

Population And Migration Statistics (PAMS) Committee (Scotland)
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Life Expectancy for Scottish Areas

Background

1. The National Records of Scotland (NRS) have been working with the Office for National Statistics (ONS), Information Services Division (ISD), Scottish Government, Northern Ireland Statistics and Research Agency (NISRA), Public Health England (PHE) and the Welsh Government to harmonise life expectancy statistics across the UK. The aim of this work is to produce consistent life expectancy statistics at the national and council area level across the UK, published at the same time.
2. ONS will publish subnational life expectancy (and healthy life expectancy) for the UK, constituency countries and council areas within the UK for 2013-15 on 29 November 2016. On the same day, NRS will publish life expectancy for Scotland, Scottish council areas and health boards for 2013-15. We will publish life expectancy for other geographies within Scotland (Scottish Index of Multiple Deprivation (SIMD), Urban Rural 6 fold classification, Scottish Parliamentary Constituencies and council areas by SIMD) at a later date.
3. ONS have also updated their method for calculating subnational life expectancy, in consultation with the devolved administrations. Subnational life expectancy calculations are abridged life tables which use population and deaths in grouped ages (<1, 1-4, 5-9, 10-14, etc). In previous publications, the upper age used in the calculations was 85 years and over. Due to an ageing population, ONS have increased the upper age category to 90 years and over which improves the estimate. NRS has investigated the impact of the method change for Scotland, and will also use the 90+ method for the 2013-15 publication. This paper illustrates the impact of this change for Scotland.

Impact of the method change at the Scotland level

4. ONS have recalculated the 2012-14 subnational life expectancy figures for Scotland and council areas using the 90+ upper age band. They have compared the results to the NRS published 2012-14 life expectancy which uses the 85+ upper age band¹.
5. ONS found that the calculations using the 90+ method were closer to the estimate using the full National Life Tables² for England and Wales. This suggests that the 90+

Footnote

1) Note that the published 85+ results used uncorrected 2012-14 Mid-year estimates (MYE) while the recalculated 90+ results use corrected 2012-14 MYE. So any difference could be due to a combination of the life expectancy method change and the MYE correction.

2) National Life Tables are complete life tables based on populations and deaths at single years of age. Therefore the National Life Tables provide the definitive estimate for life expectancy at the National level within the UK.

method provides a better estimate than the 85+ method. They also found that the 90+ life expectancy at birth estimate was lower than the 85+ estimate.

- Table 1 shows the same trend for Scotland. The estimate for Scotland using the 90+ method is much closer to the National Life Tables, differing by 0.03 years for males and 0.01 years for females. The 90+ estimate was lower than the 85+ estimate, by 0.07 years for males and females.

Table 1: Life expectancy at birth from the National Life Tables, abridged life tables closed at 85+ and 90+, Scotland, 2012-14

	National Life Tables	Abridged life tables closed at 85+ (Current method - NRS published)	Abridged life tables closed at 90+ (New method - ONS recalculated)
Male	77.05	77.15	77.08
Female	81.06	81.14	81.07

Impact for Scottish council areas

- ONS looked at the difference between the 85+ and 90+ methods for local authorities in England and Wales. They found that life expectancy at birth was typically lower with the 90+ method, although it was higher for some authorities. The differences in life expectancy at birth between the methods³ ranged from +0.03 years to -0.4 years for males, and from +0.1 years to -0.6 years for females.
- For most Scottish council areas, we found that the estimate with the 90+ method was lower than with 85+ method. For life expectancy at birth for males, the differences between the methods ranged from -0.02 years for Glasgow and West Dunbartonshire to -0.22 years for East Dunbartonshire. For females, the differences ranged from +0.04 years for Na h-Eileanan Siar to -0.36 years for East Dunbartonshire. The magnitude of the differences is similar to ONS's findings for England and Wales.
- Looking at life expectancy at 65 (the 65-69 year age band), we see the same pattern as with life expectancy at birth, with slightly larger differences between the methods. For males, the differences ranged between -0.03 years for Glasgow and West Dunbartonshire to -0.24 years for East Dunbartonshire. For females, the differences ranged from +0.05 years for Na h-Eileanan Siar to -0.39 years for East Dunbartonshire.

