

Article

# 2011 Census analysis: General Health in Overcrowded and Under-occupied Households in England and Wales

Using 2011 Census data, we look at residents living in overcrowded and under-occupied households and their general health. Results show residents living in overcrowded households reported significantly higher levels of “not good” health compared with those living in under-occupied households. Young people (aged 0 to 15) were more than twice as likely to report “not good” health if they lived in overcrowded households.



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# 1. Key points

- Residents living in overcrowded households reported significantly higher levels of 'Not Good' health compared with those living in under-occupied households.
- Young people (aged 0 to 15) were more than twice as likely to report 'Not Good' health if they lived in overcrowded households than in under-occupied households.
- In three of the four age groups (0 to 15, 50 to 64 and 65+), the West Midlands had the largest general health gap between residents living in under-occupied households and residents living in overcrowded households across the English regions and Wales.
- Across all age groups residents in the South East reported consistently lower levels of 'Not Good' health in both under-occupied and overcrowded households.

# 2. Policy context

The 2011 Census reported that there were approximately [1.1 million overcrowded households in England and Wales](#). [Prior research](#) has shown that overcrowded households negatively affect the physical health (in terms of the transmission of illness and disease) and mental health (for example, anxiety, depression and stress) of those living in them. Using 2011 Census data, this analysis looks further at general health by bedroom occupancy rating in England (regionally as well as nationally) and Wales. This analysis will be useful for national and local policy makers, seeking evidence on the wider determinants of health inequality (for example, the Department for Communities and Local Government, the Welsh Government and the Local Government Association) to use in cross-sector actions such as addressing housing supply limitations and improving living standards, especially in the social housing sector. This analysis will also inform discussions and debates such as the [National Conversation on Health Inequalities](#), launched in February 2014 by Public Health England.

# 3. Definitions

Residents in England and Wales were asked to assess their general health in the 2011 Census (question 13, Box 1). Residents who assessed their general health as 'Very good' or 'Good' were classified as having 'Good' health. Those who answered their general health was 'Fair', 'Bad', or 'Very bad' were classified as having 'Not Good' health. This analysis focuses on the proportion (given as percentages) of usual residents (age groups 0 to 15, 16 to 49, 50 to 64 and 65 and over) who assessed their general health as 'Not Good'.

## Box 1: General health question in the 2011 Census

13 How is your health in general?

Very good	Good	Fair	Bad	Very bad
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The 2011 Census collected data on bedroom occupancy in a household. A bedroom occupancy rating was derived for each household in England and Wales by subtracting the 'bedroom standard' (recommended in the [Housing \(Overcrowding\) Bill of 2003](#)) from the number of bedrooms actually available in the house (as indicated in the 2011 Census). The 'bedroom standard', provides a notionally recommended number of bedrooms for each household based on its size and the age, sex, marital status and relationship among members of the household. The bedroom occupancy rating indicates whether a person lives in an overcrowded household or an under-occupied household. The bedroom occupancy ratings are defined as follows:

- Occupancy rating of zero: the household has the precise number of bedrooms recommended by the 'bedroom standard'. For the purpose of this publication, a household with an occupancy rating of zero will be referred to as a standard occupancy home.
- Occupancy rating of -1 or less: the household has at least one bedroom too few for the number and composition of people living in the household and is considered overcrowded by the bedroom standard.
- Occupancy rating of +1: indicates that a household has one bedroom more than is recommended for the number and composition of people living in the household and is considered under-occupied by the bedroom standard.
- Occupancy rating of +2 or more: indicates that a household has two or more bedrooms more than is recommended for the number and composition of people living in the household and is also considered under-occupied.

For the purpose of this analysis, those people who were living alone were excluded; this was implemented for two main reasons:

1. A large proportion (41.1%) of those residents who were living alone were 65 years and over (for example, 58.9% of those aged 85 and over live alone). By excluding those who live alone this analysis controls for the less than favourable health effects of old age and living alone (ONS, [2001 \(71.2 Kb Pdf\)](#) ).
2. A house cannot be overcrowded with only one person living in it.

