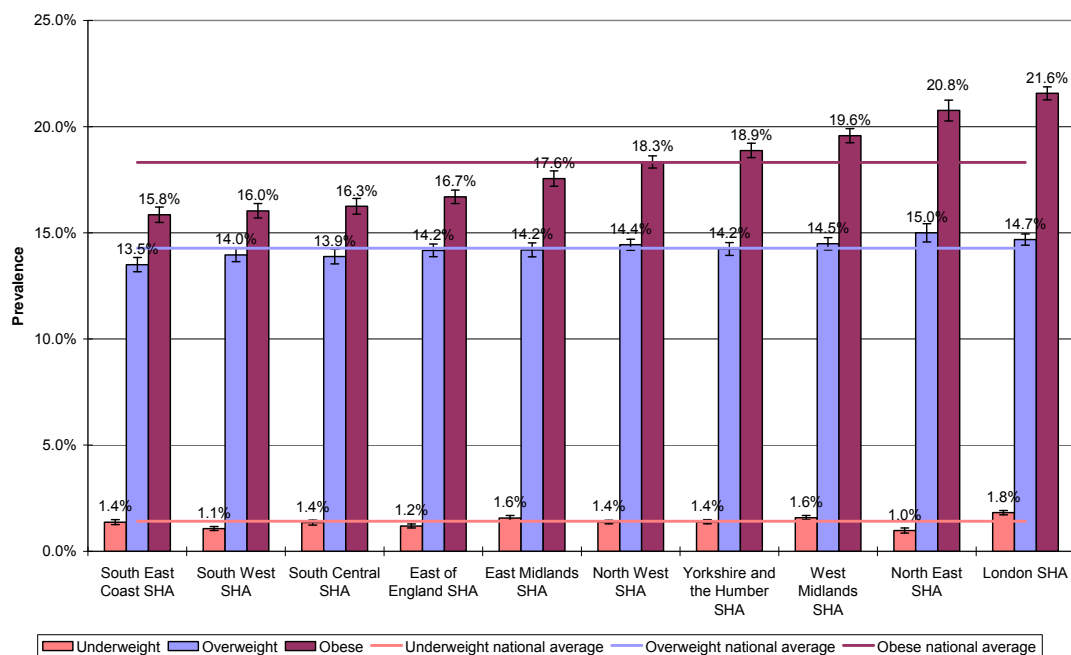
## Prevalence by Strategic Health Authority (SHA)

3.21. Figures 7 and 8 show, for Reception and Year 6 respectively, the prevalence of underweight, overweight and obese children, with associated 95% confidence intervals, by the SHA of the child's school, in 2007/08. The bars are ordered by obesity prevalence. Detailed tables can be found in annex 1 showing underweight, overweight, obese and combined prevalence, with associated 95% confidence intervals, by year, at PCT, SHA and LA level.

**Figure 7: Prevalence of underweight, overweight and obese children in Reception, by SHA, England, 2007/08**

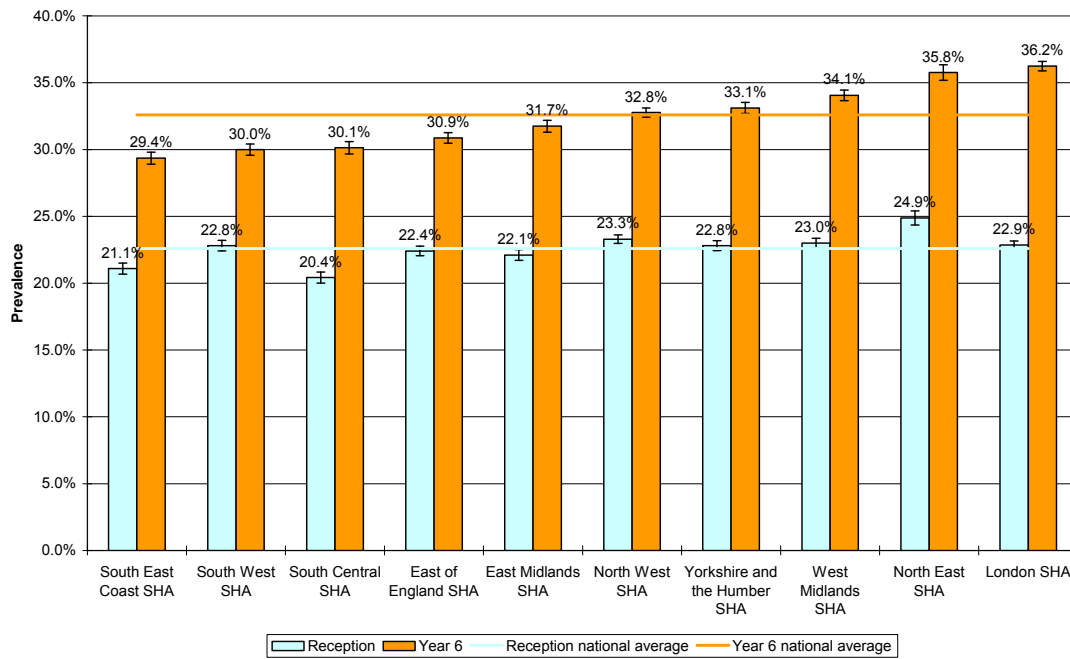


**Figure 8: Prevalence of underweight, overweight and obese children in Year 6, by SHA, England, 2007/08**



3.22. Figure 9 compares the prevalence of children who are overweight or obese (“overweight and obese combined”), with associated 95% confidence intervals, in Reception and Year 6, by SHA, in 2007/08. The bars have been ranked by prevalence in Year 6.

**Figure 9: Prevalence of “overweight and obese combined” children, by year and SHA, England, 2007/08**



### 3.23. Key findings:

- Obesity prevalence is significantly higher than the national average in the North East, West Midlands and London SHAs for both school years as well as North West SHA for Reception children and Yorkshire and Humber SHA for Year 6 children;
- Obesity prevalence is significantly below the national average in the South East Coast, South Central, South West and East Midlands SHAs for children in both school years, as well as for Year 6 children in the East of England SHA;
- The SHA-level obesity trends described above are very similar to those observed in the 2006/07 NCMP;
- Areas with high obesity prevalence in one year group tend to also have high obesity prevalence in the other year group (figures 13 and 14). The order of SHAs, ranked by obesity prevalence, is similar for both school years, with the top three SHAs occupying the same rank order for children in both years. The relationship between obesity prevalence in each year can be quantified by the coefficient of determination<sup>8</sup> (called  $r^2$ ). Here the

<sup>8</sup> The coefficient of determination,  $r^2$ , reflects the relationship or linkage between two variables. Specifically, it is a measure of how much of the variation in Variable A can be explained by changes in Variable B. The coefficient of determination is always between 0 and 1, with 1 indicating a perfect relationship and 0 indicating no relationship. Relationships can be linear or non-linear. The above analysis looks at the linear relationship between obesity prevalence in each year.

coefficient of determination is 0.91 which means that 91% of the variation of the Year 6 obesity prevalence can be explained by variation in the Reception obesity prevalence at the SHA level;

- Areas with high underweight prevalence in one year group tend to also have high underweight prevalence in the other year group<sup>9</sup>;
- There is little or no relationship between the overweight prevalence in each year group by area<sup>10</sup>;
- In Year 6, a strong relationship exists between the prevalence of overweight and obese children: where the prevalence of obese children is high, the prevalence of overweight children tends to also be high<sup>11</sup>;
- In Reception no relationship exists between the prevalence of overweight and obese children: where the prevalence of obese children is high, the prevalence of overweight children is not necessarily high<sup>12</sup>. For example, London SHA has the *highest* obesity prevalence but the overweight prevalence is significantly lower than the national average;
- In Reception, there is a fairly strong relationship between the prevalence of obese and underweight children: where the prevalence of obese children is high, the prevalence of underweight children tends to also be high<sup>13</sup>. This relationship is much weaker in Year 6<sup>14</sup>.
- As shown in this report and earlier NCMP analyses, child obesity prevalence is linked to area deprivation factors and child ethnicity. Those areas with higher concentrations of deprived areas and particular ethnic profiles, such as London, would therefore be expected to have higher levels of child obesity.

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<sup>9</sup>  $r^2=0.49$  i.e. 49% of the variation of the Year 6 underweight prevalence can be explained by variation in the Reception underweight prevalence.

<sup>10</sup>  $r^2=0.07$

<sup>11</sup>  $r^2=0.81$

<sup>12</sup>  $r^2=0.02$

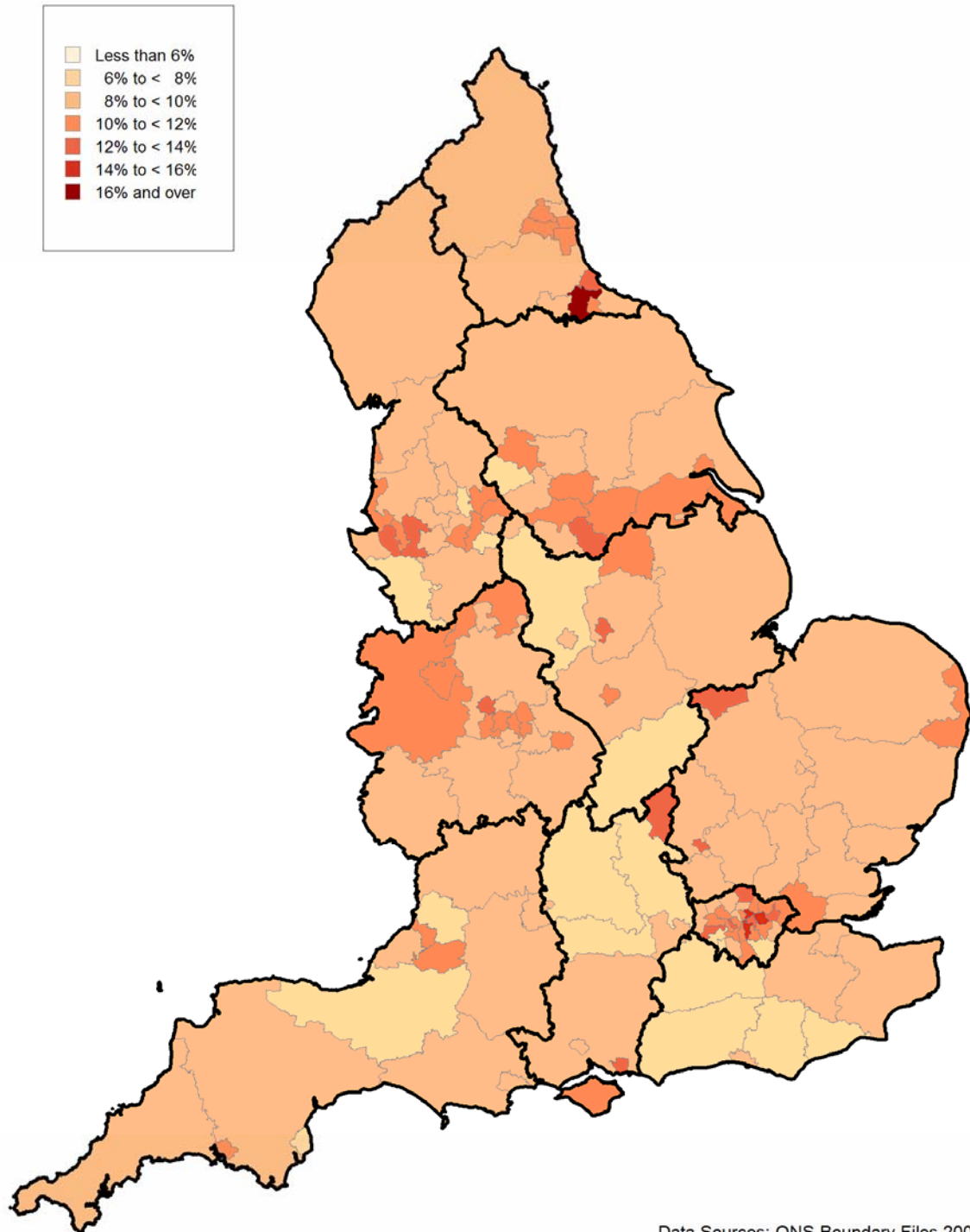
<sup>13</sup>  $r^2=0.32$

<sup>14</sup>  $r^2=0.13$

## Prevalence by PCT

3.24. Figures 10 and 11 show Reception and Year 6 obesity prevalence by PCT. PCT prevalence estimates have been calculated on the basis of the location of the child's school. Annex 1 provides more detailed tables.

Figure 10: Prevalence of obese children in Reception, by PCT, England 2007/08

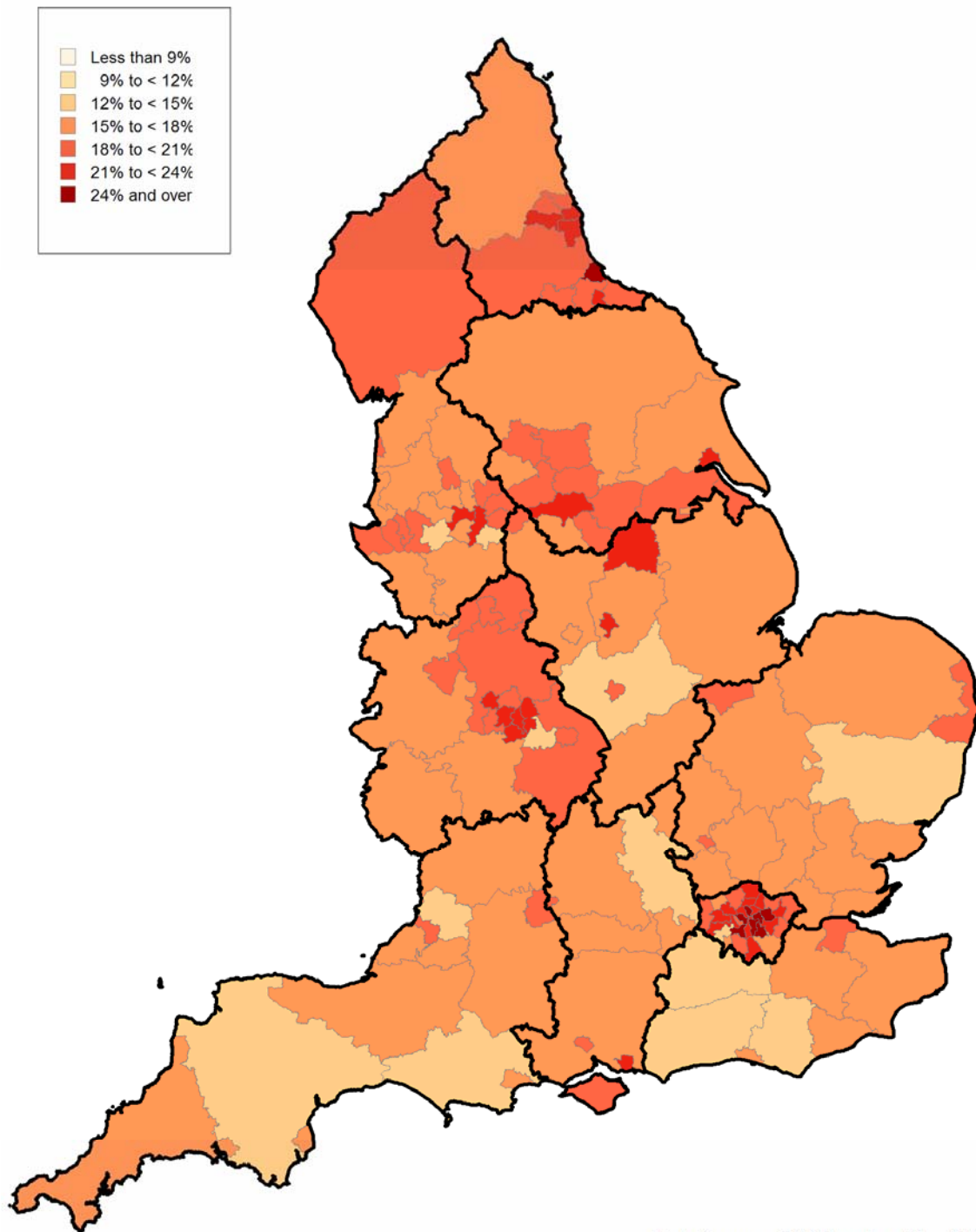


Data Sources: ONS Boundary Files 2006,  
National Child Measurement Programme data

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Figure 11: Prevalence of obese children in Year 6, by PCT, England 2007/08



Data Sources: ONS Boundary Files 2006,  
National Child Measurement Programme data

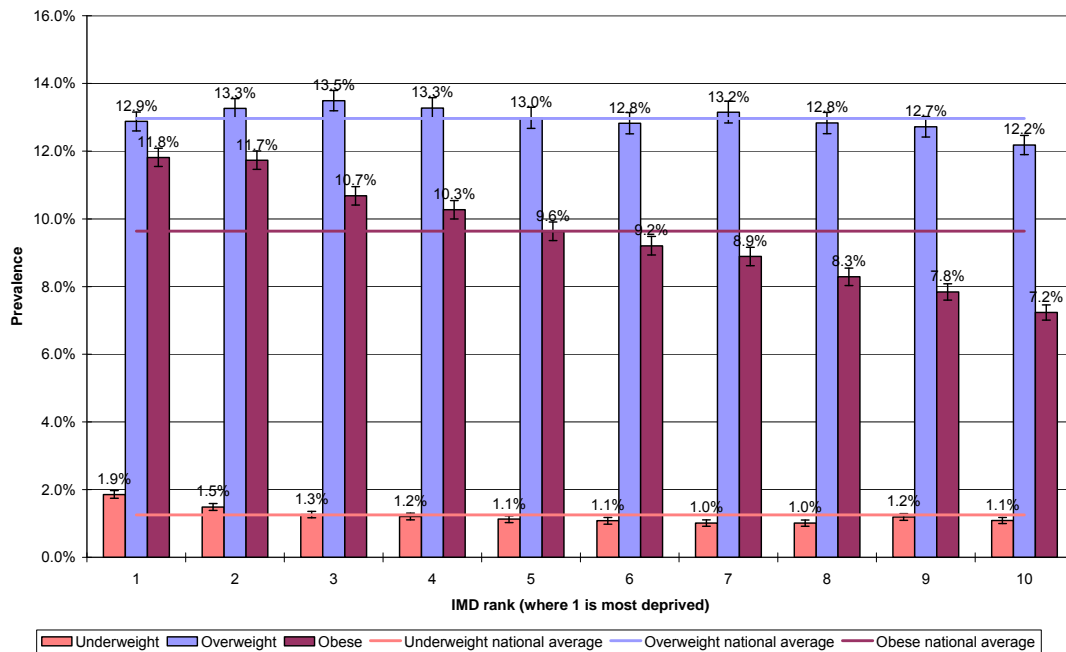
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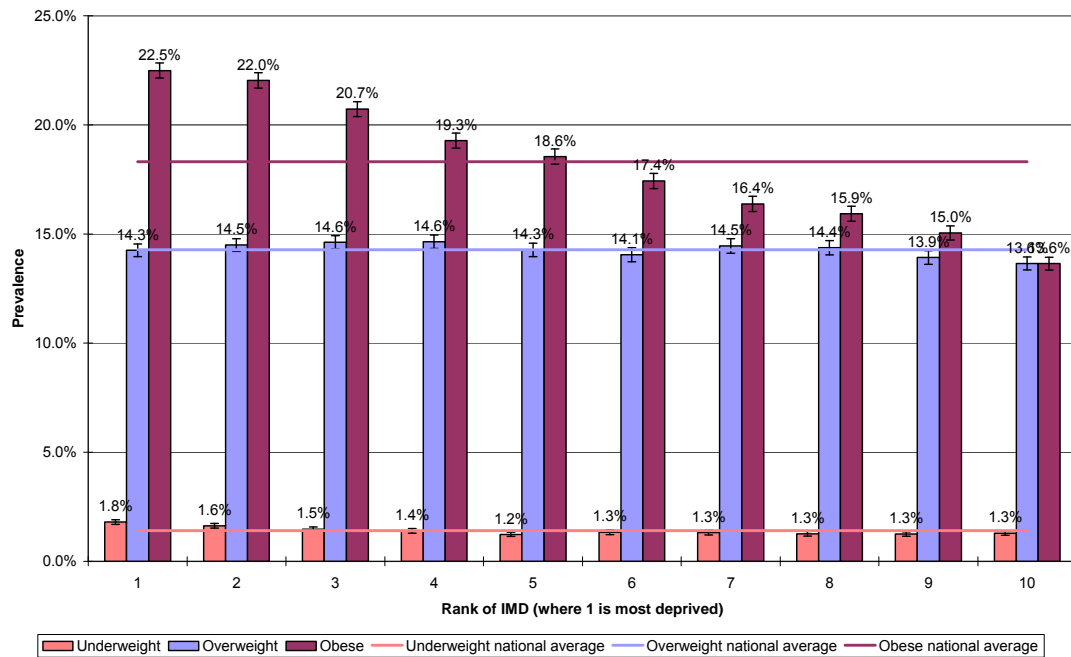
## Prevalence by area deprivation

3.25. Figures 12 and 13 investigate the relationship between deprivation as measured by the 2007 Index of Multiple Deprivation (IMD) and the prevalence of underweight, overweight and obese Reception and Year 6 children. Records have been ranked into one of ten equal sized groups based on the IMD score of the child's school location. The prevalence of underweight, overweight and obese children within each rank (where 1 is the most deprived) has then been calculated:

**Figure 12: Prevalence of underweight, overweight and obese children in Reception against school area 2007 IMD rank, England, 2007/08**



**Figure 13: Prevalence of underweight, overweight and obese children in Year 6 against school area 2007 IMD rank, England, 2007/08**



### 3.26. Key findings:

- A strong relationship exists between deprivation (as measured by the 2007 IMD score) and obesity prevalence in children in both years;
- In Year 6 the prevalence of obese children is 65% higher in the most deprived rank compared with the least deprived; in Reception, the difference is 64%;
- For both school years, the four most deprived ranks have obesity prevalence that is significantly above the national average;
- For both school years, the five least deprived ranks have obesity prevalence that is significantly below the national average;
- The two most deprived ranks have a prevalence of underweight children that is very slightly higher than the national average for both school years.



