



Public Health
England

Protecting and improving the nation's health

Local authority child health profiles 2017 Indicator guide

This document presents metadata including the definitions and sources of the data for Public Health England's local authority child health profiles 2017

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health, and are a distinct delivery organisation with operational autonomy to advise and support government, local authorities and the NHS in a professionally independent manner.

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Published: March 2017.

PHE publications gateway number: 2016636.



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General information

Geographical areas used in the profiles

The regional comparators shown in the charts on page three of the child health profiles, and as a grey diamond in the spine chart on page four, are the Nomenclature of Territorial Units for Statistics (NUTS) 1 statistical regions of England. For more information see: ec.europa.eu/eurostat/web/nuts/overview

Key findings

The key findings relating to the general health and wellbeing summarises the spine chart and provides a single statement of whether, when considering the 32 indicators selected for inclusion, the area is 'generally better than', 'generally worse than', 'generally similar to' or 'mixed compared with' the England averages.

An area is classed to be 'generally better than' the England average if any of the following are true:

- most (60% or more) indicators are green (ie significantly better than the England average)
- green indicators make up 40% or more and only up to 20% are red (ie significantly worse than the England average)
- green indicators make up 30% or more and there are no red indicators

An area is classed to be 'generally worse than' the England average if any of the following are true:

- most (60% or more) indicators are red
- red indicators make up 40% or more and only up to 20% are green
- red indicators make up 30% or more and there are no green indicators

An area is classed to be 'similar to' the England average if most (53% or more) of the indicators are amber. Otherwise, the area is classed as 'mixed'.

The first four key findings in each profile cover the same topics on each profile. The last two were selected from a list of potential topics to highlight areas of particular interest. They aim to balance the profile. So if an area is generally performing well, ones will be chosen where the area does worse or vice versa. The aim is that these give either the opportunity for areas to see where they are doing well, and on which they might build, or areas on which they need to focus to improve.

Where consistent with the method described above, an area which is best or worst in the country will see this highlighted in their key findings.

Many of the key messages describe whether an area is better or worse (or higher or lower) than the England average for a particular indicator. This relates to statistically significant difference, using the methodology described in the section below on confidence interval.

Statistical neighbours used in the profiles

Statistical neighbour models provide one method for benchmarking progress. For each local authority, these models designate a number of other local authorities deemed to have similar characteristics. These designated local authorities are known as statistical neighbours. Any local authority may compare its performance (as measured by various indicators) against its statistical neighbours to provide an initial guide as to whether their performance is above or below the level that might be expected.

The statistical neighbours used have been drawn from the Children's Services Statistical Neighbour Benchmarking Tool which was updated in October 2014. While the tool defines ten neighbours, this has been limited to the four closest statistical neighbours in the profiles as space on the charts is limited.

Further information about this tool is available here:

www.gov.uk/government/publications/local-authority-interactive-tool-lait

Confidence intervals

A confidence interval is a range of values that is used to quantify the imprecision in the estimate of a particular value that results from random variation in the estimation of the value.

In public health many indicators are based on what can be considered to be complete datasets and not samples. For example, mortality rates based on death registers. In these instances, the imprecision arises not as a result of sampling variation but of 'natural' variation. Generally, in public health, it is the underlying circumstances or process that is of interest and the actual value observed gives only an imprecise estimate of this 'underlying risk'.

The width of the confidence interval depends on three things:

- the sample or population size from which the estimate is derived – larger samples give more precise estimates with smaller confidence intervals

- the degree of variability in the phenomenon being measured
- the required level of confidence – this is an arbitrary value and conventional practice is to use 95% confidence

For the purpose of these profiles, we have used 95% confidence limits which are denoted by a horizontal line with minimum and maximum ranges showing as small vertical lines at either end. In general, increasing the required level of confidence, results in wider limits. For a given level of confidence, the wider the confidence interval, the greater the uncertainty in the estimate is.

With the exception of two indicators, a significant difference is said to occur where the confidence intervals for the local authority do not overlap the reference value. For example, where both the confidence limits for the local authority exceed the value for England the area is significantly higher than England. Where the confidence limits straddle the reference value (England or region), there is said to be no significant difference.

A different method is used for two of the immunisations indicators (MMR vaccination for one dose (two years) and Dtap/IPV/Hib vaccination (two years)) to decide whether they appear as red or green in the spine chart on page four. For immunisation programmes to be highly effective, there is a minimum percentage of the population who must be immunised. Once this percentage is reached, the risk of epidemics of infection in the population overall are largely removed. The World Health Organization (WHO) has set vaccination coverage targets at global and WHO regional levels, which have been adopted by the Department of Health at national and local levels.