Following this reasoning, 7.1 million (12.8% of the population) people were excluded from this analysis. This analysis included 48 million residents living in shared households (in England and Wales). Of these, 4.6 million were classed as living in overcrowded households, 13.9 million as living in standard occupancy households and 29.5 million as living in under-occupied households. [Further information](#) on the Demographic and Socio-Economic Characteristics of those living alone in England and Wales was previously published on the ONS website.

## 4. Results: England and Wales

The results discussed will compare overcrowded households with under-occupied households with two or more bedrooms spare. Data for under-occupied houses with one bedroom spare can be found in the reference tables provided.

### England

In England, 45.4 million people were living in a shared household and thus were included in this analysis.

The general health gap between residents living in overcrowded households and those living in under-occupied households widened with age (Figure 1). The 2011 Census found that 2.8% of young people (aged 0 to 15) living in England reported 'Not Good' health. However, young people were more than twice as likely to report 'Not Good' health if they lived in overcrowded households (4.0%), compared with if they lived in under-occupied households (1.6%), a difference of 2.4 percentage points. The health gap is largest amongst those aged 65 and over at 22.6 percentage points, with 61.9% of those living in overcrowded households reporting 'Not Good' health, compared with 39.3% in under-occupied households.

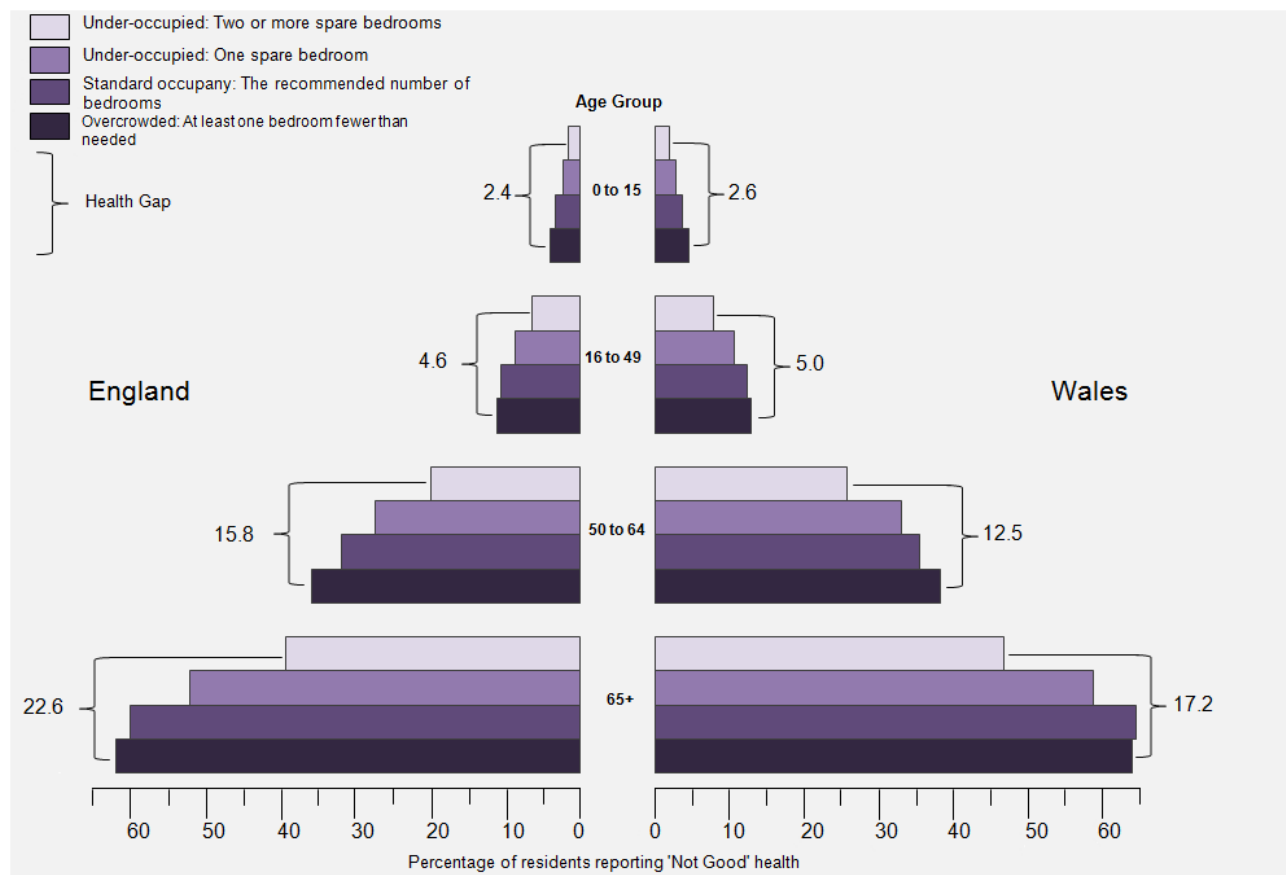
## Wales

In Wales, 2.6 million people were living in a shared household and thus were included in this analysis.

The 2011 Census found that 3.1% of young people living in Wales reported 'Not Good' health. Young people living in overcrowded households in Wales were more than twice as likely to report 'Not Good' health (4.4%) compared with those living in under-occupied households (1.8%), a difference of 2.6 percentage points.

The health gap between residents living in overcrowded households and those living in under-occupied households in Wales was found to widen as age increased. The health gap was largest for those aged 65 and over (a 17.2 percentage point difference), with 63.6% of people living in overcrowded households reporting 'Not Good' health, compared with 46.4% living in under-occupied households. Interestingly, in the 65 and over age group, the percentage of residents reporting 'Not Good' health in standard occupancy homes was slightly higher at 64.1%, than in households that were overcrowded (63.6%).