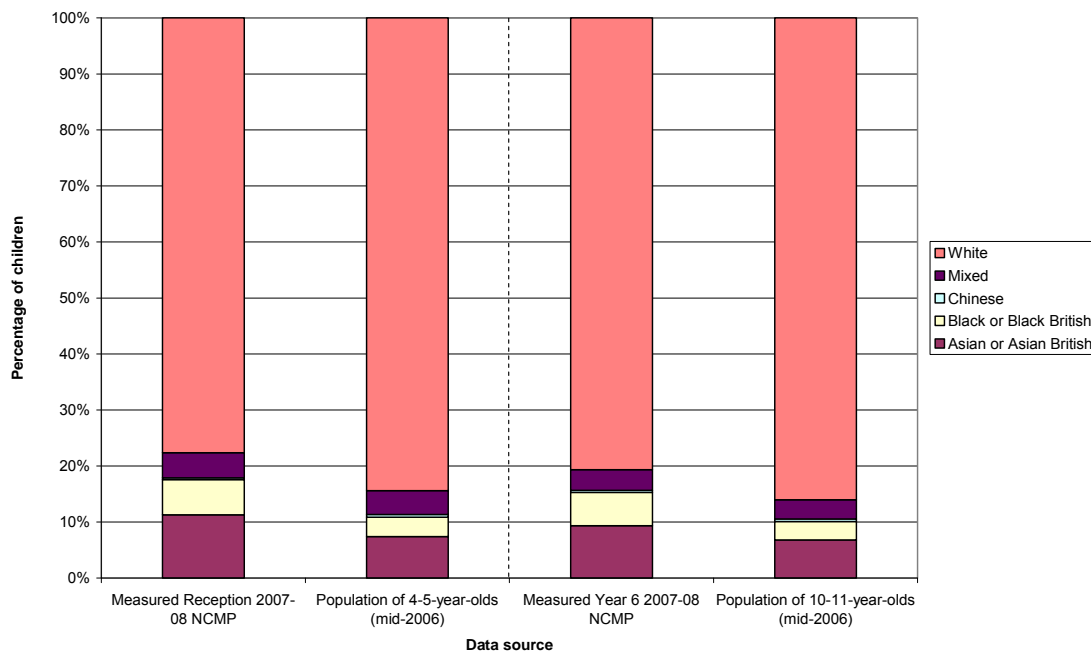
## Prevalence by ethnicity

3.27. In the 2007/08 NCMP, collection of the ethnicity of participating children was mandatory. PCTs were able to supply ethnic codes using either the NHS or DCSF classification. These codes were grouped into seven categories for national analysis<sup>15</sup>.

3.28. Of the 973,073 children for whom valid measurements were submitted, 67% of records included valid ethnic codes (excluding the code “not stated”). This is more than twice the proportion of records with ethnic codes received for NCMP 2006/07, when only 32% of records had valid ethnic codes.

3.29. In order to assess the quality of the 2007/08 ethnicity data, figure 14 compares the ethnicity breakdowns for the children in the NCMP dataset with the mid-2006 national ethnicity profiles for the population of 4-5 and 10-11-year-olds for the 5 main specified ethnic groups<sup>16</sup>:

**Figure 14: Comparison of 2007/08 NCMP ethnicity profiles and national population breakdowns for 4-5 and 10-11-year-olds**



3.30. The population and NCMP figures relate to different time periods (mid-2006 and 2007/08 academic year respectively), and they relate to different population groups (all children aged 4-5 and 10-11 compared to children in

<sup>15</sup> The seven ethnic categories used for analysis have been derived by combining the following NHS ethnic categories:

- **White:** White British, White Irish, White Any other White background;
- **Mixed:** Mixed White and Black Caribbean, Mixed White and Black African, Mixed White and Asian, Mixed Any other mixed background;
- **Asian or Asian British:** Asian and Asian British Indian, Asian and Asian British Pakistani, Asian and Asian British Bangladeshi, Asian and Asian British Any other Asian background;
- **Black or Black British:** Black or Black British Caribbean, Black or Black British African, Black or Black British Any other Black background;
- **Chinese:** Chinese;
- **Any other ethnic group:** Any other ethnic group;
- **Unknown:** Not Stated or data not returned by PCT

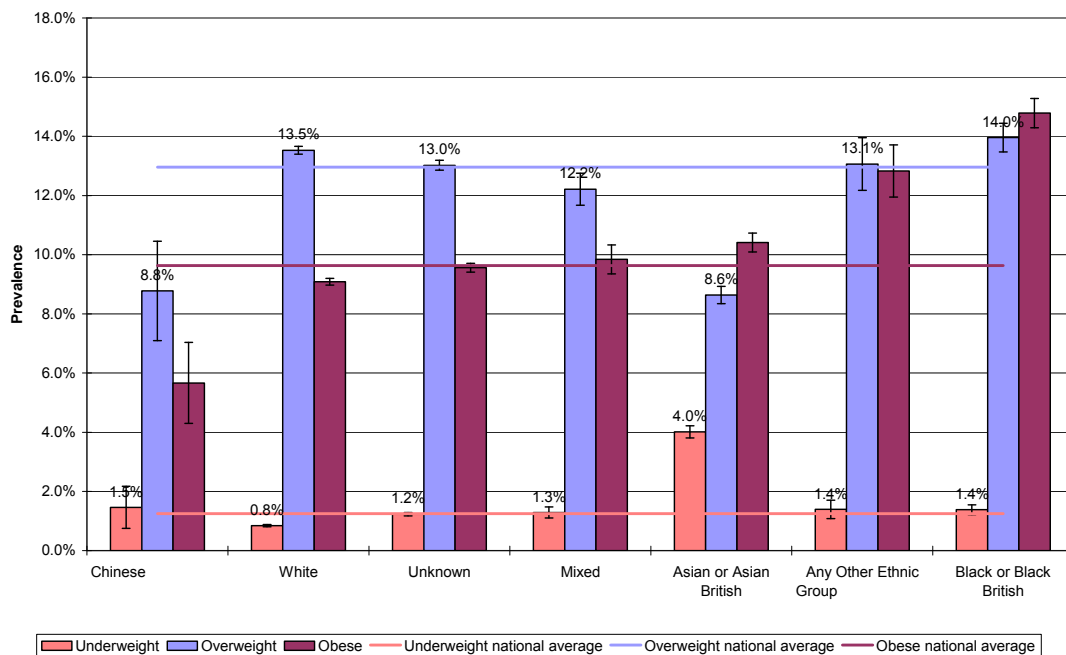
<sup>16</sup> Excludes ‘not provided’, ‘not stated’ and ‘any other ethnic group’. Source: ONS mid-year population estimates

Reception and Year 6). However, they do at least give an indicative comparison of the national and NCMP participant ethnicity profiles.

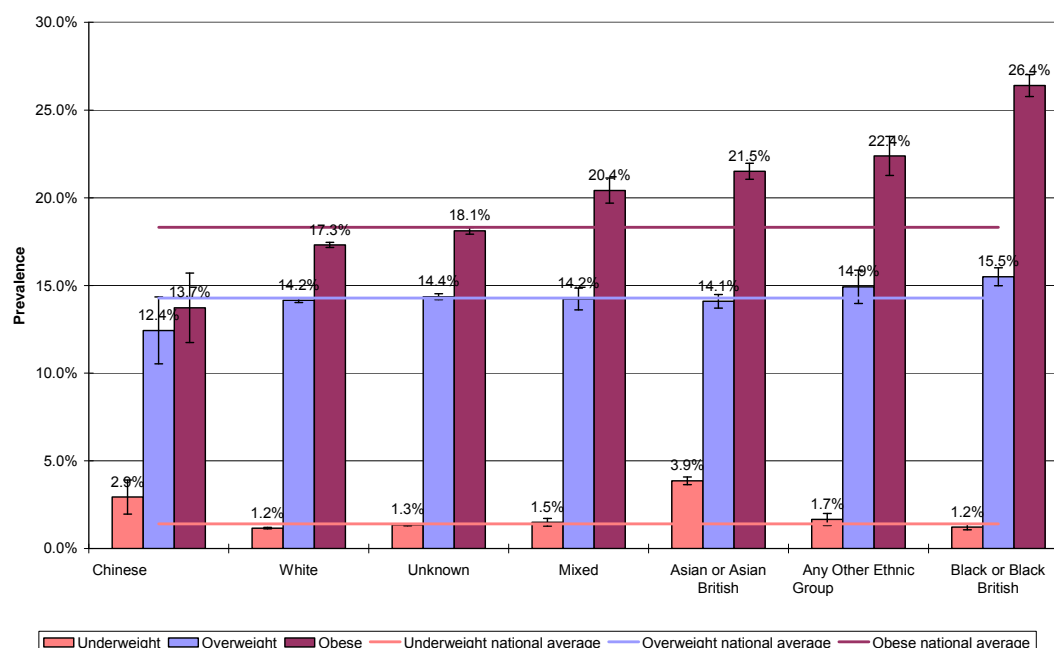
3.31. It can be seen that for these 5 ethnic groups the 'Asian or Asian British' and 'Black or Black British' groups account for higher proportions in the NCMP measured population than in the population as a whole. The 'Mixed' and 'Chinese' groups account for roughly the same proportions in each population for these 5 ethnic groups, while the 'White' ethnicity group accounts for a lower proportion in the NCMP measured population than in the population as a whole. It is important to note that a third of NCMP measurements had missing or 'not stated' ethnic codes. It is possible that these records included a disproportionate number of measurements for children from particular ethnic groups. These measurements are, however, included in the national estimates presented in this report.

3.32. Figures 15 and 16 show, for Reception and Year 6 respectively, the prevalence of underweight, overweight and obese children, with associated 95% confidence intervals, by ethnic category, in England, 2007/08. The bars have been ranked by obesity prevalence.

**Figure 15: Prevalence of underweight, overweight and obese children in Reception, by ethnic category, England, 2007/08**



**Figure 16: Prevalence of underweight, overweight and obese children in Year 6, by ethnic category, England, 2007/08**



### 3.33. Key findings:

- Obesity prevalence is significantly higher than the national average for children in both years in the ethnic groups: “Asian or Asian British”, “Any Other Ethnic Group” and “Black or Black British”.
- Obesity prevalence is significantly lower than the national average for children in both years in the ethnic groups: “Chinese” and “White”.
- The prevalence of overweight Year 6 children is not significantly different to the national average for any ethnic group except “Black or Black British”. The prevalence of overweight Reception children varies considerably more by ethnic group.

3.34. There are known links between ethnicity and area deprivation<sup>17</sup>. However, many ethnic groups are found in urban areas with high deprivation, so it is likely that there exist confounding factors which impact on the obesity prevalence figures presented above.

<sup>17</sup> [http://www.noo.org.uk/uploads/doc168\\_2\\_NOO\\_NCMP\\_report230608.pdf](http://www.noo.org.uk/uploads/doc168_2_NOO_NCMP_report230608.pdf)

### Prevalence by rural/urban classification

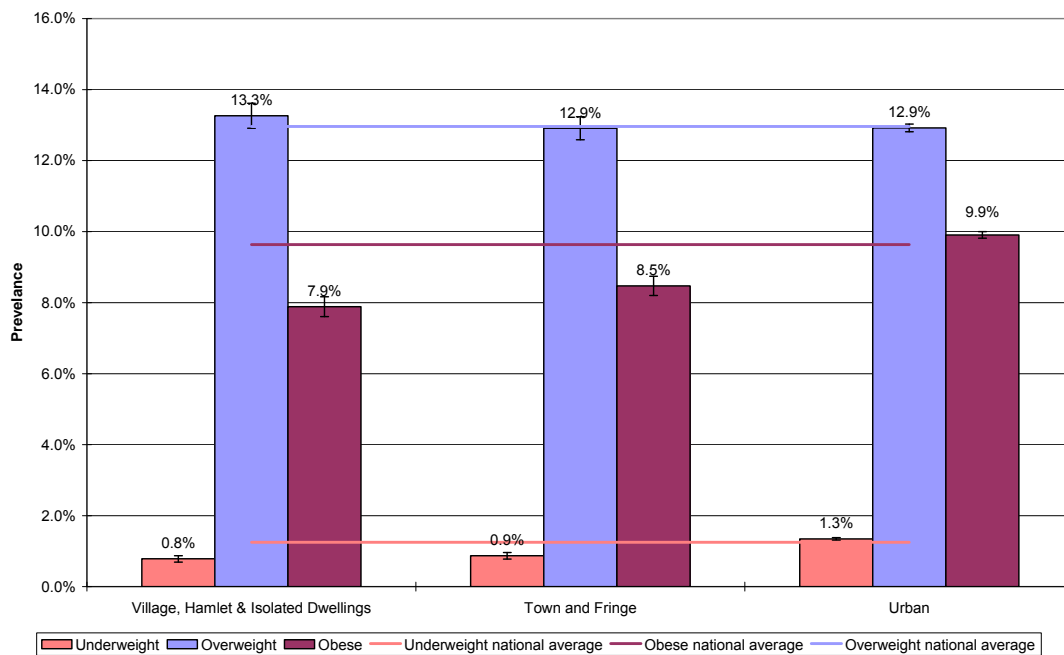
3.35. Collection of the home postcode of participating children was mandatory for the 2007/08 NCMP. Of the 973,073 children for whom valid measurements were uploaded to the NCMP Database, 947,304 records (97%) included home postcodes.

3.36. To anonymise the data, postcodes were aggregated to the larger areas of lower super output areas (LSOA) when PCTs uploaded their data to the NCMP database. This meant that the NHS IC did not hold home postcode of any child.

3.37. Each record was assigned a rural/urban classification<sup>18</sup> according to the settlement form of the LSOA of the child.

3.38. Figures 17 and 18 show, for Reception and Year 6 respectively, the prevalence of underweight, overweight and obese children, by rural/urban classification, in England, 2007/08.

**Figure 17: Prevalence of underweight, overweight and obese children in Reception, by rural/urban classification, England, 2007/08**

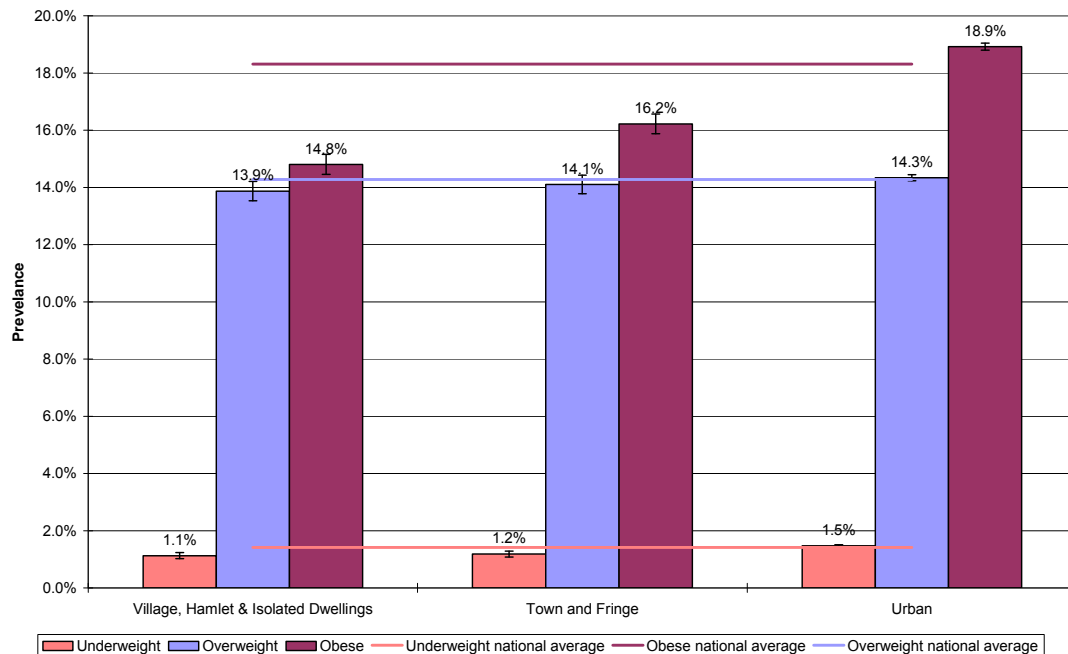


<sup>18</sup> The Office for National Statistics (ONS) produced the Rural and Urban Classification in consultation with the Department for Environment, Food and Rural Affairs, the Department for Communities and Local Government and the Countryside Agency. Areas are defined through two measures:

- settlement form: dispersed dwellings, hamlet, village, small town, urban fringe and urban (>10,000 population);
- sparsity - each hectare grid square is assigned a sparsity score based on the number of households in surrounding hectare squares up to a distance of 30 km.

The analyses in this report have combined “sparse” with “less sparse” and classifications are purely based on settlement form. Further details are available at: <http://www.statistics.gov.uk/geography/nrudp.asp>

**Figure 18: Prevalence of underweight, overweight and obese children in Year 6, by rural/urban classification, England, 2007/08**



### 3.39. Key findings:

- Obesity prevalence is significantly higher in urban areas than in non-urban areas for both years;
- The prevalence of underweight children is significantly higher in urban areas than in non-urban areas for both years;
- Overweight prevalence is similar between areas: there are no significant differences between areas in either year;

3.40. The National Obesity Observatory's 2006/07 report<sup>19</sup> showed that confounding factors exist here, and that the variation in child obesity prevalence between urban and rural areas can probably be explained by differences in the degree of deprivation and the ethnic mix in such areas.

<sup>19</sup> [http://www.noo.org.uk/uploads/doc168\\_2\\_NOO\\_NCMP\\_report230608.pdf](http://www.noo.org.uk/uploads/doc168_2_NOO_NCMP_report230608.pdf)

### ***Comparison of results from the Health Survey for England***

- 3.41. The best figures available to compare with the NCMP findings are child obesity data from the Health Survey for England (HSE)<sup>20</sup>. The HSE is a series of sample-based surveys focusing on a range of health indicators including obesity in children.
- 3.42. In last year's NCMP report, the findings of the 2006/07 NCMP were compared to the 2006 HSE. It was shown that, apart from for obese boys in Reception, the prevalence rates are very close and are not statistically significantly different for each study. The obesity prevalence estimate for boys in Reception was shown to be significantly higher in the HSE and warrants further investigation.
- 3.43. At the time of publication of this report, the results of the 2007 HSE were not publicly available and so an updated comparison with the 2007/08 NCMP was not possible. The NHS IC will make a comparison as part of its secondary analysis work in due course.

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<sup>20</sup> Source: Health Survey for England 2006, Joint Surveys Unit. <http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles-related-surveys/health-survey-for-england>

# Annex 1: Detailed tables

Tables A, B and C show the prevalence of underweight, overweight and obese children, by school year, at PCT, SHA and LA level respectively.

