2016-based subnational population projections: frequently asked questions

An article providing answers to questions on the 2016-based subnational population projections.

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1 . Introduction

This article answers questions on the 2016-based subnational population projections, published on 24 May 2018. It also covers the variant subnational population projections published on 9 April 2019.

2 . What are the subnational population projections and how are they used?

The 2016-based subnational population projections for England provide an indication of the possible size and structure of the future population, based on the continuation of recent demographic trends, and are produced on a consistent basis across all local authorities in England. Subnational population projections for English regions, counties, clinical commissioning groups (CCGs) and NHS England regions are produced from the local authority projections.

The subnational population projections are an input into household projections and are used by central and local government for planning education and health services provision. They were an important variable used by the Ministry of Housing, Communities and Local Government (MHCLG) in the last assessment of local authority need in financial year ending March 2014 and, depending on the outcome of the Review of local authorities' relative needs and resources, may form part of a new funding formula from financial year ending March 2021 onwards.

They are also used by local authorities for local planning or as a basis for producing their own projections. The subnational population projections are used to inform local-level policy and planning. Other uses include, but are not limited to:

- emergency service provision

- business development

- survey design and development

- planning local events

- calculation of local rates

- academic and market research

3 . What population base was used in these subnational population projections?

The base year data used in these subnational population projections are the revised mid-2016 population estimates and underlying components of change data, which are part of the revised back series of population estimates for the years mid-2012 to mid-2016, published on 22 March 2018.

4 . What population is covered by the subnational population projections?

The projections cover usually resident population. This includes all long-term international migrants (people changing their country of usual residence for at least one year). However, it does not include short-term migrants who come to or leave the UK for less than a year.

5 . Are single year of age data available?

We publish unrounded [subnational population projection data by single year of age and components of change](#) so that users can aggregate to their own age bands. We no longer publish subnational population projections by the broad age groups that used to be available in Table 4.

Subnational population projections data at single year of age are not as robust as projections data at greater levels of aggregation. However, making projections data available in this way allows users to aggregate data to the age groups that they require, which may be different from the standard five-year age groups. We advise that the data should be aggregated to five-year age groups or larger and rounded to the nearest 100 people if quoted in any publication, presentation or documentation.

Also available are a set of tables containing projected population for males, females and persons, by five-year age groups, for all years, for regions, counties, local authorities and health geographies. We have also published summary components of change tables for regions, counties and local authorities. The data in these tables are rounded to the nearest 100 people.

6 . How far ahead do the subnational projections go?

Projections are uncertain and become increasingly uncertain the further they are carried forward in time. For this reason, analysis of projection results mainly focuses upon the first 10 or 25 years of the projection period, which corresponds with the planning horizons of most users of the projections. Subnational projections are available for up to 25 years ahead.

Some of our main users require national projections over a longer time period for modelling purposes; therefore, the 2016-based national projections covered 100 years ahead. Caution must be used when interpreting these longer-term projections. National variant projections are also available to aid interpretation of the uncertainty.

7 . For what levels of geography are subnational population projections available?

Subnational projections for England are available for NHS England regions, clinical commissioning groups (CCGs), counties and local authorities within England only. The projections use the mid-2016 [geographic boundaries](#).

Subnational population projections for other UK countries are available from the respective devolved administrations: for Scotland by [National Records of Scotland](#), for Wales by the [Statistical Directorate of the Welsh Government](#) and for Northern Ireland by the [Northern Ireland Statistics and Research Agency](#).

[Subnational population projections across the UK: a comparison of data sources and methods](#) provides information on subnational population projections produced by the devolved administrations.

8 . How are the subnational population projections produced?

The subnational population projections methodology is based on the internationally recognised cohort component method, which takes the population at the start of the year and adjusts for births, deaths and migration to calculate the population at the end of the year. The births, deaths and migration figures used are derived from trends over the previous five years. The overall results are constrained to be consistent with the national population projections. For more detail about the methodology, please see the methodology used to produce the 2016-based subnational population projections for England.

9 . What changes have been made to the subnational population projections source data and methodology?

The changes to the subnational population projections source data and methodology are provided in the methodology used to produce the 2016-based subnational population projections for England.

10 . Were users informed about the changes to the methods and source data in the subnational population projections?

Yes, an information paper published on 19 January 2018 provided an overview of subnational population projections methodological developments and the changes to source data. Feedback on the changes to the 2016-based subnational population projections was requested from representatives of local authorities, clinical commissioning groups and city regions between 19 January 2018 and 2 March 2018. Overall, the feedback from the user engagement exercise was generally positive, which meant no further changes to the subnational populations methodology.

11 . What data sources were used to set the assumptions?