**Figure 1: Percentage of population reporting 'Not Good' health in overcrowded and under-occupied households, England and Wales, 2011**



Source: Census - Office for National Statistics

**Notes:**

1. 2011 Census data
2. The 'Health Gap' is the percentage point difference between those living in 'Not Good' health in overcrowded and under-occupied households (with two or more spare bedrooms)

## 5. Results: English regions and Wales

This section looks at the variations in general health across occupancy rating categories in the English regions and Wales. The analysis is separated into the four age groups.

Notably, in three of the four age groups (0 to 15, 50 to 64 and 65 and over), the West Midlands had the largest health gap between those living in under-occupied households and those living in overcrowded households. Furthermore, for these age groups, the South East had the lowest 'Not Good' health rates across all under-occupied, overcrowded and standard occupancy categories.

### Age 0 to 15

Young people (aged 0 to 15) in the South East living in under-occupied households reported the lowest levels of 'Not Good' health at 1.4% and Wales, the North East, North West and Yorkshire and The Humber reported the highest at 1.8% (Table 1). For overcrowded households, the West Midlands had the highest proportions reporting 'Not good' health at 4.4%, while the lowest rate was again in the South East with 3.7%.

The largest general health gap in terms of 'Not Good' health was in the West Midlands with a 2.7 percentage point difference between residents living in under-occupied households and those living in overcrowded households. The smallest general health gap in terms of 'Not Good' health was in the North West with a 2.2 percentage point difference.

**Table 1: Percentage of Young People (0 to 15 years old) in 'Not Good' Health living in Overcrowded and Under-Occupied Households, 2011**

English regions /Wales	Under-occupied: Two or more spare bedrooms	Overcrowded: At least one bedroom fewer than needed	Health Gap
North East	1.8	4.1	2.3
North West	1.8	4.0	2.2
Yorkshire and The Humber	1.8	4.3	2.6
East Midlands	1.6	3.9	2.4
West Midlands	1.7	4.4	2.7
East	1.5	3.9	2.3
London	1.6	4.0	2.4
South East	1.4	3.7	2.3
South West	1.6	4.0	2.4
Wales	1.8	4.4	2.6

Source: Office for National Statistics

Notes:

1. 2011 Census data
2. The 'Health Gap' is the percentage point difference between those living in 'Not Good' health in overcrowded and under-occupied households (with two or more spare bedrooms)

In every region, the percentage prevalence of 'Not Good' health in overcrowded households was more than twice that in under-occupied households, demonstrating the importance of personal living space to health among children.

