



Public Health
England

Health and wellbeing indicators at your...

Fingertips

User Guide

Version 2.1, September 2016



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1. Introduction

Fingertips is a web platform that provides easy access to in-depth analysis of a wide range of health and health related data in thematic Profiles. All profiles can be accessed via:

<http://fingertips.phe.org.uk/>

It was initially designed and built by the Eastern Region Public Health Observatory, and is now owned by PHE. The platform grows quickly both in functionality and content and is served by one common database called PHOLIO.

Although some parts of Fingertips are product specific the overall development approach is to aim for an efficient, modular system. This User guide focuses on the common features and uses examples which can easily be recognised in other environments. For more product specific guidance please also view the supporting documents supplied in context with each output. More data related information, which is not necessarily covered by the metadata supplied in 'Definitions' would also be discussed there.

2. Updates to Fingertips indicators

Fingertips is refreshed monthly, usually on the first Tuesday of the month, when changes to code and data are deployed. However, each product follows its own update cycle and changes are not necessarily rolled out across all products at the same time.

All of the data in Fingertips are suitable for unrestricted publication. Where appropriate, small numbers have been suppressed in order to maintain confidentiality. Note that users in the NHS or local government may be able to use internal systems (e.g. Unify2) to access more recent data that has not yet been finalised and made public.

The web tool is designed to be flexible and readily allows revision of indicators. Due to changes in geography and responsibilities affecting the provision of data, or due to the change in the definition of certain indicators, continuous time series cannot be guaranteed in all cases. When organisational boundaries change there is inevitably a lag before data become available for the new organisation. We aspire to present the most relevant information for the current entities but depend on the availability of the source data for our indicators. In order to mitigate the lack of data for newer organisations, values for aggregate areas are calculated if this is suitable for the product and the methods involved (such as STP values based on the contributing CCGs).


3. Using elements in reports and presentations

You are welcome to use elements of Fingertips in your own documents and reports. You may re-use this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence v3.0. To view this licence, visit OGL or email psi@nationalarchives.gsi.gov.uk. Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned. Otherwise please acknowledge the source with this statement:



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Most data used in producing these tools are available as Excel files ('Get the data') for those who would like to create their own tables or charts or as PDF ('Area Profile') via the 'Download' tab.

Where you see the image icon and the text 'Export ... as image' (e.g.  Export map as image) visualisations can be exported in png-format. Alternatively you can extract graphics from Fingertips using the Snipping Tool (available under Accessories in the Windows Start Menu). If you do not have the Snipping Tool, use the 'print screen' button on your keyboard to produce a screen grab which can be pasted into a document and cropped to show the element of interest.

4. Feedback

We welcome any comments on the Fingertips tools, in particular, on the usefulness and user friendliness of the tool and on the indicators included. All data in the tools, and the tools themselves, have undergone internal quality assurance. However, we recognise that with the range of data presented in electronic format over the web, errors are possible and request that users alert us to any potential problems if they occur. Please get in touch by clicking 'Contact Us' or emailing directly profilefeedback@phe.gov.uk.

5. Overview of Fingertips tools

All Fingertips profiles are accessible via the portal at <http://fingertips.phe.org.uk>. Most of them are using the same template with certain features switched on or off, depending on the data and geographies displayed. The focus of this user guide is to show and explain this type of profile which is for example used for the PHOF profiles, mental health profiles, sexual and reproductive health profiles and many more.

Other types of Fingertips profiles not covered in detail in this user guide are:

- The Longer Lives / Healthier Lives profiles which are adjusted to suit a less analytically minded audience and focus on maps and visual outputs.
- National GP profiles which are for historical reasons not fully integrated yet into the code base and have some features that are not available elsewhere. A product specific user guide is available from the introduction page of the National GP profiles
- Legacy profiles which are hosted on and accessible via Fingertips but are only partially using the platform. Their usage is very self-explanatory and mostly reduced to browsing and searching in order to find the relevant items for downloading.

