



Public Health  
England

Protecting and improving the nation's health

# Local authority child health profiles 2020

## Indicator guide

This document presents metadata including the definitions and sources of the data for Public Health England's local authority child health profiles 2020

## 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-leading science, research, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

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# Introduction

The Child health profiles on the [Fingertips data website](#) provide an annual snapshot report of child health in upper-tier local authority areas. These are part of an overview of child health that brings together indicators for local government and clinical commissioning group (CCG) areas across several different themes.

Child health profiles have been published nationally as an annual snapshot report since 2011 for each upper tier local authority in England. PHE has responsibility for producing these statistics on an annual basis.

The document is intended to show the methods used to generate the annual snapshot reports in a transparent manner, for the avoidance of doubt about how they have been generated and what they represent.

# General information

## Geographical areas used in the profiles

The regional comparators shown in the charts on page 3 of the child health profiles, and as a grey diamond in the spine chart on page 4, are the Nomenclature of Territorial Units for Statistics (NUTS) 1 statistical regions of England. For more information see: [ec.europa.eu/eurostat/web/nuts/background](https://ec.europa.eu/eurostat/web/nuts/background)

## Main findings

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

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

- most (60% or more) indicators are green (they are significantly better than the England average)
- green indicators make up 40% or more and only up to 20% are red (they are 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 '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'.

Information on infant and child mortality is given for all areas. Seven main findings are then given for all areas on topics where public health interventions can improve child health at a local level. These include childhood obesity, breastfeeding, dental health, MMR immunisation, teenage pregnancy, smoking in pregnancy and mental health.

The last 2 main findings are selected from a list of potential topics to highlight areas of particular interest. Topics could include any of the following:

- immunisation against childhood diseases such as:
  - diphtheria
  - pertussis (whooping cough) and tetanus (DTap)
  - Haemophilus influenzae type b (Hib – an important cause of childhood meningitis and pneumonia)
  - polio
- immunisations for children in care
- babies born with low birthweight
- child poverty and family homelessness
- alcohol and substance misuse
- road traffic accidents, injuries, A&E attendance
- hospital admissions for asthma
- young people not in education or employment, children entering the youth justice system, and school readiness

They aim to balance the profile. So if an area is generally performing well, ones will be chosen where the area does worse and 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, if an area is best or worst in the country on a particular indicator, then the relevant main finding will be selected.

Many of the main messages describe whether an area is better or worse than the England average for a particular indicator. This relates to a 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 Department for Education's 'children's services statistical neighbour benchmarking tool', which was last updated in

July 2019. While the tool defines 10 neighbours, this has been limited to the 4 closest statistical neighbours in the profiles as space on the charts is limited.

Further information about this tool is available here:

<https://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 are 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 3 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 on the bar charts 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 2 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. Unless otherwise stated, the reference value is the England average (mean).

A different method is used for 2 of the immunisations indicators (MMR vaccination for one dose (2 years) and Dtap/IPV/Hib vaccination (2 years)) to decide whether they

appear as red or green in the spine chart on page 4. 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 and Social Care 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 consistent with the method used in PHE's Fingertips tool.

- amber horizontal 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
- white or grey dot – the selected area could not be compared to 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, 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 2 and 3 of the child health profiles.

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:

North East	<a href="mailto:LKISNorthEast@phe.gov.uk">LKISNorthEast@phe.gov.uk</a>
North West	<a href="mailto:LKISNorthWest@phe.gov.uk">LKISNorthWest@phe.gov.uk</a>
Yorkshire and the Humber	<a href="mailto:LKISYorkshireandHumber@phe.gov.uk">LKISYorkshireandHumber@phe.gov.uk</a>
East Midlands	<a href="mailto:LKISEastMidlands@phe.gov.uk">LKISEastMidlands@phe.gov.uk</a>
East of England	<a href="mailto:LKISEast@phe.gov.uk">LKISEast@phe.gov.uk</a>
West Midlands	<a href="mailto:LKISWestMidlands@phe.gov.uk">LKISWestMidlands@phe.gov.uk</a>
London	<a href="mailto:LKISLondon@phe.gov.uk">LKISLondon@phe.gov.uk</a>
South East	<a href="mailto:LKISSouthEast@phe.gov.uk">LKISSouthEast@phe.gov.uk</a>
South West	<a href="mailto:LKISSouthWest@phe.gov.uk">LKISSouthWest@phe.gov.uk</a>

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 4 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 or 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 both confidence limits for the local authority exceed the value for England, the area is significantly higher than England for that indicator. Where the confidence interval 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 consider data over the most recent five years, and tests for differences over time. The test produces 2 statistics each time it is run, one which determines significance at 95% and the other which describes whether the trend

is increasing or decreasing. Outliers are taken into account as part of determining the significance.

## Young people's sexual and reproductive health, breastfeeding and child development aged 2-2 ½

The charts compare the local authority featured in the profile with its 4 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 confidence limits for the local authority exceed the value for England the area is significantly higher than England. Where the confidence interval straddles the reference value (England or region), there is said to be no significant difference.

Breastfeeding and child development data have not been published where data for the area has not passed validation. Further information is available in the indicator definitions: <https://fingertips.phe.org.uk/profile/child-health-profiles/data#page/1/gid/1938133228/>

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. PHE recommends that local authorities should be working towards achieving a detection rate of at least 2,300 per 100,000 population.

The text for chlamydia describes 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.