## Age 16 to 49

The South East had the lowest percentage of residents reporting 'Not Good' health of those living in under-occupied households (5.6%) and Wales had the highest (7.8%), as Table 2 shows. For overcrowded households, the North East had the highest percentage of residents reporting 'Not Good' health at 13.1% and London had the lowest at 9.9%.

The largest health gap was in the North East with a 5.7 percentage point difference, with 7.4% of residents reporting 'Not Good' health in under-occupied households compared with 13.1% of residents in overcrowded households. The smallest health gap was in London with a 4.1 percentage point difference, with 5.8% of residents reporting 'Not Good' health in under-occupied households compared with 9.9% of residents in overcrowded households.

**Table 2: Percentage of 16 to 49 year olds in 'Not Good' Health living in Overcrowded and Under-Occupied Households, 2011**

English regions /Wales	Under-occupied : Two or more spare bedrooms	Overcrowded: At least one bedroom fewer than needed	Health Gap
North East	7.4	13.1	5.7
North West	7.2	12.7	5.5
Yorkshire and The Humber	7.2	12.4	5.2
East Midlands	7.0	12.0	5.0
West Midlands	7.3	12.9	5.6
East	6.1	10.5	4.4
London	5.8	9.9	4.1
South East	5.6	10.3	4.7
South West	6.5	11.5	5.0
Wales	7.8	12.8	5.0

Source: Office for National Statistics

Notes:

1. 2011 Census data
2. The 'Health Gap' is the percentage point difference between those living in 'Not Good' health in overcrowded and under-occupied households (with two or more spare bedrooms)

## Age 50 to 64

For under-occupied households, the North East had the highest percentage of residents reporting 'Not Good' health at 25.7%, compared with the South East at 15.9% (Table 3). For overcrowded households, the West Midlands had the highest percentage of residents reporting 'Not Good' health at 41.7 %, compared with the South East at 30.6%.

The largest health gap was in the West Midlands with a difference of 19.2 percentage points, with 22.5% of residents reporting 'Not Good' health in under-occupied households compared with 41.7% of residents in overcrowded households. The smallest health gap was in Wales with a 12.5 percentage point difference, 25.6% of residents in under-occupied households reported 'Not Good' health compared with 38.1% in overcrowded households.

**Table 3: Percentage of 50 to 64 year olds in 'Not Good' Health in Overcrowded and Under-Occupied Households, 2011**

English regions /Wales	Under-occupied : Two or more spare bedrooms	Overcrowded: At least one bedroom fewer than needed	Health Gap
North East	25.7	40.4	14.7
North West	23.2	39.6	16.4
Yorkshire and The Humber	22.3	40.1	17.8
East Midlands	21.5	35.8	14.3
West Midlands	22.5	41.7	19.2
East	18.1	31.8	13.7
London	19.6	34.8	15.2
South East	15.9	30.6	14.8
South West	17.6	32.0	14.4
Wales	25.6	38.1	12.5

Source: Office for National Statistics

Notes:

1. 2011 Census data
2. The 'Health Gap' is the percentage point difference between those living in 'Not Good' health in overcrowded and under-occupied households (with two or more spare bedrooms)

## Age 65 and over

Wales had the highest percentage of residents reporting 'Not Good' health at 46.4% for those living in under-occupied households, compared with the South East at 33.7% (Table 4). For overcrowded households, the West Midlands had the highest percentage of residents reporting 'Not Good' health at 68.0%, compared with the South East at 56.3%.

The largest health gap was in the West Midlands with a difference of 25.8 percentage points, with 42.2% of residents reporting 'Not Good' health in under-occupied households compared with 68.0% of residents in overcrowded households. The smallest health gap was in Wales with a difference of 17.2 percentage points, with 46.4% of residents in under-occupied households reporting 'Not Good' health compared to 63.6% in overcrowded households.



