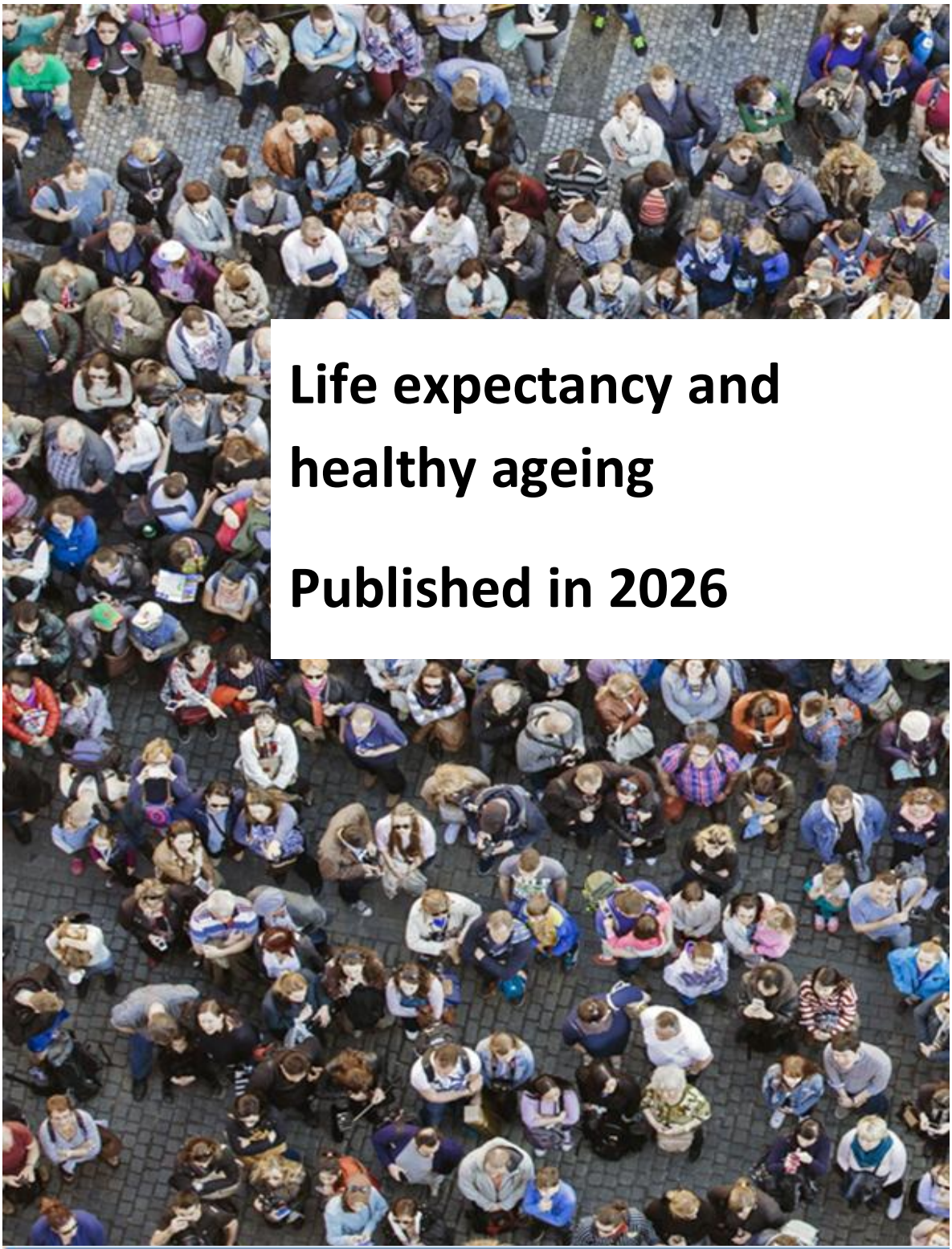

Life expectancy and healthy ageing

Published in 2026

InformGloucestershire

Version	Date	Amendment
1.0	September 2024	First release
2.0	June 2025	Addition of latest data available in June 2025 including healthy life expectancy at age 65 and at district level, and Inequality in Life Expectancy data
3.0	October 2026	Addition of latest data available in October 2026 including, life expectancy and healthy life expectancy at MSOA level and rural/urban and deprivation inequality analysis Removal of HealthSpan analysis due to discontinuation of data availability.

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Glossary

Life Expectancy- The average number of years a person would be expected to live if current age-specific mortality rates continued throughout their life. Estimates are commonly presented by sex and geographical area.

Life Expectancy Inequality - The difference in life expectancy between people living in the most and least deprived areas. Larger differences indicate greater inequality within a population

Healthy Life Expectancy- An estimate of the average number of years a person can expect to live in "good" general health. It combines mortality data with people's self-reported assessment of their general health.

Time spent in poor health- A comparison between the estimated life expectancy and healthy life expectancy to give indication of how long someone is likely to live in poor health.

Multi-morbidity- the presence of 2 or more long-term health conditions in a single individual. It impacts an individual's quality of life, mental health and wellbeing, daily function, and often results in greater healthcare utilisation the more co-existing conditions they have.

Long-term Condition - A health condition that cannot currently be cured but can often be managed through treatment, lifestyle changes and support. Examples include diabetes, heart disease and chronic respiratory conditions.

Data availability

Measure	Data source	Date covered by the data
Life expectancy	Office for National Statistics	2001-2003- 2022-2024
Life expectancy at MSOA	Office for National Statistics	2019-2023
Drivers of mortality	Office for Health Improvement and Disparities	2022-2023
Inequality in life expectancy	Office for Health Improvement and Disparities	2011-2013- 2022-2024
Healthy life expectancy	Office for National Statistics	2011-2013- 2022-2024
Healthy life expectancy at MSOA	Office for National Statistics	2019-2023
Long-term conditions	Gloucestershire Integrated Care Board	Snapshot taken in July 2026
Multi-morbidity	Gloucestershire Integrated Care Board	Snapshot taken in May 2026

Life expectancy

1.1 What is life expectancy?

"Life expectancy" is a measure of estimated length of life in a population. It is the average number of years a person would be expected to live based on their age, sex, and the area in which they live.

The two most commonly used measures are:

- Life expectancy at birth, which is defined as the average number of years that a newborn is expected to live if current mortality rates continue.
- Life expectancy at age 65, which tells us the average number of years that a person currently aged 65 can be expected to live.

1.2 Current picture

In Gloucestershire male life expectancy at birth is 80.3 years and female life expectancy at birth is 83.9 years in 2022-2024. Similarly, the South West life expectancy is 80.3 years for males and 84.1 years for females which is not significantly different[1] from Gloucestershire. However, both Gloucestershire and the South West are significantly higher than the national average of 79.5 years for males and 83.3 years for females.

Life expectancy at age 65 years in Gloucestershire is a further 19.4 years for males and a further 21.7 years for females. This is similar to the South West values of 19.4 years for males and 21.9 years for females. Both areas perform significantly better than the national average of 18.9 years for males and 21.4 years for females.

[1] In Gloucestershire, the preferred method of determining whether something is significantly better/worse than the national/county average is overlapping confidence intervals. Non-overlapping confidence intervals provide evidence that the estimates differ, although this is a conservative approximation rather than a formal significance test. OHID's fingertips tool generally uses the method of confidence intervals overlapping the reference value. This difference in methodology means the colour coding used in this report may not correspond with that presented in OHID's fingertips tool

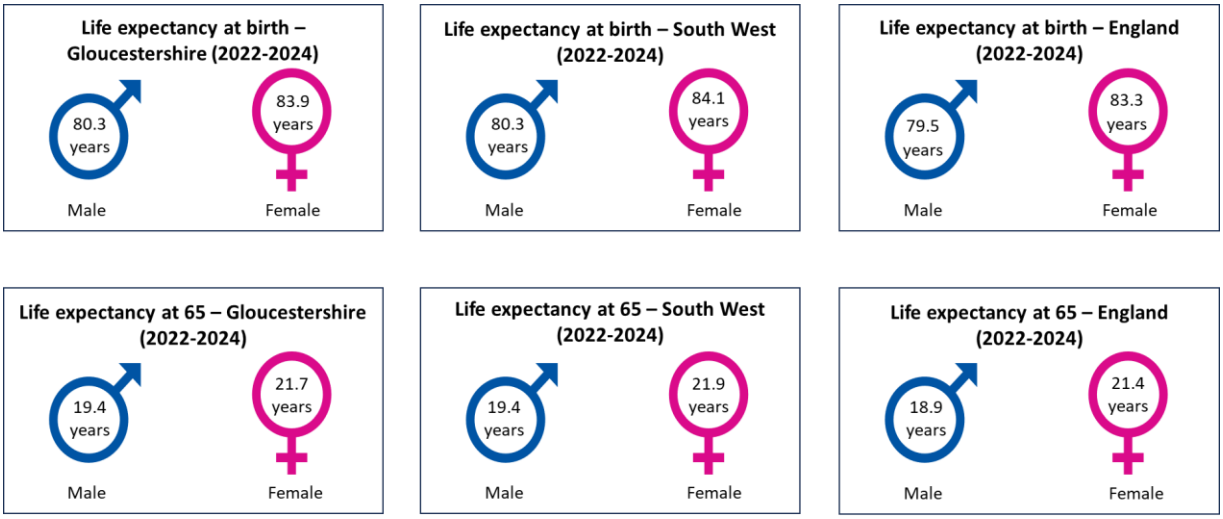


Figure 1: Life expectancy at birth and life expectancy at age 65, Gloucestershire, South West and England (2022-2024)[2]

1.3 Sex differences

The life expectancy gap (the difference) between males and females, in Gloucestershire in the period 2022-2024, was 3.6 years. This means that females are expected to live on average three years and seven months longer than males. This gap is not unique to Gloucestershire and is also observed at a regional and national level. The picture is also similar for life expectancy at age 65. The gap between males and females for life expectancy at age 65 is around two years and four months.

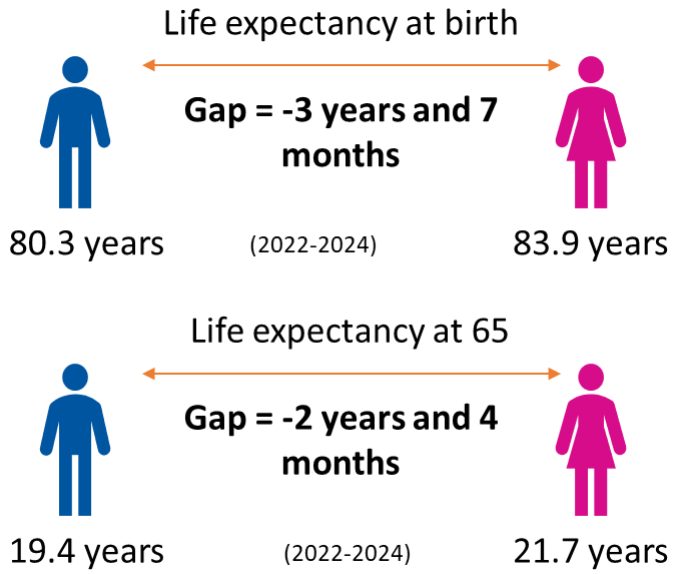


Figure 2: 2022-2024 male and female life expectancy gap at birth and age 65, Gloucestershire[3]

[2] Life expectancy for local areas between 2001 to 2003 and 2022 to 2024, ONS

[3] *Ibid.*

1.4 How does Gloucestershire compare to other areas?

Gloucestershire compares well to England, in terms of life expectancy at birth and at age 65, having significantly better life expectancy than the national average across all measures.

