

General Health in England and Wales, 2011 and Comparison with 2001

Coverage: **England and Wales**

Date: **30 January 2013**

Geographical Area: **Super Output Area and Data Zone**

Theme: **Health and Social Care**

Key points

- In 2011, 81.2 per cent of people in England and Wales reported their general health as either 'Very good' or 'Good'; in England it was 81.4 per cent and in Wales it was 77.8 per cent.
- People living in London and the South East region had the highest percentages of 'Very good' or 'Good' general health, and Wales and the North East region the lowest.
- In England and Wales, the gap between local authorities reporting the highest (Hart: 88.1 per cent) and lowest (Blaenau Gwent: 72.6 per cent) percentages of 'Very good' and 'Good' general health was 15.5 percentage points.
- The general pattern of better health in London and the South East region, and worse health in the Northern regions in 2001 is maintained in 2011.
- However, some traditionally deprived local authorities experienced a notable improvement in 2011; specifically Newham, Tower Hamlets, Hackney and Manchester.

Animated YouTube video

A podcast explaining this analysis using audio commentary and graphical animations is available on the [ONS YouTube channel](#).

Introduction

This analysis describes the general health of the population of England and Wales; a complementary [analysis](#) released today by ONS describes activity limitations that are related to a health problem of disability.

This publication follows the [2011 Census Population and Household Estimates for England & Wales](#). The census provides estimates of the characteristics of all people and households in England and Wales on census day. These are produced for a variety of users including government, local and unitary authorities, business and communities. The census provides population statistics from a national to local level. This analysis discusses the results at national, regional, local and small area level.

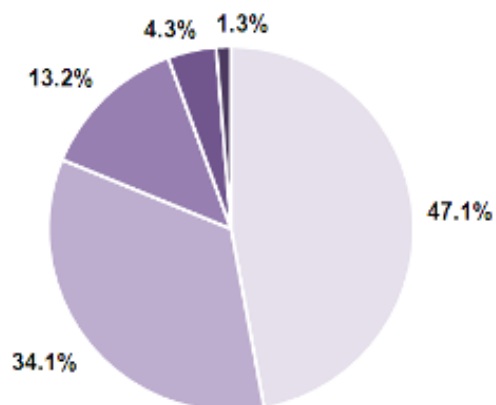
Self-assessed health draws together an individual's perception of all aspects of their health and wellbeing and is a useful indicator of general well-being and health-related quality of life.

National focus

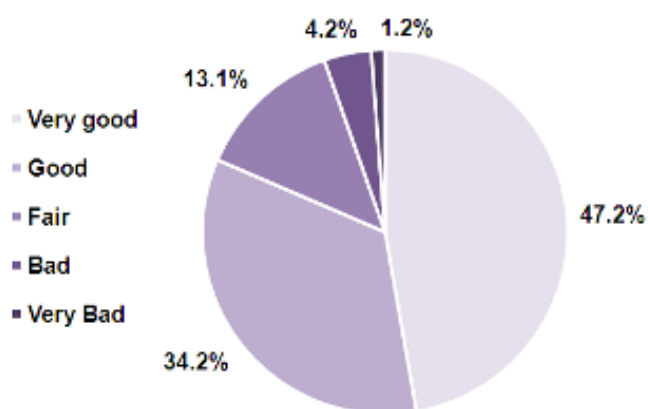
The 2011 Census¹ included a question on general health^{2,3} and this information enables an assessment to be made about the nation's health status and to make comparisons between areas within England and Wales.

Figure 1. General health

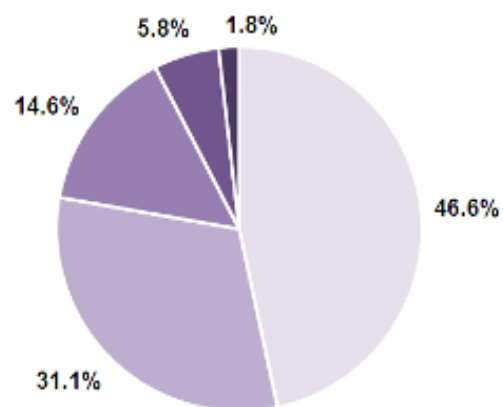
England and Wales, England, Wales, 2011, Usual residents



England and Wales



England



Wales

Source: Census - Office for National Statistics

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The 2011 Census in England and Wales shows that more than 26 million people reported their general health as 'Very good', and a further 19.1 million as 'Good'; while only 2.5 million were in a 'Bad' state of health and a further 716,000 in a 'Very bad' health state. Therefore more than four-fifths of the population in England and Wales (81.2 per cent) reported their general health as either 'Very good' or 'Good' in 2011 (figure 1). In England the equivalent figure was 81.4 per cent, and in Wales it was 77.8 per cent, a 3.6 percentage point difference.