**Table A: Prevalence of underweight, overweight and obese children with associated 95% confidence intervals, by PCT, England, 2007/08**

Primary Care Trust	Underweight						Overweight						Obese		
	Reception		Year 6		Reception		Year 6		Reception		Year 6				
	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	-	+		
Ashton, Leigh & Wigan PCT	1.3%	0.4%	1.3%	0.4%	12.3%	1.2%	15.0%	1.2%	9.9%	1.1%	18.0%	1.3%	2.0%		
Barking & Dagenham PCT	0.9%	0.4%	1.1%	0.5%	14.9%	1.5%	16.6%	1.6%	13.5%	1.5%	23.9%	1.3%	2.9%		
Barnet PCT	2.1%	0.5%	2.1%	0.5%	11.3%	1.1%	13.8%	1.2%	8.8%	1.0%	18.8%	1.4%	2.0%		
Barnsley PCT	0.9%	0.4%	1.3%	0.4%	12.6%	1.4%	13.6%	1.3%	10.4%	1.3%	21.2%	1.6%	2.1%		
Bassetlaw PCT	1.3%	0.7%	1.9%	0.9%	12.6%	2.1%	13.9%	2.2%	10.0%	1.9%	23.9%	2.7%	3.6%		
Bath & North East Somerset PCT	0.8%	0.5%	2.0%	0.7%	14.9%	1.8%	12.3%	1.7%	10.6%	1.6%	15.9%	1.9%	3.6%		
Bedfordshire PCT	0.7%	0.3%	1.0%	0.3%	12.5%	1.0%	13.1%	1.0%	8.7%	0.9%	15.1%	1.1%	1.9%		
Berkshire East PCT	1.4%	0.4%	1.3%	0.4%	9.8%	1.0%	14.3%	1.1%	8.3%	0.9%	17.3%	1.2%	1.8%		
Berkshire West PCT	1.9%	0.4%	1.6%	0.4%	10.8%	1.0%	14.6%	1.1%	7.2%	0.9%	15.7%	1.1%	1.9%		
Bexley Care Trust	2.6%	0.7%	1.6%	0.5%	10.6%	1.3%	15.8%	1.5%	9.6%	1.3%	20.0%	1.6%	2.5%		
Birmingham East & North PCT	1.2%	0.3%	2.3%	0.4%	12.1%	1.0%	13.9%	1.0%	10.1%	0.9%	21.3%	1.2%	2.0%		
Blackburn With Darwen PCT	2.0%	0.6%	2.2%	0.7%	11.2%	1.5%	13.8%	1.7%	8.5%	1.3%	18.7%	1.9%	3.2%		
Blackpool PCT	0.4%	0.3%	1.5%	0.6%	12.5%	1.8%	14.7%	1.7%	10.1%	1.6%	18.3%	1.9%	2.3%		
Bolton PCT	1.1%	0.4%	2.1%	0.5%	12.5%	1.2%	14.4%	1.2%	9.5%	1.0%	17.2%	1.3%	1.7%		
Bournemouth & Poole Teaching PCT	0.4%	0.2%	1.3%	0.4%	13.9%	1.4%	15.0%	1.4%	8.2%	1.1%	16.3%	1.4%	2.0%		
Bradford & Airedale Teaching PCT	1.9%	0.3%	2.0%	0.4%	12.2%	0.8%	13.8%	0.9%	10.6%	0.8%	20.9%	1.1%	1.8%		
Brent Teaching PCT	2.4%	0.6%	1.8%	0.5%	11.5%	1.2%	14.6%	1.3%	10.7%	1.1%	22.4%	1.6%	2.2%		
Brighton & Hove City PCT	0.9%	0.4%	1.3%	0.5%	12.9%	1.4%	13.4%	1.5%	8.2%	1.2%	17.7%	1.6%	2.2%		
Bristol PCT	0.8%	0.3%	1.0%	0.3%	15.2%	1.2%	13.9%	1.2%	10.3%	1.0%	19.5%	1.3%	2.3%		
Bromley PCT	1.6%	0.5%	1.8%	0.5%	10.0%	1.1%	12.4%	1.2%	7.3%	0.9%	15.7%	1.3%	2.0%		
Buckinghamshire PCT	2.6%	0.5%	2.3%	0.4%	10.3%	0.9%	12.3%	0.9%	6.3%	0.7%	13.9%	1.0%	1.9%		
Bury PCT	2.4%	0.7%	1.8%	0.6%	10.5%	1.4%	16.2%	1.6%	7.9%	1.2%	16.8%	1.6%	2.0%		
Calderdale PCT	1.9%	0.6%	1.8%	0.6%	10.5%	1.3%	13.7%	1.4%	7.1%	1.1%	15.8%	1.5%	1.9%		
Cambridgeshire PCT	1.1%	0.3%	1.1%	0.3%	11.4%	0.8%	13.1%	0.8%	8.9%	0.8%	17.0%	1.0%	2.0%		
Camden PCT	1.2%	0.6%	1.2%	0.6%	12.4%	1.7%	16.5%	2.1%	9.6%	1.6%	22.1%	2.3%	2.9%		
Central & Eastern Cheshire PCT	0.9%	0.3%	1.1%	0.3%	13.0%	1.0%	13.4%	1.0%	8.4%	0.9%	16.1%	1.1%	1.6%		
Central Lancashire PCT	1.0%	0.3%	1.5%	0.4%	14.6%	1.1%	13.5%	1.0%	9.6%	0.9%	17.6%	1.1%	1.7%		
City & Hackney Teaching PCT	1.2%	0.5%	1.7%	0.6%	14.5%	1.5%	15.1%	1.6%	14.0%	1.5%	23.6%	1.9%	2.9%		
Cornwall & Isles of Scilly PCT	0.6%	0.3%	0.6%	0.2%	14.7%	1.2%	15.2%	1.1%	9.9%	1.0%	17.0%	1.2%	2.6%		
County Durham PCT	0.6%	0.2%	0.9%	0.2%	13.8%	1.0%	14.1%	0.9%	9.6%	0.8%	20.9%	1.1%	1.5%		
Coventry Teaching PCT	0.9%	0.3%	1.8%	0.5%	14.1%	1.3%	14.8%	1.2%	10.8%	1.1%	18.8%	1.3%	2.0%		
Croydon PCT	0.9%	0.3%	1.3%	0.4%	12.8%	1.1%	14.6%	1.2%	10.9%	1.0%	21.2%	1.4%	2.1%		
Cumbria Teaching PCT	0.6%	0.2%	0.7%	0.2%	15.9%	1.1%	14.1%	1.0%	9.5%	0.9%	20.2%	1.1%	1.9%		
Darlington PCT	0.7%	0.5%	0.4%	0.4%	13.5%	2.0%	13.9%	2.0%	10.0%	1.8%	20.4%	2.3%	2.5%		
Derby City PCT	1.0%	0.4%	2.3%	0.6%	12.2%	1.3%	14.2%	1.3%	9.4%	1.1%	16.0%	1.4%	2.1%		
Derbyshire County PCT	0.5%	0.2%	1.2%	0.3%	13.2%	0.8%	14.0%	0.8%	7.8%	0.7%	17.1%	0.9%	1.7%		
Devon PCT	1.1%	0.3%	1.2%	0.3%	12.8%	0.9%	13.7%	0.8%	8.0%	0.7%	14.2%	0.8%	1.9%		
Doncaster PCT	1.2%	0.4%	1.0%	0.3%	13.1%	1.2%	15.2%	1.2%	11.6%	1.2%	19.1%	1.4%	2.2%		
Dorset PCT	0.5%	0.2%	0.8%	0.3%	13.5%	1.2%	14.5%	1.2%	9.3%	1.0%	14.4%	1.2%	2.2%		
Dudley PCT	2.0%	0.5%	1.7%	0.4%	11.9%	1.1%	15.4%	1.2%	11.4%	1.1%	20.1%	1.3%	1.7%		
Ealing PCT	1.9%	0.5%	2.3%	0.5%	11.7%	1.1%	15.2%	1.3%	10.9%	1.1%	21.0%	1.4%	2.0%		
East & North Hertfordshire PCT	0.8%	0.2%	0.9%	0.2%	13.6%	0.9%	14.8%	0.9%	8.7%	0.8%	16.3%	1.0%	1.7%		
East Lancashire Teaching PCT	1.5%	0.4%	1.4%	0.4%	12.5%	1.1%	14.1%	1.1%	9.8%	1.0%	16.8%	1.2%	2.4%		
East Riding of Yorkshire PCT	0.5%	0.3%	0.8%	0.3%	14.6%	1.4%	13.9%	1.2%	9.9%	1.2%	17.6%	1.3%	2.2%		
East Sussex Downs & Weald PCT	1.6%	0.5%	1.3%	0.4%	13.3%	1.3%	12.3%	1.2%	7.7%	1.0%	15.0%	1.3%	2.2%		
Eastern & Coastal Kent PCT	0.8%	0.2%	1.4%	0.3%	13.9%	0.9%	13.2%	0.8%	9.1%	0.7%	17.2%	0.9%	1.4%		
Enfield PCT	1.2%	0.4%	1.6%	0.4%	11.8%	1.1%	15.1%	1.3%	13.0%	1.2%	22.5%	1.5%	2.4%		
Gateshead PCT	0.7%	0.4%	0.9%	0.4%	16.9%	1.7%	16.7%	1.6%	11.9%	1.5%	21.6%	1.8%	2.1%		
Gloucestershire PCT	1.6%	0.4%	1.3%	0.3%	13.1%	1.0%	14.0%	1.0%	9.6%	0.8%	16.1%	1.0%	2.2%		
Great Yarmouth & Waveney PCT	0.2%	0.2%	0.9%	0.4%	14.2%	1.6%	12.8%	1.3%	10.4%	1.4%	19.6%	1.6%	2.2%		
Greenwich Teaching PCT	1.3%	0.4%	1.9%	0.6%	11.2%	1.2%	15.2%	1.5%	10.1%	1.2%	22.6%	1.7%	2.4%		
Halton & St Helens PCT	0.5%	0.3%	1.1%	0.4%	17.0%	1.3%	14.4%	1.2%	12.9%	1.2%	20.6%	1.4%	2.1%		
Hammersmith & Fulham PCT	1.1%	0.6%	0.7%	0.5%	13.6%	1.9%	14.6%	2.1%	11.8%	1.8%	22.8%	2.4%	2.7%		
Hampshire PCT	0.9%	0.2%	0.9%	0.2%	13.4%	0.6%	13.9%	0.6%	8.3%	0.5%	15.9%	0.6%	1.3%		
Haringey Teaching PCT	2.0%	0.5%	2.0%	0.6%	12.0%	1.3%	15.3%	1.4%	10.0%	1.2%	23.2%	1.7%	2.3%		
Harrow PCT	2.1%	0.6%	3.0%	0.7%	11.5%	1.3%	15.4%	1.5%	9.4%	1.2%	17.9%	1.6%	2.2%		
Hartlepool PCT	0.3%	0.4%	0.7%	0.5%	16.0%	2.4%	15.5%	2.2%	13.0%	2.2%	25.6%	2.7%	3.5%		
Hastings & Rother PCT	3.5%	0.9%	1.7%	0.6%	10.0%	1.5%	14.4%	1.7%	7.7%	1.3%	16.1%	1.8%	2.6%		
Havering PCT	0.6%	0.3%	1.2%	0.4%	13.3%	1.6%	13.8%	1.4%	10.1%	1.4%	19.0%	1.6%	3.3%		
Heart of Birmingham Teaching PCT	4.1%	0.6%	3.1%	0.5%	10.5%	0.9%	14.4%	1.1%	11.5%	0.9%	23.1%	1.3%	1.8%		
Herefordshire PCT	0.3%	0.3%	0.6%	0.4%	13.2%	1.7%	14.6%	1.8%	8.9%	1.5%	16.2%	1.8%	2.7%		
Heywood, Middleton & Rochdale PCT	1.0%	0.4%	1.5%	0.5%	13.4%	1.4%	14.0%	1.4%	11.1%	1.3%	19.2%	1.6%	2.1%		
Hillingdon PCT	2.9%	0.6%	2.2%	0.6%	9.8%	1.1%	12.6%	1.3%	8.4%	1.0%	19.4%	1.5%	2.2%		
Hounslow PCT	2.3%	0.6%	1.9%	0.6%	11.1%	1.3%	14.5%	1.4%	13.0%	1.4%	22.7%	1.7%	2.1%		
Hull Teaching PCT	0.7%	0.3%	1.1%	0.4%	14.7%	1.4%	15.4%	1.4%	11.8%	1.3%	22.3%	1.7%	2.6%		
Isle of Wight NHS PCT	0.5%	0.4%	0.5%	0.4%	12.9%	2.0%	13.3%	1.8%	10.0%	1.8%	19.2%	2.1%	2.9%		
Islington PCT	1.7%	0.6%	1.8%	0.7%	12.4%	1.6%	15.1%	1.8%	10.4%	1.5%	24.1%	2.1%	3.0%		
Kensington & Chelsea PCT	0.2%	0.3%	1.7%	0.9%	12.9%	2.3%	16.2%	2.5%	12.4%	2.3%	20.7%	2.8%	3.4%		
Kingston PCT	1.5%	0.6%	1.4%	0.6%	10.3%	1.6%	14.7%	1.9%	7.6%	1.4%	16.4%	2.0%	2.8%		
Kirklees PCT	1.7%	0.4%	1.8%	0.4%	12.5%	0.9%	14.3%	1.0%	9.7%	0.8%	18.9%	1.1%	1.5%		
Knowsley PCT	0.5%	0.4%	0.4%	0.3%	14.9%	1.7%	14.7%	1.7%	11.8%	1.6%	21.0%	1.9%	2.8%		
Lambeth PCT	2.2%	0.6%	1.9%	0.6%	14.4%	1.4%	15.4%	1.5%	11.8%	1.3%	23.2%	1.7%	2.1%		
Leeds PCT	1.9%	0.3%	1.8%	0.3%	11.2%	0.7%	13.8%	0.8%	8.4%	0.6%	19.3%	0.9%	1.0%		
Leicester City PCT	2.3%	0.5%	2.5%	0.5%	13.1%	1.2%	13.2%	1.1%	10.8%	1.1%	20.3%	1.4%	2.0%		
Leicestershire County & Rutland PCT	0.9%	0.2%	1.2%	0.3%	13.4%	0.8%	14.0%	0.9%	8.4%	0.7%	14.7%	0.9%	1.7%		
Lewisham PCT	1.0%	0.4%	1.2%	0.4%	14.4%	1.3%	14.7%	1.4%	10.6%	1.2%	25.3%	1.7%	2.3%		