Life expectancy in Gloucestershire is broadly in line with the region for male and female life expectancy at birth and it is not significantly different. The South West life expectancy at age 65 is also similar to Gloucestershire.

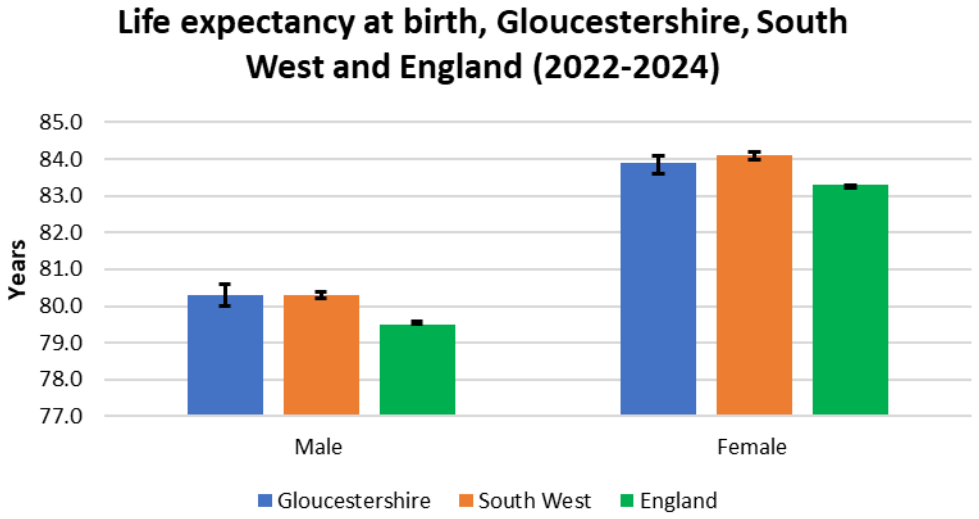


Figure 3: Life expectancy at birth, Gloucestershire, South West and England (2022-2024)[4]

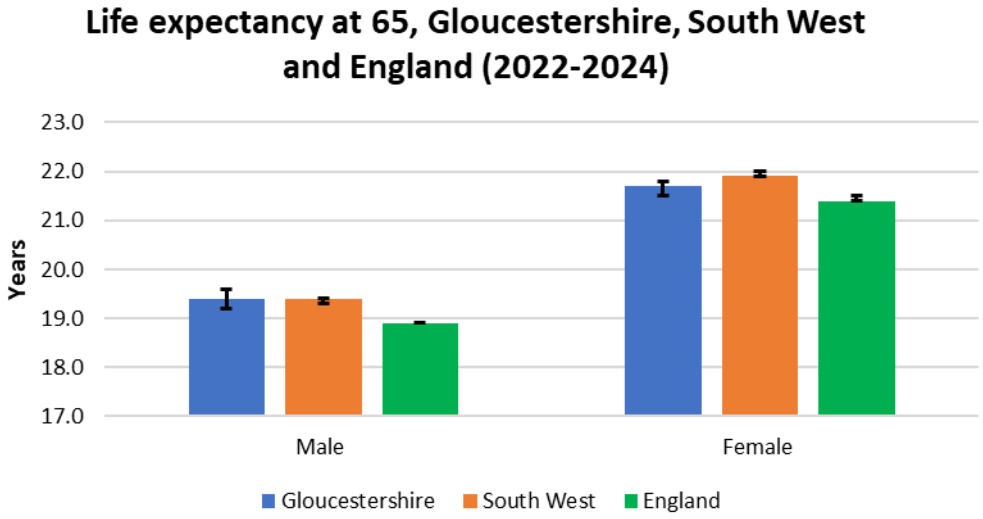


Figure 4: Life expectancy at age 65, Gloucestershire, South West and England (2022-2024)[5]

[4] *Ibid.*

[5] *Ibid.*

Gloucestershire compares relatively well to its nearest neighbours[6] in terms of both life expectancy at birth and at age 65.

In absolute terms, the county ranks 9th out of 16 similar authorities when looking at male life expectancy at birth. However, when confidence intervals are considered, the county has a similar male life expectancy at birth to 9 authorities, a better life expectancy than Lincolnshire, Nottinghamshire and Derbyshire, and a lower life expectancy than Cambridgeshire, Hampshire and Oxfordshire.

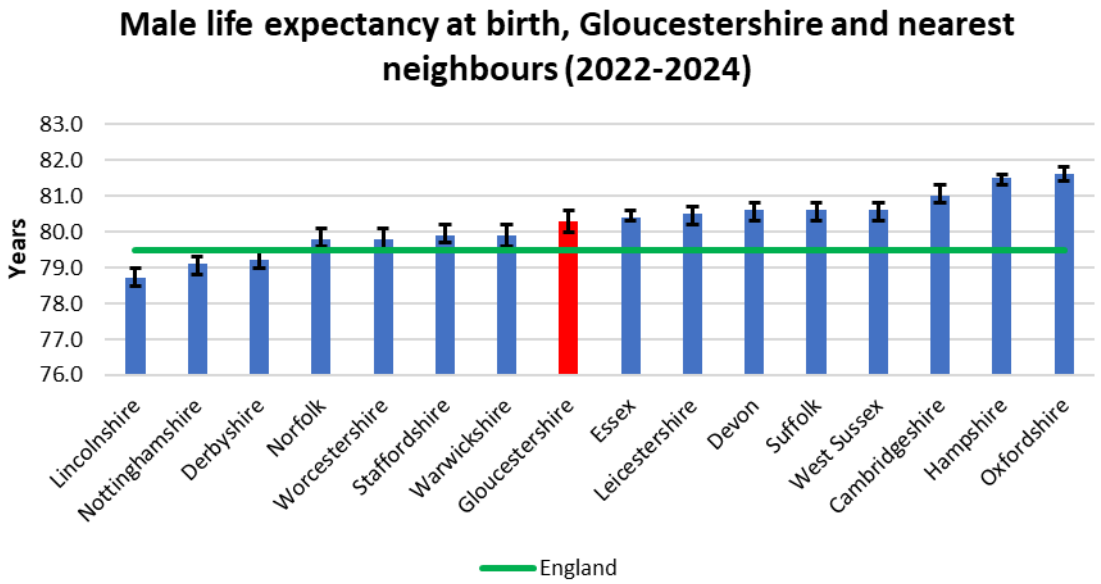


Figure 5: Male life expectancy at birth, Gloucestershire and nearest neighbours (2022-2024)[7]

When looking at female life expectancy at birth the county also ranks 9th out of 16 similar authorities. However, when confidence intervals are taken into account, the county has a similar female life expectancy at birth to 8 authorities, a better life expectancy than Derbyshire, Lincolnshire and Nottinghamshire, and a lower life expectancy than West Sussex, Devon, Hampshire and Oxfordshire.

[6] This list is based on the CIPFA nearest neighbour model, which provides a list of Local Authorities which may not be close to one another geographically but share similar characteristics meaning they are useful to compare to one another

[7] Life expectancy for local areas between 2001 to 2003 and 2022 to 2024, ONS

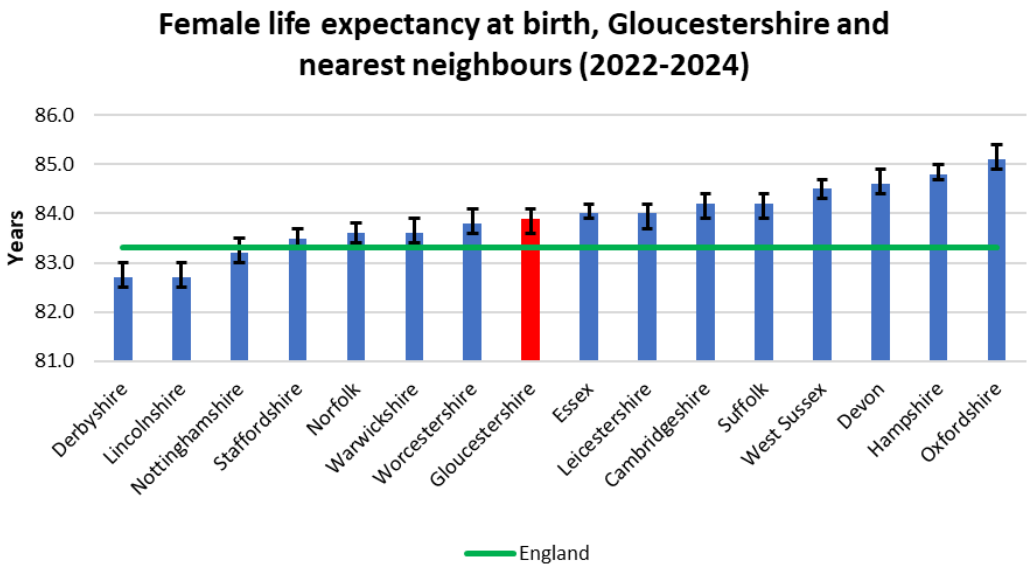


Figure 6: Female life expectancy at birth, Gloucestershire and nearest neighbours (2022-2024)[8]

In absolute terms, the county ranks joint 8th (with Leicestershire) out of 16 similar authorities when looking at male life expectancy at age 65. However, when confidence intervals are considered, the county has a similar male life expectancy age 65 to 10 authorities, a better life expectancy than Lincolnshire, Nottinghamshire and Derbyshire, and a lower life expectancy than Hampshire and Oxfordshire.

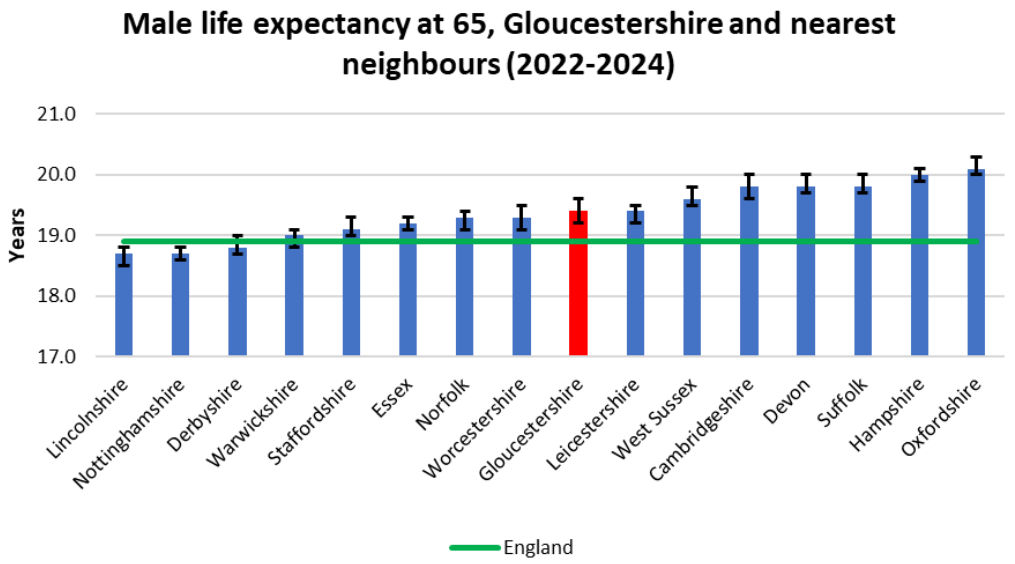


Figure 7: Male life expectancy at age 65, Gloucestershire and nearest neighbours (2022-2024)[9]

[8] *Ibid.*

[9] *Ibid.*

When looking at female life expectancy at age 65 the county ranks joint 9th (with Norfolk and Warwickshire) out of 16 similar authorities. However, when confidence intervals are taken into account, the county has a similar female life expectancy at age 65 to 7 authorities, a better life expectancy than Derbyshire, Lincolnshire, and Nottinghamshire and a lower life expectancy than Suffolk, West Sussex, Devon, Hampshire and Oxfordshire.