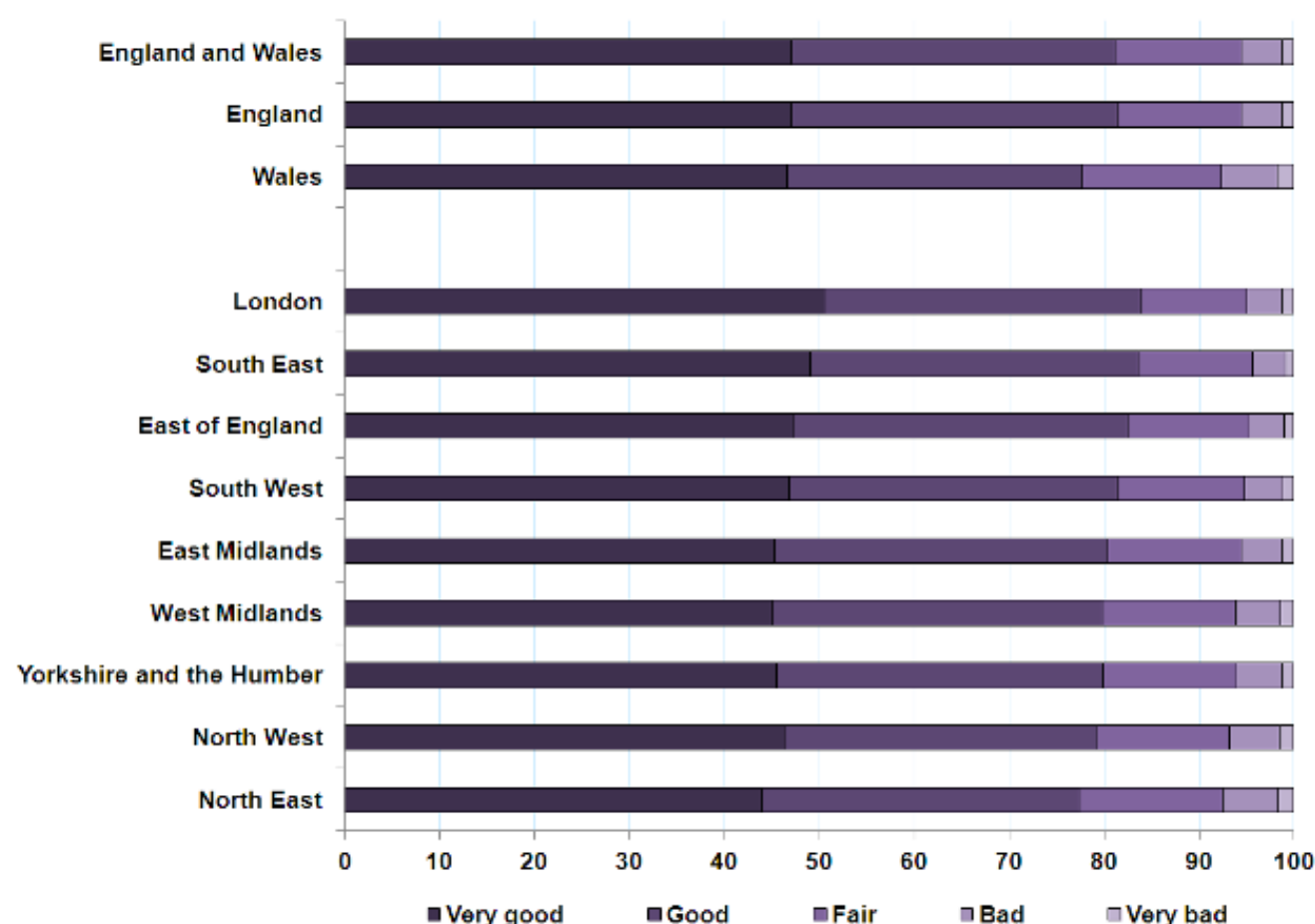
Notes

1. This publication follows the [2011 Census Population and Household Estimates for England & Wales](#). The census provides estimates of the characteristics of all people and households in England and Wales on census day. These are produced for a variety of users including government, local and unitary authorities, business and communities. The census provides population statistics from a national to local level. This short story discusses the results at national, regional, local and small area level.
2. A question on self-assessed general health was included in both the 2001 and 2011 Censuses. In 2001, each person in a household was asked to rate their general health over the last 12 months; the possible responses were 'Good', 'Fairly good' or 'Not good'. In 2011 each person in the household was asked to rate their health in general; the possible responses were 'Very good', 'Good', 'Fair', 'Bad' and 'Very bad'. Unlike simple indicators based on the presence or absence of disease, an important property of the general health status indicator is that it includes the entire spectrum of health states ranging from 'Good' to 'Not good' health.
3. Self reports are useful in indicating general well-being, health-related quality of life, the experience of long-term illness and the relative risks of future admission to hospital, impairment and mortality. Therefore the monitoring of general health over time is important for determining fitness for work, need for care and benefits and social capital. Self-assessed health draws together an individual's perception of all aspects of their health and wellbeing.

General health across the English regions and Wales

Figure 2. General health by region

England and Wales, England, Wales, England regions, 2011, Usual residents



Source: Census - Office for National Statistics

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(19 Kb)

- Across the English regions and Wales, the general health profile of London's population was more favourable than any other region in 2011, with more than half (50.5 per cent) assessing their health as 'Very good', and a further third (33.3 per cent) as 'Good'; only 5 per cent assessed their health as either 'Bad' or 'Very bad'.
- [The younger age structure](#)¹ of London's population partly contributes to this region's more favourable health status. Other likely contributing factors are a healthy worker effect resulting from the job-creating regeneration occurring in London during the first decade of the 21st Century such as: construction of the Olympic Village; the improvements to the transport system; and investment in brown field sites such as Greenwich and the Isle of Dogs. In addition, the attraction of migrants from other parts of the UK and from abroad to take up these employment

opportunities is also likely to affect the socio-demographic structure towards a more trained and skilful workforce and a younger age-structure.

- The South East of England had a similar profile to London.
- The North East region had the least favourable general health; only 44 per cent reported 'Very good' health and 7.4 per cent reported their health as 'Bad' or 'Very bad'.
- Wales's general health profile was largely similar to the North East region.
- A North-South divide in general health is often present with health improving in line with a southerly and easterly direction of travel.
- These results have a consistent pattern seen in regional variations in other measures of health status such as [life expectancy \(1.33 Mb Excel sheet\)](#) and [health expectancy](#) published by the Office for National Statistics (ONS).

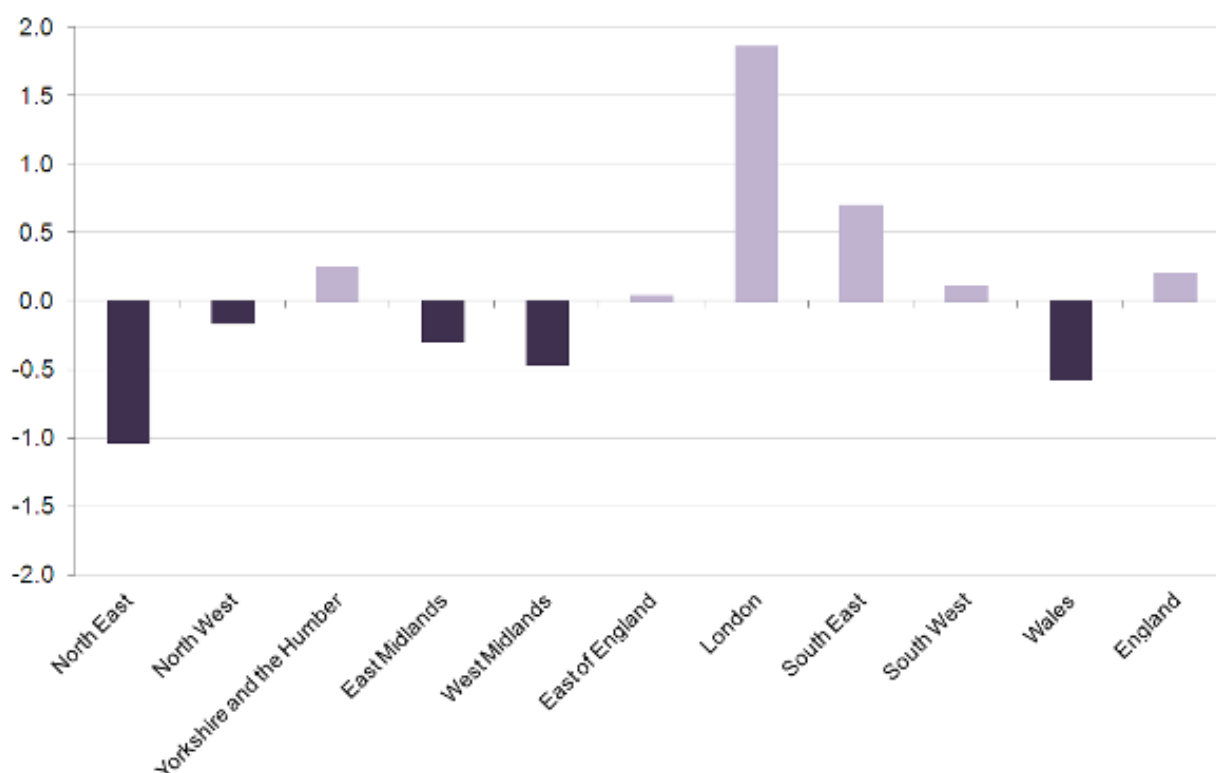
Notes

1. Click into the link and select London in the left pyramid and another region or Wales in the right pyramid to compare age structure.