Footnote

3) Difference calculated as life expectancy estimate using 90+ method minus estimate using 85+ method.

10. Figures 1 and 2 suggest that the method change has a greater impact for councils with higher life expectancy. This makes sense as these councils are likely to have proportionately more people living into the older age groups. For example, East Dunbartonshire is the area which is most affected by the method change for both males and females. This council area also has the highest life expectancy for both males and females. Recent experimental statistics published by NRS on [Subnational Centenarians](#) showed that between 2005 and 2015, the number of people aged 90 and over increased by 84 per cent in East Dunbartonshire. This was the largest increase across all Scottish councils. East Dunbartonshire was also the council area with the highest proportion of centenarians who were male, with 33 male centenarians per 100 female centenarians (one in four centenarians were male).

Figure 1: Male life expectancy at birth (2012-14) for Scottish council areas plotted against the difference between the 85+ and 90+ method.

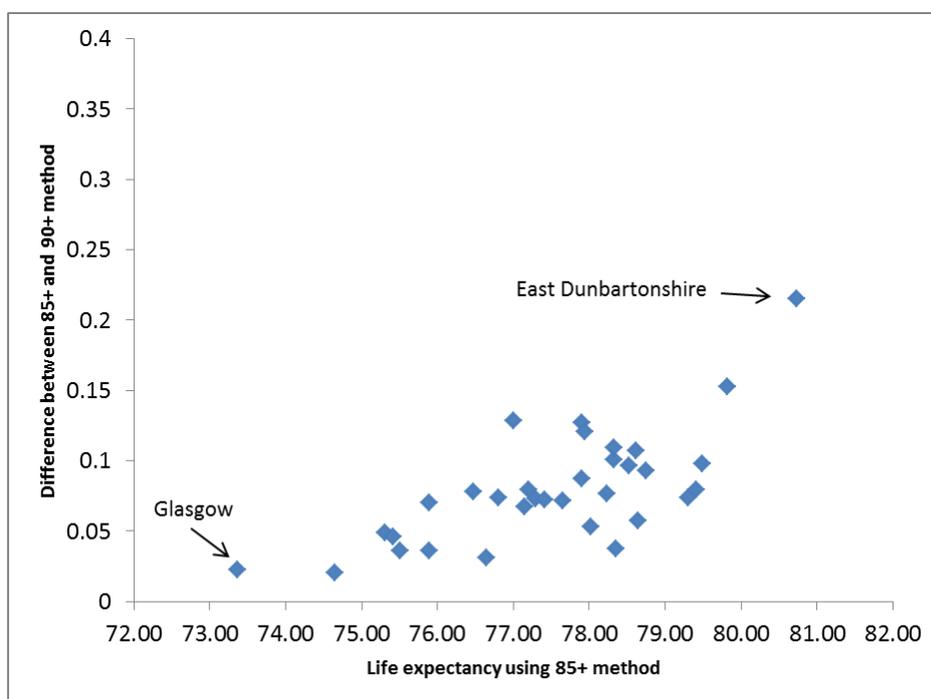
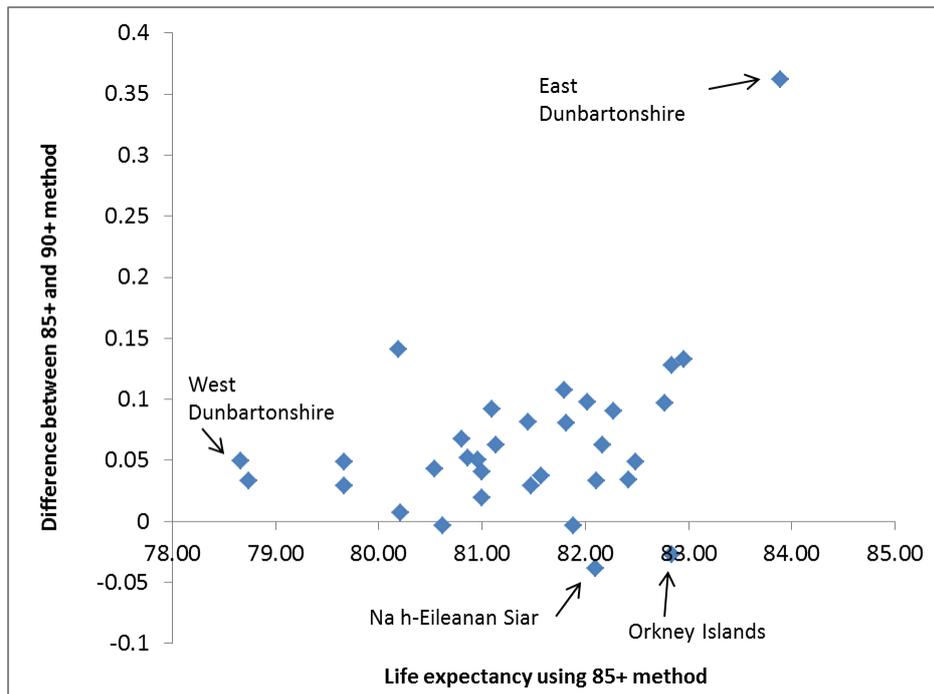