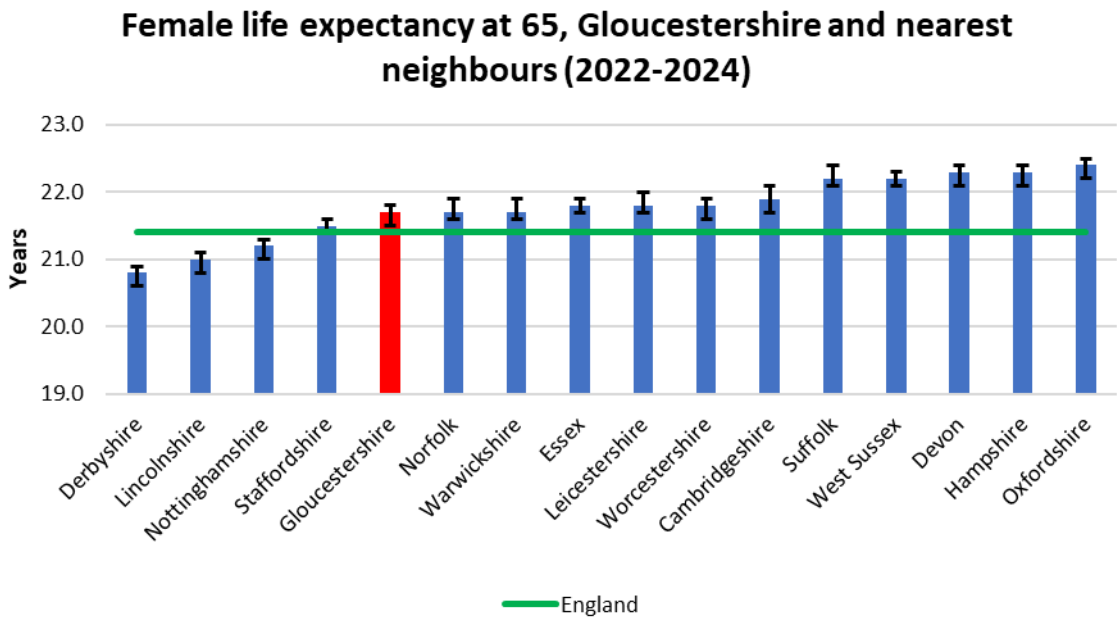


Figure 8: Female life expectancy at age 65, Gloucestershire and nearest neighbours (2022-2024)[10]

1.5 Variation across Gloucestershire's districts

There is geographical variation within Gloucestershire, with male life expectancy at birth ranging from 78.3 years in Gloucester, to 82.0 years in Cotswold, a difference of 3.7 years. Female life expectancy at birth ranges from 82.1 years in Gloucester to 84.7 years in Tewkesbury, a difference of 2.6 years.

When compared to the national average, Gloucester is significantly worse than England in terms of male and female life expectancy at birth. Cotswold, Stroud, and Tewkesbury have a significantly better male and female life expectancy at birth, and the male and female life expectancies at birth in Cheltenham and Forest of Dean are similar to England.

Male life expectancy at age 65 is lowest in Gloucester where it stands at 17.9 years and highest in Cotswold where it stands at 20.5 years, a difference of 2.6 years. Female life expectancy at age 65 ranges from 20.6 years in Gloucester to 22.4 years in Cotswold, a difference of 1.8 years.

[10] *Ibid.*

In Gloucester, life expectancy at age 65 is significantly lower than the England average for both males and females. For males, life expectancy at age 65 is significantly higher than the England average in all other districts. For females, Cheltenham and Forest of Dean are statistically similar to England, while Cotswold, Stroud and Tewkesbury are significantly higher.

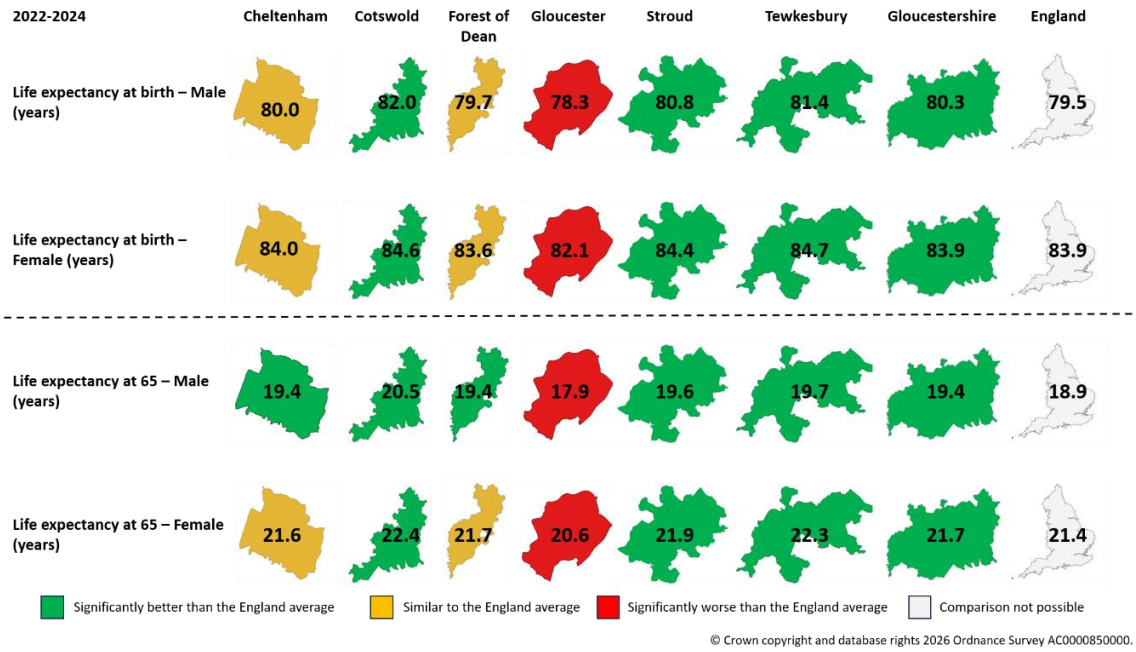


Figure 9: Life expectancy at birth and life expectancy at age 65 in Gloucestershire districts (2022-2024)[11]

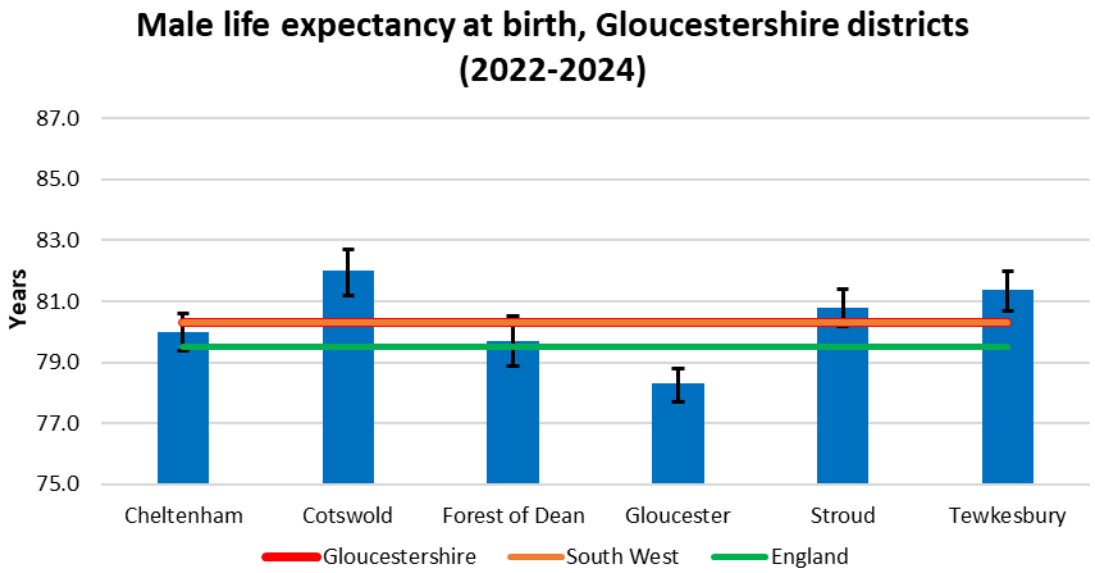


Figure 10: Male life expectancy at birth, Gloucestershire districts (2022-2024)[12]

[11] *Ibid.*

[12] *Ibid.*

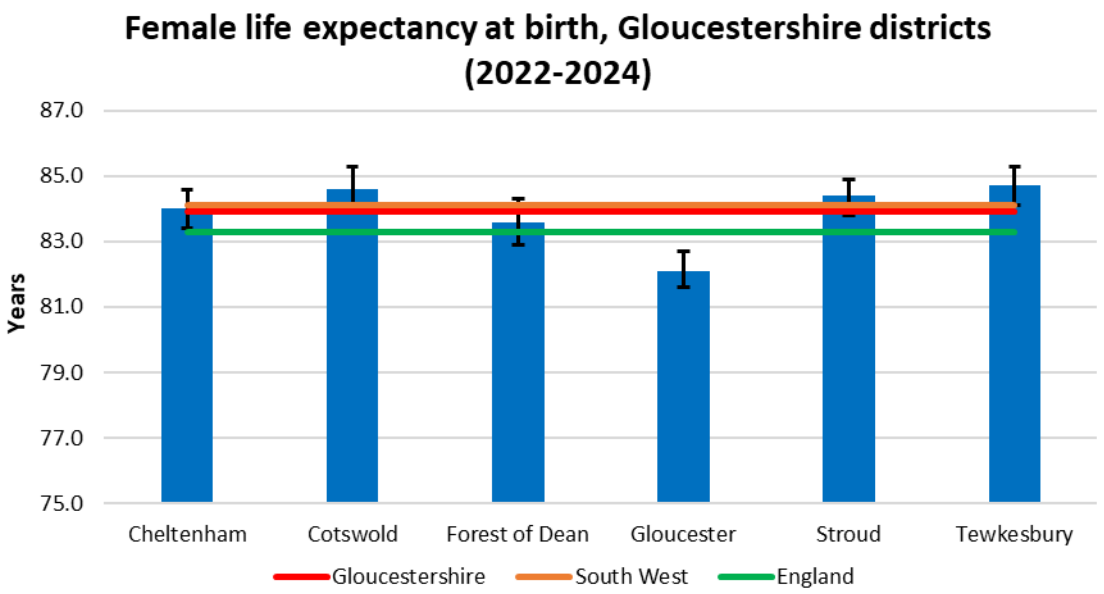


Figure 11: Female life expectancy at birth, Gloucestershire districts (2022-2024)[13]

