POPULATION PATTERNS

Seminar Series

'Missing' 90-year-olds

Britain is undeniably an ageing society but there are inconsistencies in the assumptions about how long we are living and the number of 'oldest old' living today. The latest Census revealed the country was 'missing' a number of people aged 90 and above. This has significant implications for future spending and mortality predictions.

Researching the 'Missing' 90-year-olds is part of a broader demographic series by the International Longevity Centre – UK (ILC-UK, supported by Partnership Assurance Group entitled *Population Patterns*. Population patterns looking at the influences on and changes in UK demographics, particularly our ageing population. In seeking high quality debate about the way in which Britain is changing, how we record the changes and respond to it, Partnership aims to influence better decisions in the way we plan for older age and support consumers throughout the changing landscape of their lives. especially age-related expenditure.

The Census has tracked population, housing, labour markets and a host of other factors that help to indicate change in UK life for the past 200 years.

What has happened?

The latest population projections, based on the 2011 Census and published in July 2012, showed a small but material reduction in the projected lifespan of pensioners and the numbers of oldest old living in England and Wales.

The Office of National Statistics' (ONS) publication *What are the chances of reaching 100?* published in 2012 projected that 9.5%, or 37,000, men aged 65 in the UK in 2012 would reach age 100.

However, just a year later the figure had been revised to 8%, or 31,000, men and it can be argued that in fact a more realistic figure of 5-6% should be used, according to mortality experts.

But there is a more shocking downward revision that has not been highlighted; the Census revealed there are approximately 30,000 fewer people aged 90+ alive than was thought before the Census.

This has meant mortality rates at these ages have had to be revised sharply upwards. As a result the pace at which mortality rates are declining is **much lower** than previously believed. In 2010 it was thought that mortality rates for those aged 90+ were improving at a rate of between 2.5% and 3% a year, the actual rate – based on the latest Census – is around just 1% per annum.

The revelations in the 2011 Census have led practitioners to significantly revise their expectations of future mortality improvement at the highest ages.

This has led experts, statisticians and policymakers to question whether we have an accurate picture of old age and retirement.

> ***There has been no attention given to old age estimates [even though] the revision is significant in terms of percentage change***
>
> Richard Willets, Partnership, director of longevity

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International problem

Other countries have experienced similar issues.

For instance, in 2004 the US Census Bureau projected there would be 114,000 Americans aged 100+ in 2010, and 1.1 million centenarians by 2050. However, the 2010 Census revealed the figures were wholly inaccurate and the figures were revised sharply downwards. Just 53,364 Americans were aged 100+ and the projection for 2050 was revised down to 590,000.

Work now needs to be done to ensure that population estimates at the highest ages are as accurate as possible.

Why has it happened?

While the collection of data is thorough, it is in infallible and, as is proved by the mis-match between population estimates and reality, there is room for error.

Currently, the ONS makes mid-year population estimates of gender and age up to 89 and the 90+ population using the 'cohort component' method. This method rolls forward the number of people at each age, takes away the number of deaths and allows for net migration.

Additionally for the 90+ population, the 'Kannisto-Thatcher' method – a form of survivor ratio methodology - is used. This works on the basis that if someone dies in 2012, they were alive in 2011 (but a year younger), and in 2010 (and two years younger) and so on. Population estimates are therefore derived using data on deaths rather than population counts.

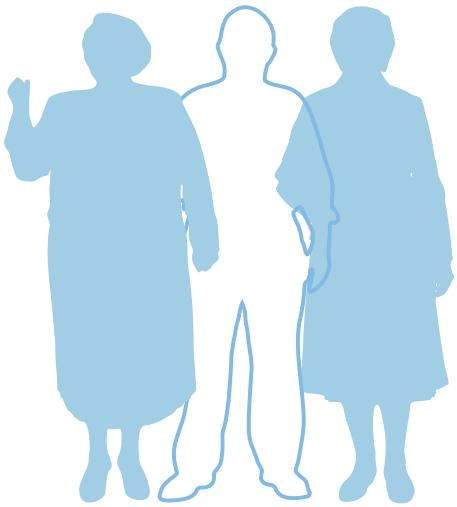
For every year that goes past, the population estimates are recalculated and become more accurate.

Data sets

The difficulty in making accurate estimates at the highest ages arises because the size of the 90+ cohort is small, meaning that any inaccuracy that has found its way into prior population estimates is magnified. Estimation errors are rolled forward and have a bigger impact (in proportionate terms) as the size of a cohort reduces.

This means that a mis-count of people in their 80s would have a larger proportionate impact as the cohort moved into their 90s.

The potential for errors tends to be larger for men as there are fewer men than women living at older ages. If there is a 1% error in population counts for ages 80-89 this is likely to become a 4% error for females aged 90-99 and 7% error for males of this age. This is a crucial area for the ONS and one which is being addressed in its consultation on reforming the Census. In the first of the Population Patterns series, *End of the Census*, it was noted that continuous use of administrative data in conjunction with a once in a decade Census would reduce errors in the data.