Figure 2: Female life expectancy at birth (2012-14) for Scottish council areas plotted against the difference between the 85+ and 90+ method.



Ranking of the council areas

- Applying this change in method from 85+ to 90+ does not change the councils with the highest and lowest life expectancy at birth (2012-14) within Scotland. For males, Glasgow had the lowest life expectancy and East Dunbartonshire the highest. For females, West Dunbartonshire had the lowest life expectancy and East Dunbartonshire the highest.
- Figures 3 and 4 illustrate the small impact of the method change, by plotting the 95 per cent confidence intervals (CI) for the current method (85+) and new method (95+). As shown, there are some small changes in the length and position of the CI. The ranking across all of the councils has not changed⁴.

Footnotes

4) For males, the position of South Lanarkshire and Clackmannanshire could be switched. In the 85+ method the lower CI for South Lanarkshire (76.262) was slightly lower than for Clackmannanshire (76.263). In the 90+ method the lower CI for South Lanarkshire (76.23) was slightly higher than for Clackmannanshire (76.15). I haven't swapped them in order to highlight the similarity between the plots and because they are the same to 1 decimal place.

Figure 3: Life expectancy at birth using current 85+ method, 95 per cent confidence intervals for Scottish council areas, 2012-14 (males and females)

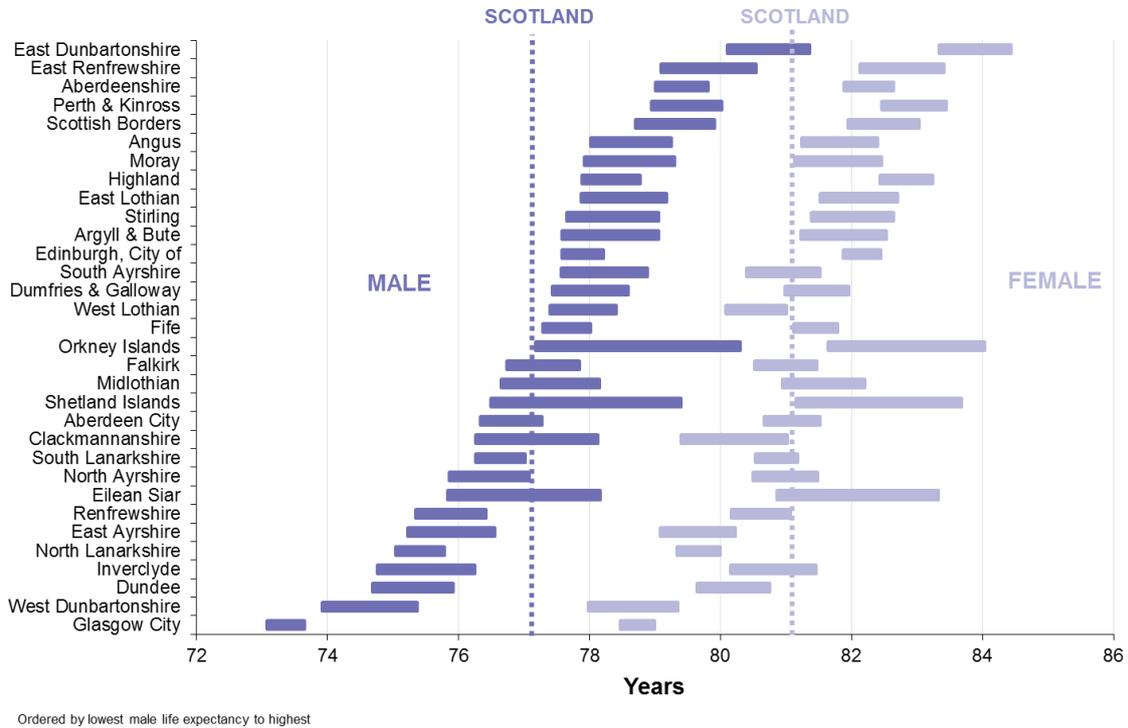
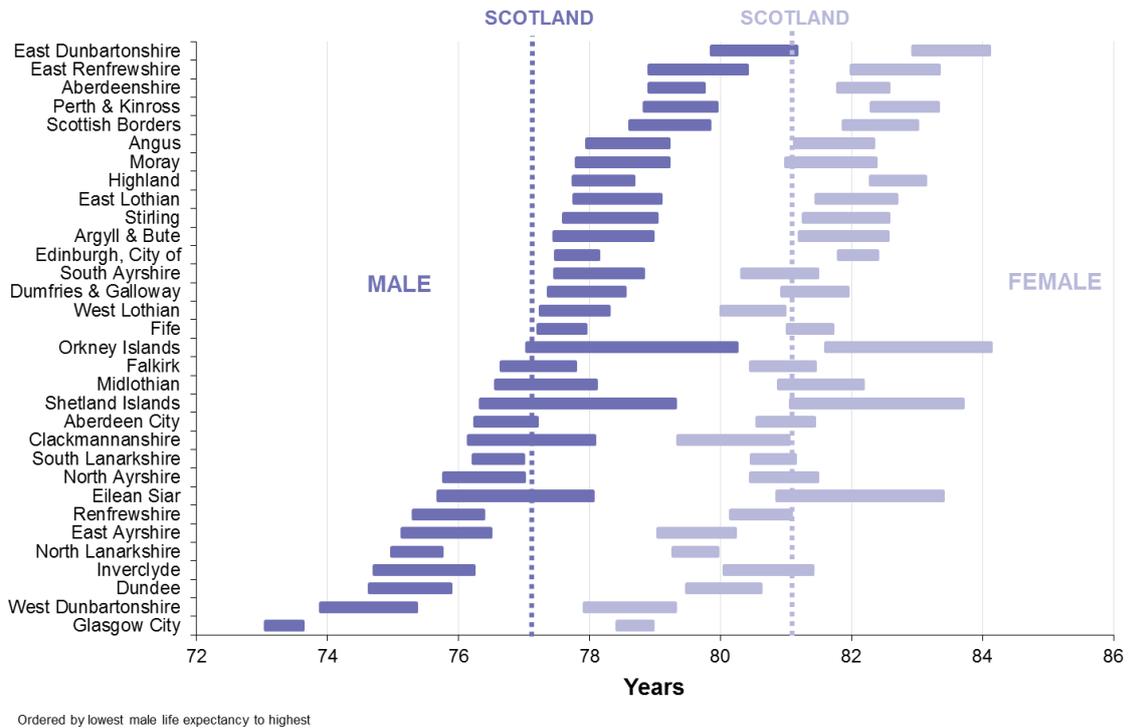


Figure 4: Life expectancy at birth using new 90+ method, 95 per cent confidence intervals for Scottish council areas, 2012-14 (males and females)



13. PAMS committee are asked to note the changes and provide any feedback on the method change.

NRS: Population and Migration Statistics branch
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