6. Fingertips Features

Additional information

A Home link and a feedback link are found in the top section of each tool. The supply of profile specific supporting information such as FAQs and user guides varies between profiles

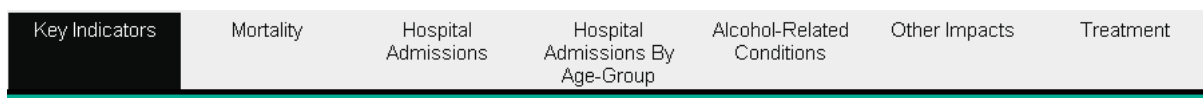


Search for indicators

Search facilities are located at the top right of the page. Using this function returns all indicators across all Fingertips profiles which include the keyword in the name or in a specific set of metadata fields.

Domains

Tools which are broken down into subsections or domains can be explored by clicking the domain headings. For example:



Geography

The example below shows a profile with the complete set of options (only offered when choices are actually available in the data):

Area selection:

1. The user selects an Area type in the first drop down. The selection determines which area groupings become available.
Fingertips can only display data for one level of geography at a time. If a tool contains indicators at more than one geographical level the user needs to firstly choose which geography they want to view the data by. If this drop down is missing there is only one area type available and it is therefore obsolete.
Note: Not all indicators are provided at all geographical levels. If an indicator is not showing check different area types.
2. The user then chooses an area grouping type (Areas grouped by ...). This choice determines the options in the drop down below.
The options are either a higher geographical level (Centre, Region) or groupings by similarity such as deprivation deciles.
3. A specific area (here: North West) is then selected.
4. The Area drop down is populated accordingly and the choice made in the drop down will be picked up in views for individual areas (not relevant for Overview).
5. By default the Benchmark for statistical comparison is the England average, however most profiles allow to benchmark against any grouping option (2) chosen.

Where applicable, another grouping option is available that is bases on statistically most similar areas (here: CIPFA nearest neighbours). Because each area has its own ranked set of neighbours who



don't have a common parent area this is accommodated in a separate area that does not include the common area navigation features:

[Exit nearest neighbours](#)

[More information](#)

County Durham and its CIPFA nearest neighbours

The user returns to the area navigation by clicking 'Exit nearest neighbours'.

Statistical significance and colour coding

Wherever possible values are colour coded to allow a quick visual interpretation of the display.

Compared with benchmark Better Similar Worse Lower Similar Higher Low High Not compared

The colours red and green and the two shades of blue show whether the measure for that area is statistically above or below the benchmark. The five shades of purple are based on a simple quintile allocation of the ranked values and not on statistical testing.

The default comparator is the national average. This can be changed to a subnational grouping option using the benchmark 'drop-down' at the top of the page. If the indicator is not coloured it means that no statistical comparison was possible. In most cases this is because the raw data used to calculate the indicator, and which is necessary to undertake statistical comparison, were not available, or the necessary benchmark value could not be obtained.

When an indicator has no preferred polarity i.e. when it is not appropriate to say that a high value is good or bad, shades of blue are used in place of red and green.

Even if an indicator is green and therefore the area is doing significantly better than the average, there may still be a health issue in the area that is worthy of intervention. Some indicators will change colour depending on the comparator group – for example, it is not unusual for areas to be significantly better than the England average while not being significantly different from the regional average. It is also possible that an area may be experiencing a downward trend while remaining above the national or regional average. Local knowledge and understanding of health issues are also needed to provide context and to inform decisions of where priorities lie.

Details about confidence levels and methods used can be found in the metadata for the indicators in the 'Definitions' tab.



7. Views

Overview	Compare indicators	Map	Trends	Compare areas	Area profiles	Definitions	Inequalities	Download
The default option. Indicators in rows, geogr. areas in columns, and data values or trend markers in each cell.	Thematic maps plus bar charts and data tables. Scatter plots show the relationship between two indicators across all areas. Line charts with time on x-axis; comparator and confidence bars.		Bar chart, funnel plot (where appl.), and a data table. One indicator, all areas. A spine chart to view all indicators for one area compared with range and benchmark.			Metadata: Definition, methods, source, etc. Explore all dimensions of inequality available in the data.		Extract data in an Excel file and download pdf reports where available.

Overview

'Overview' is the default option in most profiles. It shows all the indicators in rows, the geographical areas in columns, and indicator data in each cell, where possible colour-coded showing if the value is significantly different from the benchmark or not.