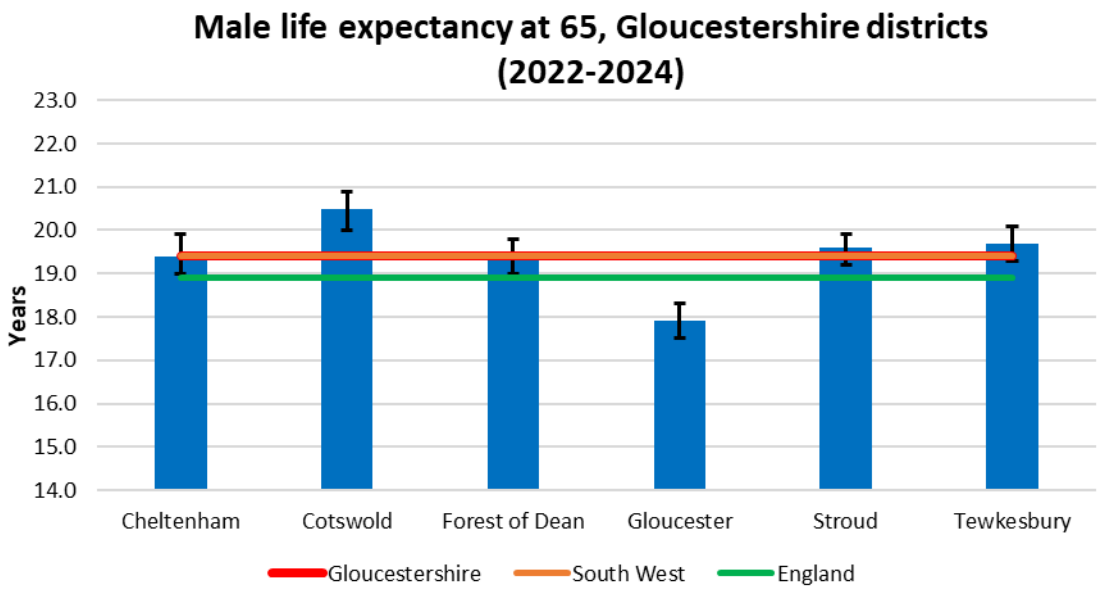


Figure 12: Male life expectancy at age 65, Gloucestershire districts (2022-2024)[14]

[13] *Ibid.*

[14] *Ibid.*

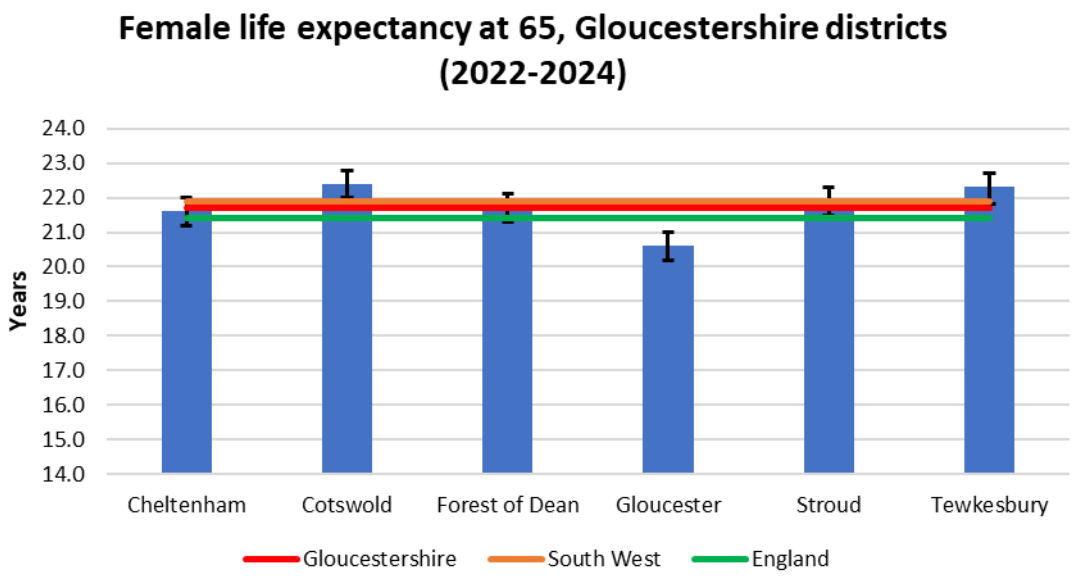


Figure 13: Female life expectancy at age 65, Gloucestershire districts (2022-2024)[15]

1.6 Variation across Gloucestershire's Middle Super Output Areas 2019-2023

The ONS has published estimates of life expectancy by Middle Super Output Areas (MSOAs)[16]. Across Gloucestershire's MSOAs, male life expectancy ranges between 72.2 years in Kingsholm and Wotton, Gloucester to 83.9 years in Kemble and South Cerney, Cotswold, a difference of 11.7 years. In comparison, female life expectancy ranges from 77.3 years in Kingsholm and Wotton, Gloucester to 96.7 years in Quedgeley North, Gloucester, a difference of 19.4 years.

The maps show that life expectancy is not evenly distributed across Gloucestershire. Higher life expectancy tends to be found in the rural east of the county, particularly within the Cotswolds, whereas lower life expectancy is concentrated in some urban areas of Gloucester and parts of the Forest of Dean. This geographical pattern mirrors wider inequalities in the social, economic and environmental factors that influence health. The gap between the highest and lowest life expectancy estimates is particularly large for females, although the exceptionally high estimate observed in Quedgeley North should be interpreted with caution due to the wide confidence interval around the estimate.

This estimate should be interpreted with caution because the confidence interval is very wide (85.0 to 108.4 years), indicating a high degree of statistical uncertainty. The unusually high estimate is therefore likely to reflect instability

[15] *Ibid.*

[16] MSOAs are statistical areas used by the ONS, typically containing between 5,000-15,000 residents or 2,000 to 6,000 households.

associated with small population sizes and low numbers of deaths within the area, rather than a true life expectancy approaching 97 years.

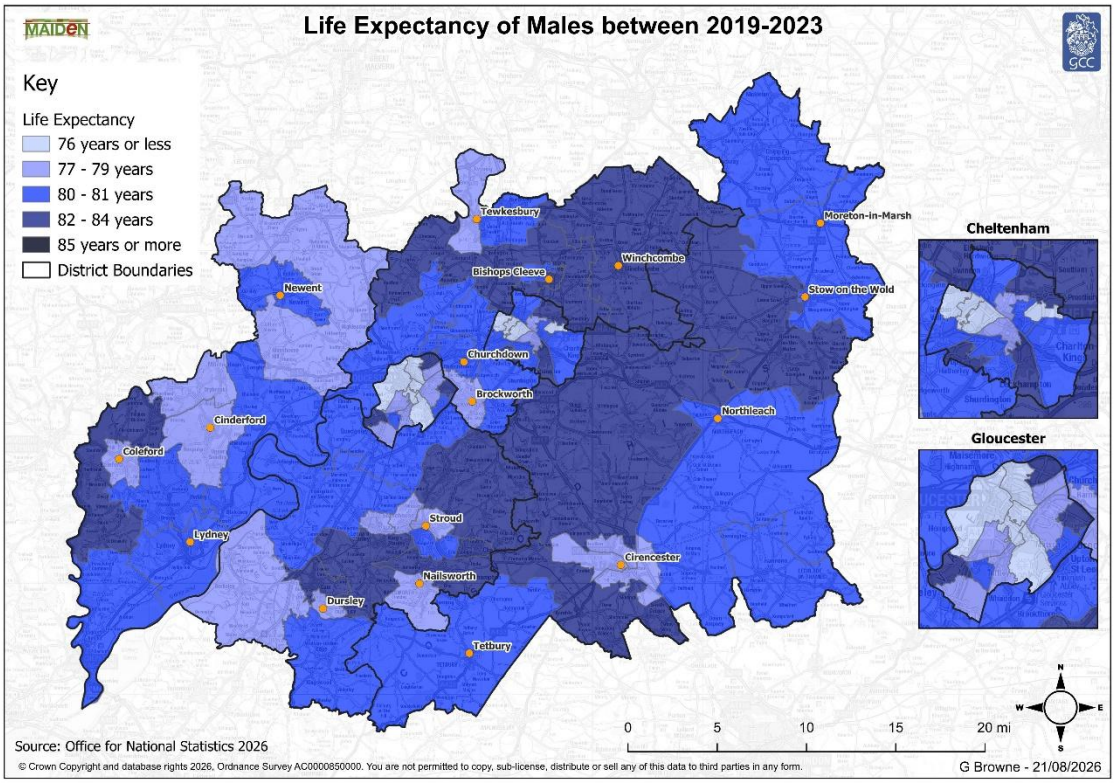


Figure 14: Life expectancy of males between 2019-2023, by Middle Super Output Areas in Gloucestershire[17]

[17] Health state life expectancy estimates for Middle layer Super Output Areas, England and Wales: 2019 to 2023, ONS

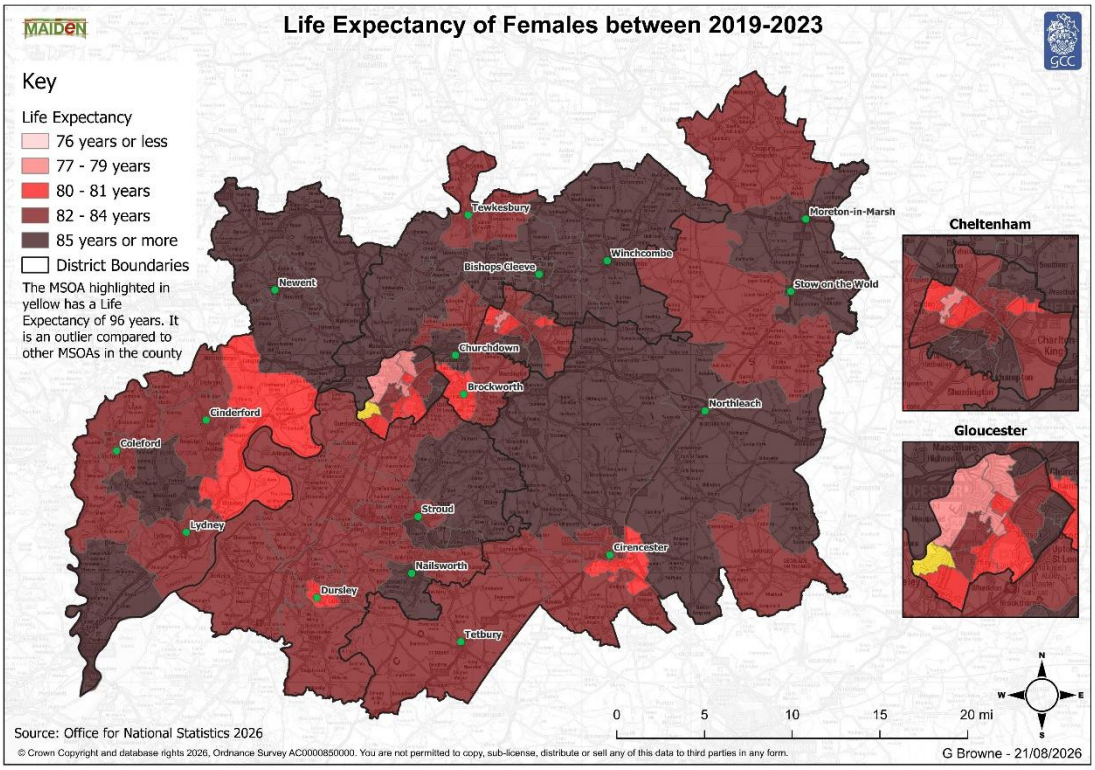


Figure 15: Life expectancy of females between 2019-2023, by Middle Super Output Areas in Gloucestershire[18]

1.7 Change over time

In the late 1990s and early 2000s, local and national life expectancy at birth rose steadily. This has been attributed to improvements in public health and the environment (such as immunisation and road safety), medical advances in diagnosing and treating diseases (such as heart disease and cancer), as well as lifestyle changes (such as a decline in smoking and changes to smoking legislation).