Primary Care Trust	Underweight				Overweight				Obese				
	Reception		Year 6		Reception		Year 6		Reception		Year 6		
	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	±	
Lincolnshire Teaching PCT	0.8%	0.2%	1.1%	0.3%	13.8%	0.9%	15.1%	0.9%	9.6%	0.8%	17.9%	0.9%	2.0%
Liverpool PCT	1.4%	0.4%	1.6%	0.4%	12.3%	1.0%	16.3%	1.1%	12.1%	1.0%	20.8%	1.2%	1.8%
Luton PCT	1.1%	0.4%	1.6%	0.5%	12.7%	1.3%	14.1%	1.4%	12.5%	1.3%	20.5%	1.6%	2.0%
Manchester PCT	1.3%	0.3%	1.6%	0.4%	13.1%	1.0%	13.9%	1.1%	11.5%	1.0%	21.9%	1.3%	2.2%
Medway PCT	1.7%	0.5%	1.3%	0.4%	10.1%	1.2%	15.3%	1.3%	8.0%	1.1%	20.4%	1.5%	2.2%
Mid Essex PCT	0.6%	0.3%	1.4%	0.4%	12.9%	1.3%	16.6%	1.2%	8.7%	1.1%	15.7%	1.2%	3.0%
Middlesbrough PCT	1.2%	0.6%	0.9%	0.5%	13.2%	1.8%	15.7%	1.9%	11.0%	1.6%	22.7%	2.1%	2.9%
Milton Keynes PCT	1.7%	0.5%	2.0%	0.6%	13.3%	1.3%	13.9%	1.4%	12.1%	1.3%	16.1%	1.5%	2.0%
Newcastle PCT	1.2%	0.4%	1.2%	0.4%	13.9%	1.4%	14.3%	1.4%	10.9%	1.2%	20.8%	1.6%	2.6%
Newham PCT	3.0%	0.5%	2.7%	0.5%	12.4%	1.1%	14.5%	1.2%	14.0%	1.1%	25.6%	1.4%	1.9%
Norfolk PCT	0.9%	0.2%	1.2%	0.3%	13.7%	0.9%	13.7%	0.9%	9.1%	0.7%	18.0%	1.0%	1.8%
North East Essex PCT	1.2%	0.4%	1.4%	0.4%	12.6%	1.2%	14.0%	1.3%	9.0%	1.1%	15.9%	1.4%	2.5%
North East Lincolnshire Care Trust Plus	0.2%	0.2%	0.9%	0.4%	14.3%	1.7%	14.5%	1.6%	11.3%	1.5%	19.6%	1.8%	2.0%
North Lancashire Teaching PCT	0.5%	0.3%	1.2%	0.4%	13.7%	1.3%	14.7%	1.3%	8.7%	1.1%	17.0%	1.4%	2.2%
North Lincolnshire PCT	2.0%	0.7%	1.0%	0.5%	14.0%	1.7%	13.4%	1.7%	10.3%	1.5%	18.8%	1.9%	3.2%
North Somerset PCT	0.6%	0.4%	0.9%	0.4%	14.4%	1.6%	14.9%	1.6%	9.0%	1.3%	16.8%	1.7%	2.4%
North Staffordshire PCT	1.1%	0.5%	1.1%	0.5%	15.4%	1.8%	14.0%	1.5%	10.7%	1.5%	19.4%	1.7%	2.3%
North Tyneside PCT	0.6%	0.3%	1.0%	0.4%	12.8%	1.5%	15.0%	1.5%	8.5%	1.2%	20.5%	1.7%	2.1%
North Yorkshire & York PCT	0.4%	0.2%	1.1%	0.2%	15.0%	0.8%	14.5%	0.8%	9.4%	0.7%	15.5%	0.8%	1.5%
Northamptonshire Teaching PCT	2.3%	0.4%	2.5%	0.4%	10.1%	0.7%	14.1%	0.8%	7.3%	0.6%	16.9%	0.9%	1.8%
Northumberland Care Trust	0.6%	0.3%	0.9%	0.3%	14.8%	1.3%	14.3%	1.2%	10.0%	1.1%	17.9%	1.4%	2.2%
Nottingham City PCT	1.2%	0.4%	1.4%	0.4%	13.4%	1.3%	14.1%	1.3%	12.8%	1.3%	21.9%	1.6%	2.3%
Nottinghamshire County Teaching PCT	0.6%	0.2%	1.2%	0.3%	15.4%	0.9%	14.3%	0.8%	9.8%	0.8%	17.6%	0.9%	1.5%
Oldham PCT	2.7%	0.6%	2.3%	0.6%	12.3%	1.2%	14.4%	1.3%	11.6%	1.2%	18.1%	1.5%	2.1%
Oxfordshire PCT	0.9%	0.2%	1.5%	0.3%	11.1%	0.8%	13.9%	0.9%	7.2%	0.7%	15.4%	1.0%	1.7%
Peterborough PCT	0.8%	0.4%	1.4%	0.6%	17.7%	1.7%	16.9%	1.9%	12.6%	1.5%	19.1%	2.0%	4.0%
Plymouth Teaching PCT	0.7%	0.3%	0.6%	0.3%	15.2%	1.4%	13.0%	1.3%	10.1%	1.2%	17.1%	1.5%	2.0%
Portsmouth City Teaching PCT	0.5%	0.4%	0.6%	0.4%	15.3%	1.8%	15.9%	1.7%	12.7%	1.7%	22.2%	2.0%	2.4%
Redbridge PCT	1.9%	0.5%	2.0%	0.5%	11.2%	1.1%	13.5%	1.2%	11.4%	1.1%	20.8%	1.5%	2.0%
Redcar & Cleveland PCT	4.4%	1.1%	1.7%	0.7%	13.6%	1.9%	15.7%	1.9%	9.8%	1.6%	18.7%	2.1%	3.1%
Richmond & Twickenham PCT	0.6%	0.4%	1.2%	0.6%	11.1%	1.4%	13.2%	1.8%	6.2%	1.1%	12.4%	1.7%	2.2%
Rotherham PCT	1.1%	0.4%	1.1%	0.4%	13.2%	1.3%	16.2%	1.4%	12.0%	1.2%	20.8%	1.5%	2.2%
Salford PCT	0.8%	0.4%	1.1%	0.4%	14.0%	1.5%	14.1%	1.4%	9.8%	1.3%	21.2%	1.7%	2.1%
Sandwell PCT	2.4%	0.5%	1.7%	0.5%	10.6%	1.1%	14.6%	1.2%	11.0%	1.1%	23.9%	1.5%	2.6%
Sefton PCT	0.6%	0.3%	1.0%	0.4%	15.4%	1.4%	14.6%	1.3%	11.4%	1.2%	17.6%	1.4%	2.1%
Sheffield PCT	1.8%	0.4%	1.3%	0.3%	12.0%	0.9%	13.2%	0.9%	8.1%	0.8%	17.4%	1.1%	1.7%
Shropshire County PCT	0.4%	0.3%	0.9%	0.4%	15.4%	1.4%	14.4%	1.4%	11.2%	1.2%	17.8%	1.5%	2.9%
Solihull Care Trust	1.2%	0.5%	1.1%	0.4%	13.6%	1.5%	14.5%	1.5%	8.5%	1.2%	14.1%	1.5%	2.6%
Somerset PCT	0.4%	0.2%	1.2%	0.3%	14.0%	1.0%	13.7%	1.0%	8.0%	0.8%	15.2%	1.0%	1.9%
South Birmingham PCT	1.3%	0.4%	1.2%	0.4%	13.6%	1.2%	14.8%	1.2%	10.0%	1.0%	21.9%	1.3%	1.9%
South East Essex PCT	1.2%	0.4%	1.3%	0.4%	12.9%	1.2%	14.4%	1.2%	8.3%	1.0%	16.8%	1.3%	2.2%
South Gloucestershire PCT	0.6%	0.3%	0.9%	0.4%	12.6%	1.4%	13.3%	1.5%	7.0%	1.1%	14.2%	1.5%	3.7%
South Staffordshire PCT	1.2%	0.3%	1.0%	0.2%	13.0%	0.9%	14.1%	0.9%	9.0%	0.8%	19.0%	1.0%	1.9%
South Tyneside PCT	1.6%	0.6%	0.9%	0.5%	12.0%	1.7%	16.5%	1.8%	10.1%	1.5%	21.5%	2.0%	2.5%
South West Essex PCT	0.7%	0.3%	1.2%	0.3%	13.1%	1.0%	14.3%	1.1%	10.8%	1.0%	17.5%	1.1%	1.9%
Southampton City PCT	2.3%	0.6%	1.3%	0.5%	12.4%	1.4%	14.1%	1.5%	9.3%	1.2%	18.6%	1.7%	2.5%
Southwark PCT	1.1%	0.4%	1.0%	0.4%	13.3%	1.3%	15.9%	1.4%	14.4%	1.4%	26.0%	1.7%	2.4%
Stockport PCT	2.1%	0.6%	1.8%	0.5%	10.2%	1.2%	14.2%	1.3%	6.8%	1.0%	14.4%	1.3%	2.1%
Stockton-On-Tees Teaching PCT	4.7%	0.9%	1.1%	0.5%	13.7%	1.5%	15.0%	1.6%	16.2%	1.6%	20.4%	1.8%	2.0%
Stoke On Trent PCT	0.7%	0.3%	2.3%	0.6%	13.0%	1.4%	14.2%	1.4%	9.7%	1.2%	18.1%	1.5%	2.6%
Suffolk PCT	1.1%	0.3%	1.4%	0.3%	13.0%	1.0%	14.0%	0.9%	8.8%	0.8%	14.4%	0.9%	1.8%
Sunderland Teaching PCT	0.6%	0.3%	1.0%	0.4%	15.4%	1.3%	15.5%	1.3%	10.3%	1.1%	21.2%	1.5%	1.9%
Surrey PCT	0.8%	0.2%	1.6%	0.3%	12.1%	0.7%	12.8%	0.7%	7.9%	0.5%	14.1%	0.7%	1.4%
Sutton & Merton PCT	2.4%	0.5%	1.4%	0.4%	11.8%	1.1%	14.9%	1.2%	9.5%	1.0%	18.5%	1.3%	1.7%
Swindon PCT	1.0%	0.4%	0.9%	0.4%	14.8%	1.5%	14.2%	1.5%	9.1%	1.2%	19.1%	1.7%	2.5%
Tameside & Glossop PCT	0.8%	0.3%	1.3%	0.4%	14.1%	1.4%	14.5%	1.3%	9.5%	1.2%	18.7%	1.5%	2.1%
Telford & Wrekin PCT	0.5%	0.4%	0.9%	0.5%	18.2%	1.9%	15.7%	1.8%	11.9%	1.6%	18.6%	1.9%	2.7%
Torbay Care Trust	1.3%	0.7%	0.8%	0.5%	14.4%	2.1%	14.2%	2.0%	7.3%	1.5%	16.4%	2.1%	3.0%
Tower Hamlets PCT	2.5%	0.6%	2.4%	0.6%	10.4%	1.2%	14.8%	1.4%	13.7%	1.3%	24.5%	1.7%	2.5%
Trafford PCT	1.2%	0.4%	1.4%	0.5%	14.2%	1.4%	15.0%	1.5%	10.7%	1.3%	15.8%	1.5%	2.2%
Wakefield District PCT	0.5%	0.2%	1.2%	0.4%	14.9%	1.3%	14.9%	1.2%	10.5%	1.1%	20.4%	1.4%	2.1%
Walsall Teaching PCT	1.8%	0.5%	1.8%	0.5%	10.7%	1.1%	15.7%	1.3%	8.9%	1.0%	20.0%	1.4%	1.9%
Waltham Forest PCT	1.7%	0.5%	2.5%	0.6%	11.4%	1.2%	14.1%	1.4%	10.4%	1.2%	22.8%	1.7%	2.3%
Wandsworth PCT	1.3%	0.5%	2.2%	0.7%	11.6%	1.4%	14.8%	1.6%	10.3%	1.3%	24.0%	2.0%	3.4%
Warrington PCT	0.6%	0.3%	1.3%	0.5%	13.2%	1.5%	14.5%	1.5%	8.5%	1.2%	14.9%	1.5%	2.3%
Warwickshire PCT	1.0%	0.3%	1.2%	0.3%	12.9%	1.0%	13.5%	0.9%	8.0%	0.8%	18.1%	1.1%	1.9%
West Essex PCT	0.7%	0.3%	1.1%	0.4%	11.3%	1.2%	14.6%	1.4%	8.2%	1.1%	17.6%	1.5%	2.3%
West Hertfordshire PCT	1.0%	0.3%	1.2%	0.3%	13.8%	0.9%	14.1%	0.9%	8.8%	0.8%	15.2%	1.0%	1.8%
West Kent PCT	0.8%	0.2%	1.0%	0.2%	13.4%	0.8%	14.1%	0.9%	8.8%	0.7%	16.1%	0.9%	1.7%
West Sussex PCT	1.0%	0.2%	1.4%	0.3%	14.0%	0.9%	13.9%	0.8%	7.7%	0.7%	14.6%	0.8%	1.5%
Western Cheshire PCT	2.3%	0.7%	1.3%	0.5%	11.0%	1.4%	13.8%	1.5%	7.8%	1.2%	17.5%	1.7%	2.9%
Westminster PCT	2.1%	0.8%	2.0%	0.8%	12.4%	1.9%	15.1%	2.1%	11.8%	1.8%	24.8%	2.6%	4.0%
Wiltshire PCT	0.5%	0.2%	1.3%	0.3%	13.3%	1.0%	13.3%	1.0%	8.6%	0.8%	15.9%	1.1%	2.0%
Wirral PCT	0.6%	0.3%	0.9%	0.3%	13.1%	1.2%	15.1%	1.2%	9.6%	1.0%	19.1%	1.4%	2.3%
Wolverhampton City PCT	2.5%	0.6%	2.4%	0.6%	11.6%	1.3%	14.9%	1.4%	12.1%	1.3%	22.1%	1.6%	2.4%
Worcestershire PCT	0.5%	0.2%	1.1%	0.3%	15.4%	1.0%	14.5%	1.0%	8.5%	0.8%	16.8%	1.1%	2.2%
Total	1.3%	0.0%	1.4%	0.0%	13.0%	0.1%	14.3%	0.1%	9.6%	0.1%	18.3%	0.1%	0.9%



**Table B: Prevalence of underweight, overweight and obese children, with associated 95% confidence intervals, by SHA, England, 2007/08**

Strategic Health Authority	Underweight				Overweight				Obese				
	Reception		Year 6		Reception		Year 6		Reception		Year 6		
	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	-	+
East Midlands SHA	1.2%	0.1%	1.6%	0.1%	13.0%	0.3%	14.2%	0.3%	9.1%	0.3%	17.6%	0.4%	1.2%
East of England SHA	0.9%	0.1%	1.2%	0.1%	13.1%	0.3%	14.2%	0.3%	9.3%	0.3%	16.7%	0.3%	1.2%
London SHA	1.8%	0.1%	1.8%	0.1%	12.0%	0.2%	14.7%	0.3%	10.9%	0.2%	21.6%	0.3%	1.0%
North East SHA	1.3%	0.1%	1.0%	0.1%	14.2%	0.4%	15.0%	0.4%	10.7%	0.4%	20.8%	0.5%	1.1%
North West SHA	1.2%	0.1%	1.4%	0.1%	13.3%	0.3%	14.4%	0.3%	10.0%	0.2%	18.3%	0.3%	1.0%
South Central SHA	1.4%	0.1%	1.4%	0.1%	12.1%	0.3%	13.9%	0.3%	8.3%	0.3%	16.3%	0.4%	1.1%
South East Coast SHA	1.1%	0.1%	1.4%	0.1%	12.9%	0.3%	13.5%	0.3%	8.2%	0.3%	15.8%	0.4%	1.0%
South West SHA	0.8%	0.1%	1.1%	0.1%	13.9%	0.3%	14.0%	0.3%	8.9%	0.3%	16.0%	0.3%	1.4%
West Midlands SHA	1.5%	0.1%	1.6%	0.1%	13.0%	0.3%	14.5%	0.3%	10.0%	0.3%	19.6%	0.3%	1.2%
Yorkshire and the Humber SHA	1.3%	0.1%	1.4%	0.1%	13.0%	0.3%	14.2%	0.3%	9.8%	0.3%	18.9%	0.3%	0.9%
<b>Total</b>	<b>1.3%</b>	<b>0.0%</b>	<b>1.4%</b>	<b>0.0%</b>	<b>13.0%</b>	<b>0.1%</b>	<b>14.3%</b>	<b>0.1%</b>	<b>9.6%</b>	<b>0.1%</b>	<b>18.3%</b>	<b>0.1%</b>	<b>0.9%</b>

**Table C: Prevalence of underweight, overweight and obese children, with associated 95% confidence intervals, by LA, England, 2007/08**

Local Authority	Underweight					Overweight					Obese				
	Reception		Year 6			Reception		Year 6			Reception		Year 6		
	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	±	
Barking and Dagenham	0.9%	0.4%	1.1%	0.5%	14.9%	1.5%	16.6%	1.6%	13.5%	1.5%	23.9%	1.9%			
Barnet	2.1%	0.5%	2.1%	0.5%	11.3%	1.1%	13.8%	1.2%	8.8%	1.0%	18.8%	1.4%			
Barnsley	0.9%	0.4%	1.3%	0.4%	12.6%	1.4%	13.6%	1.3%	10.4%	1.3%	21.2%	1.6%			
Bath and North East Somerset	0.8%	0.5%	2.0%	0.7%	14.9%	1.8%	12.3%	1.7%	10.6%	1.6%	15.9%	1.9%			
Bedfordshire	0.7%	0.3%	1.0%	0.3%	12.5%	1.0%	13.1%	1.0%	8.7%	0.9%	15.1%	1.1%			
Bexley	2.6%	0.7%	1.6%	0.5%	10.6%	1.3%	15.8%	1.5%	9.6%	1.3%	20.0%	1.6%			
Birmingham	2.3%	0.3%	2.3%	0.3%	11.9%	0.6%	14.3%	0.6%	10.6%	0.5%	22.1%	0.7%			
Blackburn with Darwen	2.0%	0.6%	2.2%	0.7%	11.2%	1.5%	13.8%	1.7%	8.5%	1.3%	18.7%	1.9%			
Blackpool	0.4%	0.3%	1.5%	0.6%	12.5%	1.8%	14.7%	1.7%	10.1%	1.6%	18.3%	1.9%			
Bolton	1.1%	0.4%	2.1%	0.5%	12.5%	1.2%	14.4%	1.2%	9.5%	1.0%	17.2%	1.3%			
Bournemouth	0.4%	0.3%	1.3%	0.6%	14.5%	1.9%	15.6%	1.9%	8.5%	1.5%	17.2%	2.0%			
Bracknell Forest	1.0%	0.6%	0.5%	0.4%	9.7%	1.9%	15.0%	2.2%	7.9%	1.7%	17.5%	2.3%			
Bradford	1.9%	0.3%	2.0%	0.4%	12.2%	0.8%	13.8%	0.9%	10.6%	0.8%	20.9%	1.1%			
Brent	2.4%	0.6%	1.8%	0.5%	11.6%	1.2%	14.6%	1.3%	10.7%	1.1%	22.5%	1.6%			
Brighton and Hove	0.9%	0.4%	1.3%	0.5%	12.9%	1.4%	13.4%	1.5%	8.2%	1.2%	17.7%	1.6%			
Bristol, City of	0.8%	0.3%	1.0%	0.3%	15.2%	1.2%	13.9%	1.2%	10.3%	1.0%	19.5%	1.3%			
Bromley	1.6%	0.5%	1.8%	0.5%	10.0%	1.1%	12.4%	1.2%	7.3%	0.9%	15.7%	1.3%			
Buckinghamshire	2.7%	0.5%	2.4%	0.4%	10.4%	0.9%	12.3%	0.9%	6.4%	0.7%	14.0%	1.0%			
Bury	2.4%	0.7%	1.8%	0.6%	10.5%	1.4%	16.2%	1.6%	7.9%	1.2%	16.8%	1.6%			
Calderdale	1.9%	0.6%	1.8%	0.6%	10.5%	1.3%	13.7%	1.4%	7.1%	1.1%	15.8%	1.5%			
Cambridgeshire	1.1%	0.3%	1.1%	0.3%	11.4%	0.8%	13.1%	0.9%	8.9%	0.8%	17.0%	1.0%			
Camden	1.2%	0.6%	1.2%	0.6%	12.4%	1.7%	16.5%	2.1%	9.6%	1.6%	22.1%	2.3%			
Cheshire	1.4%	0.3%	1.2%	0.3%	12.3%	0.8%	13.6%	0.8%	8.2%	0.7%	16.5%	0.9%			
Cornwall and Isles Of Scilly	0.6%	0.3%	0.6%	0.2%	14.7%	1.2%	15.2%	1.1%	9.9%	1.0%	17.0%	1.2%			
Coventry	0.9%	0.3%	1.8%	0.5%	14.1%	1.3%	14.8%	1.2%	10.8%	1.1%	18.8%	1.3%			
Croydon	0.9%	0.3%	1.3%	0.4%	12.8%	1.1%	14.6%	1.2%	10.9%	1.0%	21.2%	1.4%			
Cumbria	0.6%	0.2%	0.7%	0.2%	15.9%	1.1%	14.1%	1.0%	9.5%	0.9%	20.2%	1.1%			
Darlington	0.7%	0.5%	0.4%	0.4%	13.5%	2.0%	13.9%	2.0%	10.0%	1.8%	20.4%	2.3%			
Derby	1.0%	0.4%	2.3%	0.6%	12.2%	1.3%	14.2%	1.3%	9.4%	1.1%	16.0%	1.4%			
Derbyshire	0.5%	0.2%	1.3%	0.3%	13.4%	0.8%	14.0%	0.8%	7.9%	0.7%	17.0%	0.9%			
Devon	1.1%	0.3%	1.2%	0.3%	12.8%	0.9%	13.7%	0.8%	8.0%	0.7%	14.2%	0.8%			
Doncaster	1.2%	0.4%	1.0%	0.3%	13.1%	1.2%	15.2%	1.2%	11.6%	1.2%	19.1%	1.4%			
Dorset	0.5%	0.2%	0.8%	0.3%	13.5%	1.2%	14.5%	1.2%	9.3%	1.0%	14.4%	1.2%			
Dudley	2.0%	0.5%	1.7%	0.4%	11.9%	1.1%	15.4%	1.2%	11.4%	1.1%	20.1%	1.3%			
Durham	0.6%	0.2%	0.9%	0.2%	13.8%	1.0%	14.1%	0.9%	9.6%	0.8%	20.9%	1.1%			
Ealing	1.9%	0.5%	2.3%	0.5%	11.6%	1.1%	15.2%	1.3%	10.8%	1.0%	21.0%	1.4%			
East Riding of Yorkshire	0.5%	0.3%	0.8%	0.3%	14.6%	1.4%	13.9%	1.2%	9.9%	1.2%	17.6%	1.3%			
East Sussex	2.3%	0.5%	1.5%	0.4%	12.1%	1.0%	13.0%	1.0%	7.7%	0.8%	15.4%	1.1%			
Enfield	1.2%	0.4%	1.6%	0.4%	11.8%	1.1%	15.1%	1.3%	13.0%	1.2%	22.5%	1.5%			
Essex	0.9%	0.2%	1.3%	0.2%	12.4%	0.6%	15.0%	0.6%	8.7%	0.5%	15.9%	0.6%			
Gateshead	0.7%	0.4%	0.9%	0.4%	16.9%	1.7%	16.7%	1.6%	11.9%	1.5%	21.6%	1.8%			
Gloucestershire	1.6%	0.4%	1.3%	0.3%	13.1%	1.0%	14.0%	1.0%	9.6%	0.8%	16.1%	1.0%			
Greenwich	1.3%	0.4%	1.9%	0.6%	11.2%	1.2%	15.2%	1.5%	10.1%	1.2%	22.6%	1.7%			
Hackney and City of London	1.2%	0.5%	1.7%	0.6%	14.5%	1.5%	15.1%	1.6%	14.0%	1.5%	23.6%	1.9%			
Halton	0.5%	0.4%	1.1%	0.6%	15.8%	2.1%	14.4%	2.0%	10.1%	1.7%	21.8%	2.3%			
Hammersmith and Fulham	1.1%	0.6%	0.7%	0.5%	13.6%	1.9%	14.6%	2.1%	11.8%	1.8%	22.8%	2.4%			
Hampshire	0.9%	0.2%	0.9%	0.2%	13.4%	0.6%	13.9%	0.6%	8.3%	0.5%	15.9%	0.6%			
Haringey	2.0%	0.5%	2.0%	0.6%	12.0%	1.3%	15.3%	1.4%	10.0%	1.2%	23.2%	1.7%			
Harrow	2.1%	0.6%	3.0%	0.7%	11.5%	1.3%	15.4%	1.5%	9.4%	1.2%	17.9%	1.6%			
Hartlepool	0.3%	0.4%	0.7%	0.5%	16.0%	2.4%	15.5%	2.2%	13.0%	2.2%	25.6%	2.7%			
Havering	0.6%	0.3%	1.2%	0.4%	13.3%	1.6%	13.8%	1.4%	10.1%	1.4%	19.0%	1.6%			
Herefordshire, County of	0.3%	0.3%	0.6%	0.4%	13.2%	1.7%	14.6%	1.8%	8.9%	1.5%	16.2%	1.8%			
Hertfordshire	0.9%	0.2%	1.1%	0.2%	13.7%	0.7%	14.5%	0.7%	8.8%	0.5%	15.8%	0.7%			
Hillingdon	2.9%	0.6%	2.2%	0.6%	9.8%	1.1%	12.6%	1.3%	8.4%	1.0%	19.4%	1.5%			
Hounslow	2.3%	0.6%	1.9%	0.6%	11.1%	1.3%	14.5%	1.4%	13.0%	1.4%	22.7%	1.7%			
Isle of Wight	0.5%	0.4%	0.5%	0.4%	12.9%	2.0%	13.3%	1.8%	10.0%	1.8%	19.2%	2.1%			
Islington	1.7%	0.6%	1.8%	0.7%	12.4%	1.6%	15.1%	1.8%	10.4%	1.5%	24.1%	2.1%			
Kensington and Chelsea	0.2%	0.3%	1.7%	0.9%	12.9%	2.3%	16.2%	2.5%	12.4%	2.3%	20.7%	2.8%			
Kent	0.8%	0.2%	1.2%	0.2%	13.7%	0.6%	13.6%	0.6%	9.0%	0.5%	16.7%	0.6%			
Kingston upon Hull, City of	0.7%	0.3%	1.1%	0.4%	14.7%	1.4%	15.4%	1.4%	11.8%	1.3%	22.3%	1.7%			
Kingston upon Thames	1.5%	0.6%	1.4%	0.6%	10.3%	1.6%	14.7%	1.9%	7.6%	1.4%	16.4%	2.0%			
Kirklees	1.7%	0.4%	1.8%	0.4%	12.5%	0.9%	14.3%	1.0%	9.7%	0.8%	18.9%	1.1%			
Knowsley	0.5%	0.4%	0.4%	0.3%	14.9%	1.7%	14.7%	1.7%	11.8%	1.6%	21.0%	1.9%			
Lambeth	2.2%	0.6%	1.9%	0.6%	14.4%	1.4%	15.4%	1.5%	11.8%	1.3%	23.2%	1.7%			
Lancashire	1.0%	0.2%	1.4%	0.2%	13.7%	0.7%	14.0%	0.6%	9.5%	0.6%	17.2%	0.7%			
Leeds	1.9%	0.3%	1.8%	0.3%	11.2%	0.7%	13.8%	0.8%	8.4%	0.6%	19.3%	0.9%			
Leicester	2.3%	0.5%	2.5%	0.5%	13.1%	1.2%	13.2%	1.1%	10.8%	1.1%	20.3%	1.4%			
Leicestershire	0.9%	0.2%	1.2%	0.3%	13.3%	0.9%	13.9%	0.9%	8.3%	0.7%	14.8%	0.9%			
Lewisham	1.0%	0.4%	1.2%	0.4%	14.4%	1.3%	14.7%	1.4%	10.6%	1.2%	25.3%	1.7%			
Lincolnshire	0.8%	0.2%	1.1%	0.3%	13.8%	0.9%	15.1%	0.9%	9.6%	0.8%	17.9%	0.9%			
Liverpool	1.4%	0.4%	1.6%	0.4%	12.3%	1.0%	16.3%	1.1%	12.1%	1.0%	20.8%	1.2%			
Luton	1.1%	0.4%	1.6%	0.5%	12.7%	1.3%	14.1%	1.4%	12.5%	1.3%	20.5%	1.6%			
Manchester	1.3%	0.3%	1.6%	0.4%	13.1%	1.0%	13.9%	1.1%	11.5%	1.0%	21.9%	1.3%			
Medway	1.8%	0.5%	1.4%	0.4%	9.9%	1.2%	15.4%	1.3%	7.9%	1.1%	20.5%	1.5%			