General health over time in English regions and Wales

Figure 3. Percentage change in 'Good' health between 2001 and 2011

English regions, Wales, 2001 to 2011, Usual residents



Source: Census - Office for National Statistics

Notes:

1. Rounded Values
2. Percentage change in 'Good' health between 2001 and 2011 is calculated by subtracting per cent 'Good' health in 2011 from per cent 'Good' health in 2001 and dividing the resulting figure by per cent 'Good' health in 2001 and multiplying by 100.
3. Estimates for 2001 are based on a simulation to derive the categories 'Good' and 'Not good' general health because a different general health question was included in the 2001 Census to that included in the 2011 Census. Therefore comparisons with 2001 should be treated with caution.

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When combining the categories into 'Good' and 'Not good' health¹, (the former represented by the categories 'Very good' and 'Good'; the latter represented by the categories 'Fair', 'Bad' and 'Very bad'), a North-South divide is noticeable in 2011. London (83.8 per cent), the South East (83.6 per cent), the East of England (82.5 per cent) and the South West (81.4 per cent) all have higher percentages reporting 'Good' general health than the England average, while the North East (77.3 per cent), North West (79.3 per cent) and Yorkshire and the Humber (80.0 per cent) have lower percentages; the difference between top and bottom regions on health was 6.5 per cent.

How English regions and Wales compare with 2001^{2, 3} shows a variable picture (figure 3); those with the lowest percentages of people with 'Good' health in 2001 saw their rates fall between 2001 and 2011 and vice versa. The North East, North West, East Midlands, West Midlands and Wales experienced falls, but in other regions the rate increased, most notably in London and the south⁴.

Notes

1. Comparability between 2001 and 2011 relies on a method, developed by ONS in 2009, which has been applied to translate the 2011 categories to the 2001 Census population; however, this method requires combining the categories into two health states:
 - a. 'Good' (representing those that would have reported their general health as either 'Very good' or 'Good') if the 2011 question had been asked in 2001, and
 - b. 'Not good' (those that would have reported their general health as 'Fair', 'Bad' or 'Very bad') if the 2011 question had been asked in 2001.
2. A direct comparison of general health status between 2011 and 2001 is not possible because of differences between the question asked in 2011 and in 2001.
3. ONS has developed a method to convert the 2001 question, which splits the 2001 population into two health states:
 - a. those whose general health is either 'Very good' or 'Good' representing a state of 'Good' general health; and

b. those whose general health is either 'Fair', 'Bad' or 'Very bad' representing a state of 'Not good' general health.

4. The absence of age structure breakdowns in these results means that the accuracy of creating the two health states of 'Good' general health and 'Not good' general health in 2001 is lessened. Therefore the comparison between 2001 and 2011 should be interpreted as an initial indication of change rather than definitive evidence. Further work using age-specific and age standardised measures will be undertaken by ONS later in 2013 to further refine the measurement of change between 2001 and 2011.

English local authority comparisons

Local authority comparisons are based on the breakdown of general health into states of 'Good' and 'Not good'¹ health as described above, which enables local authorities in England to be ranked by the percentage of their population reporting 'Good' general health (table 1).

Table 1. Local authorities with the highest and lowest percentages of 'Good' general health

England local authorities, 2001, 2010, 2011, Usual residents

				per cent
Local Authority	Per Cent 'Good' health 2011	Rank 'Good' health 2011	Rank 'Good' health 2001 ¹	Indices of Deprivation 2010 Summary Score Rank ²
Highest³				
Hart	88.1	1	2	326
City of London	87.9	2	56	262
Richmond upon Thames	87.9	3	6	285
Wokingham	87.8	4	1	325
Elmbridge	87.4	5	4	320
Wandsworth	87.3	6	41	121
Guildford	87.0	7	11	300
St Albans	87.0	8	9	317
Oxford	87.0	9	52	122
Surrey Heath	86.8	10	3	324
Lowest³				
East Lindsey	73.5	326	313	73
Blackpool	73.6	325	324	6

Local Authority	Per Cent 'Good' health 2011	Rank 'Good' health 2011	Rank 'Good' health 2001 ¹	Indices of Deprivation 2010 Summary Score Rank ²
Tendring	74.2	324	310	86
Bolsover	74.3	323	326	58
Barnsley	75.2	322	325	47
Sunderland	75.5	321	315	44
South Tyneside	75.7	320	312	52
County Durham	75.8	319	323	62
Mansfield	75.8	318	317	38
Thanet	75.8	317	303	49

Table source: Office for National Statistics

Table notes:

1. Estimates for 2001 are based on a simulation to derive the categories 'Good' and 'Not good' general health because a different general health question was included in the 2001 Census to that included in the 2011 Census. Therefore comparisons with 2001 should be treated with caution.
2. Index of Multiple Deprivation score rank, 1 = most deprived, 326 = least deprived; Indices of deprivation 2010 summary score rank is based on the average of LSOA ranks (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6884/1871689.xls)
3. Hyperlinks to the relevant view on the interactive map for each local authority included in the table can be accessed from the attached table download.

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For those authorities not included among the highest and lowest ten, their respective percentages of 'Good' general health, their IMD 2010 rank and their percentage in 2001 can be accessed using the link to the interactive maps of general health and entering a relevant postcode.

In 2011, the gap between local authorities in the percentage of their populations in 'Good' health was 14.6 per cent, ranging from 88.1 per cent in the district of Hart in Hampshire to 73.5 per cent in the district of East Lindsey in Lincolnshire (table 1).

The table includes the ten local authorities with the highest and lowest percentages of their populations in 'Good' general health; further context is provided by including each authority's rank based on their [Index of multiple deprivation 2010 average summary score](#)².

Three London boroughs feature in the ten authorities with the highest rates of 'Good' health in England in 2011, illustrating the improvement occurring in London generally; of the remaining seven local authorities, six were located in the South East region and one in the East region.

Six of the highest ten authorities in 2011 were also in the highest ten in 2001. New entrants to the highest ten in 2011 were Oxford, Wandsworth, City of London and Guildford.

The majority of authorities with the highest rates are also among the most advantaged authorities in England as shown by their IMD 2010 summary score rank which takes account of a number of interrelated local issues such as income, unemployment, access to services and the quality of the physical environment. However, Wandsworth borough in London and the district of Oxford were ranked towards the bottom half, suggesting the relative deprivation experienced by these populations is greater than in authorities such as Surrey Heath, Wokingham and Hart. The younger age-structure of Wandsworth's and Oxford's populations is likely to partly account for their favourable position in regard to general health and comparisons between local authority age structures can be visualised using this [link to the interactive population pyramids](#), selecting the local authorities to compare and clicking the overlay button.