Over the last decade, improvements in life expectancy have slowed both nationally and locally. The Marmot Review (2020) suggested that this slowdown may be linked to worsening social and economic conditions and widening inequalities experienced since 2010. Between the periods 2018-2020 and 2020-2022, life expectancy declined nationally and locally for both males and females, reflecting the direct and indirect impacts of the COVID-19 pandemic. However, more recent data for Gloucestershire suggest a modest increase in life expectancy in the 2021-2023 and 2022-2024 reporting periods. However, these increases are not statistically significant and should therefore be interpreted with caution. Female life expectancy has returned to around pre-pandemic levels, while male life expectancy remains below those observed before the pandemic.

[18] Ibid.

Continued monitoring will be required to determine whether these recent improvements represent the beginning of a sustained recovery or normal year-to-year variation.

Life expectancy in Gloucestershire has been similar or better than the national average for both males and females over time.

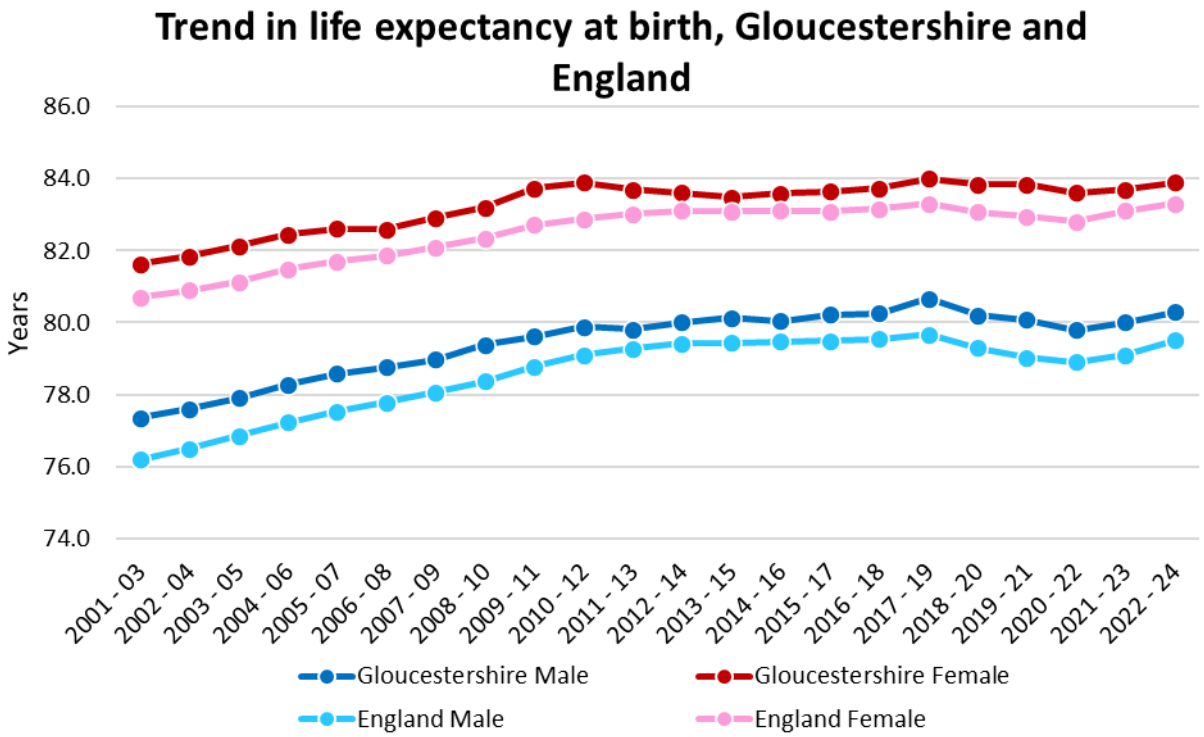


Figure 16: Trend in life expectancy at birth, Gloucestershire and England[19]

A similar picture is also observed when looking at life expectancy at age 65 as shown in Figure 17.

Although the latest two reporting periods suggest a possible improvement in life expectancy, these changes are not statistically significant and should therefore be interpreted with caution. Female life expectancy has returned to around pre-pandemic levels, while male life expectancy remains below those observed before the COVID-19 pandemic. Further data will be required to establish whether life expectancy has resumed its longer-term upward trend or whether recent increases reflect normal year-to-year variation.[20]

[19] Life expectancy for local areas between 2001 to 2003 and 2022 to 2024, ONS

[20] The most recent fall in life expectancy between 2017-2019 and 2020-2022 is likely to be largely attributable to the COVID-19 pandemic which led to increased mortality rates during the period 2020-2022. The estimates in this report rely on the assumption that recent levels of mortality (i.e., in 2022-2024), which were still fairly high, will continue for the rest of someone's life. However, it should be noted that improvement in life expectancy had stalled in the years preceding the pandemic.

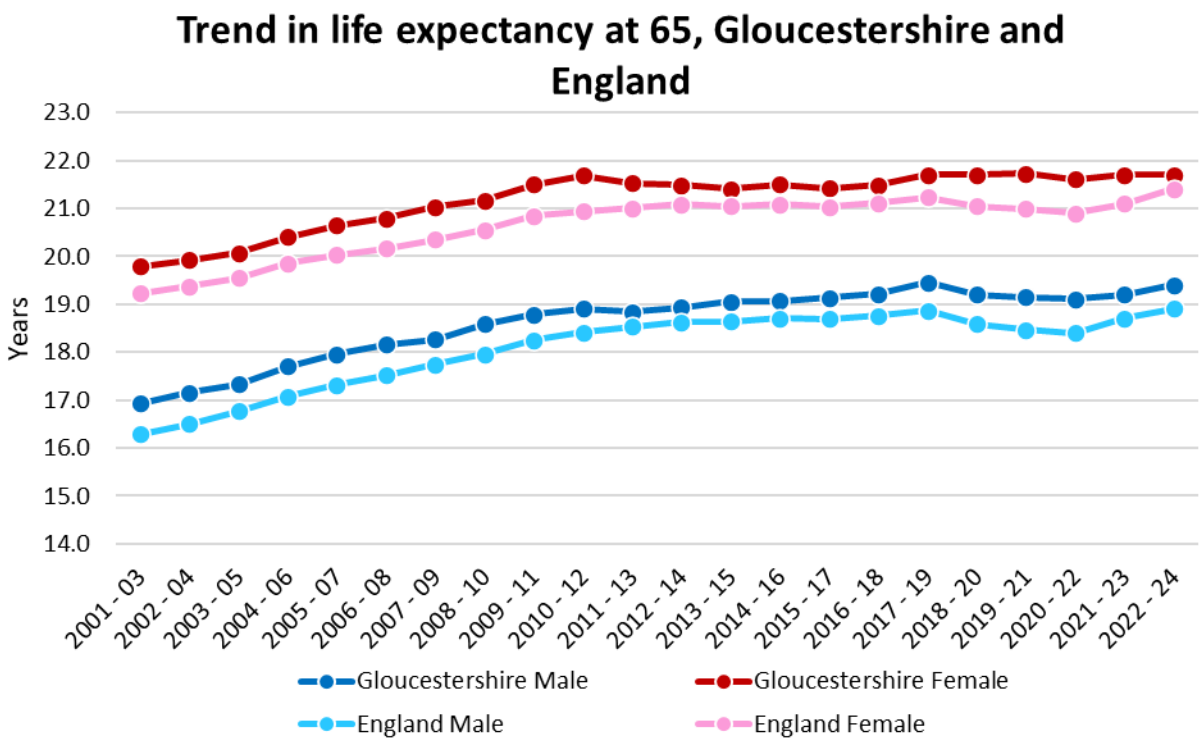


Figure 17: Trend in life expectancy at age 65, Gloucestershire and England[21]

1.7.1 Sex differences

Looking over the last thirty years females have consistently had a higher life expectancy than males, with many researchers believing that there is a biological and clinical reason for this. For example, males typically have a higher incidence of respiratory and cardiovascular diseases, infections, cancers, and autoimmune diseases than females. Lifestyle factors are also likely to contribute to this life expectancy gap, for example in 2024, 8.7% of males in Gloucestershire were current smokers compared to 7.9% of females.[22]

During the period 2001-2003 to 2017-2019 males in Gloucestershire saw a greater improvement in life expectancy at birth than females. This saw the sex gap in life expectancy narrow from 4.3 years in 2001-2003 to 3.3 years in 2017-2019. Between 2017-2019 and 2020-2022, male life expectancy at birth worsened at a faster rate than female life expectancy, this resulted in the life expectancy gap between males and females widening, standing at 3.8 years in 2020-2022. However, between 2020-2022 and 2022-2024 there was a slightly higher increase in male life expectancy compared to female life expectancy. This has reduced the gap by 0.2 years to 3.6 years and could indicate that the gap may begin to get closer again. This trend has also been reflected at a national level and when looking at life expectancy at age 65.

[21] Life expectancy for local areas between 2001 to 2003 and 2022 to 2024, ONS

[22] Fingertips, OHID

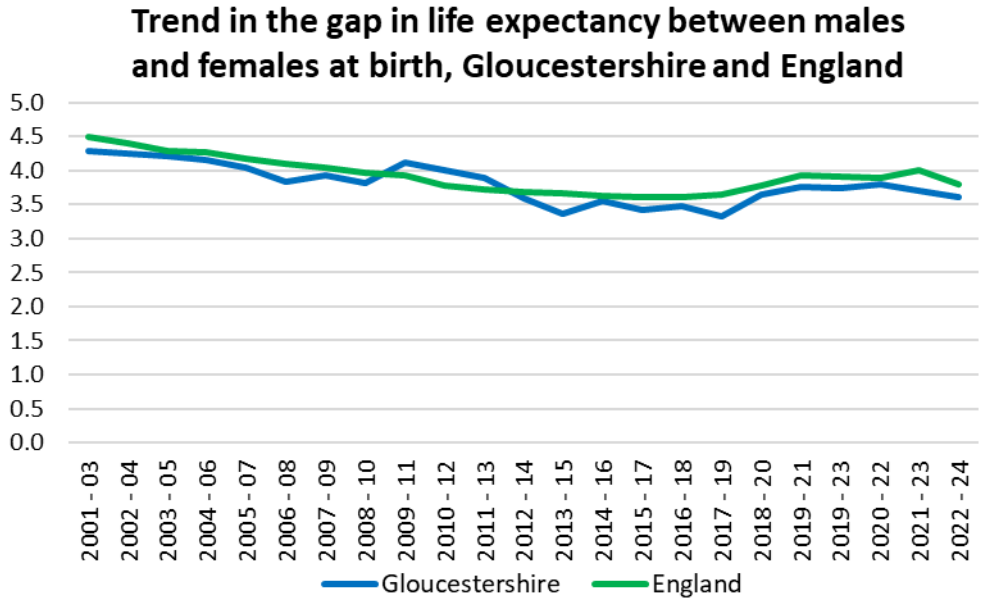


Figure 18: Trend in the gap in life expectancy at birth between males and females, Gloucestershire and England[23].

1.7.2 Variation across Gloucestershire

Gloucestershire's districts broadly followed the trend in life expectancy at birth observed at a county and national level. The following section describes life expectancy at birth and age 65 at a district level. It is important to note that, at district level, all differences discussed below are not statistically significant, especially when comparing between adjacent periods.