Local Authority	Underweight				Overweight				Obese			
	Reception		Year 6		Reception		Year 6		Reception		Year 6	
	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	±	Prevalence	±
Merton	3.3%	0.8%	1.3%	0.6%	12.3%	1.6%	15.5%	1.7%	10.9%	1.5%	21.3%	2.0%
Middlesbrough	1.2%	0.6%	0.9%	0.5%	13.2%	1.8%	15.7%	1.9%	11.0%	1.6%	22.7%	2.1%
Milton Keynes	1.7%	0.5%	2.0%	0.6%	13.3%	1.3%	13.9%	1.4%	12.1%	1.3%	16.1%	1.5%
Newcastle upon Tyne	1.2%	0.4%	1.2%	0.4%	13.9%	1.4%	14.3%	1.4%	10.9%	1.2%	20.8%	1.6%
Newham	3.0%	0.5%	2.7%	0.5%	12.4%	1.1%	14.5%	1.2%	14.0%	1.1%	25.6%	1.4%
Norfolk	0.7%	0.2%	1.1%	0.2%	13.8%	0.8%	13.7%	0.8%	9.4%	0.7%	18.3%	0.9%
North East Lincolnshire	0.2%	0.2%	0.9%	0.4%	14.3%	1.7%	14.5%	1.6%	11.3%	1.5%	19.6%	1.8%
North Lincolnshire	2.0%	0.7%	1.0%	0.5%	14.0%	1.7%	13.4%	1.7%	10.3%	1.5%	18.8%	1.9%
North Somerset	0.6%	0.4%	0.9%	0.4%	14.4%	1.6%	14.9%	1.6%	9.0%	1.3%	16.8%	1.7%
North Tyneside	0.6%	0.3%	1.0%	0.4%	12.8%	1.5%	15.0%	1.5%	8.5%	1.2%	20.5%	1.7%
North Yorkshire	0.4%	0.2%	1.2%	0.3%	15.1%	1.0%	15.1%	1.0%	9.8%	0.8%	15.2%	1.0%
Northamptonshire	2.3%	0.4%	2.5%	0.4%	10.1%	0.7%	14.1%	0.8%	7.3%	0.6%	16.9%	0.9%
Northumberland	0.6%	0.3%	0.9%	0.3%	14.8%	1.3%	14.3%	1.2%	10.0%	1.1%	17.9%	1.4%
Nottingham	1.2%	0.4%	1.4%	0.4%	13.4%	1.3%	14.1%	1.3%	12.8%	1.3%	22.0%	1.6%
Nottinghamshire	0.7%	0.2%	1.3%	0.3%	15.0%	0.8%	14.3%	0.8%	9.9%	0.7%	18.4%	0.9%
Oldham	2.7%	0.6%	2.3%	0.6%	12.3%	1.2%	14.4%	1.3%	11.6%	1.2%	18.1%	1.5%
Oxfordshire	0.9%	0.2%	1.5%	0.3%	11.1%	0.8%	13.9%	0.9%	7.1%	0.7%	15.3%	0.9%
Peterborough	0.8%	0.4%	1.4%	0.6%	17.7%	1.7%	16.9%	1.9%	12.6%	1.5%	19.1%	2.0%
Plymouth	0.7%	0.3%	0.6%	0.3%	15.2%	1.4%	13.0%	1.3%	10.1%	1.2%	17.1%	1.5%
Poole	0.4%	0.4%	1.4%	0.6%	13.1%	2.0%	14.5%	1.9%	7.7%	1.5%	15.4%	2.0%
Portsmouth	0.5%	0.4%	0.6%	0.4%	15.3%	1.8%	15.9%	1.7%	12.7%	1.7%	22.2%	2.0%
Reading	1.3%	0.6%	1.1%	0.6%	11.5%	1.8%	14.5%	2.0%	10.0%	1.7%	19.2%	2.3%
Redbridge	1.9%	0.5%	2.0%	0.5%	11.2%	1.1%	13.5%	1.2%	11.4%	1.1%	20.8%	1.5%
Redcar and Cleveland	4.4%	1.1%	1.7%	0.7%	13.6%	1.9%	15.7%	1.9%	9.8%	1.6%	18.7%	2.1%
Richmond upon Thames	0.6%	0.4%	1.2%	0.6%	11.1%	1.4%	13.2%	1.8%	6.2%	1.1%	12.4%	1.7%
Rochdale	1.0%	0.4%	1.5%	0.5%	13.4%	1.4%	14.0%	1.4%	11.1%	1.3%	19.2%	1.6%
Rotherham	1.1%	0.4%	1.1%	0.4%	13.2%	1.3%	16.2%	1.4%	12.0%	1.2%	20.8%	1.5%
Rutland	0.0%	0.0%	1.0%	1.1%	14.6%	4.2%	16.5%	4.2%	9.1%	3.4%	13.9%	3.9%
Salford	0.9%	0.4%	1.1%	0.4%	14.0%	1.5%	14.2%	1.4%	9.8%	1.3%	21.1%	1.6%
Sandwell	2.4%	0.5%	1.7%	0.5%	10.6%	1.1%	14.6%	1.2%	11.0%	1.1%	23.9%	1.5%
Sefton	0.6%	0.3%	1.0%	0.4%	15.4%	1.4%	14.6%	1.3%	11.4%	1.2%	17.6%	1.4%
Sheffield	1.8%	0.4%	1.3%	0.3%	12.0%	0.9%	13.2%	0.9%	8.1%	0.8%	17.4%	1.1%
Shropshire	0.4%	0.3%	0.9%	0.4%	15.4%	1.4%	14.4%	1.4%	11.2%	1.2%	17.8%	1.5%
Slough	1.6%	0.7%	2.4%	0.8%	10.1%	1.7%	14.6%	1.9%	10.5%	1.8%	18.6%	2.1%
Solihull	1.2%	0.5%	1.1%	0.4%	13.6%	1.5%	14.5%	1.5%	8.5%	1.2%	14.1%	1.5%
Somerset	0.4%	0.2%	1.2%	0.3%	14.0%	1.0%	13.7%	1.0%	8.0%	0.8%	15.2%	1.0%
South Gloucestershire	0.6%	0.3%	0.9%	0.4%	12.6%	1.4%	13.3%	1.5%	7.0%	1.1%	14.2%	1.5%
South Tyneside	1.6%	0.6%	0.9%	0.5%	12.0%	1.7%	16.5%	1.8%	10.1%	1.5%	21.5%	2.0%
Southampton	2.3%	0.6%	1.3%	0.5%	12.4%	1.4%	14.1%	1.5%	9.3%	1.2%	18.6%	1.7%
Southend-on-Sea	1.0%	0.5%	0.9%	0.5%	13.8%	1.8%	14.1%	1.7%	9.2%	1.5%	18.7%	1.9%
Southwark	1.1%	0.4%	1.0%	0.4%	13.3%	1.3%	15.9%	1.4%	14.4%	1.4%	26.0%	1.7%
St. Helens	0.5%	0.3%	1.2%	0.5%	17.7%	1.7%	14.4%	1.6%	14.8%	1.6%	19.8%	1.8%
Staffordshire	1.2%	0.3%	1.0%	0.2%	13.6%	0.8%	14.1%	0.7%	9.5%	0.7%	19.0%	0.8%
Stockport	2.1%	0.6%	1.8%	0.5%	10.2%	1.2%	14.2%	1.3%	6.8%	1.0%	14.4%	1.3%
Stockton-on-Tees	4.7%	0.9%	1.1%	0.5%	13.7%	1.5%	15.0%	1.6%	16.2%	1.6%	20.4%	1.8%
Stoke-on-Trent	0.7%	0.4%	2.3%	0.6%	12.7%	1.4%	14.1%	1.4%	9.5%	1.3%	18.3%	1.6%
Suffolk	0.9%	0.2%	1.3%	0.3%	13.2%	0.9%	13.7%	0.8%	8.9%	0.7%	15.3%	0.9%
Sunderland	0.6%	0.3%	1.0%	0.4%	15.4%	1.3%	15.5%	1.3%	10.3%	1.1%	21.2%	1.5%
Surrey	0.8%	0.2%	1.6%	0.3%	12.1%	0.7%	12.8%	0.7%	8.0%	0.5%	14.1%	0.7%
Sutton	1.6%	0.6%	1.4%	0.5%	11.2%	1.5%	14.3%	1.6%	8.2%	1.3%	15.9%	1.7%
Swindon	1.0%	0.4%	0.9%	0.4%	14.8%	1.5%	14.2%	1.5%	9.1%	1.2%	19.1%	1.7%
Tameside	0.7%	0.4%	1.2%	0.5%	13.9%	1.5%	14.6%	1.4%	9.8%	1.3%	19.1%	1.6%
Telford and Wrekin	0.5%	0.4%	0.9%	0.5%	18.2%	1.9%	15.7%	1.8%	11.9%	1.6%	18.6%	1.9%
Thurrock	0.5%	0.3%	1.0%	0.5%	13.3%	1.6%	13.6%	1.6%	12.5%	1.6%	21.0%	2.0%
Torbay	1.3%	0.7%	0.8%	0.5%	14.4%	2.1%	14.2%	2.0%	7.3%	1.5%	16.4%	2.1%
Tower Hamlets	2.5%	0.6%	2.4%	0.6%	10.4%	1.2%	14.8%	1.4%	13.7%	1.3%	24.5%	1.7%
Trafford	1.2%	0.4%	1.4%	0.5%	14.2%	1.4%	15.0%	1.5%	10.7%	1.3%	15.8%	1.5%
Wakefield	0.5%	0.2%	1.2%	0.4%	14.9%	1.3%	14.9%	1.2%	10.5%	1.1%	20.4%	1.4%
Walsall	1.8%	0.5%	1.8%	0.5%	10.7%	1.1%	15.7%	1.3%	8.9%	1.0%	20.0%	1.4%
Waltham Forest	1.7%	0.5%	2.5%	0.6%	11.4%	1.2%	14.1%	1.4%	10.4%	1.2%	22.8%	1.7%
Wandsworth	1.3%	0.5%	2.2%	0.7%	11.6%	1.4%	14.8%	1.6%	10.3%	1.3%	24.0%	2.0%
Warrington	0.6%	0.3%	1.3%	0.5%	13.2%	1.5%	14.5%	1.5%	8.5%	1.2%	14.9%	1.5%
Warwickshire	1.0%	0.3%	1.2%	0.3%	12.9%	1.0%	13.5%	0.9%	8.0%	0.8%	18.1%	1.1%
West Berkshire	1.9%	0.7%	1.3%	0.6%	11.7%	1.6%	13.9%	1.8%	6.2%	1.2%	15.3%	1.9%
West Sussex	1.0%	0.2%	1.4%	0.3%	14.0%	0.9%	13.9%	0.8%	7.7%	0.7%	14.6%	0.8%
Westminster	2.1%	0.8%	2.0%	0.8%	12.4%	1.9%	15.1%	2.1%	11.8%	1.8%	24.8%	2.6%
Wigan	1.2%	0.4%	1.3%	0.4%	12.3%	1.2%	15.0%	1.2%	9.8%	1.1%	18.0%	1.3%
Wiltshire	0.5%	0.2%	1.3%	0.3%	13.3%	1.0%	13.3%	1.0%	8.6%	0.8%	15.9%	1.1%
Windsor and Maidenhead	1.5%	0.7%	0.9%	0.5%	9.7%	1.7%	13.5%	1.9%	6.6%	1.4%	15.6%	2.0%
Wirral	0.6%	0.3%	0.9%	0.3%	13.1%	1.2%	15.1%	1.2%	9.6%	1.0%	19.1%	1.4%
Wokingham	2.6%	1.0%	2.1%	0.7%	8.5%	1.8%	15.2%	1.8%	5.4%	1.5%	13.5%	1.7%
Wolverhampton	2.5%	0.6%	2.4%	0.6%	11.6%	1.3%	14.9%	1.4%	12.1%	1.3%	22.1%	1.6%
Worcestershire	0.5%	0.2%	1.1%	0.3%	15.4%	1.0%	14.5%	1.0%	8.5%	0.8%	16.8%	1.1%
York	0.4%	0.3%	0.8%	0.4%	14.5%	1.7%	12.3%	1.6%	8.2%	1.3%	16.6%	1.8%
Total	1.3%	0.0%	1.4%	0.0%	13.0%	0.1%	14.3%	0.1%	9.6%	0.1%	18.3%	0.1%

Notes:

1. Mapping of Local Authorities in table C based on DCSF coding. Alternate mapping based on school postcode can be found at [www.ic.nhs.uk/ncmp](http://www.ic.nhs.uk/ncmp)
2. Data for City of London have been combined with Hackney to avoid disclosure of small numbers

# Annex 2: Data Quality report

Table D shows a number of PCT data quality measures for the 2007/08 NCMP. As discussed at the beginning of section 3, there have been considerable improvements in the overall NCMP data quality since 2006/07.

Table D: PCT data quality report for NCMP 2007/08

**Key:**

	Green	Amber	Red
Measure 1 - Overall participation rate	≥85%	≥80% and <85%	<80%
Measure 2 - % of records with heights rounded to the nearest whole number	<25%	≥25% and ≤50%	>50%
Measure 3 - % of records with weights rounded to the nearest whole number	<25%	≥25% and ≤50%	>50%
Measure 4 - % of records with complete home postcodes	>95%	≥75% and ≤95%	<75%
Measure 5 - % of records with complete ethnicity codes	>90%	≥50% and ≤90%	<50%

PCT name	Overall participation rate	Percentage of records with heights rounded to the nearest whole number	Percentage of records with weights rounded to the nearest whole number	Percentage of records with missing home postcodes	Percentage of records with missing ethnicity codes
<b>National average</b>	<b>88%</b>	<b>30%</b>	<b>23%</b>	<b>3%</b>	<b>33%</b>
5J9 Darlington PCT	98%	27%	12%	1%	100%
5H1 Hammersmith & Fulham PCT	97%	31%	20%	1%	1%
5N2 Kirklees PCT	97%	61%	18%	0%	18%
TAN North East Lincolnshire Care Trust Plus	97%	22%	7%	0%	0%
5KF Gateshead PCT	96%	17%	19%	0%	99%
5N1 Leeds PCT	96%	25%	71%	0%	54%
5E1 Stockton-On-Tees Teaching PCT	96%	30%	19%	0%	51%
5PE Dudley PCT	96%	25%	12%	0%	11%
5HP Blackpool PCT	96%	21%	15%	0%	2%
5KL Sunderland Teaching PCT	95%	17%	18%	1%	100%
5HQ Bolton PCT	95%	27%	8%	1%	2%
5KG South Tyneside PCT	94%	14%	11%	1%	51%
5CQ Milton Keynes PCT	94%	19%	42%	59%	100%
5D8 North Tyneside PCT	94%	22%	21%	0%	1%
5LD Lambeth PCT	94%	20%	10%	3%	1%
5QG Berkshire East PCT	94%	24%	17%	3%	22%
5NQ Heywood, Middleton & Rochdale PCT	94%	28%	15%	1%	2%
5F1 Plymouth Teaching PCT	93%	15%	21%	0%	1%
5JX Bury PCT	93%	19%	20%	1%	2%
5MX Heart of Birmingham Teaching PCT	93%	33%	44%	3%	4%
5J6 Calderdale PCT	93%	60%	83%	9%	100%
5M3 Walsall Teaching PCT	93%	12%	9%	0%	0%
5HX Ealing PCT	93%	25%	12%	3%	55%
5NL Liverpool PCT	93%	37%	76%	12%	100%
5M6 Richmond & Twickenham PCT	92%	19%	9%	26%	23%
5HY Hounslow PCT	92%	25%	11%	1%	2%
5C5 Newham PCT	92%	21%	27%	0%	2%
5P6 West Sussex PCT	92%	15%	20%	0%	100%
5GC Luton PCT	92%	33%	10%	0%	21%
5LQ Brighton & Hove City PCT	92%	21%	9%	0%	15%
5M7 Sutton & Merton PCT	92%	8%	6%	2%	0%
5P8 Hastings & Rother PCT	92%	24%	49%	1%	14%
5NA Redbridge PCT	92%	23%	7%	1%	3%
5A7 Bromley PCT	91%	20%	51%	0%	5%
5ND County Durham PCT	91%	17%	14%	13%	91%
5K6 Harrow PCT	91%	44%	11%	2%	2%
5NR Trafford PCT	91%	37%	43%	1%	5%
5N7 Derby City PCT	91%	16%	11%	1%	2%
5F5 Salford PCT	91%	17%	18%	0%	9%
5M8 North Somerset PCT	91%	16%	10%	0%	17%
5K7 Camden PCT	91%	21%	10%	1%	1%
5JE Barnsley PCT	91%	21%	10%	0%	3%
5M1 South Birmingham PCT	90%	21%	11%	2%	3%
5HG Ashton, Leigh & Wigan PCT	90%	21%	64%	1%	100%
5QN Bournemouth & Poole Teaching PCT	90%	24%	6%	1%	8%
5AT Hillingdon PCT	90%	22%	10%	1%	3%
5QL Somerset PCT	90%	28%	11%	0%	1%
5P2 Bedfordshire PCT	90%	33%	9%	1%	16%
5A9 Barnet PCT	90%	35%	16%	2%	5%
5K3 Swindon PCT	90%	26%	23%	0%	4%
5N4 Sheffield PCT	90%	23%	30%	0%	2%
5C9 Haringey Teaching PCT	90%	20%	10%	1%	2%
5NV North Yorkshire & York PCT	90%	49%	36%	26%	58%
5J4 Knowsley PCT	90%	18%	11%	0%	100%
5A5 Kingston PCT	90%	14%	10%	1%	1%
5K5 Brent Teaching PCT	90%	22%	10%	1%	14%
5QC Hampshire PCT	90%	18%	23%	1%	79%
5N3 Wakefield District PCT	89%	100%	11%	0%	95%
5NP Central & Eastern Cheshire PCT	89%	64%	16%	5%	100%
5LA Kensington & Chelsea PCT	89%	24%	10%	0%	4%
5QE Oxfordshire PCT	89%	16%	10%	2%	1%
5J2 Warrington PCT	89%	21%	19%	0%	3%
5NJ Sefton PCT	89%	23%	20%	0%	0%
5N8 Nottinghamshire County Teaching PCT	89%	55%	11%	0%	3%