The 95% target for vaccination coverage is required nationally to ensure control of vaccine preventable diseases within the UK routine childhood vaccination programmes, with at least 90% coverage in each geo-political unit. For this reason, all areas which fall below 90% will see this indicator highlighted as red. Areas which are between 90% and 95% will see this indicator highlighted as amber to make it clear that this is an issue which they are likely to want to investigate in more depth. Areas above 95% will see a green dot. This matches the method used for these indicators in the [Public Health Outcomes Framework](#).

Using the spine chart

The spine chart shows a summary of performance for all indicators. The following information is shown for each indicator.

Trend arrow: the arrow shows the recent trend, following the method used in PHE's Fingertips tool. Missing data points in any year could mean the trend cannot be calculated:

- amber horizontal two headed arrow – shows no significant change
- green up arrow – shows increasing and getting better
- green down arrow – shows decreasing and getting better
- red up arrow – shows increasing and getting worse
- red down arrow – shows decreasing and getting worse
- black dash – shows trend cannot be calculated

Local number per year: the number of occurrences in the local authority (a per year average is calculated where the indicator presents multiple pooled years). The exact definition of ‘occurrences’ depends on the indicator definition. Examples could include children, hospital admissions or diagnoses.

Local value: the value of the indicator for the local authority.

England average: the value of the indicator for England.

England worst: the highest or lowest of all local authority values, depending on the indicator definition.

England best: the lowest or highest of all local authority values, depending on the indicator definition.

Spine: the coloured dot shows how the area is performing compared to the England average (shown as the red line on the chart):

- red dot – with the exception of the immunisations indicators noted above, this means that the selected area is performing significantly worse than the England average
- green dot – with the exception of the immunisations indicators noted above, this means that the selected area is performing significantly better than the England average
- yellow dot – with the exception of the immunisations indicators noted above, this means that the selected area is not significantly different from the England average
- grey diamond – this shows the regional average
- the grey boxes on the spine chart represent the area between the maximum or minimum value of all local authorities in England and either the 75th or 25th percentile (depending on the exact indicator definition), shown as light grey shading, with the area between the 25th and 75th percentile shown in dark grey shading

Charts

The profiles present more detailed analysis of children and young people's health in local areas in the charts on pages two and three.

Full details of how the indicators on these pages have been calculated and the sources for this data are included in the [interactive version of the profiles](#) available on PHE's [Fingertips tool](#). For help using the interactive tool or for further advice, please contact the local knowledge and intelligence service in your area:

| | |
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| East Midlands | Lkiseastmidlands@phe.gov.uk |
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| South East | LKISSouthEast@phe.gov.uk |
| South West | LKISSouthWest@phe.gov.uk |

The methods used to analyse and present the data in the charts are described below.

Interpreting the charts

Obesity charts

The charts compare the local authority featured in the profile with its four closest statistical neighbours and the England value, together with confidence limits. The confidence limits on the smaller bars are for children who are classified as obese, while the confidence limits on the longer bars are for those who are classified as obese and overweight. A significant difference is said to occur where the confidence intervals for the local authority do not overlap the reference value. For example, where the confidence limit for the local authority exceeds the value for England, the area is significantly higher than England for that indicator. Where the confidence limit straddles the England value, there is said to be no significant difference.

Trend information in the alcohol and mental health charts

The trend calculation uses a test which takes the data over the full time period shown on the chart, and tests for differences over time. It describes whether the trend is going up or down, weighting later data more heavily than earlier data. The test produces two

statistics each time it is run, one, the χ^2 , which determines significance at 95% and the other which describes whether the trend is increasing or decreasing.

Teenage conceptions and breastfeeding charts

The charts compare the local authority featured in the profile with its four closest statistical neighbours and regional and England values, together with confidence limits. A significant difference is said to occur where the confidence intervals for the local authority do not overlap the reference value. For example, where both the confidence limits for the local authority exceed the value for England the area is significantly higher than England. Where the confidence limits straddle the reference value (England or region), there is said to be no significant difference.

Breastfeeding data has not been published where data has not passed validation. Further information is available at: www.gov.uk/government/statistics/breastfeeding-at-6-to-8-weeks-after-birth-annual-data.