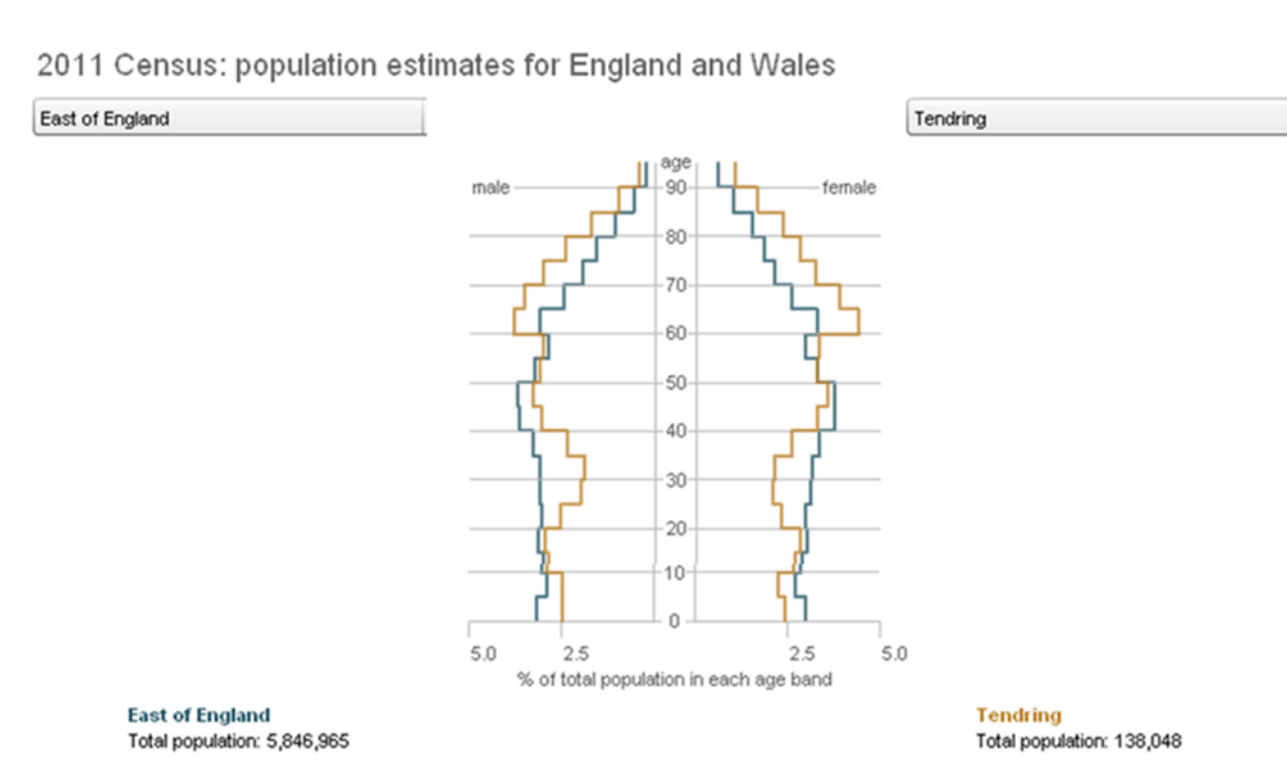
The authorities with the lowest rates of 'Good' health were predominantly located in the North East, North West and East Midlands regions. However, Tendring in Essex and Thanet in Kent were placed in the lowest ten and were the most dissimilar authorities within their respective regions of the East of England and South East in terms of age structure. For example, Tendring has proportionately more people aged 60 years and above than the East of England region as a whole and proportionately less people aged between 20 and 50 years, as demonstrated by overlaying the population pyramids (figure 4).

The older age structures of Tendring (figure 4) and Thanet (not shown) influence their respective percentages of 'Good' health.

Five authorities placed in the lowest ten in 2001 were also present in the lowest ten in 2011: these were Mansfield, County Durham, Blackpool, Barnsley and Bolsover. Exits from the lowest ten in 2011 were Barrow in Furness, Liverpool, Gateshead, Stoke-on-Trent and Chesterfield, but their relative improvement in ranking was modest.

Figure 4. Age structure of the East of England and Tendring

East of England, Tendring, 2011, Usual residents

Figure 4. Age structure of the East of England and Tendring

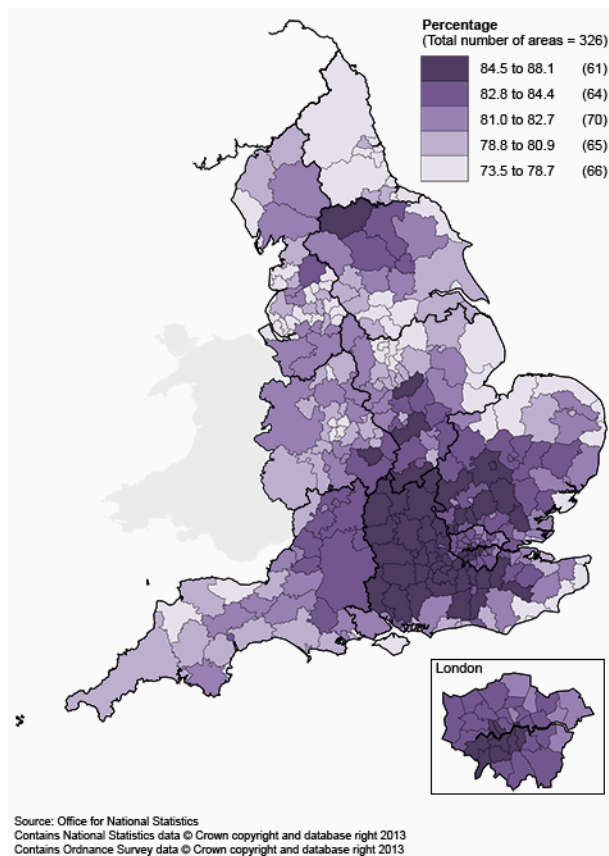
Source: 2011 Census, Office for National Statistics

A comparison of 'Good' general health across all authorities in England in both 2011 and 2001 is shown in Map 1 and Map 2 respectively. The darker colours signify better health and the lighter colours worse health.

The maps demonstrate the concentration of high percentages of 'Good' general health in central and southern England and emphasise the north-south divide in health at each time point. The relatively darker shading of London boroughs in 2011 shows the improvement taking place in London, while some coastal authorities, such as in Kent, East Sussex, Devon and Cambridgeshire have experienced a relative decline.

Map 1. Population reporting 'good' general health

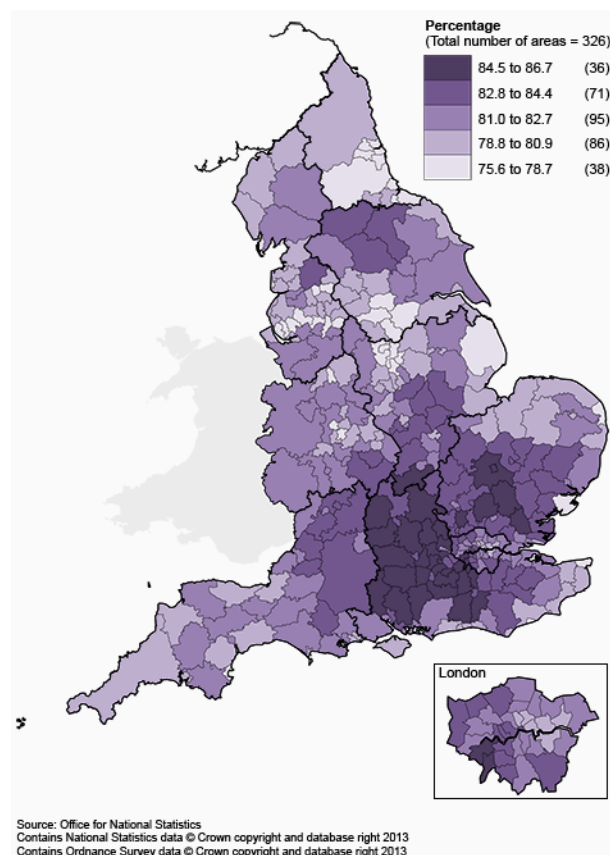
England local authorities, 2011, Usual residents