Life expectancy at birth has generally increased across all Gloucestershire districts since 2001-2003 for both males and females, although the pace of improvement has varied and many districts experienced a slight decline during the pandemic period before showing signs of recovery in the latest estimates. For males, the largest gains were seen in Cotswold and Tewkesbury, which increased from around 78.5 years in 2001-2003 to 82.0 and 81.4 years respectively in 2022–2024, while Stroud also reached a relatively high 80.8 years. Gloucester consistently recorded the lowest male life expectancy throughout the period, increasing from 75.7 to 78.3 years, while Forest of Dean remained below the county average despite long-term improvement. A similar pattern is seen for females, with Tewkesbury, Cotswold and Stroud recording the highest life expectancy in 2022-2024 at 84.7, 84.6 and 84.4 years respectively. Gloucester again recorded the lowest female life expectancy at 82.1 years, although this still represents an improvement from 80.9 years in 2001-2003. The COVID-19 pandemic appears to have interrupted the long-term upward trend,

[23] *Ibid.*

with most districts experiencing falls in life expectancy between 2018-20 to 2020-22 periods before showing signs of recovery in the latest estimates.

Figure 19 shows that in the latest period between 2021-2023 and 2022-2024, male life expectancy at birth increased, in absolute terms, in five of the six districts. The largest increase occurred in Cotswold from 81.4 years to 82.0 years an increase of 0.6 years. However, Stroud saw a decrease in its male life expectancy estimate by 0.2 years from 81.0 years to 80.8 years.

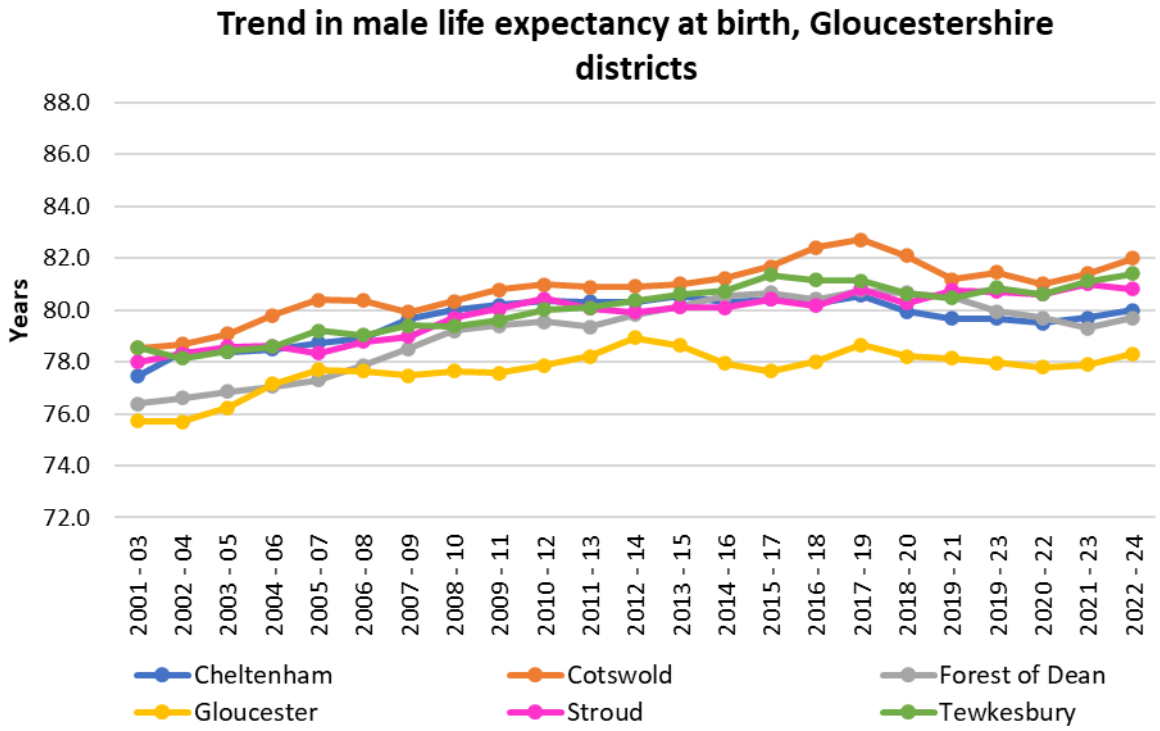


Figure 19: Trend in male life expectancy at birth, Gloucestershire districts[24]

In comparison, Figure 20 indicates that 3 out of the 6 districts saw an increase in female life expectancy between 2021-2023 and 2022-2024, with the largest increase taking place in Stroud by 0.5 years from 83.9 years to 84.4 years. Life expectancy in Cotswold and the Forest of Dean stayed the same, and female life expectancy at birth in Cheltenham decreased by 0.1 years, from 84.1 years to 84.0 years.

[24] *Ibid.*

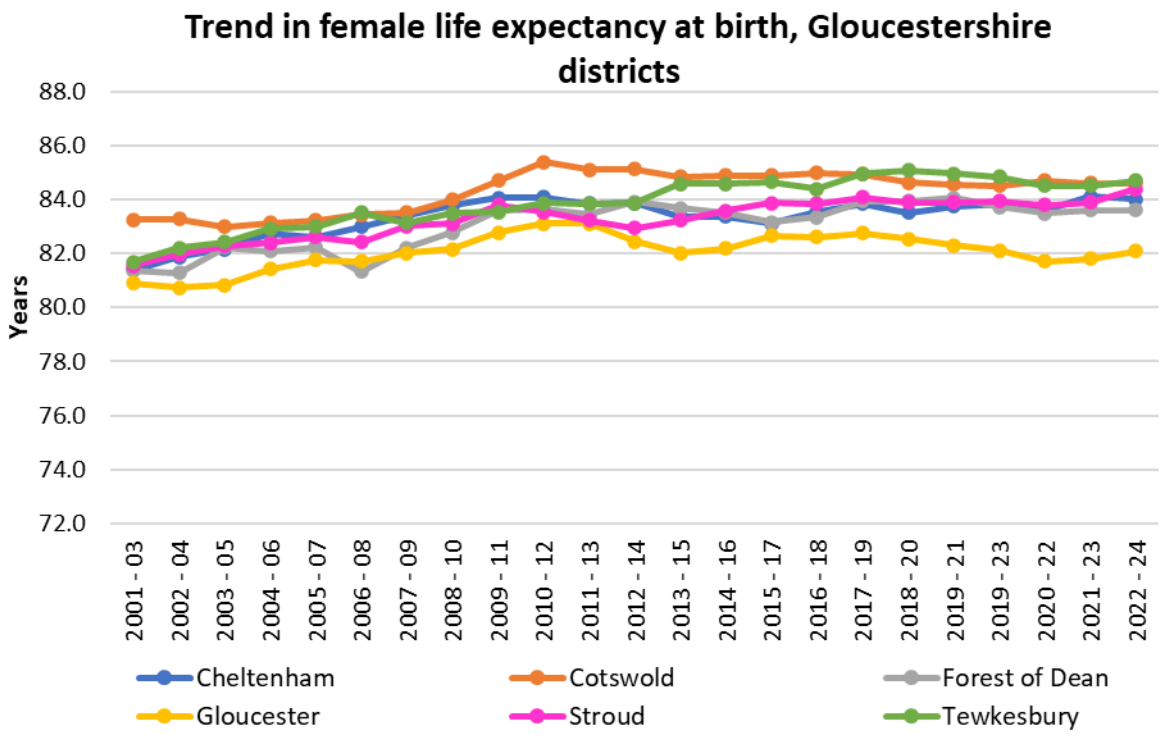


Figure 20: Trend in female life expectancy at birth, Gloucestershire districts[25]

When looking at life expectancy at age 65 the picture is mixed. Figure 21 shows that between 2021-2023 and 2022-2024, male life expectancy at age 65 increased in four of the six districts. The largest increase occurred in Cotswold, at 0.5 years. It remained unchanged in Stroud and decreased by 0.1 years in Forest of Dean.

[25] *Ibid.*

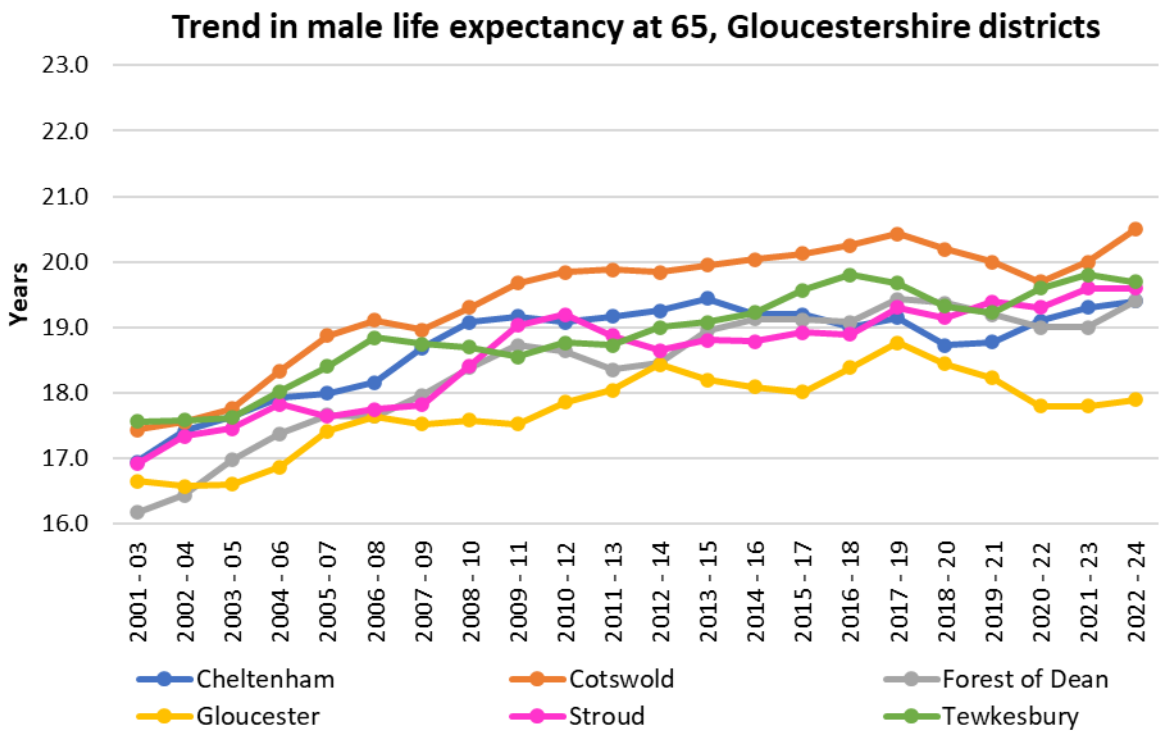


Figure 21: Trend in male life expectancy at age 65, Gloucestershire districts[26]

Figure 22 shows female life expectancy at age 65 increased in Gloucester, Stroud and Tewkesbury between 2021-2023 and 2022-2024. Whereas it stayed the same in Cotswold and Forest of Dean and fell in Cheltenham. These changes are not statistically significant.