Alternatively, the display can show in the cells statistical trends or both:



Recent trends are shown with colour-coded arrows and calculated where the value type and the length of the time series allows it:



Trends are calculated at 99.8% confidence level, using a χ^2 -test for trends. Calculations are carried out when at least five non-overlapping data points are available and the value is a proportion or a crude rate. More information can be found behind the 'i'-symbol.

This view shows a 'tartan rug' of all the indicators, allowing indicators to be compared across all the areas belonging to the grouped-by option chosen (see above: geography). For some options the number of indicators is large and users will probably have to scroll down the screen to see all of the measures. For each indicator, where statistical significance can be calculated the colour coding shows whether the measure for that area is statistically above or below / better or worse than the comparator average. The default comparator is the national average.

The values in the tartan rug can be sorted using the arrows at the start of each row. Using the arrows in the header row sorts the areas alphabetically while using them in an indicator row sorts the table by ascending or descending values of the indicator where the sorting was applied.



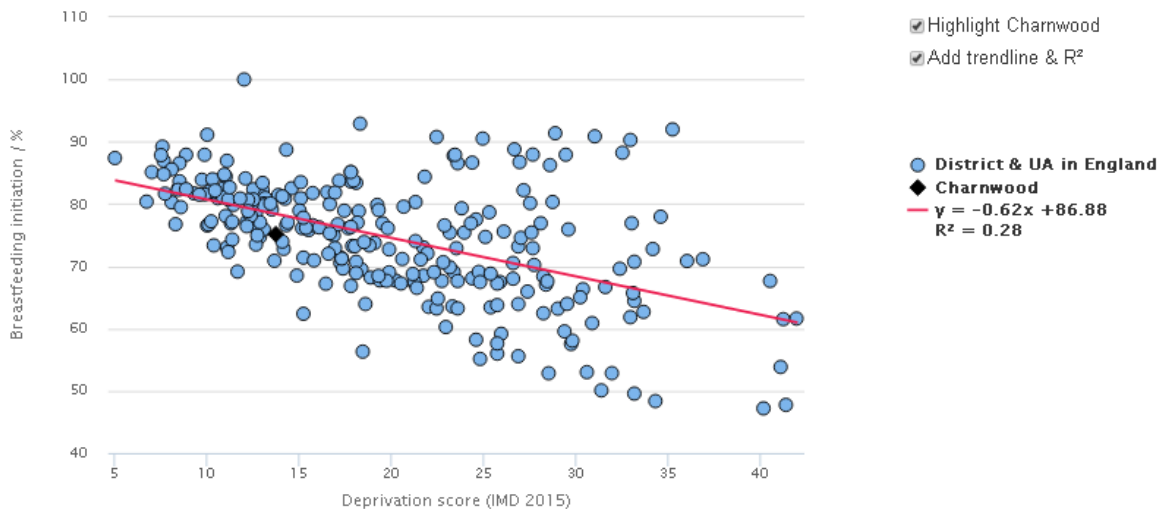
Sort the columns into alphabetical order (this is the default view)

Indicator	Period	England	East of England	Bedford	Cambridgeshire CC	Central Bedfordshire	Essex CC	Hertfordshire CC	Luton	Norfolk CC	Peterborough	Southend-on-Sea	Suffolk CC	Thurrock
General fertility rate	2006 - 10	63.1	63.1	63.0	58.6	63.0	60.4	64.2	83.1	58.4	79.7	70.2	62.5	68.7
% of women smoking at delivery	2009/10	14.0	14.0	15.4	11.4	15.4	15.0	11.1	16.7	15.5	15.7	15.0	16.6	10.7
Low birthweight rate	2010	7.32	6.87	7.38	6.13	6.29	7.10	6.66	9.50	6.87	6.64	6.68	6.68	6.53
Breastfeeding initiation	2009/10	73.6	73.8	74.4	79.7	74.4	73.4	75.0	67.7	73.6	71.1	71.4	72.1	69.8
Perinatal mortality	2008 - 10	7.5	6.8	6.4	6.3	7.1	6.2	6.4	12.0	6.1	8.5	5.9	6.3	9.0
Infant deaths	2008 - 10	4.60	4.00	4.70	3.90	2.80	3.70	3.70	7.50	3.90	4.30	3.70	4.00	4.00

Sort the columns by the values of this indicator. Click once to sort in descending order, click twice to sort in ascending order.