Source: Census - Office for National Statistics

Map 2. Population reporting 'good' general health

England local authorities, 2001, Usual residents



Source: Census - Office for National Statistics

Comparison with 2001

Table 2. Local authorities with the highest and lowest percentage difference in "Good" general health between 2001 and 2011

England local authorities, 2001, 2011, Usual residents

per cent				
Local Authority	Per Cent 'Good' health in 2011	Absolute Percentage difference (2011-2001) ¹	Rank 'Good' health in 2011	Rank 'Good' health in 2001
Highest improvement in general health²				
City of London	87.9	4.0	2	56
Tower Hamlets	83.3	3.0	100	231
Wandsworth	87.3	3.0	6	41
Oxford	87.0	3.0	9	52
Southwark	84.7	2.7	55	149
Newham	83.1	2.7	111	226
Hackney	82.9	2.6	121	230
Hammersmith and Fulham	85.7	2.5	32	80
Manchester	80.5	2.5	212	305
Lambeth	85.0	2.3	47	111
Highest worsening in general health²				
East Lindsey	73.5	-4.1	326	313
Tendring	74.2	-3.6	324	310
Fenland	77.3	-2.6	291	251
Rother	77.2	-2.5	296	257
North Norfolk	76.7	-2.5	305	277
Blackpool	73.6	-2.4	325	324
West Somerset	77.0	-2.3	299	271
Thanet	75.8	-2.3	317	303
Castle Point	79.6	-2.2	239	159
Scarborough	77.2	-2.1	295	273

Table source: Office for National Statistics

Table notes:

1. Estimates for 2001 are based on a simulation to derive the categories 'Good' and 'Not good' general health because a different general health question was included in the 2001 Census to that included in the 2011 Census. Therefore comparisons with 2001 should be treated with caution.
2. Hyperlinks to the relevant view on the interactive map for each local authority included in the table can be accessed from the attached table download.

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(41 Kb)

Eight of the ten authorities with the highest improvement in their respective rate of 'Good' health since 2001 were London boroughs (table 2), and of particular interest is the improvement occurring in traditionally deprived parts of inner London such as Newham, Hackney and Tower Hamlets. The two authorities outside London which have improved most markedly since 2001 are Manchester and Oxford; the former improving its rank by 93 places compared with 2001 and its rate of 'Good' general health by 2.5 percentage points.

Those authorities experiencing the highest deterioration in rates of 'Good' health were in less densely populated areas (table 2). An interesting feature of these authorities is their predominant coastal location, their distribution across regions, and that their deprivation rank fell between [2004](#) and [2010](#), suggesting these areas are more relatively deprived than they were in 2001.

Examining the inequality in rates of 'Good' health between the most deprived local authority in England (Liverpool) and the least deprived (Hart), a gap of 10.9 percentage points exists in 2011. This gap widened from 2001 as Liverpool's rate worsened in 2011 while Hart's improved; but their relative position in the local authority ranking was similar to that in 2001.

Notes

1. The absence of age structure breakdowns in these results means that the accuracy of creating the two health states of 'Good' general health and 'Not good' general health in 2001 is lessened. Therefore the comparison between 2001 and 2011 should be interpreted as an initial indication of change rather than definitive evidence. Further work using age-specific and age standardised measures will be undertaken by ONS later in 2013 to further refine the measurement of change between 2001 and 2011.
2. Population weighted average of the combined scores for the LSOAs in a local authority district. This measure is calculated by averaging the LSOA scores in each local authority district after they have been population weighted.

Welsh unitary authority comparisons

There are 22 unitary authorities in Wales ranging in population size and density. Cardiff has the largest population and Merthyr Tydfil the smallest.

Table 3 shows the top and bottom five unitary authorities in Wales with the highest and lowest percentages of 'Good' health in 2011, the rank on 'Good' general health in both 2011 and 2001, and their rank on the [Welsh Index of Multiple Deprivation 2011](#) (WIMD)¹.

Table 3. Unitary authorities with the highest and lowest percentages of 'Good' general health

Wales unitary authorities, 2001, 2011, Usual residents

					per cent
Wales					
Unitary Authority	Per Cent 'Good' health 2011	Rank 'Good' health 2011 ¹	Rank 'Good' health in 2001 ^{1, 2}	WIMD 2011 Summary Score Rank ³	
Highest⁴					
Cardiff	81.4	1	4	5	
Flintshire	81.1	2	1	15	
Gwynedd	81.1	3	2	17	
The Vale of Glamorgan	80.1	4	5	12	
Monmouthshire	80.1	5	3	21=	
Lowest⁴					
Blaenau Gwent	72.6	22	21	2	
Merthyr Tydfil	73.0	21	22	1	
Neath Port Talbot	73.3	20	20	6	
Rhondda Cynon Taff	74.5	19	19	3	
Caerphilly	74.7	18	18	7	

Table source: Office for National Statistics

Table notes:

1. The deprivation ranking of authorities is based on the proportion of the authority's lower super output areas (LSOAs) that are ranked in the most deprived tenth of LSOAs in Wales using the Welsh Index of Multiple Deprivation in 2011.

2. Estimates for 2001 are based on a simulation to derive the categories 'Good' and 'Not good' general health because a different general health question was included in the 2001 Census to that included in the 2011 Census. Therefore comparisons with 2001 should be treated with caution.
3. WIMD rank 2011, 1=most deprived, 22=least deprived, numbers followed by an "=" sign indicate that this unitary authority shares this rank with another unitary authority.
4. Hyperlinks to the relevant view on the interactive map for each local authority included in the table can be accessed from the attached table download.

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(34.5 Kb)

The gap between authorities in the rate of 'Good' health in 2011 was smaller than that in England, amounting to 8.8 percentage points between Cardiff (81.4 per cent) and Blaenau Gwent (72.6 per cent). Cardiff's age structure is somewhat younger than that of Blaenau Gwent which is likely to partly explain the gap between these two authorities. A comparison of Cardiff's age structure to that in Blaenau Gwent can be visualised using [this link to the interactive population pyramids](#) and selecting Cardiff in the left pyramid and Blaenau Gwent in the right pyramid.

The five unitary authorities with the lowest percentages all had less than three-quarters of their population reporting their general health as 'Good', and these authorities are among the more deprived authorities in Wales.

