

Data quality statement

National Child Measurement Programme: England, 2011/12 school year

Established in 2005/06, the National Child Measurement Programme (NCMP) for England¹ records height and weight measurements of children in Reception (typically aged 4–5 years) and Year 6 (typically aged 10–11 years) and enables detailed analysis of prevalence and trends in child underweight, healthy weight, overweight and obesity levels. The programme now holds six years of reliable data and the national report holds UK National Statistics status. The data are key to improving understanding of overweight and obesity in children. They are used at a national level to inform policy and locally to inform the planning and commissioning of services. The NCMP also provides local areas with an opportunity to raise public awareness of child obesity and to assist families to make healthy lifestyle changes through provision of a child's result to their parents.

Data Collection and Burden

Primary Care Trusts (PCTs) send letters to parents of children eligible to participate in the NCMP prior to measurements being taken. This letter sets out the purposes for which the data will be held and used. This programme operates on an "opt out" basis.

The measurement process is overseen by trained healthcare professionals in schools and not shared with school staff or pupils. More detail on collection methods is available from the latest guidance document titled 'The National Child Measurement Programme Guidance for PCTs: 2011/12 school year' available at:

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_129001

Data are provided annually by Primary Care Trusts (PCTs) and published by the Health and Social Care Information Centre (HSCIC). Most PCTs also choose to feed back measurements to parents by generating a letter using the HSCIC's 'Parental Feedback Tool', and are encouraged to do so within six weeks of the measurements being taken.

Timeliness

This report is published annually. The collection period is the academic year, which runs from September to August. The measurements can take place at any point during the collection period, and date of measurement is recorded. The data are validated with queries being resolved with PCTs where appropriate. The NCMP report relating to each academic year is scheduled for publication in December.

¹ See http://www.dh.gov.uk/en/Publichealth/Obesity/DH_100123 for more information about the National Child Measurement Programme, including guidance and resources for undertaking the exercise

Accuracy

The accuracy and completeness of the dataset underpinning the analysis in the report is ensured by following a rigorous validation procedure which is outlined at <http://www.ic.nhs.uk/ncmp/validation>

Subsequent accuracy checks are also carried out to ensure that the analysis carried out using the dataset has been performed correctly. These checks include:

- Comparisons with data from the previous year
- Carrying out tests to identify unreliable source data, e.g. systematic error (Year 6 height measurements in Luton PCT (5GC) were excluded from the analysis for 2009/10 on this basis, even though they were not considered 'out of range')
- Ensuring the extract queries are fit for purpose
- Exploring possible bias in the data and considering what, if any, adjustments are necessary (e.g. the link between obesity prevalence and participation rate)
- Ensuring significance testing methodologies are fit for purpose and statistically robust.
- Manually checking a sample of calculations that are part of the automated system (e.g. the BMI z-score and BMI p-score values which are calculated from the child's age, gender, height and weight are checked using the British 1990 growth reference)
- Cross referencing key data between tables to ensure a match
- Dual running key calculations using two analysts

In recognition of the effect of natural year to year variation, confidence intervals are included around the percentages in the tables and charts in this report where possible and should be considered when interpreting results. A confidence interval gives an indication of the sampling error around the estimate calculated and takes into consideration the sample sizes and the degree of variation in the data. They are used to determine whether any differences in prevalence figures are likely to be real or due to sampling variation.

As the sample sizes and participation rates for NCMP are large (1,056,780 records and 93% participation in 2011/12) the 95% confidence intervals for prevalence estimates at national level are very narrow (indicating a small margin of potential error). The comparisons that feature in this report have all been tested at a 95% significance level and have been determined to be statistically significant. Further details are provided in Annex 2.

Annex 1 of the 2011/12 NCMP report contains a 'Data Quality Report' which is based on five key indicators relating to data quality. These include indicators around coverage, completeness and accuracy of data entry. The performance of each PCT is colour coded as red, amber or green depending on which of the defined ranges it falls into for that indicator. This publication of this information is intended to provide an incentive for PCTs to take active steps to improve data quality. Since 2006/07, there have been considerable improvements in data quality. For example, in 2011/12 85% of records included a valid ethnic code compared to 32% in 2006/07.

Issue with Leicester Height Measuring Equipment

During 2012, it was discovered that there was a potential issue with the Leicester Height Measure height measurement equipment used as part of NCMP in that mixing old-model (pre 2004) and new-model (post 2004) components – the vertical column and base, and the horizontal measuring arm – of the Leicester Height Measure results in inaccurate readings up to 2.9 cm higher or lower than the individual's true height.