	PCT name	Overall participation rate	Percentage of records with heights rounded to the nearest whole number	Percentage of records with weights rounded to the nearest whole number	Percentage of records with missing home postcodes	Percentage of records with missing ethnicity codes
5A8	Greenwich Teaching PCT	89%	23%	76%	1%	43%
5NM	Halton & St Helens PCT	89%	18%	17%	4%	41%
5J5	Oldham PCT	89%	36%	64%	2%	3%
5ET	Bassetlaw PCT	89%	22%	16%	9%	12%
5D7	Newcastle PCT	89%	24%	27%	0%	100%
5C3	City & Hackney Teaching PCT	89%	22%	10%	0%	2%
5PV	West Essex PCT	89%	19%	14%	1%	4%
5QT	Isle of Wight NHS PCT	89%	16%	11%	0%	9%
5H8	Rotherham PCT	89%	100%	30%	0%	66%
5PC	Leicester City PCT	89%	19%	11%	0%	18%
5PQ	Norfolk PCT	89%	15%	18%	0%	0%
5PY	South West Essex PCT	89%	23%	11%	1%	2%
5NF	North Lancashire Teaching PCT	89%	18%	14%	0%	7%
5NC	Waltham Forest PCT	89%	60%	26%	1%	2%
5NG	Central Lancashire PCT	88%	21%	13%	1%	73%
5L1	Southampton City PCT	88%	24%	36%	0%	32%
5EM	Nottingham City PCT	88%	18%	10%	0%	25%
TAC	Northumberland Care Trust	88%	28%	12%	2%	0%
5LF	Lewisham PCT	88%	16%	11%	1%	3%
5PA	Leicestershire County & Rutland PCT	88%	26%	14%	2%	4%
5NY	Bradford & Airedale Teaching PCT	88%	100%	32%	0%	100%
5PR	Great Yarmouth & Waveney PCT	88%	25%	11%	0%	48%
5P9	West Kent PCT	88%	16%	15%	1%	99%
5NX	Hull Teaching PCT	88%	41%	12%	0%	58%
5NK	Wirral PCT	88%	12%	10%	2%	100%
5MK	Telford & Wrekin PCT	88%	43%	17%	1%	29%
5LE	Southwark PCT	88%	24%	10%	0%	3%
5PG	Birmingham East & North PCT	88%	21%	10%	1%	9%
5K9	Croydon PCT	88%	14%	10%	1%	3%
5PT	Suffolk PCT	88%	39%	13%	0%	27%
5P5	Surrey PCT	87%	31%	16%	3%	44%
5QM	Dorset PCT	87%	22%	12%	1%	3%
5F7	Stockport PCT	87%	21%	71%	2%	100%
5LH	Tameside & Glossop PCT	87%	17%	10%	2%	88%
5CN	Herefordshire PCT	87%	20%	15%	0%	21%
5D9	Hartlepool PCT	87%	28%	12%	0%	100%
5N5	Doncaster PCT	87%	23%	20%	0%	100%
5PM	Warwickshire PCT	87%	18%	10%	0%	24%
5KM	Middlesbrough PCT	87%	19%	17%	0%	65%
5PD	Northamptonshire Teaching PCT	87%	35%	68%	0%	84%
5QK	Wiltshire PCT	86%	19%	9%	14%	11%
5C4	Tower Hamlets PCT	86%	22%	14%	1%	0%
5AL	Torbay Care Trust	86%	22%	10%	0%	1%
5P4	West Hertfordshire PCT	86%	17%	19%	0%	2%
5N6	Derbyshire County PCT	86%	18%	12%	0%	4%
5P3	East & North Hertfordshire PCT	86%	21%	14%	0%	2%
5K8	Islington PCT	86%	24%	10%	3%	4%
5EF	North Lincolnshire PCT	86%	100%	62%	0%	56%
5NE	Cumbria Teaching PCT	86%	24%	20%	0%	47%
5FE	Portsmouth City Teaching PCT	86%	15%	22%	0%	60%
5MD	Coventry Teaching PCT	86%	14%	10%	0%	2%
5QA	Eastern & Coastal Kent PCT	86%	18%	20%	0%	100%
TAK	Bexley Care Trust	86%	15%	63%	0%	5%
5P7	East Sussex Downs & Weald PCT	85%	21%	39%	0%	11%
5QR	Redcar & Cleveland PCT	85%	33%	31%	0%	49%
5PH	North Staffordshire PCT	85%	31%	27%	0%	14%
5PP	Cambridgeshire PCT	85%	94%	37%	0%	3%
5QJ	Bristol PCT	85%	35%	20%	0%	17%
5L3	Medway PCT	85%	19%	42%	1%	1%
5PW	North East Essex PCT	85%	23%	32%	1%	9%
5NT	Manchester PCT	84%	26%	11%	2%	37%
5QQ	Devon PCT	84%	34%	29%	1%	4%
5C1	Enfield PCT	84%	37%	11%	5%	5%
5CC	Blackburn With Darwen PCT	84%	30%	7%	3%	1%
5C2	Barking & Dagenham PCT	84%	51%	11%	1%	1%
5PL	Worcestershire PCT	84%	17%	10%	0%	6%
5P1	South East Essex PCT	84%	41%	20%	100%	100%
5NN	Western Cheshire PCT	84%	39%	76%	0%	70%
5MV	Wolverhampton City PCT	83%	24%	70%	0%	4%
5N9	Lincolnshire Teaching PCT	83%	35%	48%	1%	1%
5M2	Shropshire County PCT	82%	67%	21%	0%	35%
5PK	South Staffordshire PCT	82%	36%	25%	0%	37%
5QF	Berkshire West PCT	82%	31%	58%	0%	4%
TAM	Solihull Care Trust	82%	20%	10%	0%	47%
5NH	East Lancashire Teaching PCT	82%	21%	10%	2%	7%
5LG	Wandsworth PCT	82%	30%	12%	10%	3%
5NW	East Riding of Yorkshire PCT	81%	29%	17%	1%	65%
5QD	Buckinghamshire PCT	81%	40%	46%	1%	7%
5PF	Sandwell PCT	80%	20%	36%	0%	8%
5QH	Gloucestershire PCT	79%	22%	55%	1%	80%
5PJ	Stoke On Trent PCT	79%	26%	19%	0%	13%
5LC	Westminster PCT	79%	33%	48%	1%	4%
5PN	Peterborough PCT	78%	100%	16%	0%	100%
5FL	Bath & North East Somerset PCT	77%	18%	15%	0%	59%
5QP	Cornwall & Isles of Scilly PCT	75%	19%	17%	2%	3%
5A4	Havering PCT	72%	32%	10%	0%	2%
5PX	Mid Essex PCT	72%	100%	44%	1%	100%
5A3	South Gloucestershire PCT	68%	16%	19%	0%	16%

The rows in table D are sorted by the main data quality indicator: measure 1, the overall participation rate (the percentage of eligible Reception and Year 6 children for which valid measurements were received).

Four other data quality measures are also presented:

- Measures 2 and 3: percentage of records with rounded heights / weights. Heights and weights in the NCMP should be rounded to 1 decimal place, and so it would be expected that approximately 10% of measurements would be rounded to the nearest whole number. Percentages that are considerably different to this may have been

inappropriately rounded. Analysis by the National Obesity Observatory has shown that systematic rounding to the nearest whole number can have a small overall biasing effect on height and weight measurements.

- Measures 4 and 5: percentages of records with complete home postcodes and ethnicity codes. The 2007/08 NCMP was the first year for which collection of these data fields was mandatory.

## Annex 3 – Confidence intervals

A confidence interval gives an indication of the likely error around an estimate that has been calculated from measurements based on a sample of the population. It indicates the range within which the true value for the population as a whole can be expected to lie, taking natural random variation into account.

Throughout this report, 95% confidence intervals are used. These are known as such because if it were possible to repeat the same programme under the same conditions a number of times, we would expect 95% of the confidence intervals calculated in this way to contain the true population value for that estimate.

Larger sample sizes lead to narrower confidence intervals, since there is less natural random variation in the results when more individuals are measured. The NCMP has relatively narrow confidence limits because of the large size of the sample.

Note that:

- Confidence limits have not been adjusted using the finite population correction factor; and
- Raw confidence limits do not reflect error due to issues such as data quality and low response rates and, therefore, may give a misleading impression of the degree of precision.

Where applicable in this report, confidence limits are included in graphs. These confidence limits give an indication of whether any observed differences in prevalence (e.g. between school years) are likely to be real, or whether they are likely to be due to chance and the small numbers involved. **Where 95% confidence limits for two subgroups do not overlap, the difference can be said to be statistically significant.**

When comparing Year 6 obesity prevalence figures between 2006/07 and 2007/08, an extra amount has been added to the upper limits to represent the uncertainties in the estimates due to response bias. It is known that, in Year 6, the children who opt out are more likely to be obese than those who are measured (see annex 6). Given that the final Year 6 participation rates for the 2006/07 and 2007/08 NCMPs were different (78% and 87% respectively), this is an important consideration when assessing whether there has been a genuine change in obesity prevalence between the years.

## Annex 4 - Calculation of prevalence

Prevalence = number of overweight or obese ÷ number of valid records uploaded

The data collection tool calculates the number of overweight/obese children using the following steps for each record:

1. calculate the BMI score:  $BMI = \frac{10,000}{h(cm)^2} \times w(kg)$
2. calculate the BMI z-score:
  - a. look up child age (rounded to the nearest whole month) and sex on the UK National BMI percentiles classification;
  - b. retrieve the corresponding L, M, and S values for use in the following formula (where y is the BMI score):

$$z = \frac{\left(\frac{y}{M}\right)^L - 1}{LS}$$

3. calculate the BMI p-score by converting the above z-score using the standardised normal distribution
4. children with a BMI p-score of  $\leq 0.02$  are flagged as 'underweight', those with a p-score  $\geq 0.85$  and  $< 0.95$  are flagged as 'overweight' and those with a p-score  $\geq 0.95$  are flagged as 'obese'.

Prevalence rates are then calculated by dividing the numbers of children flagged by the number of eligible records uploaded for each school year.



# Annex 5 – Calculation of participation rates

## Calculating participation rates:

The participation rate is the proportion of eligible children who were measured by the PCT. The participation rate is calculated by dividing **the number of pupils measured** by **the number of pupils who were eligible for measurement**.

This year, for the first time, PCTs were given access to a secure NCMP website where they were able to view, following their data upload, their participation rate and the basis upon which it had been calculated. PCTs were able to review their data, make corrections, and re-upload data to the NCMP database, as many times as necessary.

The **number of pupils measured** is the total number of records uploaded by a PCT to the NCMP database *excluding*:

- i. Invalid records (further information on the validation process can be found in annex 7);
- ii. Records from independent and special schools.

*Note: after a PCT had uploaded data they were provided with information on the secure NCMP website detailing the records that would be removed due to being invalid. PCTs were given the opportunity to correct these records and thereby increase their participation rate.*

The **number of pupils eligible for measurement** for each school year is the number of pupils in state-maintained schools, with primary school aged children, excluding pupils with special educational needs.

- i. Estimates of the total number of pupils that were eligible for measurement, based on DCSF data, were initially supplied to PCTs. PCTs were then able to update these figures if they deemed them inaccurate.
- ii. These “eligible” figures were automatically validated, on upload, through comparison to other PCT supplied data: (i) the school-level headcounts and (ii) the number of pupils with special educational needs.
- iii. Based on this comparison, the PCT supplied “eligible” figure was either accepted or rejected by the database<sup>21</sup>. Note: only ten of the 152 PCTs had their supplied “eligible” figures rejected.
- iv. PCTs had the opportunity to review and correct their data, if necessary.

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<sup>21</sup> The report compared **(A)** to **(B) – (C)** for each year, where:

- (A)** is the number of eligible pupils
- (B)** is the state-maintained schools headcount sum
- (C)** is the number of pupils with special educational needs

Since the number of eligible pupils should be the number of pupils in state-maintained schools, excluding pupils with special educational needs, it would be expected that **(A) = (B) – (C)**.

The database carried out the following calculation:

- Where **(A) / ((B) – (C))** is in the range 0.95 to 1.05, **(A)** was **accepted**.
- Where **(A) / ((B) – (C))** is outside the range 0.95 to 1.05, **(A)** was **rejected** and **(B) – (C)** was used instead.

# Annex 6 - Effect of participation rate on prevalence

Since the participation rates for the NCMP in 2006/07 and 2007/08 were not 100%, the datasets used to estimate prevalence are based on samples. The prevalence rates for the sample are assumed to apply to the entire population.

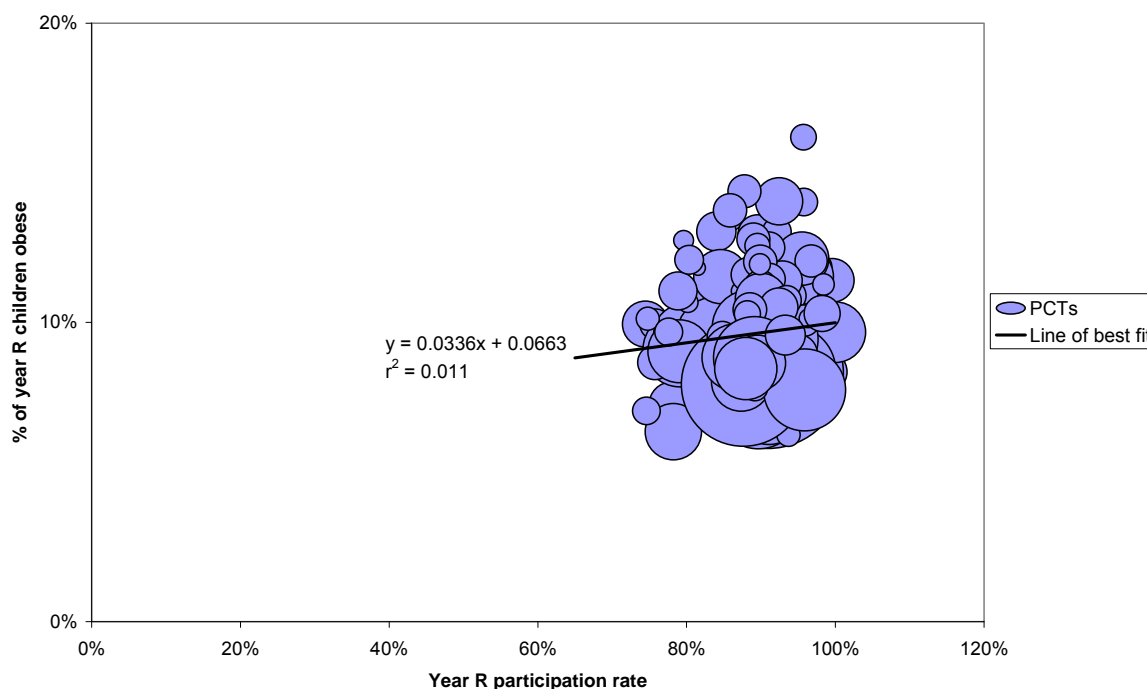
To avoid biased results, a sample must be representative of the entire population from which it was drawn. In the case of the NCMP this means that every child must have an equal chance of being included in the dataset.

If the children who do not get included in the dataset share certain characteristics, such as being more likely to be overweight, then the sample would be biased. Such selective non-participation of overweight or obese children could potentially bias the results.

We do not have a good measure of the degree of selective opt out, but participation may provide a reasonable proxy of this factor. The higher the participation rate, the less chance there is for selective opt out, though this measure is far from perfect.

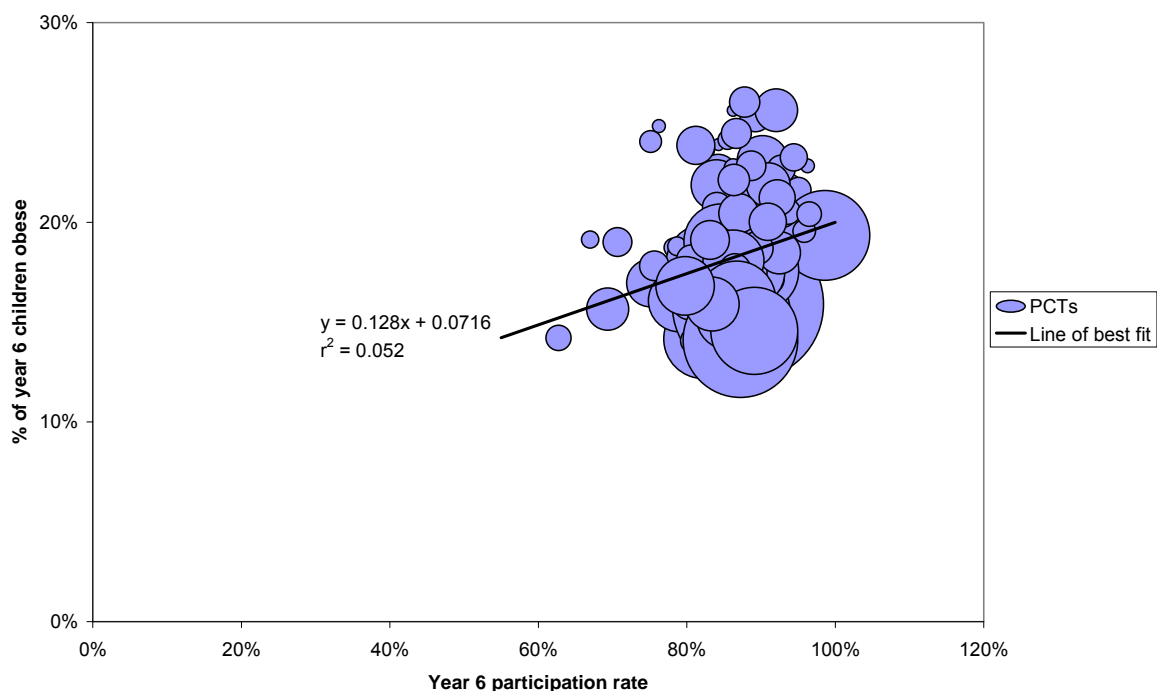
Figures A and B investigate whether there is a relationship between participation rate and obesity prevalence within the 2007/08 results by plotting each PCT's percentage participation rate against their prevalence.

**Figure A: Reception obesity prevalence vs. participation rate, by PCT, England, 2007/08**



Note: PCTs are weighted according to the number of pupils measured in 2007/08

**Figure B: Year 6 obesity prevalence vs. Year 6 participation rate, by PCT, England, 2007/08**



Note: PCTs are weighted according to the number of pupils measured in 2007/08

The points in figures A and B are fairly widely scattered with no apparent pattern to indicate a strong relationship. The closer the points lie to the line of best fit, the stronger the relationship between the two variables. The wide dispersion of the points around these lines indicates that there is not a strong linear relationship between participation rate and prevalence in either year.

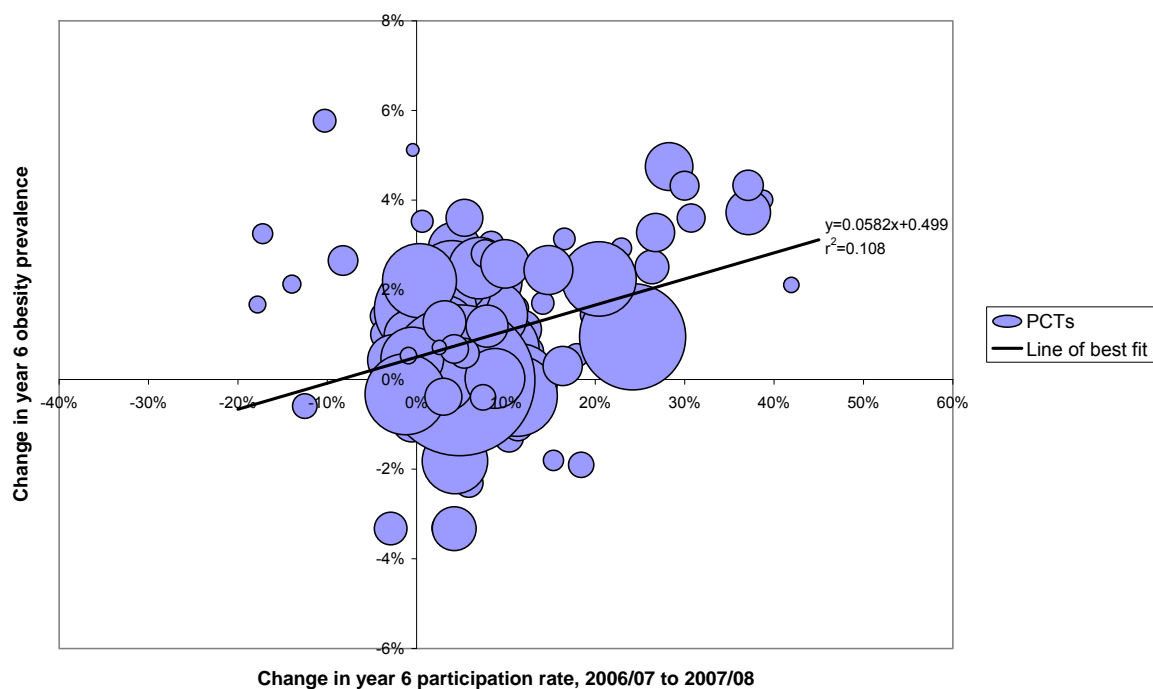
The strength of the relationship can be judged visually by simply looking at the proximity of the points to the line of best. However, the graphs do not display the *relative* distances between points and this can be deceptive. A more accurate way of measuring the strength of a linear relationship between two variables is a numerical measure called the coefficient of determination ( $r^2$ ).  $r^2$  is the fraction of variation in one variable explained by the variation of the other.  $r^2$  is always between 0 and 1, with 1 indicating a perfect linear relationship and 0 indicating no linear relationship.