Compare indicators

A scatterplot is shown on this tab that allows the user to compare two indicators directly and see if there is a correlation between these indicators. Along the x-axis the selected indicator in the drop-down near the top is plotted, for the y-axis choice another drop down is available that is populated with all the indicators of the profile in alphabetical order.



Ticking the box to Highlight the local area marks it with a black diamond on the chart. Ticking 'Add trendline and R²', adds in red a linear trend line to the chart, the line equation and an R² value (a measure that indicates how strong the correlation is). If the correlation is weak (R² below 0.15) neither trendline nor equation are shown and an explanation is provided why this is the case.

Maps

Where this is possible, a thematic map is produced, visualising the information for one indicator in a geographical way, using the same colour scheme used for this indicator in other visualisations. The

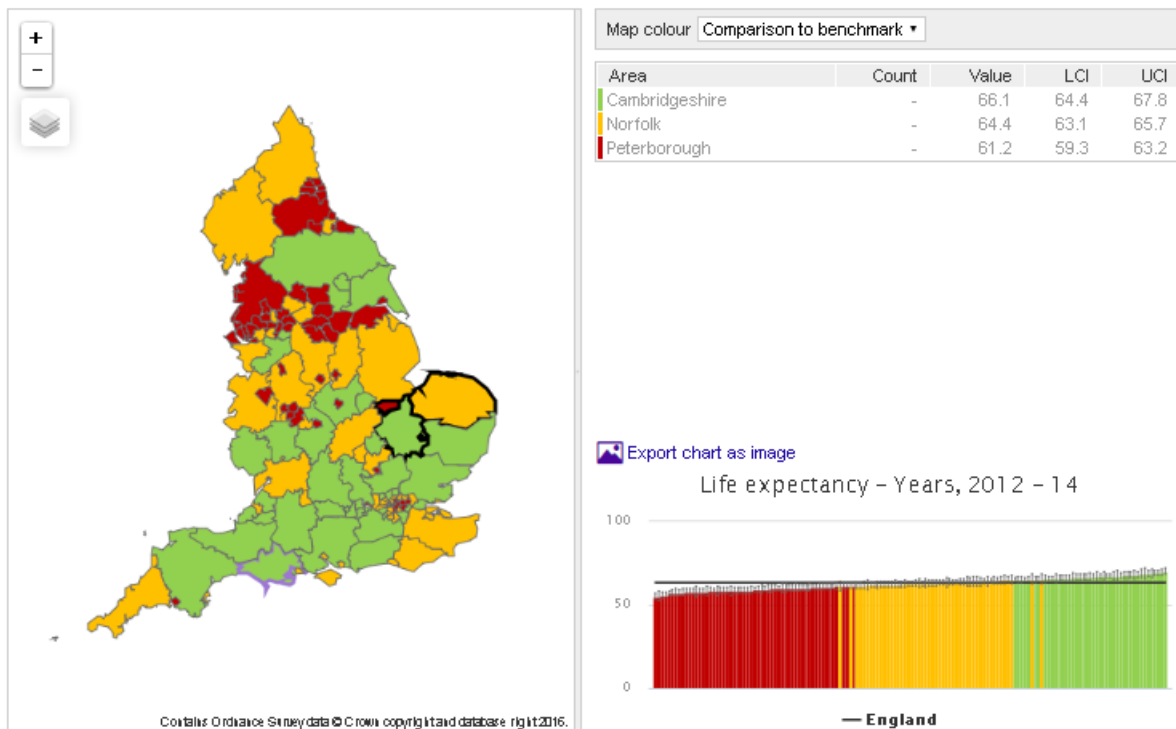


user can zoom in and out of the map using '+' and '-', contextual layers can be added and various levels of transparency can be chosen to improve the visibility of the selected contextual layers.