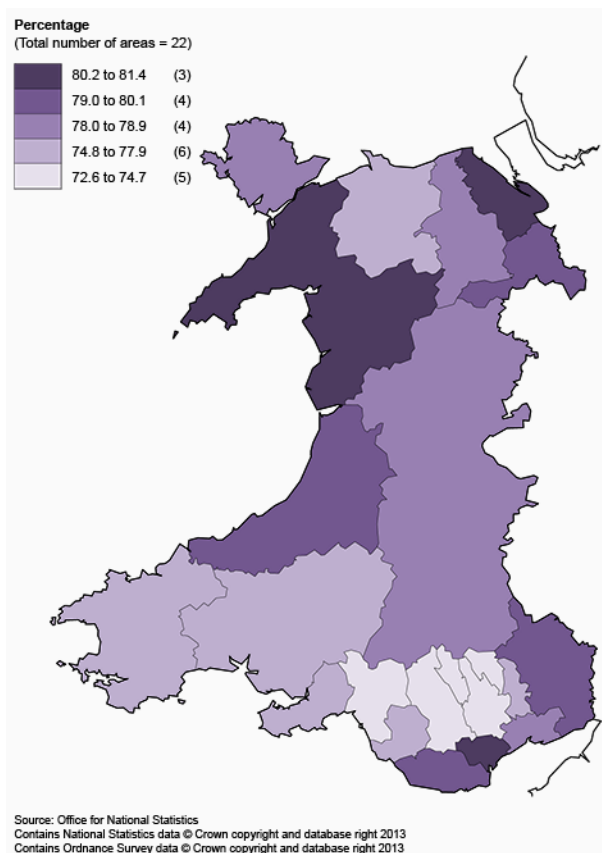
The percentages of 'Good' health for those unitary authorities which are not among the five highest or lowest ranked authorities can be accessed using the links to the interactive general health maps in the table below.

A comparison of 'Good' general health across all unitary authorities in Wales for 2011 and 2001 is shown in Map 3 and Map 4 respectively. The darker colours signify better health and the lighter colours worse health.

The maps demonstrate the concentration of low percentages of 'Good' general health in the former coal mining and heavy industrial centres of the Welsh valleys in 2011, with Cardiff, Gwynedd and Flintshire having the best levels of general health in 2011.

Map 3. Population reporting 'good' general health

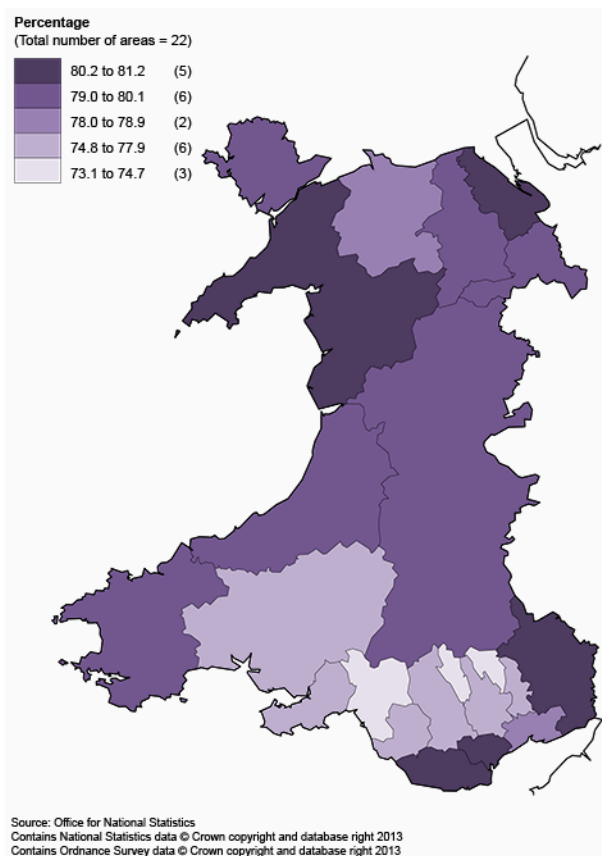
Wales unitary authorities, 2011, Usual residents



Source: Census - Office for National Statistics

Map 4. Population reporting 'good' general health

Wales unitary authorities, 2001, Usual residents



Source: Census - Office for National Statistics

Comparison with 2001

Table 4. Unitary authorities with the highest and lowest percentage difference in "Good" general health between 2001 and 2011

Welsh unitary authorities, 2001, 2011, Usual residents

per cent					
Unitary Authority	Per Cent 'Good' health 2011	Absolute percentage difference (2011-2001)	Rank 'Good' health 2011 ¹	Rank 'Good' health 2001 ^{1, 2}	WIMD 2011 Summary Score Rank ³
Highest improvement in general health ⁴					
Cardiff	81.4	0.6	1	4	5
Swansea	77.9	0.3	13	14	8
Wrexham	79.7	0.2	6	9	13
Highest worsening in general health ⁴					
Blaenau Gwent	72.6	-1.6	22	21	2
Isle of Anglesey	78.6	-1.4	9	7	19
Carmarthenshire	75.2	-1.3	17	16	14

Table source: Office for National Statistics**Table notes:**

1. The deprivation ranking of authorities is based on the proportion of the authority's lower super output areas (LSOAs) that are ranked in the most deprived tenth of LSOAs in Wales using the Welsh Index of Multiple Deprivation in 2011.
2. Estimates for 2001 are based on a simulation to derive the categories 'Good' and 'Not good' general health because a different general health question was included in the 2001 Census to that included in the 2011 Census. Therefore comparisons with 2001 should be treated with caution.
3. Welsh Index of Multiple Deprivation 2011 rank, 1 = most deprived, 326 = least deprived
4. Hyperlinks to the relevant view on the interactive map for each local authority included in the table can be accessed from the attached table download.

Download table

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Only three authorities improved since 2001 and the extent of improvement was less than one percentage point (table 4) and all three were urban areas, with Cardiff improving the most.

Blaenau Gwent experienced the largest worsening between 2001 and 2011 of 1.6 percentage points, which caused it to become the lowest ranked authority for 'Good' health in Wales in 2011, replacing Merthyr Tydfil. A mixed picture is present over time with both more affluent and deprived authorities, such as Isle of Anglesey and Neath Port Talbot experiencing falls of more than 1 percentage point.

Information for the other unitary authorities in Wales can be accessed by clicking into the health and disability [interactive map interface](#) and selecting the relevant unitary authority.

Notes

1. The deprivation ranking of authorities is based on the proportion of the authority's lower super output areas (LSOAs) that are ranked in the most deprived tenth of LSOAs in Wales using the Welsh Index of Multiple Deprivation in both [2005](#) and [2011](#).

General health and area deprivation for small area groupings

The inequality that exists between populations is often explained in terms of area disadvantage. Measures of health status such as life expectancy and health expectancy are shown to be more favourable in some geographical locations than others and to be strongly patterned with material factors such as income, environment, housing quality, unemployment, access to services and education. These factors have been brought together into an index (such as the [Index of Multiple Deprivation](#)) which can be applied to small areas such as LSOAs to give a measure of relative material disadvantage experienced by a specific area compared with other areas.

In order to present a picture of general health and the scale of inequality that exists between populations, these small areas are amalgamated, on the basis of their relative level of disadvantage. The Index of Multiple Deprivation [2004](#) and [2010](#) in England, and the Welsh Index of Multiple Deprivation [2005](#) and [2011](#) in Wales, are used to group areas into tenths (deciles). Rates of 'Good' general health are then calculated for these deciles.

The level of inequality between the least and most deprived group of areas can then be estimated using the [Slope Index of Inequality](#)¹. This statistic represents the inequality between the most and least deprived deciles of areas on the basis of the gradient of the best fitting line. The line indicates the level of health improvement needed by decile 1 to get to decile 10's position on the hill and thereby narrow the inequality.

Notes

1. The Slope Index of Inequality (SII) assesses the absolute inequality between the least and most deprived tenths, taking account of the inequality across all adjacent area tenths, rather than focusing only on the extremes. It is calculated using weighted regression, which ensures the different population sizes of the area groupings is taken into account. The regression calculates a predicted slope which represents the extent of inequality across the whole population.