Registrations of births and deaths collected by the civil registration system at the General Register Office are used to calculate fertility and mortality rates. Internal migration estimates and cross-border migration estimates are based on administrative data, including data on General Practitioner (GP) registrations. International migration estimates are based on data from the International Passenger Survey. Asylum seeker data are from the Home Office and National Asylum Support Service, and data on people from Syria granted humanitarian protection under the Vulnerable Persons Resettlement Scheme (VPRS) are also provided by the Home Office. Ministry of Defence and British Forces Germany data are used to allocate returning UK armed forces and their dependants to the local areas where their units are due to be based. The revised back series of population estimates from years ending mid-2012 to mid-2016 is used in the calculation of trends. For more detail about the methodology, please see the methodology used to produce the 2016-based subnational population projections for England.

12 . What is the difference between internal, cross-border and international migration?

Internal migration covers movements of people between different local areas within England. Cross-border migration covers movements, in both directions, between England and the other constituent countries of the UK – Wales, Scotland and Northern Ireland. International migration covers movements, in both directions, between outside the UK and each local area. International migration uses the United Nations definition of an international long-term migrant – someone who changes their country of usual residence for a period of at least a year, so that the country of destination effectively becomes the country of usual residence.

13 . Do the subnational population projections take Brexit into account?

Population projections are not forecasts and, as such, do not attempt to predict the impact of government policies, development aims, changing economic or political circumstances such as Brexit, not least because it is very difficult to be sure of even the broad demographic impact.

If any recent changes have not yet affected the population estimates or trend data upon which the projections are based, then those changes will not affect the projections. The projections also do not consider the capacity of an area to accommodate changes in its population, such as planned housing growth. They simply provide the population size and age and sex structure that would result if the underlying assumptions about future fertility, mortality and migration were to be realised.

In simple terms, therefore, we do not take Brexit into account. However, because we used provisional international migration data up to March 2017 when deriving the shorter-term international migration assumptions in the national population projections, they do reflect the decline in net international migration that occurred following the Brexit vote in June 2016.

14 . Does ONS use local plan information to improve the subnational population projections?

Subnational population projections are projections, not forecasts, and as such do not attempt to predict the impact that government policies, development aims, changing economic circumstances or other factors might have on demographic behaviour. The projections do not consider the capacity of an area to accommodate changes in its population, nor do they attempt to predict how any local plan information may affect the projections. The projections simply indicate the population levels and age structure that would result if the assumptions and trends based on observed estimates were to be realised.

15 . Why is the main (principal) 2016-based population projection for this area different to the 2014-based projection?

We would expect the new population projections to be different and the reasons include changes in the:

- subnational trends (births, deaths and migration)

- assumptions for fertility, mortality and migration at national level

- source data (the revised population estimates and underlying components of change from years ending mid-2012 to mid-2016)

- methods used to produce the 2016-based subnational population projections in the following areas: international emigration; dependants of US foreign armed forces; UK armed forces (and dependants) returning from Germany; cross-border migration; people granted humanitarian protection; and asylum seekers.

The 2016-based variant subnational population projections also differ because they are based on different migration scenarios: high international migration, low international migration and 10-year migration.

For more detail about the methodology, please see the [methodology used to produce the 2016-based subnational population projections for England](#).

16 . Why are components of change data not available for health geographies?

As projections for clinical commissioning groups (CCGs) are not modelled directly but based on the projections created for local authorities, components of population change are not available for these areas. In many cases, CCGs share boundaries with local authorities or aggregations of local authorities, in which case population projections for these areas are calculated by aggregating the appropriate local authority projections. Where areas do not share boundaries, CCG projections are produced by apportioning local authority-level projections. The [methodology used to produce the 2016-based subnational population projections for England](#) provides further information on how the 2016-based CCG projections were calculated.

17 . Does ONS produce variant subnational population projections?

Yes, the [variant subnational population projections for England: 2016-based](#), published on 9 April 2019, provide three variant subnational population projections: high international migration, low international migration and 10-year migration. The high international migration and low international migration variants are produced broadly using the same methods as the 2016-based subnational population projections main release (the principal), except that the totals are constrained to match those in the 2016-based high and low migration variant national population projections for England.

The 2016-based 10-year migration variant uses 10 years' (years ending mid-2007 to mid-2016) worth of input data for international migration (including asylum seekers), internal migration and cross-border migration. The 10-year migration variant is consistent with the principal subnational population projections in that all migration components are constrained to the principal 2016-based population projection for England. However, because it uses 10 years' worth of migration input data rather than five, the distribution of migration at local authority level is different.

The methods for producing the variants are available in [methodology used to produce the 2016-based subnational population projections for England](#). Our future approach to variant subnational projections is yet to be determined but will be influenced by feedback on the current set.

18 . Are the input data for the 10-year migration variant consistent?

The 10-year migration variant was produced with input data whose methodology changed during the 10-year period. This means that any changes over time are liable to reflect a combination of both real world and methodological differences.