Hovering over an area, the name and value for this locality comes up and the area's column in the column chart on the right is highlighted. By clicking on areas on the map a tailored table is assembled at the right of the map, listing the selected areas with count, value and confidence limits.

All area values are sorted and displayed in a column chart with a line for the benchmark value.

Hovering over the columns on this chart gives you the name and local figures of an area and its rank and highlights the area on the map with bold purple boundaries.



Trends view

This view presents indicator time series data. Drop-down boxes allow users to select the geographical area and the indicator of interest. The default view is to present one indicator for one area. However, it is also possible to show all indicators for the area (Show all indicators), or to generate many charts showing the same indicator over time in all areas (e.g.:

Trends for **Derby** All in East Midlands region).

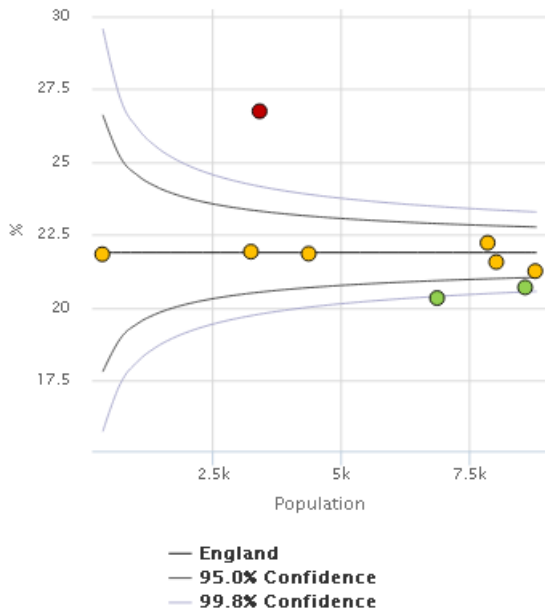
For some indicators and for some areas time series data are not available, but for other indicators there is a useful dataset with many time points (e.g. quarterly figures on NHS health checks). These data are presented in chart form and also in table form, with confidence intervals shown in the tables. Hovering over a data point on the chart will display the values for that point.

Compare areas

This view focuses on a particular indicator, selected by using the drop-down box near the top of the page, or by clicking on the indicator name in the Overview.



For indicators which are proportions (percentages), crude rates or directly standardised rates (DSRs), this page can show funnel plots with points colour-coded depending on whether they are significantly different from the benchmark (Note: functionality not included in all profiles). The funnel plot on the Indicators view is a good way of seeing what is happening with regard to this indicator in the wider area (e.g. region) as a whole. Funnel plots are an example of statistical process control (SPC) methodology. The central horizontal line shows the benchmark.



Each of the dots represents the indicator value for one local area. Area results that fall outside the grey curved lines (the 'funnel') suggest that these areas are outliers and that this is unlikely to be due to chance. The darker grey lines represent the 2 standard deviation limits (95% confidence) while the light grey lines represent the 3 standard deviation limits (99.8% confidence). The funnel lines converge towards the benchmark as the population increases. Where SPC methods are used for comparison, dots within the 95% confidence funnel are coloured amber and dots outside the funnel are coloured either red and green if high values for the indicator can be said to be good or bad (the 'polarity' of the indicator) or dark and light blue if no value judgement is appropriate for the indicator. By hovering over a dot, you can identify which areas fall outside the confidence limits.

For more details on funnel plots see APHO Technical Briefing 2: Statistical Process Control Methods in Public Health Intelligence

<http://fingertips.phe.org.uk/documents/TechnicalBriefing2Statisticalprocesscontrolmetho.pdf>

A training video on funnel plots is available at https://www.youtube.com/watch?v=0x_RIoL2EB8

The Indicators view also presents a bar chart of the indicator's values for each area in the region, and a table showing the data with confidence intervals. The table can be sorted by area name, or by ascending or descending values of the indicator by clicking on the up and down arrows within the table header. Sorting the table also sorts the bars in the bar chart.