Validity

One of the main problems facing statisticians is that they are unsure of the validity of the data they originally start with. When it comes to dealing with the oldest old there is a concern about mis-reporting of dates of birth, incorrect records of births, processing issues and exaggeration of age. All of these, again, have a significant impact on smaller cohorts and can lead to problems in the figures.

There is no gold standard. There are possible sources of error in all data sources

Angele Storey, ONS demographic analysis unit

Why does it matter?

The fact that assumptions about our ageing population and mortality at older ages are subject to uncertainty has an impact on not just our understanding of older people, but on state expenditure and spending by private companies, particularly those operating in the financial services sector.

Understanding

While only a small number of people in England and Wales live into very old age, their circumstances are often very particular to them and life invariably becomes tougher.

A high proportion suffer falls, limiting long-term conditions, frailty and day-to-day struggles. Depression and loneliness often play a debilitating part of their lives. There is also increased risk of developing dementia, although this is likely to be underplayed.

In terms of wealth, 10% of over-90s have net wealth of £3,000 or less, living on a reducing amount of money into older age.

State spending

With an ageing population comes inevitable increased spending on the state pension and later life benefits, healthcare, social care, suitable public transport and housing.

The government has to make provision for this increase in spending based on population estimates from the ONS. If future money is being allocated to particular resources based on the inaccurate projections it is simply not available to be allocated to an area in which it is needed.

However, it could be argued that the number of oldest old in receipt of the state pension etc. is so low that any inaccuracy would have an immaterial impact, although it has a greater impact when extrapolated over time.

If we assume that £300 million has to be spent somewhere that it is never going to be spend then that is £300 million that could be spent elsewhere

Andrew Latto, deputy director, DWP work, welfare and wellbeing in later life

Private companies

For financial service companies selling annuities and other types of life insurance, changes in mortality rates are of particular interest.

The same is true for private companies paying out defined benefit (DB) pensions.

Companies with DB schemes are contracted to pay pensions to retired employees until death, which is becoming an increasingly large financial commitment as people live longer. Revisions in projected lifespans in retirement can have a large impact on pension valuations and even reduce the deficits that some companies are shouldering.

How can we fix the problem?

The ONS has launched a review into how the approaches used to produce population estimates at the highest ages can be improved.

Ideas were discussed at the ILC-UK meeting to discuss this topic.

Data quality verification

Validating a sample of 90+ deaths by matching them to birth certificates each year would help to uncover any margin of error in reported ages, or misreporting of date of birth that may have occurred.

The ONS could also use its longitudinal study to trace those aged 90 to 115 back through the five available Censuses. While this would be time and resource-consuming for the ONS it would add a degree of accuracy to the population predictions.

Government data sources

While the Census is a reliable way to track changes in the country's demographics, it would be made more reliable if data from more government departments was fed in.

To better track the oldest old, the ONS could make use of data from other government sources, such as patient registrations, benefits payments and data from the Department for Work and Pensions.

However, it is not always easy or straightforward for other departments to feed into the ONS as has been well documented.

Other data sources

The financial services sector is a well-known user of mortality statistics and data that the ONS could make use of, or at least call upon, to help validate its own figures for the oldest old.

It has also been suggested that the ONS could be helped by mortality datasets compiled by combining the records of occupational pension schemes, which constituent a significant proportion of the population at retirement ages.

Both insurance companies and pension schemes have processes to ensure they are not paying pensions to individuals who have died.

The ONS is calling on statisticians, policymakers and other interested parties to put forward further ideas for reform.

By taking estimates from different sources and understanding the issues within them we can get the best possible outcome we can from a variety of sources

Dave Grimshaw, partner
Barnett Waddingham

Points to consider

- The use of multiple external and private data sources alongside the Census could help to verify the ages of the oldest old and reduce errors.
- The government must continue trends of open access to data to ensure accuracy of the oldest old data.
- Closer monitoring of the oldest old is needed to ensure they are not overlooked and that they are being adequately prepared for.
- The government should consider validating a proportion of data collected on those aged 90+ in the Census to ensure accuracy and account for marginal errors.
- Greater research into the lives of those aged 90+ is needed to ensure their physical and mental wellbeing is taken care of.

Final thoughts

As the population ages, the information collected on the oldest old will become increasingly important. By adapting the way in which data is collected and verified now it can be ensured that errors are not extrapolated in future and the ONS can build a genuine picture of the 90+ population living in the UK today.

Population patterns

Over the next 12 months ILC-UK, supported by specialist insurer Partnership Assurance Group, will undertake a series of events exploring the impact of demographic change on public policy. The Population Patterns series, #populationpatterns, will look at the long-term challenges demographic change will have for government, especially age-related expenditure.

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