In figure A the  $r^2$  value is 0.011, meaning that just 1% of the variation in the prevalence rate can be explained by the participation rate for Reception year. As in 2006/07, it can therefore be deduced that there is no substantial association between participation rate and obesity prevalence for Reception children.

In figure B the  $r^2$  value is 0.052. In other words, 5% of the variation in the prevalence rate can be explained by the participation rate for Year 6. This suggests that there is a significant link and that PCTs with low participation rates have low obesity prevalence. This suggests that a slightly disproportionate number of “obese” children in Year 6 could have missed measurement and, therefore, prevalence in Year 6 may be a slight underestimate.

The effect of opt out for Year 6 can be investigated further by looking across the two years of NCMP data and looking at how the change in participation rate affects the change in the obesity.

**Figure C: Year 6 change in obesity prevalence vs. change in participation rate, 2006/07 to 2007/08, by PCT, England**



Note: PCTs are weighted according to the total number of year 6 pupils measured in 2006/07 and 2007/08

The strength of the relationship here is greater than those shown in figures A and B, as indicated by the higher  $r^2$  value of 0.108. The formula for the line of best fit (as shown on the graph) shows that a 10 percentage point increase in Year 6 participation rate between 2006/07 and 2007/08 will, on average, lead to an increase in the Year 6 obesity prevalence estimate of approximately 0.6 percentage points. Around this estimate, there is a confidence interval of +/- 0.3 percentage points.

Given that the Year 6 participation rate was 86.6% in 2007/08, it is likely that the true obesity prevalence in this year was underestimated by  $((100-86.6)/10)*0.6 = 0.8$  percentage points +/- 0.3.

Given that the Year 6 participation rate was 77.9% in 2006/07, it is likely that the true obesity prevalence in this year was underestimated by  $((100-77.9)/10)*0.6 = 1.3$  percentage points +/- 0.3.

The headline Year 6 obesity prevalence estimates presented throughout this report have not been adjusted to take into account this element of underestimation, but the upper confidence limits for Year 6 in figure 5 (year-on-year comparisons) have been adjusted.

There may be other confounding factors which have a greater impact on the prevalence figures, and these are not investigated in this report.

In conclusion, participation rate is shown to have a slight but significant positive association with the estimated prevalence of obese Year 6 children in the 2007/08 NCMP data. For Reception there is no significant association between participation rate and prevalence.

# Annex 7 – Data cleaning

The data that PCTs uploaded to the NCMP database underwent a series of data quality checks before being included in the national dataset. The following document was provided as guidance for PCTs and gives full details of the data quality checks that NCMP 2007/08 data underwent:



department for  
**children, schools and families**

**NHS**

The  
Information  
Centre  
for health and social care

# National Child Measurement Programme: NHS Information Centre validation process for 2007/08 data

July 2008

## Introduction

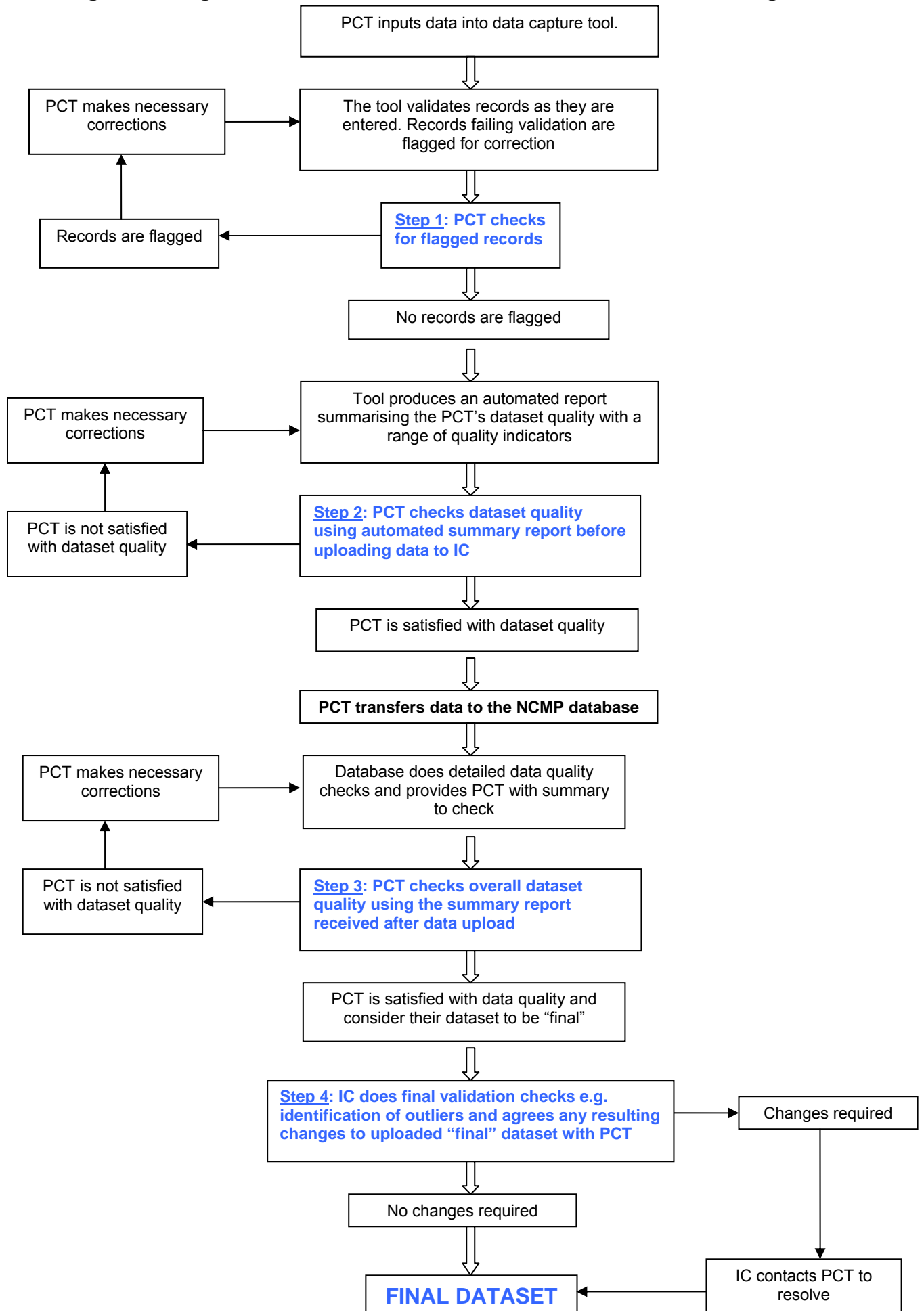
This document provides PCTs with details of the validation process that the NHS Information Centre will use for the 2007/08 NCMP data that PCTs submit to them.

Figure 1 summarises the four validation stages that data will undergo for NCMP 2007/08. Detailed explanations are provided below.

Data validation is needed to ensure that the national dataset is of high quality before any analyses of the dataset are undertaken.

Once data validation is complete, the NHS IC will undertake analysis of the national dataset and produce a national report. The anonymised national dataset will be made available to Public Health Observatories to enable further analysis of the data at regional and local levels.

**Figure 1: Stages of validation that the NCMP 2007/08 data will undergo**





### **Stage 1: PCT checks and amends records flagged in data-capture tool**

The NCMP data-capture tool will check data as records are entered. Records failing these validation checks will be flagged and must be corrected by PCTs before data can be uploaded to the NHS IC. Annex A shows the conditions required for each variable to pass this stage of validation.

### **Stage 2: PCT checks dataset quality using summary report before uploading data**

The tool will produce a report summarising the PCT's dataset enabling the PCT to do quality assurance on the whole dataset before upload. A list of the overall dataset quality indicators is in annex B.

### **Stage 3: PCT checks dataset quality using automated summary report from the NHS IC received after data upload**

A range of detailed checks on dataset quality will be done at the NHS IC each time a PCT uploads data. The PCTs will automatically be provided with this information about their dataset. If the PCT is happy with data quality results shown in the report and considers their dataset to be "final" then no further action is required at this stage. If the PCT is not satisfied with any aspect of the data quality, they can update their data quality and re-upload. Annex C shows the information that will be provided to PCTs in this report following upload.

***Please note that an automated database report will be provided to all PCTs that have uploaded data by mid-August at the latest. PCTs will be emailed a link to a secure website containing the report along with login details.***

### **Stage 4: Final validation at the NHS IC**

Following receipt of a PCT's dataset, several final checks will be done at the NHS IC. The NHS IC will contact PCTs directly about any further validation issues using contact information provided by the PCT in the data-capture tool. **Any necessary changes to a PCT's "final" dataset will be agreed with the PCT.** Annex D shows the checks that will be done.

### **Timing**

PCTs can upload their data at any time throughout the 2007/08 academic year. **The deadline for uploading data to the NHS IC is September 5, 2008.** Data uploaded after this date cannot be included in the final dataset.

We advise PCTs to allow adequate time for data entry and validation. This process can take a number of weeks if done properly and if to allow time for missed records to be entered, and so should not be left to the last minute.

### **Further information**

If you have any queries or need further information about use of the NCMP data-capture tool, please contact the Information Centre on:

**0845 300 6016** (9am to 5pm, Monday to Friday) or on **enquiries@ic.nhs.uk**

## Annex A: Stage 1, Conditions required for each variable to pass stage 1 validation within data-capture tool

Once all records have been entered into the data-capture tool and before data can be saved and uploaded to the NHS IC, users will be prompted to run the tool's validation check to ensure that:

- i. All records are complete, with no missing variables (table).
- ii. Each variable satisfies conditions to pass validation (table).

Any record that fails a validation check will be flagged "Check E" or "Check W".

- "Check E" is an ERROR message and indicates that a variable is missing or has failed a validation check. A "Check E" flag can only be removed from a record by ensuring that all variables are complete AND satisfy the validation conditions.
- "Check W" is a WARNING message and indicates that data is not within an expected range for one or more of the record's variables. A "Check W" flag can be addressed by correcting the variable (if it is incorrect) or by providing a comment in column P (if the variable is outside expected range but is actually correct). Note: this will not remove the "Check W" but will allow the record to be transferred.
- The reason(s) for a record failing validation will be displayed to the right of the data (columns Q-Z).

Variable	Validation conditions	Flag type and reason	How to correct
Records flagged as "check E" will prevent data being uploaded to IC Records flagged as "check W" will need to be corrected or commented on before upload			
URN (DCSF school unique reference number)	Valid URN	<b>Check E:</b> blank or URN is not on list of eligible schools (all state maintained primary and middle schools open during 2007/08 academic year)	Add a valid URN or, if school is not on eligible school list, add school via "add school" function
Date of birth (DOB)	Age within range 48–83 months or 120–143 months (both inclusive)	<b>Check E:</b> blank or age is outside range.	Correct DOB or remove ineligible children
Sex	Valid responses: M; m; male; F; f; female	<b>Check E:</b> blank or invalid response	Correct response for sex
Date of measurement (DOM)	Within date range 01-09-07 to 31-08-08	<b>Check E:</b> blank or DOM is outside range.	Correct DOM or remove ineligible children
Height/weight/BMI	Measurement to have a z-score of between -3 and 4 <sup>22</sup>	<b>Check E:</b> blank. <b>Check W:</b> height/weight/BMI is outside the expected range.	If measurement is a valid "extreme" record can be uploaded if a comment is provided. <i>Please carefully check measurement is correct before</i>

<sup>22</sup> See annex E for further information on z-scores

			<i>providing a comment.</i>
Ethnicity	Valid ethnic code (either single character NHS codes or four character DCSF extended codes) <sup>23</sup>	<b>Check E:</b> blank or invalid code	Add a valid ethnic code or, if one is not available, choose “n/a” from the dropdown options
Child postcode	Postcode in valid format	<b>Check W:</b> blank. Records without child postcodes can be uploaded by providing a comment. Please note that child postcode is a mandatory variable for NCMP 2007/08 and PCTs should aim for as much coverage as possible. PCTs <b>must not</b> provide school postcode if child postcode is unavailable. <b>Check E:</b> postcode provided but in invalid format	Valid formats (A=letter, N=number): <ul style="list-style-type: none"> <li>• AN NAA</li> <li>• ANN NAA</li> <li>• AAN NAA</li> <li>• ANA NAA</li> <li>• AANN NAA</li> <li>• AANA NAA</li> <li>• AN NAA</li> <li>• AANNNAA</li> <li>• AANANAA</li> </ul>

<sup>23</sup> see annex F for a full list of the DCFS codes and annex G for a list of the NHS codes

## Annex B: Stage 2, Dataset validation using the data-capture tool

After the validation report has been run, and flagged records have been corrected or commented on, the PCT must run a summary report. This report provides several indicators about the quality of the PCT's dataset. It will not be possible to upload data without first running the summary report.

The table below lists the PCT summary report indicators and describes where PCTs should investigate data quality. The valid ranges are based on the typical ranges in the 2006/07 NCMP data.

### If the PCT's ratios are outside the valid ranges, PCTs should do further checking of the data

Data quality indicator	Valid range
Ratio of Reception to Year 6 children	Ratio of Reception to Year 6 children of between 0.8:1 and 1.2:1
Ratio of boys to girls, by year	Ratio of boys to girls of between 0.9:1 and 1.1:1
Percentage of "extreme" heights/weights/BMIs <i>Note: the tool will produce a list of records with "extreme" heights/weights/BMI for checking</i>	Percentage of "extreme" heights/weights/BMIs is less than 1.0%
Percentage of children in each NCMP ethnic category <sup>24</sup>	Please check the ethnic mix of your PCT is within expected ranges <sup>25</sup>
Percentage of blank child postcodes	Child postcode is a mandatory variable for NCMP 2007/08. <b>PCTs should aim for as much coverage as possible</b>
Percentage of records sharing identical child and school postcodes	<b>PCTs must not provide school postcode if child postcode is unavailable</b>
Percentage of duplicates <i>Note: the tool will produce a list of duplicate records for checking and removal if appropriate</i>	Records are defined as duplicates by the following methodology: 1. If child name has been provided: records sharing the same URN, first name, surname, sex and DOB 2. If child name has <b>not</b> been provided: records sharing the same URN, DOB, sex, DOM, height and weight
Percentage of rounded/truncated measurements, by year: <ul style="list-style-type: none"> <li>• percentage of whole number heights (e.g. 119.0cm, 178.0cm, etc)</li> <li>• percentage of whole number weights (25.0kg, 46.0kg, etc)</li> <li>• percentage of half number weights (34.5kg, 67.5kg, etc)</li> </ul>	<b>Measurement data should be provided to one decimal place. Please investigate if:</b> <ol style="list-style-type: none"> <li>1. the percentage of whole number heights is more than 15%</li> <li>2. the percentage of whole number weights is more than 15%</li> <li>3. the percentage of half number weights is more than 15%</li> </ol>

<sup>24</sup> NHS and DCSF codes will be mapped to NCMP ethnic category. Annex H gives details on the mapping from NHS/DCSF code to NCMP ethnic category

<sup>25</sup> Please refer to table EE2 in ONS publication: "Population estimates by ethnic group, 2005 (experimental)" (<http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=14238>). This provides estimated resident population by ethnic group, age and sex split into LA upper and lower tier and GORs.

List of schools within PCT's boundary where no measurements were provided	<b>Please check that all collected data has been entered into the data-capture tool</b>
List of schools where the school headcount in a year is less than the number of measurements taken in that year.	School year headcount should always be more than or equal to the number of measurements taken in that year <i>i.e. the participation rate for each school, in each year, should not exceed 100%. Please return to the school list and check headcounts for all listed schools</i>
<p><u>Number of eligible pupils</u> For each year, the tool will check that <b>(B) = (A) + (C)</b></p> <p>Where: <b>(A)</b> is the number of children that the PCT has claimed are eligible for measurement. <i>This is provided by the PCT in the supplementary information sheet of the tool and is the number of pupils, without special educational needs (SEN), attending eligible primary and middle schools within the PCT boundary. <b>The PCT should exclude children attending independent or special schools from this figure as well as special school pupils who are educated in maintained, non-special, schools.</b></i></p> <p><b>(B)</b> is the sum of the school-level headcounts. <i>This is the sum of the figures provided by the PCT in the school list sheet. <b>This automated sum will include headcounts from any independent, special and private schools that the PCT has added</b></i></p> <p><b>(C)</b> is the number of pupils included in the school headcounts who were not eligible for measurement. <i>This is provided by the PCT in the supplementary information sheet of the tool and gives the number of children, in the PCT's edited schools list who were not <b>eligible</b> for measurement.</i> <i>Note: the only valid reason for a child being counted in the school headcount, but not being eligible for measurement, is that the child has special educational needs and is unable to be weighed or measured or pupils in independent or special schools that have been added to the schools list.</i></p>	<p>Where <b>(B) ≠ (A) + (C)</b></p> <p>PCTs will be required to either:</p> <ol style="list-style-type: none"> <li>1. correct <b>(A)</b>, <b>(B)</b> or <b>(C)</b>;</li> <li>2. provide an explanation. <i>Note: the only likely valid explanation is that there are special or independent school headcounts in <b>(B)</b> but these children have been correctly excluded from <b>(A)</b>.</i></li> </ol>

### **Annex C: Stage 3: Automated feed back summary report from the NHS IC after upload**

After a PCT has uploaded data to the NHS IC, an email will be sent to the two contacts that the PCT entered into the tool (the person responsible for data entry and the person responsible for NCMP at the PCT).

The email will provide a link to a secure site where the PCT can access information on their uploaded data to allow them to check and confirm "final" figures. The feed back will be provided in two parts: school list verification and a data quality report.

**If necessary, a PCT can make further changes in view of the automatic feed back before re-uploading their dataset to the NHS IC. There is no limit to the number of times that a PCT can upload data. However, once a PCT has confirmed that their dataset is "final" on the website, they will be blocked from uploading any more.**

**This block can be removed by contacting the NHS IC.**

**The deadline for uploading data to the NHS IC is September 5, 2008.**

*Please note that an automated database report will be provided to all PCTs that have uploaded data by mid-August at the latest. PCTs will be emailed a link to a secure website containing the report along with login details.*

#### School list verification

**This will enable PCTs to confirm the number of children eligible for measurement:**

- **This is defined as: the number pupils in state-maintained schools, with primary school aged children, excluding pupils with special educational needs.**
- **This figure will be used as the *denominator* in participation rates for the Healthcare Commission's indicator on data-quality.**

The PCT will have to complete school list verification before they can access the data quality report. Here the PCT will be asked to:

1. Check and confirm school headcount figures they uploaded.
2. If the PCT has removed any schools from the list: provide a reason (e.g. school is closed or covered by another PCT).
3. If the PCT has added or assigned any schools: select "state-maintained" if applicable. This will ensure that any new state-maintained schools not on the school-list are included in the calculation of participation rates.
4. Adjust headcounts for schools with more than 100% response rate.

Once the PCT has verified the school-list they will be able to access the data quality report.

#### Data quality report

**This will enable PCTs to confirm the number of measured children:**

- **This is the number of measurements received from state-maintained schools, with primary school aged children, excluding pupils with special educational needs.**
- **This figure will be used as the *numerator* in participation rates for the Healthcare Commission's indicator on data-quality.**

The following summary information will be provided:

1. Total number of records uploaded (by year and sex).
2. Number of records with out of range heights/weights/BMI, which will be removed (by year and sex). Note: all records with a z-score of more than 7 or less than -7 will be

removed. The report will produce a list of record numbers to enable the PCT to check these records within their tool and make corrections.