Areas view

A training video on spine charts is available at <https://www.youtube.com/watch?v=480Mswgcg8M>



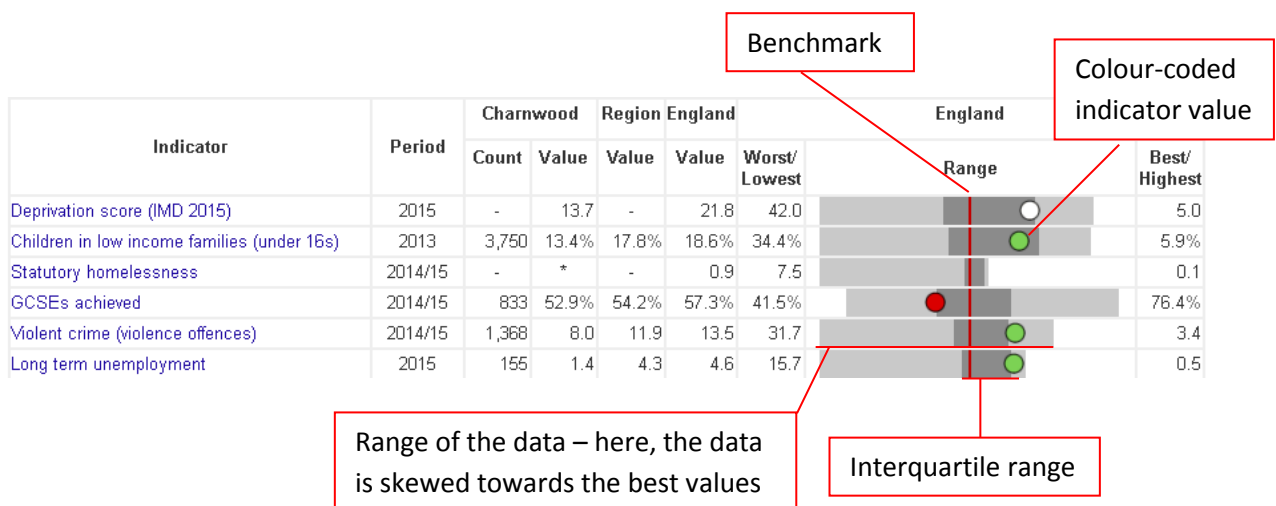
This view focuses on one area, selected using the drop-down box near the top of the page or by clicking on the area name in the Overview. It produces a table of indicators within the theme which contains typically:

- The period the data refers to
- the trend marker
- counts for the area (for example, the number of Year 6 children who are obese, or the number of deaths aged <75 from cancer)
- the indicator value for the area (usually a percentage or a rate)
- the value for England and for the region
- the best and worst / lowest and highest values within the region.

It also displays these data in the form of a spine chart with colour-coded points indicating whether the area is significantly different from the benchmark. Hovering over elements of the spine chart will give more information about the underlying data. When England is selected as the benchmark, a spine chart display is generated for the indicator if at least 70% of the values in England have valid data. This rule is to prevent the display of spine charts that are misrepresentative due to extensive missing or suppressed data points.

In the spine chart the red vertical line represents the benchmark. The light grey bar shows the range between the highest and lowest areas in England or the region (depending on the benchmark selected) with the interquartile range shown in dark grey.

- The interquartile range (dark grey bar) is the difference between the 25th and 75th percentile i.e. if all areas' values for an indicator are ranked from lowest to highest the 25th percentile is 25% of the way through the ranking and the 75th is 75% of the way through.
- The light grey bar represents the range and skew of the data. If the worst and best values are equidistant from the mean the light grey bar will extend evenly across the chart. If the data are skewed towards the worst values the light grey bar will extend to the left hand side and if the data are skewed towards the best values the light grey bar will extend to the right hand side.





Each dot represents the area indicator value. Dots to the left of the red line show that the value for this area is worse or lower than the average, dots to the right of the line show that the value is better or higher than the benchmark. Where possible, these are colour coded showing whether the local value is statistically significantly worse (red or dark blue), better (green or light blue) or not significantly different from the comparator (amber).