**Table 4: Percentage of residents aged 65 and over in 'Not Good' Health in Overcrowded and Under-Occupied Households, 2011**

English regions /Wales	Under-occupied : Two or more spare bedrooms	Overcrowded: At least one bedroom fewer than needed	Health Gap
North East	45.9	66.9	21.0
North West	42.7	65.1	22.4
Yorkshire and The Humber	42.2	64.9	22.7
East Midlands	41.2	62.7	21.5
West Midlands	42.2	68.0	25.8
East	36.9	57.8	20.8
London	42.3	61.0	18.8
South East	33.7	56.3	22.6
South West	36.1	58.3	22.2
Wales	46.4	63.6	17.2

Source: Office for National Statistics

Notes:

1. 2011 Census data
2. The 'Health Gap' is the percentage point difference between those living in 'Not Good' health in overcrowded and under-occupied households (with two or more spare bedrooms)

This analysis suggests that increased personal living space within a household is beneficial to health for all age groups, a finding consistent with prior evidence such as that reported in '[The impact of Overcrowding on Health & Education](#)' 2004 and '[Full house? How overcrowded housing affects families \(2005\)](#)'. This analysis also shows that the Southern English regions report lower levels of 'Not Good' health compared to the Northern English regions across all age groups – with Wales having comparable levels to the North of England. It must be pointed out that although health is worse in overcrowded households it is important to consider that those who are in 'Not Good' health may move into a family household to receive care and this might make the house overcrowded.

## 6. Background notes

1. The analysis is based on data from a bespoke 2011 Census table BD0074 - General health by occupancy rating (bedrooms) and age.

2. The Housing (Overcrowding) Bill of 2003 defines the bedroom standard as: “(4) For the purposes of the bedroom standard a separate bedroom shall be allocated to the following persons:
  - a) a person living together with another as husband and wife (whether that other person is of the same sex or the opposite sex)
  - b) a person aged 21 years or more
  - c) two persons of the same sex aged 10 years to 20 years
  - d) two persons (whether of the same sex or not) aged less than 10 years
  - e) two persons of the same sex where one person is aged between 10 years and 20 years and the other is aged less than 10 years
  - f) any person aged under 21 years in any case where he or she cannot be paired with another occupier of the dwelling so as to fall within (c), (d) or (e) above.”

Please note that while the 2011 Census uses the bedroom standard definition stated above, the Housing Bill of 2003 also takes account of uninhabitable bedrooms and rooms with less than 50ft<sup>2</sup> floor space in determining bedrooms or rooms available to a household. The census does not collect this information and it is therefore not used in deriving the 2011 Census bedroom occupancy ratings.

3. Figures in this publication may not sum due to rounding
4. Census day was 27 March 2011.
5. 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, including a Quality and Methodology Information (QMI) document.
6. 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.
7. The England and Wales census questionnaires asked the same questions with one exception; an additional question on Welsh language was included on the Wales questionnaire.
8. 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 and the Northern Ireland Statistics and Research Agency respectively.
9. ONS is responsible for the publication of UK statistics (compiling comparable statistics from the UK statistical agencies above) and these are available on the [ONS website](#). These will be compiled as each of the three statistical agencies involved publish the relevant data. The [Northern Ireland census prospectus](#) and the [Scotland census prospectus](#) are available online.
10. 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.
11. All key terms used in this publication, such as usual resident are explained in the [2011 Census user guide](#).
12. The 2011 Census achieved its overall target response rate of 94% of the usually resident population of England and Wales, and over 80% in all local authorities. The population estimate for England and Wales of 56.1 million is estimated with 95% confidence to be accurate to within +/- 85,000 (0.15%).
13. A list of the names of those given pre-publication access to the statistics and written commentary is available in the [pre-release access list](#). The rules and principles which govern pre-release access are featured within the [Pre-release Access to Official Statistics Order 2008](#).

14. Issuing Body

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16. Details of the policy governing the release of new data are available by visiting [www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html](http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html) or from the Media Relations Office email: [media.relations@ons.gsi.gov.uk](mailto:media.relations@ons.gsi.gov.uk)