[26] *Ibid.*

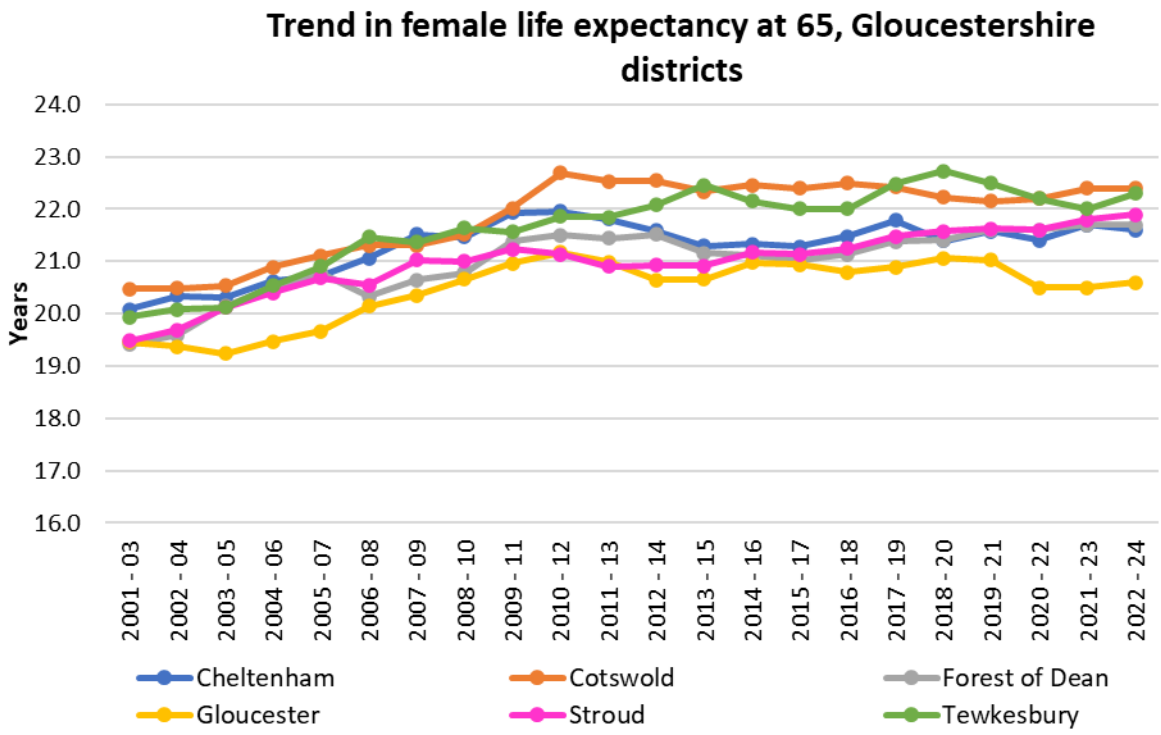


Figure 22: Trend in female life expectancy at age 65, Gloucestershire districts[27]

2. Life expectancy inequalities

2.1 New life expectancy data: rural-urban classification and deprivation analysis

Local analysis has been conducted by the Data, Analysis and Insights Team to examine inequalities in life expectancy by rural-urban classification, deprivation, and the combined effects of rural-urban and deprivation. The analysis uses data from the Primary Care Mortality Database (PCMD) and mid-year population estimates to calculate life expectancy using abridged life tables. Inequalities are assessed by comparing the absolute differences in life expectancy between deprivation quintiles, deprivation deciles, and urban and rural populations. This approach highlights the size of the gaps in life expectancy between specific population groups and helps identify where inequalities are greatest. As the analysis has been produced using local data, it is only available for Gloucestershire.

2.1.1 Life expectancy and rural-urban classification

The Office for National Statistics (ONS) 2021 Rural Urban Classification[28] categorises small areas in England according to their settlement type and

[27] *Ibid.*

[28] ONS, 2021 Rural Urban Classification

population density. Areas are classified as either rural or urban based on factors such as the size of settlements and the surrounding built environment. Using this classification allows differences in health outcomes between urban and rural communities to be explored and helps identify whether people living in different types of areas experience different health outcomes.

Life expectancy estimates have been calculated for males and females living in rural and urban areas in Gloucestershire, shown in Figure 23. The graph shows that life expectancy is higher in rural areas than in urban areas for both males and females in Gloucestershire. Male life expectancy is estimated to be 81.8 years in rural areas, compared with 79.6 years in urban areas, a difference of 2.2 years. A similar pattern is observed for females, with life expectancy estimated at 84.6 years in rural areas and 83.3 years in urban areas, a difference of 1.3 years. Females have a higher life expectancy than males in both rural and urban areas. The confidence intervals show little or no overlap between the rural and urban estimates for males and females, suggesting that these differences are statistically significant and unlikely to be due to chance. Overall, the findings indicate that residents living in rural areas tend to experience longer life expectancy than those living in urban areas across Gloucestershire.

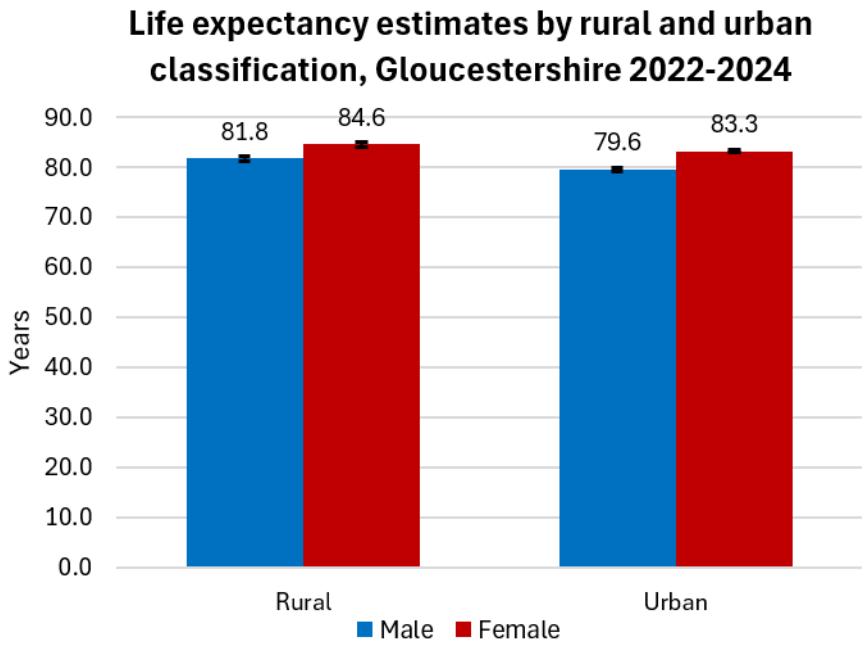


Figure 23: Life expectancy estimates by rural and urban classification, Gloucestershire 2022-2024[29]

2.1.2 Life expectancy and deprivation

The Index of Multiple Deprivation (IMD)[30] 2025 is a measure used to understand how deprived different areas are. It combines information on a range of factors

[29] Locally calculated analysis using mortality, population and ONS 2021 Rural Urban Classification data

[30] Ministry for Housing, Communities and Local Government, 2025

that can affect people's quality of life, including income, employment, education, health, crime, housing and the local environment. Using IMD allows life expectancy to be compared across areas with different levels of deprivation, helping to identify inequalities in health outcomes across Gloucestershire. By calculating life expectancy for areas with similar levels of deprivation, we can better understand the relationship between deprivation and health and identify where improvements in health and wellbeing are most needed. The life expectancy data presented below was calculated for the 2022-2024 period.

Overall, the data indicates a clear social gradient in life expectancy across Gloucestershire, with life expectancy increasing as deprivation decreases.

Figure 24 groups areas into five deprivation quintiles, with quintile 1 representing the most deprived 20% of areas nationally and quintile 5 representing the least deprived 20%. The analysis shows a clear relationship between deprivation and life expectancy in Gloucestershire. Male life expectancy increases from 73.3 years in the most deprived quintile to 82.7 years in the least deprived quintile, a difference of 9.4 years. Female life expectancy increases from 78.6 years to 85.8 years across the same deprivation groups, a difference of 7.2 years. Females have a higher life expectancy than males across all deprivation quintiles. The confidence intervals indicate that the differences between the most and least deprived groups are statistically significant, demonstrating substantial inequalities in life expectancy across the county.

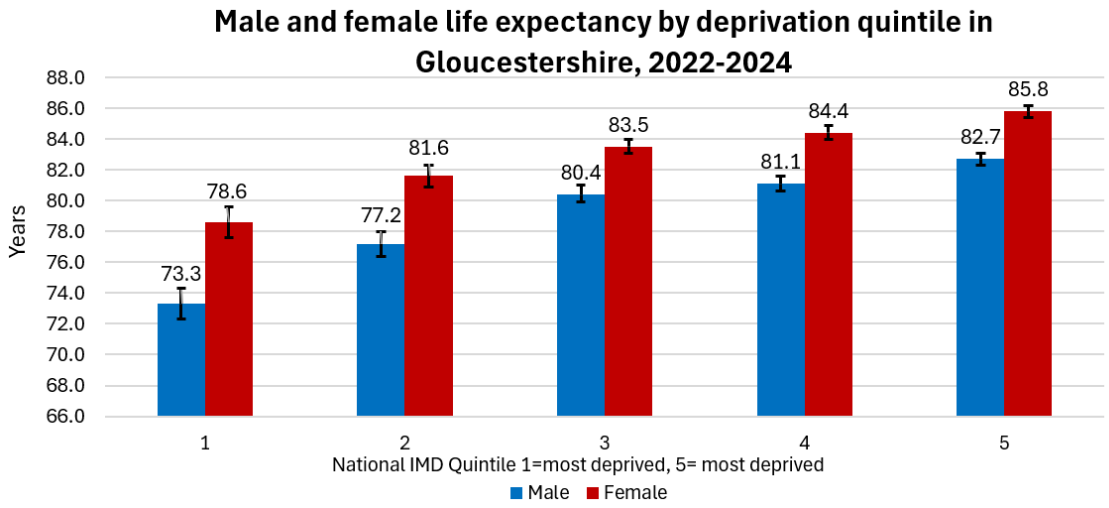


Figure 24: Male and female life expectancy by deprivation quintile in Gloucestershire, 2022-2024[31]

In more detail, Figure 25 groups areas into ten deprivation deciles, with decile 1 representing the most deprived 10% of areas nationally and decile 10 representing the least deprived 10%. This provides a more detailed view of the

[31] Locally calculated analysis using mortality, population and IMD 2025 data

relationship between deprivation and life expectancy. The chart shows a clear social gradient, with life expectancy increasing as deprivation decreases. Males living in the most deprived areas have a life expectancy of 72.2 years, compared with 82.9 years for those living in the least deprived areas, a difference of 10.7 years. For females, life expectancy rises from 76.4 years in the most deprived decile to 86.1 years in the least deprived decile, a difference of 9.7 years. The confidence intervals show that the differences between the most and least deprived deciles are statistically significant, highlighting the strong association between deprivation and lower life expectancy in Gloucestershire.