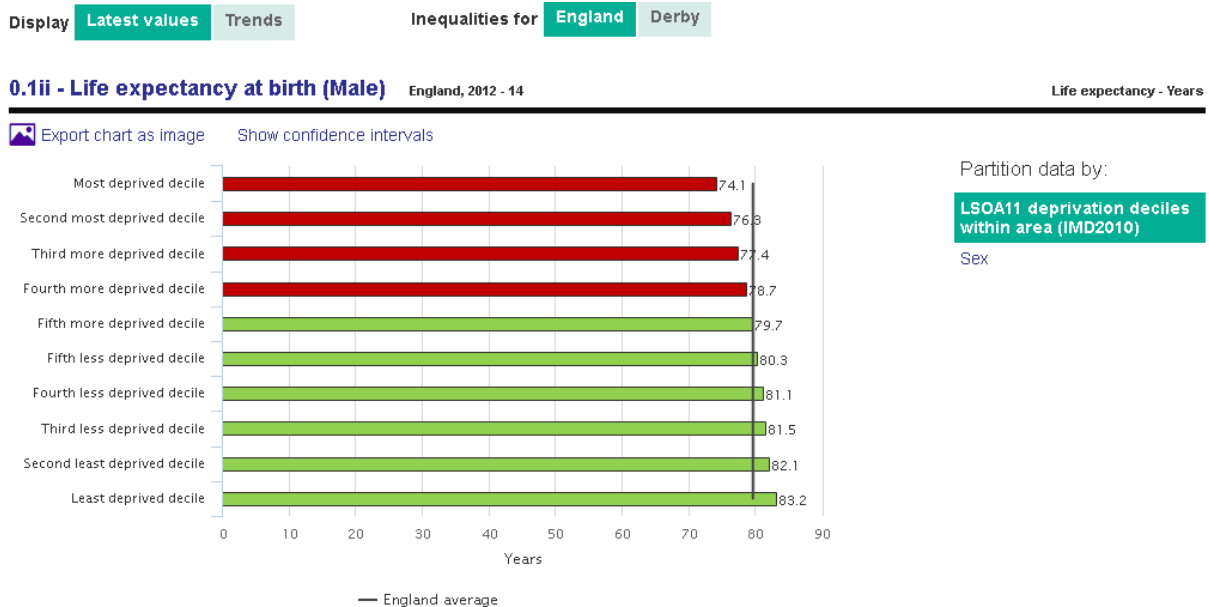
Definitions

For each indicator there is a set of metadata, providing a definition for the indicator, the data source, the methods applied etc. Depending on the purpose, more detailed information might be required than can be provided in the metadata. In this case please see also the Profile specific supporting documents (found on the introduction page) or contact profilefeedback@phe.gov.uk.

Inequalities

For many indicators stratified data is available. The categories on offer vary greatly between indicators and range from various ethnic break downs, to deprivation, or e.g. sexual behaviours. There are also various age bands and gender splits available for many indicator.

In the inequalities tab all available options are offered and related categories are shown together in a bar chart:



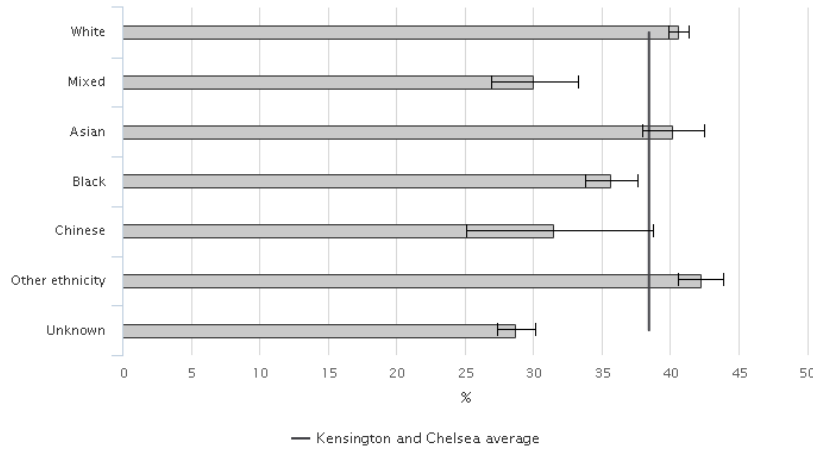
The overall area average is supplied as comparator line. Confidence interval bars can be switched on or off clicking Show/Hide confidence intervals.