Inequality in England

In England there were 32,844 LSOAs with enumerated populations in 2011; use of the [ONS Census Geography lookup file](#) enables the total number of census LSOAs to be assigned an Indices of Deprivation 2010 score. These LSOAs were then ranked according to their level of deprivation and grouped into tenths (deciles), with each decile consisting of approximately 3,284 LSOAs. This

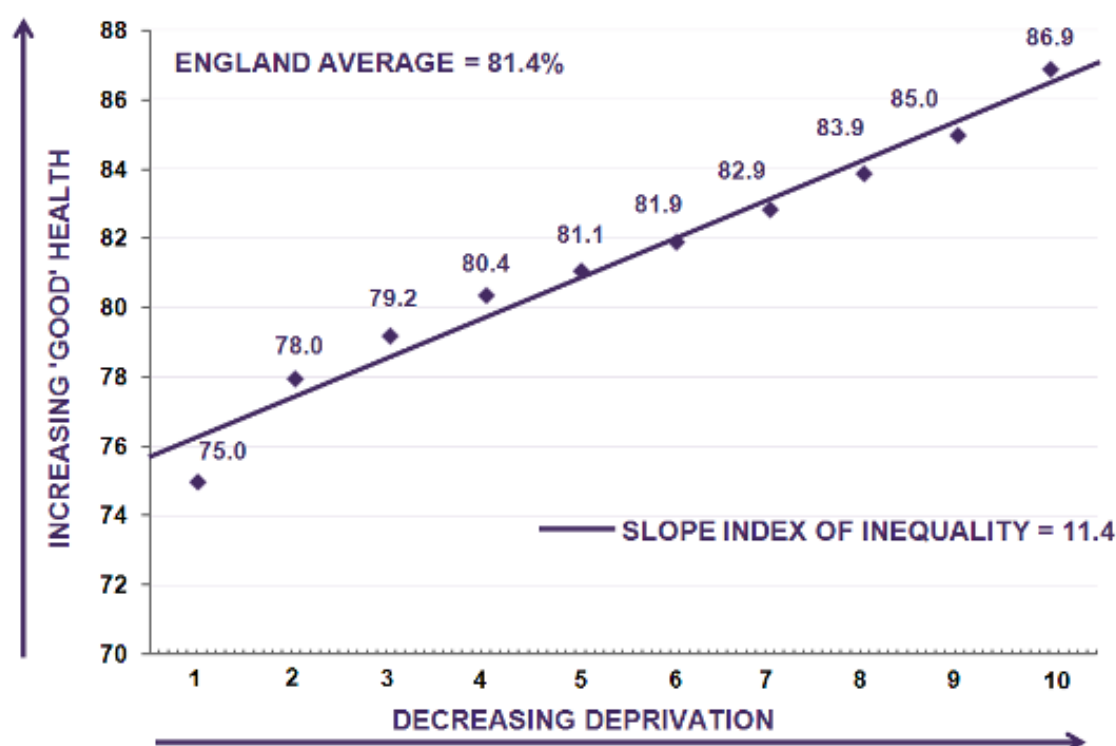
method of determining the extent of inequality between populations that is related to their relative level of disadvantage better reflects the size of the inequality between the least and most deprived areas than the summary scores of local authorities used above. By using LSOA groupings, a more valid measure of the extent of inequality in health between area populations can be constructed using the Slope Index of Inequality¹; a statistic which is able to take account of decile differences in population size and therefore the relative weight that should be placed on each decile.

In 2011 an 11.9 percentage point gap exists between the least and most deprived area deciles; in the most deprived areas, the rate of 'Good' health was only 75 per cent, whereas in the least deprived decile it was 86.9 per cent; however, the Slope Index of Inequality (figure 5), which takes account of the different population sizes across all deciles, refines this difference as slightly smaller at 11.4 percentage points, shown by the gradient of the purple line.

An interesting feature of this chart is the consistent incremental improvement in 'Good' health as the level of deprivation lessens; however, a higher increase occurs between deciles 9 and 10 and a higher decrease between deciles 2 and 1, while smaller differences occur between the intervening adjacent deciles.

Figure 5. General health by level of area deprivation ("Good" general health by deprivation deciles, showing the Slope Index of Inequality)

England, 2011, Deprivation deciles



Source: Census - Office for National Statistics

Notes:

1. Rounded values

2. Slope Index of Inequality is calculated using weighted regression, which takes account of the different population sizes of the area deciles to derive a predicted slope which represents the extent of inequality across the whole population.
3. Deprivation deciles based on the English Indices of deprivation 2010 (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6872/1871524.xls)

Download chart

XLS [XLS format](#)
(19 Kb)

Further analysis will be needed to support this provisional finding by comparing decile age structures and taking account of any future revisions to the Indices of Deprivation using 2011 Census data

Notes

1. The Slope Index of Inequality (SII) assesses the absolute inequality between the least and most deprived tenths, taking account of the inequality across all adjacent area tenths, rather than focusing only on the extremes. It is calculated using weighted regression, which ensures the different population sizes of the area groupings is taken into account. The regression calculates a predicted slope which represents the extent of inequality across the whole population.

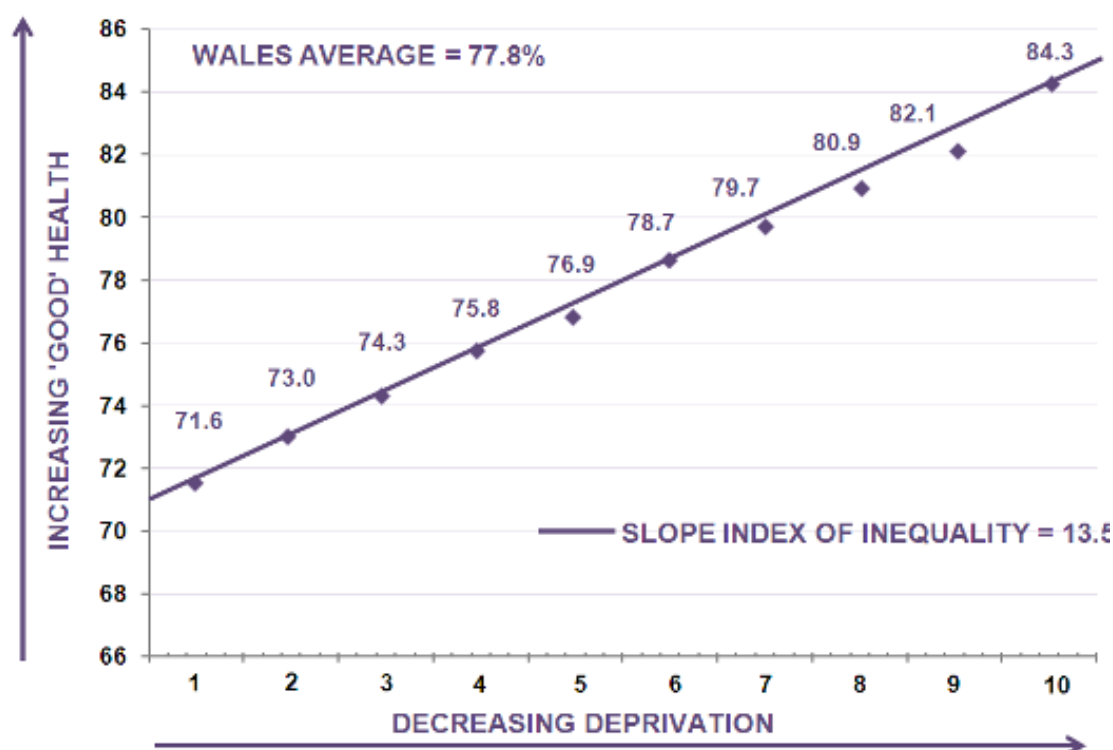
Inequality in Wales

In Wales there were 1,909 lower super output areas enumerated in the 2011 Census; [the use of the ONS lookup file](#) enables the total number of census LSOAs to be assigned a WIMD 2011 rank, with each decile consisting of approximately 191 areas.