Chlamydia chart

Chlamydia is the most commonly diagnosed sexually transmitted infection. It causes avoidable sexual and reproductive ill-health, including symptomatic acute infections and complications such as pelvic inflammatory disease (PID), ectopic pregnancy and tubal-factor infertility. The chlamydia detection rate amongst under 25 year olds is a measure of chlamydia control activities. It represents infections identified (reducing risk of sequelae in those patients and interrupting transmission onto others). Increasing detection rates indicate increased control activity: it is not a measure of morbidity. Chlamydia screening is recommended for all sexually active people under 25 and on partner change. Public Health England recommends that local authorities should be working towards achieving a detection rate of at least 2,300 per 100,000 population.

The chart shows the local authority featured in the profile with its four closest statistical neighbours and regional and England values, together with confidence limits. The vertical black line on the chart represents the recommended detection rate of 2,300 per 100,000 population, and so the chart shows whether the area's detection rate is higher than recommended (2,300 or above) or lower than the recommended rate. Rates of 1,900 to less than 2,300 are described as 'approaching', to reflect the fact that areas with detection rates in this range are only just failing to meet recommended levels. The confidence intervals are shown to highlight the inherent variation in this indicator (as is the case with all indicators), but are not used for the purpose of comparison.

Immunisations chart

The chart shows the local authority featured in the profile with its four closest statistical neighbours and regional and England values, together with confidence limits. The vertical black line on the chart represents the minimum recommended vaccination coverage of 95%, and so the chart shows whether the area's coverage is higher than recommended (95% or above) or lower than recommended. 90 to 95% is shown as a shaded area on the graph to illustrate where local authorities are approaching the recommended coverage. Areas are described as 'slightly less' than 95% if the value falls between 90 and 95%. The confidence intervals are shown to highlight the inherent variation in this indicator (as is the case with all indicators), but are not used for the purpose of comparison.

Population statistics

| Indicator/measure | Live births |
|-----------------------|--|
| Definition | Number of live births registered to mothers resident in area |
| Rationale | Understanding the demography of the area will help with planning of appropriate services |
| Numerator | Number of live birth registrations |
| Source of numerator | Office for National Statistics (ONS) |
| Denominator | Not applicable |
| Source of denominator | Not applicable |
| Age range | 0 years |
| Time period | Calendar year 2015 |
| Geographical level | Unitary authority, metropolitan borough council, London borough council, county council |
| Method | Number |
| Limitations | None |
| Further information | www.ons.gov.uk/ons/taxonomy/index.html?nscl=Live+Births+and+Still+births |

| Indicator/measure | Children (age 0 to 4 years), (age 0 to 19 years) |
|-----------------------|--|
| Definition | Number and percentage of children aged 0 to 4 years, 0 to 19 years resident within the area |
| Rationale | Understanding the demography of the area will help with planning of appropriate services |
| Numerator | Mid 2015 population estimates: single year of age and sex for local authorities in England and Wales (ages 0 to 4 years, 0 to 19 years) |
| Source of numerator | ONS |
| Denominator | Mid 2015 population estimates: single year of age and sex for local authorities in England and Wales. (persons all ages) |
| Source of denominator | ONS |
| Age range | 0 to 4 years, 0 to 19 years |
| Time period | Calendar year 2015 |
| Geographical level | Unitary authority, metropolitan borough council, London borough council, county council |
| Method | Number and percentage. Published figures are rounded to the nearest hundred persons, however the percentages are calculated on unrounded data |
| Limitations | None |
| Further information | www.ons.gov.uk/ons/taxonomy/index.html?nscl=Population+Estimates |

| Indicator/measure | Children (age 0 to 19 years) in 2025 (projected) |
|-----------------------|--|
| Definition | Projected number and percentage of children aged 0 to 19 years resident within the area in 2025 |
| Rationale | Understanding how the demography of the area is projected to change will help with planning of appropriate services |
| Numerator | 2014-based subnational population projections for local authorities in England (ages 0 to 19 years) |
| Source of numerator | ONS |
| Denominator | 2014-based subnational population projections for local authorities in England (total population) |
| Source of denominator | ONS |
| Age range | 0 to 19 years |
| Time period | Calendar year 2025 |
| Geographical level | Unitary authority, metropolitan borough council, London borough council, county council |
| Method | Population projections, percentage |
| Limitations | <p>Long-term subnational population projections are an indication of the future trends in population by age and sex over the next 25 years. They are trend-based projections, which means assumptions for future levels of births, deaths and migration are based on observed levels mainly over the previous five years. They show what the population will be if recent trends continue</p> <p>The projected resident population of an area includes all people who usually live there, whatever their nationality. People moving into or out of the country are only included in the resident population if their total stay in that area is for 12 months or more, thus visitors and short-term migrants are not included. Armed forces stationed abroad are not included, but armed forces stationed within an area are included. Students are taken to be resident at their term-time address</p> <p>The projections do not take into account any policy changes that have not yet occurred, nor those that have not yet had an impact on observed trends</p> <p>These projections published on 25 May 2016 are based on the 2014 mid-year population estimates published on 25 June 2015</p> <p>These data are based on administrative geographic boundaries as they were at 30 June 2014</p> |
| Further information | www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/subnationalpopulationprojectionsforengland/2014basedprojections |