In most cases the categories are only available for England but for certain indicators there are also within-area breakdowns available:



Health inequalities: Emergency hospital admissions by ethnic group Kensington and Chelsea, 2014/15 Proportion - %

Export chart as image Hide confidence intervals



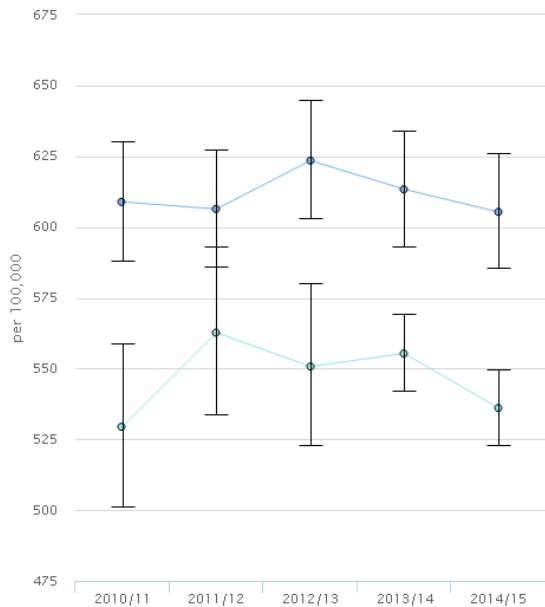
Partition data by:

Ethnic groups

There is also a trend view of inequalities, showing by default all available categories in a line chart. The user has the option to remove categories from this display by unticking the related box which allows them to concentrate on certain categories, especially in cases where too many lines make the chart difficult to read.

Hip fractures in people aged 65 and over England, 2014/15 Directly standardised rate - per 100,000

Export chart as image Hide confidence intervals



Display on chart:

- Show all
- Clear chart
- Most deprived decile (IMD2010)
- Second most deprived decile (IMD2010)
- Third more deprived decile (IMD2010)
- Fourth more deprived decile (IMD2010)
- Fifth more deprived decile (IMD2010)
- Fifth less deprived decile (IMD2010)
- Fourth less deprived decile (IMD2010)
- Third less deprived decile (IMD2010)
- Second least deprived decile (IMD2010)
- Least deprived decile (IMD2010)

Partition data by:

County & UA deprivation deciles in England (IMD2010)
District & UA deprivation deciles in England (IMD2010)
Sex

- Most deprived decile (IMD2010)
- Second most deprived decile (IMD2010)
- Third more deprived decile (IMD2010)
- Fourth more deprived decile (IMD2010)
- Fifth more deprived decile (IMD2010)
- Fifth less deprived decile (IMD2010)
- Fourth less deprived decile (IMD2010)
- Third less deprived decile (IMD2010)
- Second least deprived decile (IMD2010)
- Least deprived decile (IMD2010)



Download

The data contained in the Fingertips profiles can be downloaded in MS Excel format for the currently selected Area type with a choice for All areas in England or All areas in the selected Area grouping option.

For many profiles there are also PDF versions available which can be downloaded for the currently selected area.

8. API

An Application Programming Interface (API) is available that allows developers to obtain Fingertips data directly in order to use it in other web applications. Where this is of interest users can contact ProfileFeedback@phe.gov.uk to get related documentation.

Revision History

Version	Change	By	Date
1.0	New – First version for Fingertips launch	Vicki Peacey, Doris Hain, Hannah Walford	21/09/2011
1.1	Metadata tab renamed Information	Hannah Walford	22/09/2011
1.2	Removed references to East of England. Substance Misuse profiles refresh	Paul Brand	24/02/2012
1.3	Midlands and East cluster area rollout	Paul Brand, Hannah Walford	14/05/2012
1.4	Midlands & East ASC rollout	Vicki Peacey, Justin Robinson	19/06/2012
1.5	Added info and caveats concerning funnel plots	Hannah Walford	26/06/2012
1.6	Updated to included new functionality	Paul Brand, Hannah Walford	05/02/2013
2.0	New generalised version suitable for all Fingertips products	Doris Hain	04/02/2014
2.1	Updated with new developments	Doris Hain	28/09/2016