Figure 6 shows the rates of 'Good' general health for each decile in 2011. As in England, health inequality in Wales is sizeable, a gap of 12.7 percentage points existed between the most and least deprived area deciles; however the Slope Index of Inequality¹ suggests this is a slight underestimate and the true inequality is 13.5 percentage points. Among the most deprived area decile, 'Good' general health was only 71.6 per cent, 3.4 percentage points lower than the equivalent most deprived decile in England. Generally the Welsh deciles had lower percentages of 'Good' general health than the equivalent English deciles, but this may be partly influenced by the different measure of deprivation used in Wales.

Figure 6. General health by level of area deprivation ("Good" general health by deprivation deciles, showing the Slope Index of Inequality)

Wales, 2011, Deprivation deciles



Source: Census - Office for National Statistics

Notes:

1. Rounded values
2. Slope Index of Inequality is calculated using weighted regression, which takes account of the different population sizes of the area deciles to derive a predicted slope which represents the extent of inequality across the whole population.
3. Deprivation deciles based on the Welsh Index of Multiple Deprivation 2011 (<http://wales.gov.uk/topics/statistics/theme/wimd/wimd2011/?jsessionid=0938A37D7E1DB1B1CD933F051D8728B4?lang=en>)

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(18.5 Kb)

Further analysis will be needed to support this provisional finding by comparing decile age structures and taking account of any future revisions to the Welsh Indices of Deprivation using 2011 Census data

Notes

1. The Slope Index of Inequality (SII) assesses the absolute inequality between the least and most deprived tenths, taking account of the inequality across all adjacent area tenths, rather than focusing only on the extremes. It is calculated using weighted regression, which ensures the

different population sizes of the area groupings is taken into account. The regression calculates a predicted slope which represents the extent of inequality across the whole population.

More Census analysis

[Census Analysis landing page](#)

Background notes

1. This publication follows the [2011 Census Population and Household Estimates for England & Wales](#). The census provides estimates of the characteristics of all people and households in England and Wales on census day. These are produced for a variety of users including government, local and unitary authorities, business and communities. The census provides population statistics from a national to local level. This analysis discusses the results at national, regional, local and small area level.
2. A question on self-assessed general health was included in both the 2001 and 2011 Censuses. In 2001, each person in a household was asked to rate their general health over the last 12 months; the possible responses were 'Good', 'Fairly good' or 'Not good'. In 2011 each person in the household was asked to rate their health in general; the possible responses were 'Very good', 'Good', 'Fair', 'Bad' and 'Very bad'. Unlike simple indicators based on the presence or absence of disease, an important property of the general health status indicator is that it includes the entire spectrum of health states ranging from 'Good' to 'Not good' health.
3. Self reports are useful in indicating general well-being, health-related quality of life, the experience of long-term illness and the relative risks of future admission to hospital, impairment and mortality. Therefore the monitoring of general health over time is important for determining fitness for work, need for care and benefits and social capital. Self-assessed health draws together an individual's perception of all aspects of their health and wellbeing.
4. Comparability between 2001 and 2011 relies on a method, [developed by ONS in 2009 \(275.3 Kb Pdf\)](#), which has been applied to translate the 2011 categories to the 2001 Census population; however, this method requires combining the categories into two health states:
 - a. 'Good' (representing those that would have reported their general health as either 'Very good' or 'Good') if the 2011 question had been asked in 2001, and
 - b. 'Not good' (those that would have reported their general health as 'Fair', 'Bad' or 'Very bad') if the 2011 question had been asked in 2001.
5. The absence of age structure breakdowns in these results means that the accuracy of creating the two health states of 'Good' general health and 'Not good' general health in 2001 is lessened. Therefore the comparison between 2001 and 2011 should be interpreted as an initial indication of change rather than definitive evidence. Further work using age-specific and age standardised measures will be undertaken by ONS later in 2013 to further refine the measurement of change between 2001 and 2011.

6. Population weighted average of the combined scores for the LSOAs in a local authority district. This measure is calculated by averaging the LSOA scores in each local authority district after they have been population weighted.
7. The Slope Index of Inequality (SII) assesses the absolute inequality between the least and most deprived tenths, taking account of the inequality across all adjacent area tenths, rather than focusing only on the extremes. It is calculated using weighted regression, which ensures the different population sizes of the area groupings is taken into account. The regression calculates a predicted slope which represents the extent of inequality across the whole population.
8. 2001 Census data are available via the [Neighbourhood Statistics website](#).
9. Interactive [data visualisations](#) developed by ONS are also available to aid interpretation of the results.
10. Future releases from the 2011 Census will include more detail in cross tabulations, and tabulations at other geographies. These include wards, health areas, parliamentary constituencies, postcode sectors and national parks. Further information on future releases is available online in the [2011 Census Prospectus](#).
11. ONS has ensured that the data collected meet users' needs via an extensive [2011 Census outputs consultation](#) process in order to ensure that the 2011 Census outputs will be of increased use in the planning of housing, education, health and transport services in future years.
12. Any reference to local authorities includes both local and unitary authorities.
13. Some numbers and percentages throughout this report may not sum due to rounding.
14. ONS is responsible for carrying out the census in England and Wales. Simultaneous but separate censuses took place in Scotland and Northern Ireland. These were run by the National Records of Scotland (NRS) and the Northern Ireland Statistics and Research Agency (NISRA) respectively.
15. A person's place of usual residence is in most cases the address at which they stay the majority of the time. For many people this will be their permanent or family home. If a member of the services did not have a permanent or family address at which they are usually resident, they were recorded as usually resident at their base address.
16. All key terms used in this publication are explained in the [2011 Census glossary](#). Information on the [2011 Census Geography Products for England and Wales](#) is also available.
17. All census population estimates were extensively quality assured, using other national and local sources of information for comparison and review by a series of quality assurance panels. An extensive range of [quality assurance, evaluation and methodology](#) papers were published alongside the first release in July 2012 and have been updated in this release, including a [Quality and Methodology Information \(QMI\) document \(152.8 Kb Pdf\)](#).

18. The 2011 Census achieved its overall target response rate of 94 per cent of the usually resident population of England and Wales, and over 80 per cent in all local and unitary authorities. The population estimate for England and Wales of 56.1 million is estimated with 95 per cent confidence to be accurate to within +/- 85,000 (0.15 per cent).
19. Details of the policy governing the release of new data are available by visiting www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html or from the Media Relations Office email: media.relations@ons.gsi.gov.uk

These National Statistics are produced to high professional standards and released according to the arrangements approved by the UK Statistics Authority.

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