19 . When will the next set of subnational population projections be published?

Subnational population projections are published every two years, approximately six months after the national population projections. All planned future releases are announced on the [release calendar](#). It is likely that the next set of subnational population projections will be published in the first half of 2020

20 . How do I calculate the subnational population projections for State Pension ages?

The formula for calculating subnational population projections for State Pension ages is available in [Table of State Pension Age Factors Pensions Act 2014](#).

21 . I live in an area with large numbers of armed forces – how are they projected?

Armed forces personnel (and also dependants of foreign armed forces) are treated as a static population such that they retain the same size and age-sex structure as the base year, subject to the allowance for the planned return of armed forces and their dependants from Germany to the UK over the years ending mid-2017 to mid-2020.

The projections have used data from Ministry of Defence and British Forces Germany to allocate returning UK armed forces and their dependants to the local areas where their units are due to be based in the year they are due to return. For those returning between mid-2019 and mid-2020, no specific base has been assigned; instead, the armed forces and dependants have been distributed across a range of local authorities using base-to-residence matrices created from the 2011 Census.

The returning UK armed forces will become part of the static population in each area, while their dependants will be included in the civilian population and therefore aged on with the civilian fertility, mortality and migration rates applied in subsequent years.

22 . Are subnational population projections available for areas smaller than local authority?

We do not produce subnational population projections for areas smaller than local authority. Some local authorities and other analysts do produce their own projections for specific smaller geographic areas.

23 . Are subnational population projections available by characteristics such as ethnicity or country of birth?

We do not currently produce subnational population projections by characteristics such as ethnicity or country of birth. This is because the methodology and data sources used do not currently support the production of projections at this additional level of detail.

24 . Are these subnational population projections consistent with the national population projections produced by ONS?

The 2016-based subnational population projections are consistent with the 2016-based national population projections published on 26 October 2017. Across all subnational areas, they sum to the national principal projection for England in terms of population (by single year of age and sex) and components of change. The exception to this is the component for international inflow. This is because people from Syria granted humanitarian protection, plus UK armed forces returning from Germany and their dependants, are not included in the international inflow as, unlike in the national projections, they are added separately. However, these groups are included in the total projected population and so the subnational population projections remain consistent with the national population projections. For more detail, please see the methodology used to produce the 2016-based subnational population projections for England.

25 . How accurate are the subnational population projections?

As a result of inherent uncertainty of demographic behaviour, any set of projections will inevitably differ, to a greater or lesser extent, from actual population change.

Projections are uncertain and become increasingly so, the further they are carried forward in time, particularly for smaller geographical areas. Care should be taken in interpreting these data, particularly when broken down by age and sex. The projections are more robust at greater levels of aggregation, either by age or by area, since more detailed levels mean smaller numbers contributing to the projection process. Accuracy assessments are made periodically comparing the early years of the projected period in previous sets of projections with corresponding mid-year estimates. The most recent subnational population projections accuracy report was published in August 2015.

This release includes unrounded subnational population projection data by single years of age, allowing users to aggregate the data as they wish. However, users should note that subnational population projections are more robust at greater levels of aggregation. We advise that the data should not be aggregated to less than five-year age groups and rounded to the nearest 100 people if quoted in any publication, presentation or documentation.

Population estimates for the Isles of Scilly and to a lesser extent the City of London, are considered to be less reliable given the small population in these areas. Certain individual populations (specific age groups in specific local authorities) may also be very small. The population projections employ the same basic methodology across the country, so these areas are treated consistently. However, projections for these areas should be treated with particular caution.

26 . Do the 2016-based subnational population projections for mid-2017 differ from the mid-2017 population estimates?

Yes. The mid-2017 population estimates are based on mid-2016 population estimates and take account of the recorded numbers of births and deaths, and estimated migration in the year from mid-2016 to mid-2017. The population projections are also based on the mid-2016 estimates but rolled forward to mid-2017 using components based on recent trends, and also constrained to the mid-2017 values in the national population projection.

The latest national population projection used provisional births and deaths data up to mid-2017, and provisional international migration data up to March 2017, to inform its mid-2017 population totals.

27 . What about overseas students? Are they moved out of their university area after their studies?

Some overseas students will move elsewhere in the country, so would be expected to become part of our statistics on moves within the UK. Others will leave the UK – this too is covered in our estimates and resulting projections. In 2017 analysis was carried out on international student migration. However, during autumn 2018 research began linking Home Office visa data with student data from the Higher Education Statistics Agency; further details can be found in the case study. If this research is successful, it will give us additional insight into the quality of our estimates and projections.

28 . What if I can't find what I want?

If you have any difficulty finding the information you require, please contact the team via email at pop.info@ons.gov.uk or by telephone on +44 (0)1329 444661.