| Indicator/measure | School children from minority ethnic groups |
|-----------------------|--|
| Definition | Number and percentage of children at state funded primary and secondary schools classed as 'minority ethnic pupils', these are all pupils classified as belonging to an ethnic group other than white British |
| Rationale | Understanding the demography of the area helps with the planning of appropriate services |
| Numerator | Number of children at state funded primary and secondary schools classed as 'minority ethnic pupils' |
| Source of numerator | Department for Education (DfE) |
| Denominator | Total number of children at state funded primary and secondary schools whose ethnic group was classified |
| Source of denominator | DfE |
| Age range | Pupils of compulsory school age |
| Time period | 2016 |
| Geographical level | Unitary authority, metropolitan borough council, London borough council, county council |
| Method | Number and percentage |
| Limitations | Includes middle/all through schools as deemed. Includes all primary academies, including free schools. Includes city technology colleges and all secondary academies, including secondary free schools, university technical colleges and studio schools. Pupils of compulsory school age and above were classified according to ethnic group. Includes pupils who were sole or dual main registrations. Excludes pupils from special schools due to small numbers |
| Further information | www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2016 Table 9a and table 9b |

| Indicator/measure | Children in low income families (age under 16 years) |
|-----------------------|--|
| Definition | The percentage of children in low-income families: children living in families in receipt of out of work benefits or in receipt of tax credits where their reported income is less than 60% median income |
| Rationale | <p>Child poverty is an important issue for public health. The Marmot Review (2010) suggests there is evidence that childhood poverty leads to premature mortality and poor health outcomes for adults. Reducing the numbers of children who experience poverty should improve these adult health outcomes and increase healthy life expectancy</p> <p>‘A New Approach to Child Poverty: Tackling the Causes of Disadvantage and Transforming Families’ Lives’ sets out the Government’s approach to tackling poverty for this Parliament and up to 2020. This strategy meets the requirements set out in the Child Poverty Act 2010, focuses on improving the life chances of the most disadvantaged children, and sits alongside the Government’s broader strategy to improve social mobility</p> |
| Numerator | Number of children aged under 16 living in families in receipt of out-of-work benefits plus the number of children aged under 16 living in families in receipt of tax credits with income below 60% of median |
| Source of numerator | HM Revenue and Customs (HMRC) |
| Denominator | Children in child benefit families aged under 16 years |
| Source of denominator | HMRC |
| Age range | 0 to 15 years |
| Time period | Snapshot as at 31 August 2014 |
| Geographical level | Unitary authority, metropolitan borough council, London borough council, county council |
| Method | Percentage |
| Limitations | None |
| Further information | www.phoutcomes.info/ |

| Indicator/measure | Life expectancy at birth |
|-----------------------|--|
| Definition | Male or female life expectancy at birth |
| Rationale | Life expectancy at birth takes into account deaths at all ages and is one of the most commonly used outcome measures for examining the health of a population |
| Numerator | Male or female life expectancy at birth |
| Source of numerator | ONS |
| Denominator | Not applicable |
| Source of denominator | Not applicable |
| Age range | Life expectancies at birth |
| Time period | Calendar years 2013, 2014, 2015 pooled |
| Geographical level | Unitary authority, metropolitan borough council, London borough council, county council |
| Method | The figures are a three-year average, produced by aggregating deaths and population estimates for 2013 to 2015 |
| Limitations | Area of residence is allocated by ONS using the postcode and the National Statistics Postcode Directory – records without a valid area code are excluded but the number of such records is negligible |
| Further information | Life expectancy at birth figures for all local authorities in England are produced annually by ONS, based on three-year rolling averages of mortality data and population estimates: http://www.phoutcomes.info/ |

Spine chart data indicators

Full details of how the indicators included in the spine chart on page four of child health profiles 2017 have been calculated and the sources for this data are included in the [interactive version of the profiles](#) available on PHE's [Fingertips tool](#). For help using the interactive tool or for further advice, please [contact the local knowledge and intelligence service](#) in your area.