## Immunisations chart

The chart shows the local authority featured in the profile with its 4 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%. So the chart shows whether the area's coverage is higher than recommended (95% or above) or lower than recommended. The shaded area on the graph shows 90 to 95% coverage, and illustrates 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 2018
Geographical level	Unitary authority, metropolitan borough council, London borough council, county council
Method	Number
Limitations	None
Further information	ONS – Births in England and Wales: summary tables. See Table 3: <a href="http://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/datasets/birthsummarytables">www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/datasets/birthsummarytables</a>

Indicator/ measure	Children (aged 0 to 4 years), (aged 0 to 19 years)
Definition	Number and percentage of children aged 0 to 4 years and 0 to 19 years resident within the area
Rationale	Understanding the demography of the area will help with planning of appropriate services
Numerator	Mid-2018 population estimates for local authorities in England (persons aged 0 to 4 years and 0 to 19 years)
Source of numerator	ONS
Denominator	Mid-2018 population estimates for local authorities in England (total population: persons of all ages)
Source of denominator	ONS
Age range	0 to 4 years, 0 to 19 years
Time period	Calendar year 2018
Geographical level	Unitary authority, metropolitan borough council, London borough council, county council
Method	Population estimate (number and percentage). Published figures are rounded to the nearest hundred persons. However, the percentages are calculated on unrounded data
Limitations	None

Further information	ONS – Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland. See Table 'MYE2 – All': <a href="http://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland">www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland</a>
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Indicator/ measure	Children (aged 0 to 19 years) in 2028 (projected)
Definition	Projected number and percentage of children aged 0 to 19 years resident within the area in 2028
Rationale	Understanding how the demography of the area is projected to change will help with planning of appropriate services
Numerator	2016-based subnational population projections for local authorities in England (ages 0 to 19 years)
Source of numerator	ONS
Denominator	2016-based subnational population projections for local authorities in England (total population, persons of all ages)
Source of denominator	ONS
Age range	0 to 19 years
Time period	Calendar year 2028
Geographical level	Unitary authority, metropolitan borough council, London borough council, county council
Method	Population projections (number and percentage). Published figures are rounded to the nearest hundred persons. However, the percentages are calculated on unrounded data
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.</p> <p>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 5 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 24 May 2018 are based on the revised 2016 mid-year population estimates published on 22 March 2018.</p>
Further information	<p>ONS – Subnational population projections for England: 2016-based:</p> <p><a href="http://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/subnationalpopulationprojectionsforengland/2016based">www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/subnationalpopulationprojectionsforengland/2016based</a></p>

<b>Indicator/ measure</b>	<b>School children from minority ethnic groups</b>
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	School pupils of all ages.
Time period	2019
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 were classified according to their ethnic group. Includes pupils who were sole or dual main registrations. Excludes pupils from special schools due to small numbers
Further information	<p>DfE: 'Schools pupils and their characteristics 2019' – underlying data for pupil characteristics</p> <p><a href="http://www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2019">www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2019</a></p>

<b>Indicator/measure</b>	<b>School pupils with social, emotional and mental health needs</b>
Definition	The number of school children who are identified as having social, emotional and mental health needs expressed as a percentage of all school pupils
Rationale	The National Clinical Practice Guidelines published by the British Psychological Society state that children with learning or physical disabilities have a higher risk of developing a mental health problem compared with the national population.
Numerator	Number of primary, secondary and special school pupils with Special Education Needs (SEN), who have social, emotional and mental health needs as the primary type of need (from Tables 16, 17 and 18).
Source of numerator	DfE
Denominator	Total number of pupils (from Table 12)
Source of denominator	DfE
Age range	School age
Time period	2018
Geographical level	Unitary authority, metropolitan borough council, London borough council, county council
Method	Number and percentage
Limitations	The Isles of Scilly has a single 'all-through' school for pupils aged 4-16, and no special schools; for City of London there are no secondary or special schools, so totals are for primary schools only.
Further information	DfE – Special Educational Needs in England Local Authority Tables – <a href="http://www.gov.uk/government/statistics/special-educational-needs-in-england-january-2018">www.gov.uk/government/statistics/special-educational-needs-in-england-january-2018</a>

<b>Indicator/ measure</b>	<b>Children in low income families (age under 16 years)</b>
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</p>



	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.
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 2016
Geographical level	Unitary authority, metropolitan borough council, London borough council, county council
Method	Percentage
Limitations	None
Further information	HMRC – Personal tax credits: Children in low-income families local measure: <a href="http://www.gov.uk/government/statistics/personal-tax-credits-children-in-low-income-families-local-measure-2016-snapshot-as-at-31-august-2016">www.gov.uk/government/statistics/personal-tax-credits-children-in-low-income-families-local-measure-2016-snapshot-as-at-31-august-2016</a>

<b>Indicator/ measure</b>	<b>Life expectancy at birth</b>
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 expectancy at birth
Time period	Calendar years 2016, 2017 and 2018 pooled
Geographical level	Unitary authority, metropolitan borough council, London borough council, county council
Method	The figures are a 3-year average, produced by aggregating deaths and population estimates for 2016 to 2018
Limitations	
Further information	ONS dataset showing life expectancy at birth and at age 65 years by local areas, UK: <a href="https://fingertips.phe.org.uk/profile/public-health-outcomes-framework">https://fingertips.phe.org.uk/profile/public-health-outcomes-framework</a>

## Spine chart indicators

Full details of how the indicators included in the spine chart on page 4 of child health profiles 2020 have been calculated, and the sources of 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.