3. Number of records from independent and private school or SEN pupils<sup>26</sup> that will be excluded from the final prevalence and participation rate calculations.

4. Total number of valid records by year and sex: derived by subtracting 2 and 3 from 1.

5. Total number of children eligible for measurement, by year, after validation via comparison to school list (see annex B).

6. Participation rate by year: derived by dividing the year total for 4 by the year total for 5.

7. Ratio of boys to girls measured, by year: derived by dividing the boy year total for 4 by the girl year total for 4. *This information is provided to enable the PCT to check the data quality of the sex variable. If the ratio of boys to girls is less than 0.9:1 or greater than 1.1:1, the PCT should seek to identify any valid reasons for a substantial difference between the number of boys and girls measured.*

8. Ratio of Reception to Year 6 children measured: derived by dividing the Reception total for 4 by the Year 6 total for 4. *This information is provided to enable the PCT to check the data quality of DOB variable. When the ratio of Reception to Year 6 is less than 0.8:1 or greater than 1.2:1, the PCT should check that there are valid reasons for the difference between the numbers of children measured in each year and that this has not arisen due to data quality issues such as dates of birth entered incorrectly.*

9. Total number of blank child postcodes.

10. Percentage of blank child postcodes: derived by dividing 9 by the total for 4.

11. Number of records with whole number heights, by year.

12. Percentage of whole number heights, by year: derived by dividing year total for 11 by the year total for 4. Note: this would be expected to be around 10%.

13. Number of records with whole number weights, by year.

14. Percentage of whole number weights, by year: derived by dividing the year total for 13 by the year total for 4. Note: this would be expected to be around 10%.

15. Number of records with half number weights, by year.

16. Percentage of half number weights, by year: derived by dividing the year total for 15 by the year total for 4. Note: this would be expected to be around 10%.

17. Percentage of records sharing identical child and school postcodes.

18. Number of records with “extreme” child home to school distance. Note: this is the distance between the central point of the child LSOA and the school postcode. Extreme is defined as being 30km or more.

19. Percentage of records with “extreme” child home to school distance: derived by dividing 15 by the total for 4.

20. A list of schools within the PCT’s boundary for which no data have been returned.

21. A list of schools that the PCT has reassigned from another PCT along with the name of the original PCT (i.e. the school is in one PCT’s postcode boundary but has had data uploaded for it from another PCT).

and is satisfied with data quality, they can confirm that they consider their uploaded dataset to be “final” via a button on the website.

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<sup>26</sup> Although there is no requirement for PCTs to measure children at independent schools such measurement is encouraged where it is possible, and data on such children can be included in the data submission to the NHS Information Centre. These records will be excluded from the prevalence and participation rate calculations in the national report but will be provided back to PCTs as part of their final cleaned dataset to allow local level analyses.

## **Annex D: Stage 4: Final validation at the NHS IC**

Once a PCT has checked the automated report and confirmed that they consider the data uploaded to be their “final” dataset, a few more detailed checks will be done at the NHS IC. The NHS IC will contact PCTs directly about any further validation issues. The NHS IC will use contact details provided in the data-capture tool to contact PCTs, and as such, it is important that PCTs ensure these are entered accurately and that the details provided are for a permanent member of staff. **Any necessary changes to a PCT’s “final” dataset will be agreed with the PCT.**

The following checks will be done at the NHS IC:

1. Check for any extreme values not identified by the z-score check.
2. Check quality of child postcode variable:
  - “extreme” child to school distances;
  - percentage of records with identical child and school postcodes.
3. Check if any schools have been uploaded by more than one PCT.
4. Check that any schools that PCTs have removed from their school list have been assigned by another PCT. In cases where this has not happened, the school will be reassigned back to the original PCT and participation rates adjusted accordingly.

**If necessary, PCTs can make further changes to their data in view of these final checks and re-upload their data to the NHS IC. The deadline for uploading data to the NHS IC is September 5, 2008. Data uploaded on September 5 will be checked after this date. Any issues with data quality will be reported to PCTs and a week will be allowed to make any necessary amendments and re-upload.**



## Annex E: Calculation of extreme values

Since children's height and weight are dependent on age and sex, height and weight measurements must be standardised to take these factors into account. The standardised value is called a z-score and indicates how far, and in what direction, the measurement deviates from the average (mean) for that age and sex. The following formula is used to standardise height, weight and BMI:

For every measurement, age (in months) and sex, there exists a "growth curve". This provides values of L, M and S to allow the measurement z-score to be calculated:

$$z = \frac{\left(\frac{y}{M}\right)^L - 1}{LS}$$

where:

y = Measurement

L = Coefficient of skewness

M = Average (median) BMI for that age and sex

S = Coefficient of variation

This is called the "Cole's LMS Method"<sup>27</sup>.

High and low z-scores (i.e. measurements that are significantly higher or lower than the mean) are less likely to occur and indicate extreme values. The data-capture tool will flag as "extremes" all records with a height, weight or BMI z-score of less than -3 and more than 4. Measurements outside this range could be valid but should be checked, since they are unlikely to occur. The final national dataset has less than 0.5% of records with height, weight or BMI z-scores outside the range -3 to 4.

**Please note that records with height, weight or BMI z-scores higher than 7 or lower and -7 will be removed from a PCT's dataset. For NCMP 2006/07, out of the 878,000 records submitted by PCTs, 278 records were removed because the height z-scores were outside the -7 to 7 range. The corresponding figures for weight and BMI were 157 and 438 respectively.**

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<sup>27</sup> Growth monitoring with the British 1990 growth reference. Cole *Arch Dis Child*.1997; **76**: 47–49.

## Annex F: Four-character DCSF ethnicity codes

DfES Extended Codes	Approved Extended Categories	DfES Main Code	Sub- Category	Main Category	Further Comments
WBRI	White - British	WBRI	White - British	White	Main code (WBRI) may not be used if any of the extended categories below (WCOR-WWEL) are used.
WCOR	White - Cornish	WBRI	White - British	White	
WENG	White - English	WBRI	White - British	White	
WSCO	White - Scottish	WBRI	White - British	White	
WWEL	White - Welsh	WBRI	White - British	White	
WOWB	Other White British	WBRI	White - British	White	If LAs collect information for "White - British" pupils using any of the extended categories above (WCOR-WWEL), this category must be used as a catch all for all other White pupils within the main "White - British" category. If used, cannot have category "White - British" (WBRI).
WIRI	White - Irish	WIRI	White - Irish	White	
WIRT	Traveller of Irish Heritage	WIRT	Traveller of Irish Heritage	White	
WOTH	Any Other White Background	WOTH	Any Other White Background	White	Main code (WOTH) may not be used if any of the extended categories below (WALB-WWEU) are used.
WALB	Albanian	WOTH	Any Other White Background	White	Excluding Kosovan.
WBOS	Bosnian-Herzegovinian	WOTH	Any Other White Background	White	
WCRO	Croatian	WOTH	Any Other White Background	White	
WGRE	Greek/ Greek Cypriot	WOTH	Any Other White Background	White	If LAs do not wish to distinguish between pupils of Greek and Greek Cypriot heritage they may place all Greek/ Greek Cypriot in this category. If used, cannot have categories "Greek" (WGRK) or "Greek Cypriot" (WGRC).
WGRK	Greek	WOTH	Any Other White Background	White	If used, cannot have category "Greek/ Greek Cypriot" (WGRE). If used, must also have category "Greek Cypriot" (WGRC).
WGRC	Greek Cypriot	WOTH	Any Other White Background	White	If used, cannot have category "Greek/ Greek Cypriot" (WGRE). If used, must also have category "Greek" (WGRK).
WITA	Italian	WOTH	Any Other White Background	White	
WKOS	Kosovan	WOTH	Any Other White Background	White	
WPOR	Portuguese	WOTH	Any Other White Background	White	
WSER	Serbian	WOTH	Any Other White Background	White	
WTUR	Turkish/ Turkish Cypriot	WOTH	Any Other White Background	White	If LAs do not wish to distinguish between pupils of Turkish and Turkish Cypriot heritage they may place all Turkish/ Turkish Cypriot in this category. If used, cannot have categories "Turkish" (WTUK) or "Turkish Cypriot" (WTUC).
WTUK	Turkish	WOTH	Any Other White Background	White	If used, cannot have category "Turkish/ Turkish Cypriot" (WTUR). If used, must also have category "Turkish Cypriot" (WTUC).
WTUC	Turkish Cypriot	WOTH	Any Other White Background	White	If used, cannot have category "Turkish/ Turkish Cypriot" (WTUR). If used, must also have category "Turkish" (WTUK).
WEUR	White European	WOTH	Any Other White Background	White	If LAs do not collect information on White European pupils on the basis of country of origin or East/ West European, they may place all White European pupils here.
WEEU	White Eastern European	WOTH	Any Other White Background	White	Including Russian, Latvian, Ukrainian, Polish, Bulgarian, Czech, Slovak, Lithuanian, Montenegrin and Romanian.
WWEU	White Western European	WOTH	Any Other White Background	White	Including Italian, French, German, Spanish, Portuguese and Scandinavian.
WOTW	White Other	WOTH	Any Other White Background	White	If LAs collect information for "Any Other White Background" pupils using any of the extended categories above (WALB-WWEU), this category must be used as a catch all for all other White pupils within the main "Any Other White Background" category. If used, cannot have category "Any Other White Background" (WOTH).
WROM	Gypsy / Roma	WROM	Gypsy / Roma	White	This category includes pupils who identify themselves as Gypsies and or Romanies, and or Travellers, and or Traditional Travellers, and or Romanichals, and or Romanichal Gypsies and or Welsh Gypsies / Kaale, and or Scottish Travellers / Gypsies, and or Roma. It includes all children of a Gypsy ethnic background or Roma ethnic background, irrespective of whether they are nomadic, semi nomadic or living in static accommodation. It should not include Fairground (Showman's) children, the children travelling with circuses; or the children of New Travellers or Barges unless, of course, their ethnic status is that which is mentioned above.
MWBC	White and Black Caribbean	MWBC	White and Black Caribbean	Mixed / Dual Background	
MWBA	White and Black African	MWBA	White and Black African	Mixed / Dual Background	
MWAS	White and Asian	MWAS	White and Asian	Mixed / Dual Background	Main code (MWAS) may not be used if any of the extended categories below (MWAP-MWAI) are used.
MWAP	White and Pakistani	MWAS	White and Asian	Mixed / Dual Background	
MWAI	White and Indian	MWAS	White and Asian	Mixed / Dual Background	
MWAO	White and Any Other Asian Background	MWAS	White and Asian	Mixed / Dual Background	If LAs collect information for "White and Asian" pupils using any of the extended categories above (MWAP-MWAI), this category must be used as a catch all for all other Mixed/Dual Background pupils within the main "White and Asian" category. If used, cannot have category "White and Asian" (MWAS).
MOTH	Any Other Mixed Background	MOTH	Any Other Mixed Background	Mixed / Dual Background	Main code (MOTH) may not be used if any of the extended categories below (MAOE-MWCH) are used.
MAOE	Asian and Any Other Ethnic Group	MOTH	Any Other Mixed Background	Mixed / Dual Background	
MABL	Asian and Black	MOTH	Any Other Mixed Background	Mixed / Dual Background	
MACH	Asian and Chinese	MOTH	Any Other Mixed Background	Mixed / Dual Background	
MBOE	Black and Any Other Ethnic Group	MOTH	Any Other Mixed Background	Mixed / Dual Background	
MBCH	Black and Chinese	MOTH	Any Other Mixed Background	Mixed / Dual Background	
MCOE	Chinese and Any Other Ethnic Group	MOTH	Any Other Mixed Background	Mixed / Dual Background	
MWOE	White and Any Other Ethnic Group	MOTH	Any Other Mixed Background	Mixed / Dual Background	
MWCH	White and Chinese	MOTH	Any Other Mixed Background	Mixed / Dual Background	
MOTM	Other Mixed Background	MOTH	Any Other Mixed Background	Mixed / Dual Background	If LAs collect information for "Any Other Mixed Background" pupils using any of the extended categories above (MAOE-MWCH), this category must be used as a catch all for all other Mixed/Dual Background pupils within the main "Any Other Mixed Background" category. If used, cannot have category "Any Other Mixed Background" (MOTH).
AIND	Indian	AIND	Indian	Asian or Asian British	
APKN	Pakistani	APKN	Pakistani	Asian or Asian British	Main code (APKN) may not be used if any of the extended categories below (AMPK-AKPA) are used.
AMPK	Mirpuri Pakistani	APKN	Pakistani	Asian or Asian British	
AKPA	Kashmiri Pakistani	APKN	Pakistani	Asian or Asian British	
AOPK	Other Pakistani	APKN	Pakistani	Asian or Asian British	If LAs collect information for "Pakistani" pupils using any of the extended categories above (AMPK-AKPA), this category must be used as a catch all for all other Pakistani pupils within the main "Pakistani" category. If used, cannot have category "Pakistani" (APKN).
ABAN	Bangladeshi	ABAN	Bangladeshi	Asian or Asian British	

<b>AOTH</b>	<b>Any Other Asian Background</b>	<b>AOTH</b>	<b>Any Other Asian Background</b>	<b>Asian or Asian British</b>	<b>Main code (AOTH) may not be used if any of the extended categories below (AAFR-ASRO) are used.</b>
AAFR	African Asian	AOTH	Any Other Asian Background	Asian or Asian British	Including East and South African Asians.
AKAO	Kashmiri Other	AOTH	Any Other Asian Background	Asian or Asian British	Kashmiri respondents not wishing to be classified under Asian Pakistani should use this category.
ANEP	Nepali	AOTH	Any Other Asian Background	Asian or Asian British	
ASNL	Sri Lankan Sinhalese	AOTH	Any Other Asian Background	Asian or Asian British	All other Sinhalese pupils should be placed wherever appropriate in the categories above. If used MUST also have categories 'Sri Lankan Tamil' (ASLT) and 'Sri Lankan Other' (ASRO).
ASLT	Sri Lankan Tamil	AOTH	Any Other Asian Background	Asian or Asian British	All other Tamil pupils should be placed wherever appropriate in the categories above. If used MUST also have categories 'Sri Lankan Sinhalese' (ASNL) and 'Sri Lankan Other' (ASRO).
ASRO	Sri Lankan Other	AOTH	Any Other Asian Background	Asian or Asian British	If used MUST also have categories 'Sri Lankan Sinhalese' (ASNL) and 'Sri Lankan Tamil' (ASLT).
AOTA	Other Asian	AOTH	Any Other Asian Background	Asian or Asian British	If LAs collect information for "Any Other Asian Background" pupils using any of the extended categories above (AAFR-ASRO), this category must be used as a catch all for all other Asian pupils within the main "Any Other Asian Background" category. If used, cannot have category "Any Other Asian Background" (AOTH).
<b>BCRB</b>	<b>Black Caribbean</b>	<b>BCRB</b>	<b>Black Caribbean</b>	<b>Black or Black British</b>	<b>Including Antigua and Barbuda, Bahamas, Barbados, Dominica, Grenada, Guyana, Jamaica, St Kitts and Nevis, St Lucia, St Vincent &amp; Grenadines, Trinidad and Tobago.</b>
<b>BAFR</b>	<b>Black - African</b>	<b>BAFR</b>	<b>Black - African</b>	<b>Black or Black British</b>	<b>Main code (BAFR) may not be used if any of the extended categories below (BANN-BSUD) are used.</b>
BANN	Black - Angolan	BAFR	Black - African	Black or Black British	
BCON	Black - Congolese	BAFR	Black - African	Black or Black British	
BGHA	Black - Ghanaian	BAFR	Black - African	Black or Black British	
BNGN	Black - Nigerian	BAFR	Black - African	Black or Black British	
BSLN	Black - Sierra Leonean	BAFR	Black - African	Black or Black British	
BSOM	Black - Somali	BAFR	Black - African	Black or Black British	
BSUD	Black - Sudanese	BAFR	Black - African	Black or Black British	Including Sudanese of Egyptian origin.
BAOF	Other Black African	BAFR	Black - African	Black or Black British	Including Black South African, Zimbabwean, Ethiopian, Rwandan and Ugandan. If LAs collect information for "Black - African" pupils using any of the extended categories above (BANN-BSUD), this category must be used as a catch all for all other Black African pupils within the main "Black - African" category. If used, cannot have category "Black - African" (BAFR).
<b>BOTH</b>	<b>Any Other Black Background</b>	<b>BOTH</b>	<b>Any Other Black Background</b>	<b>Black or Black British</b>	<b>Main code (BOTH) may not be used if any of the extended categories below (BEUR-BNAM) are used.</b>
BEUR	Black European	BOTH	Any Other Black Background	Black or Black British	
BNAM	Black North American	BOTH	Any Other Black Background	Black or Black British	Include Black North American and Canadian.
BOTB	Other Black	BOTH	Any Other Black Background	Black or Black British	If LAs collect information for "Any Other Black Background" pupils using any of the extended categories above (BEUR-BNAM), this category must be used as a catch all for all other Black pupils within the main "Any Other Black Background" category. If used, cannot have category "Any Other Black Background" (BOTH).
<b>CHNE</b>	<b>Chinese</b>	<b>CHNE</b>	<b>Chinese</b>	<b>Chinese</b>	<b>Main code (CHNE) may not be used if any of the extended categories below (CHKC-CTWN) are used.</b>
CHKC	Hong Kong Chinese	CHNE	Chinese	Chinese	
CMAL	Malaysian Chinese	CHNE	Chinese	Chinese	
CSNG	Singaporean Chinese	CHNE	Chinese	Chinese	
CTWN	Taiwanese	CHNE	Chinese	Chinese	
COCH	Other Chinese	CHNE	Chinese	Chinese	If LAs collect information for "Chinese" pupils using any of the extended categories above (CHKC-CTWN), this category must be used as a catch all for all other Chinese pupils within the main "Chinese" category. If used, cannot have category "Chinese" (CHNE).
<b>OOTH</b>	<b>Any Other Ethnic Group</b>	<b>OOTH</b>	<b>Any Other Ethnic Group</b>	<b>Any Other Ethnic Group</b>	<b>Main code (OOTH) may not be used if any of the extended categories below (OAFG-OYEM) are used.</b>
OAFG	Afghan	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OARA	Arab Other	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	Include Palestinian, Kuwaiti, Jordanian and Saudi Arabian.
OEGY	Egyptian	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OFIL	Filipino	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OIRN	Iranian	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OIRQ	Iraqi	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OJPN	Japanese	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OKOR	Korean	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OKRD	Kurdish	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	Include Kurdish pupils from Iraq, Iran and Turkey.
OLAM	Latin/ South/ Central American	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	Include all pupils from Central/ South America, Cuba and Belize.
OLEB	Lebanese	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OLIB	Libyan	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OMAL	Malay	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	Including Malaysian other than Malaysian Chinese.
OMRC	Moroccan	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OPOL	Polynesian	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	Including Fijian, Tongan, Samoan and Tahitian.
OTHA	Thai	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OVIE	Vietnamese	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OYEM	Yemeni	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OOEG	Other Ethnic Group	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	If LAs collect information for "Any Other Ethnic Group" pupils using any of the extended categories above (OAFG-OYEM), this category must be used as a catch all for all other pupils within the main "Any Other Ethnic Group" category. If used, cannot have category "Any Other Ethnic Group" (OOTH).
<b>REFU</b>	<b>Refused</b>	<b>REFU</b>	<b>Refused</b>	<b>Refused</b>	
<b>NOBT</b>	<b>Information Not Yet Obtained</b>	<b>NOBT</b>	<b>Information Not Yet Obtained</b>	<b>Information Not Yet Obtained</b>	

## Annex G: Single-character NHS codes

White	
A	British
B	Irish
C	Any other White background
Mixed	
D	White and Black Caribbean
E	White and Black African
F	White and Asian
G	Any other mixed background
Asian or Asian British	
H	Indian
J	Pakistani
K	Bangladeshi
L	Any other Asian background
Black or Black British	
M	Caribbean
N	African
P	Any other Black background
Other Ethnic Groups	
R	Chinese
S	Any other ethnic group
Z	Not stated

## **Annex H: Mapping of NHS and DCSF ethnic codes to NCMP ethnic category**

The 17 NHS codes (annex G) map directly to the 17 NCMP categories. The 99 DCSF extended codes are linked to 20 DCSF sub-categories. To map these 20 sub-categories to the NCMP categories the following have been combined:

- sub-category “Traveller of Irish Heritage” has been combined with “White Irish”;
- “Gypsy/Roma” has been combined with “Any Other White Background”;
- “Refused” has been combined with “Not Stated”.

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