An audit of all PCTs discovered that 7 organisations had potentially or definitely used the Leicester Height Measure with old and new components mixed. The affected organisations were:

5NM Halton & St. Helens PCT
5NV North Yorkshire & York PCT
5H8 Rotherham PCT
5P2 Bedfordshire PCT
5QD Buckinghamshire PCT
5FL Bath & North East Somerset PCT
5NA Redbridge PCT

Three organisations (5NV, 5H8 and 5FL) were able to identify which records were affected by this issue and the HSCIC were able to amend these records prior to analysis. The remaining organisations whilst identifying that there was a potential problem were unable to identify which records had been affected. This needs to be considered when interpreting local level data.

Further data quality issues for 2011/12

5J2 Warrington PCT identified that one school (URN 11304) was incorrectly reporting all the pupils as girls. This was discovered too late in the process for any amendment to the data to be applied. As the growth curves are gender specific, this may also have an effect on the BMI scores calculated, and therefore prevalence. At a PCT level this is considered to have a negligible effect, but caution would need to be applied to any school level analyses.

5A9 Barnet PCT had an issue with their submission where only 6,159 out of 6,466 records were received by the HSCIC. This was also discovered too late in the analysis process for a re-submission to be made. The missing records were all from three schools (URN 101298, 101304, and 134677). Unfortunately data from these three schools is therefore not included in the 2011/12 publication. These schools were also removed from the participation rate calculations to ensure consistency. The HSCIC are examining whether it will be possible to include the data from these three schools in the final dataset that will be made available in early 2013.

Accessibility

The national summary report is accessible on the HSCIC website (<http://www.ic.nhs.uk/ncmp>) as a PDF document and tables are provided in Excel format.

The anonymised dataset underpinning the NCMP report is available in UK data archive (<http://www.data-archive.ac.uk/>), although this dataset is a reduced version of the full dataset shared with Public Health Observatories through a data sharing agreement in order to mitigate against the risk of disclosure. Each NCMP dataset from school year 2006/07 will be available on UK Data Archive. The 2011/12 dataset will be made available in early 2013.

The National Obesity Observatory (NOO) use NCMP data to produce a wide range of analyses. This includes 'e-Atlas', an interactive mapping tool for the analysis of data on the prevalence of obesity and its determinants at Local Authority (LA) and Primary Care Trust (PCT) level in England. E-Atlas contains past and present NCMP data (<http://www.noo.org.uk/maps/eatlas>). NOO also publish a detailed annual NCMP report which contains additional specific analyses not included in the HSCIC summary report.

Confidentiality

The data the HSCIC receives is anonymised. The most sensitive fields that are collected (first name, surname, data of birth, etc) are not transferred to the HSCIC and are only held locally by the PCT.

This publication is subject to an HSCIC risk assessment prior to issue. Information is disseminated at a high level of aggregation (Local Authority (LA) level and above). For the purposes of maintaining confidentiality, some LA and PCT level prevalence estimates based on small numbers (1-5 individuals) have been suppressed and are denoted by 'x'. A corresponding prevalence estimate is generally suppressed also (even though it may be based on greater than 5 individuals) in order to maintain suppression.

Coherence

The coherence of the data published is ensured by following a rigorous validation procedure which is outlined at <http://www.ic.nhs.uk/ncmp/validation>

Comparability

The 85th and 95th centiles of the British 1990 Growth Reference² (UK90) have been used as the thresholds for most of the overweight and obesity prevalence figures published for English children in the last 10 years. There are a number of other growth references and suggested obesity thresholds available, for example the obesity thresholds recommended by the International Obesity Task Force (IOTF), which are widely used internationally³. These thresholds are commonly applied to UK data (for example in peer reviewed journals), and are the second most common thresholds used in this country for published overweight and obesity prevalence figures, after the UK90 population monitoring thresholds.

Comparisons of overweight and obesity prevalence figures between the NCMP and other sources can only be made where the other source also uses the British 1990 Growth Reference.

Analyses have been undertaken to consider whether meaningful comparisons could be attempted between the NCMP and child obesity data contained within the Health Survey for England (HSE), which is also derived using UK90. The HSE is a series of sample-based surveys focusing on a range of health indicators including obesity in children.

A comparison between the data in the 2007/08 NCMP and the HSE 2007, and between the 2008/09 NCMP and the HSE 2008, was published in Chapter 13 of the HSE 2008 (<http://www.ic.nhs.uk/pubs/hse08physicalactivity>). Due to the smaller sample sizes associated with the HSE, comparisons were not attempted for the 2010/11 and 2011/12 school years. This will continue to be examined for future publications.

² Cole T, Freeman JV, Preece MA. *Body mass index reference curves for the UK, 1990*. Arch Dis Child 1995; 73: 25-9.

³ Cole TJ, Bellizzi MC, Flegal KM, and Dietz WH. *Establishing a standard definition for child overweight and obesity worldwide: international survey*. BMJ; 2000;320:1240-3.