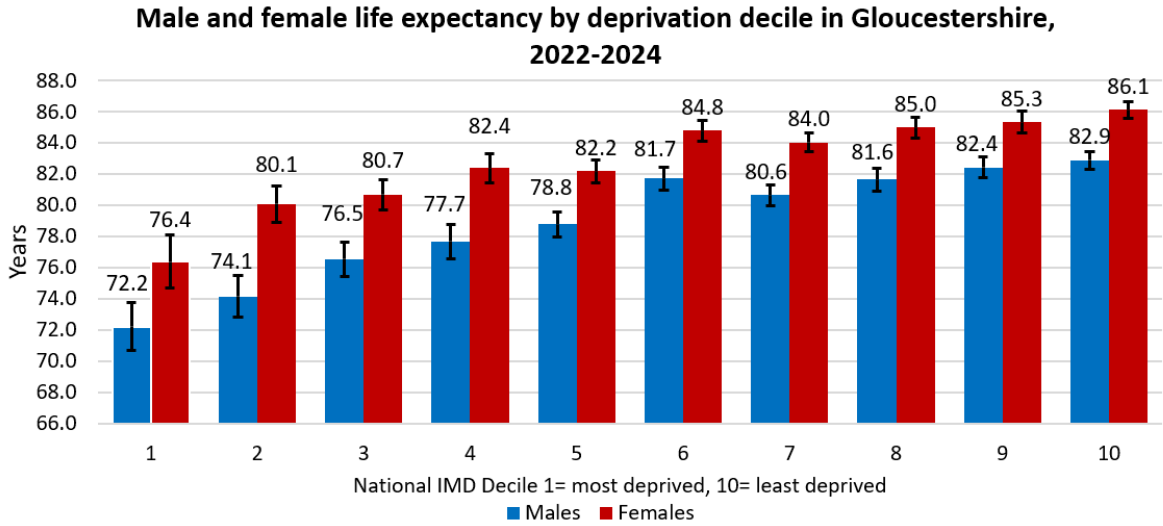


Figure 25: Male and female life expectancy by deprivation in Gloucestershire, 2022-2024[32]

2.1.3 Life expectancy by rural-urban classification and deprivation

Combining deprivation and rural-urban classification provides a more detailed picture of health inequalities in Gloucestershire. It helps identify communities experiencing the poorest health outcomes and can support more targeted prevention and service planning.

Figure 26 and Figure 27 show how life expectancy varies across both deprivation and rurality in Gloucestershire.

Across both urban and rural areas (where data is available), male life expectancy increases as deprivation decreases. In urban areas, male life expectancy rises from 73.3 years in the most deprived quintile to 82.6 years in the least deprived quintile, a difference of 9.3 years.

At comparable levels of deprivation, men living in rural areas generally have a higher life expectancy than those living in urban areas. For example, in deprivation quintile 3, male life expectancy is 81.8 years in rural areas compared with 79.0 years in urban areas. Confidence intervals indicate that some of these

[32] Locally calculated analysis using mortality, population and IMD 2025 data

differences, particularly those between the most and least deprived groups, are statistically significant, suggesting that the observed inequalities are unlikely to be due to chance.

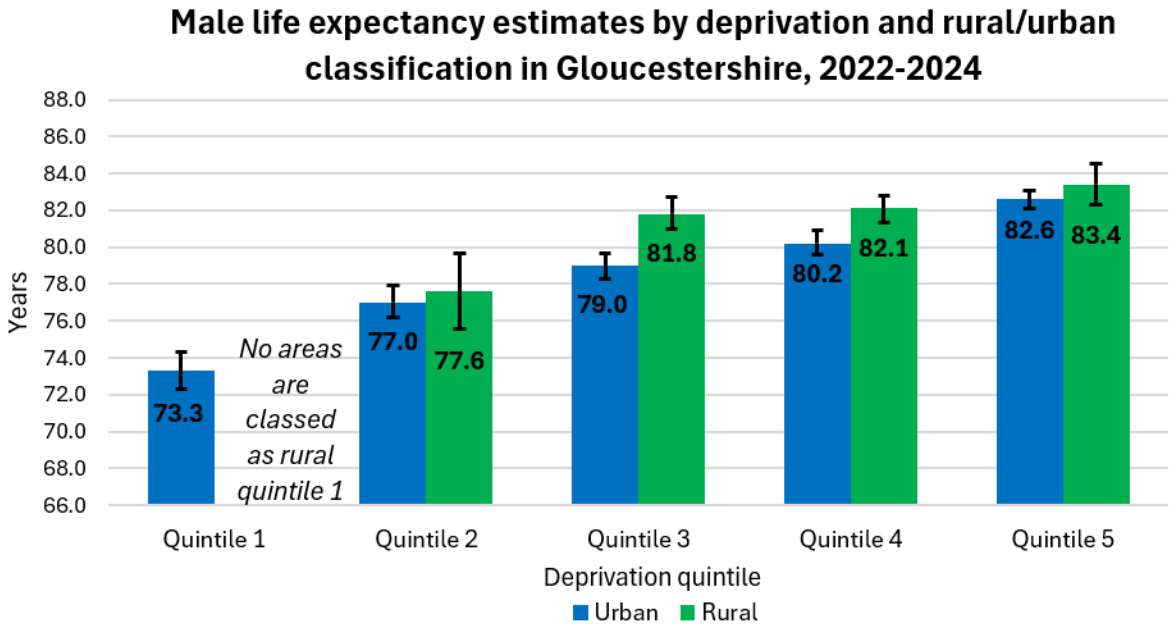


Figure 26: Male life expectancy estimates by deprivation and rural/urban classification in Gloucestershire, 2022-2024[33]

A similar pattern is observed for females, with life expectancy generally increasing as deprivation decreases in both urban and rural areas. Female life expectancy in urban areas rises from 78.6 years in the most deprived quintile to 85.9 years in the least deprived quintile, a difference of 7.3 years. No rural areas in Gloucestershire fall within the most deprived quintile; however, among the remaining quintiles, females living in rural areas generally have higher life expectancy than those living in urban areas with comparable levels of deprivation. The largest difference is observed in deprivation quintile 3, where female life expectancy is 85.2 years in rural areas compared with 82.1 years in urban areas. The confidence intervals indicate that this difference is statistically significant, whereas differences between urban and rural areas in the least deprived quintiles are smaller and not statistically significant. These findings show that female life expectancy is associated with both deprivation and rurality, although the analysis does not establish causation.

[33] Local analysis combining ONS rural/urban classification, IMD 2025, mortality and population data

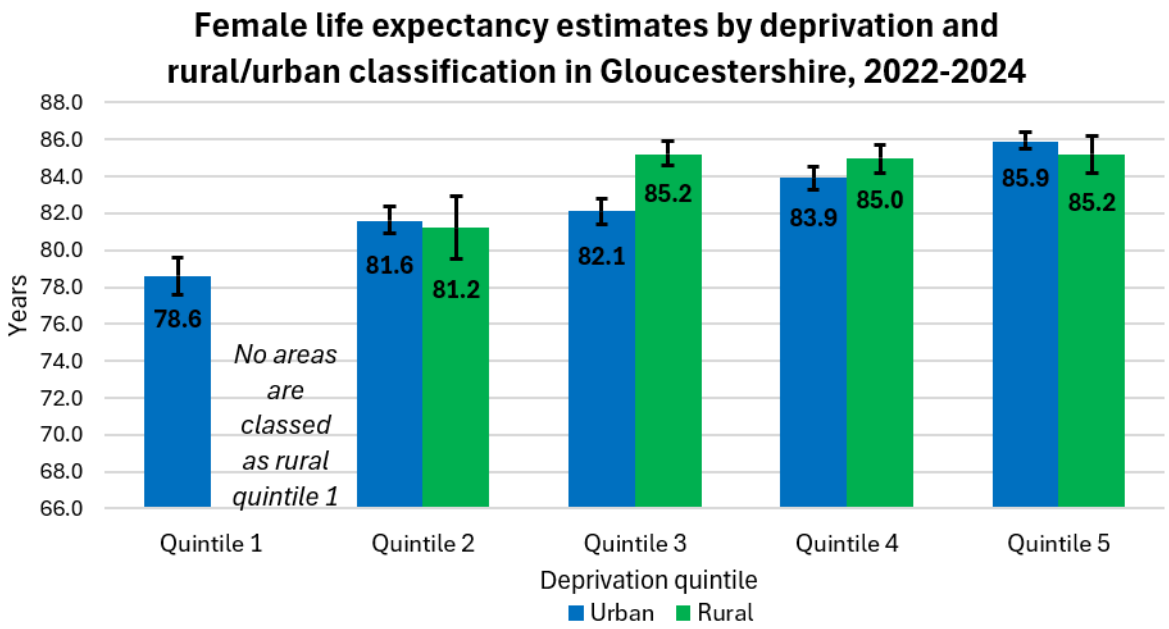


Figure 27: Female life expectancy estimates by deprivation and rural/urban classification in Gloucestershire, 2022-2024[34]

These findings describe associations at area level and should not be interpreted as evidence that deprivation or rurality directly causes differences in an individual's life expectancy. Estimates for smaller population groups may be imprecise, and the analysis does not account for all factors that may influence life expectancy, such as ethnicity, care-home populations or access to health and care services.

2.2 Measuring inequality through the Slope Index of Inequality- What is the Slope Index of Inequality in life expectancy?

While the analysis above focuses on differences between specific groups, the Slope Index of Inequality (SII) provides an overall measure of deprivation-related inequality across the whole population. Rather than comparing individual deprivation groups, it uses information from all deprivation deciles to estimate the gap in life expectancy between the most and least deprived people. This produces a single summary measure of inequality that can be compared between local authorities and over time.

A higher SII indicates a greater inequality in life expectancy, while a lower SII indicates a smaller gap between the most and least deprived people.

The indicator is expressed as:

- Inequality in life expectancy at birth- male and female

[34] Ibid.

- Inequality in life expectancy at age 65- male and female

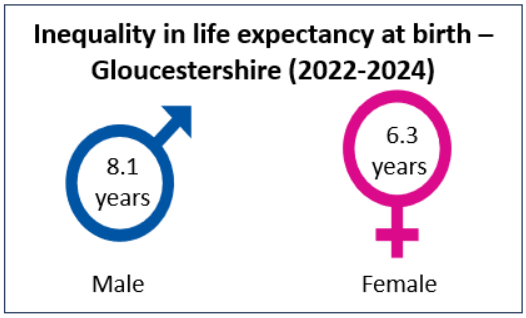
Data is available at district, county regional and national level. However, the regional and national inequality at life expectancy data is not comparable to local authority level data.

More information is available on the OHID Fingertips website here.

2.3 Current picture[35]

In Gloucestershire, the 2022-2024 inequality in life expectancy data shows that males born in the most deprived deciles of Gloucestershire could expect to live 8 years and 1 month less than those born in the most affluent deciles. In comparison, females born in the most deprived areas could expect to live 6 years and 4 months less than those born in the most affluent areas.

A similar picture is observed when looking at life expectancy at age 65. Males living in the most deprived deciles of Gloucestershire could expect to live 3 years and 11 months less than those living in the most affluent areas. In comparison, females living in the most deprived areas could expect to live 3 years and 8 months less than those born in the most affluent areas.



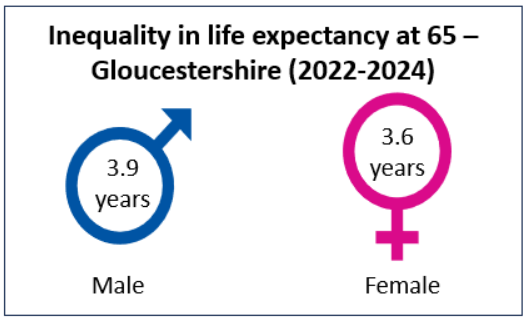


Figure 28: Inequality in life expectancy at birth and at age 65, Gloucestershire (2022-2024)[36]

[35] Figures for Gloucestershire, the South West and England are not directly comparable

[36] PHOF, OHID

2.4 How does Gloucestershire compare to other areas?

While the inequality in life expectancy data is not comparable between local authority and the regional and national data, a comparison can be made between local authorities.

In general, Gloucestershire performs in the middle of its nearest neighbours[37], with similar inequality in life expectancy values to more than half of the listed authorities.

In absolute terms, the county ranks 10th out of 16 similar authorities when looking at male inequality in life expectancy at birth. However, when confidence intervals are considered, the county has a similar male inequality in life expectancy at birth to 10 authorities, a higher life expectancy inequality than Oxfordshire, Devon, and Leicestershire, and a lower inequality in life expectancy than Nottinghamshire and Derbyshire.

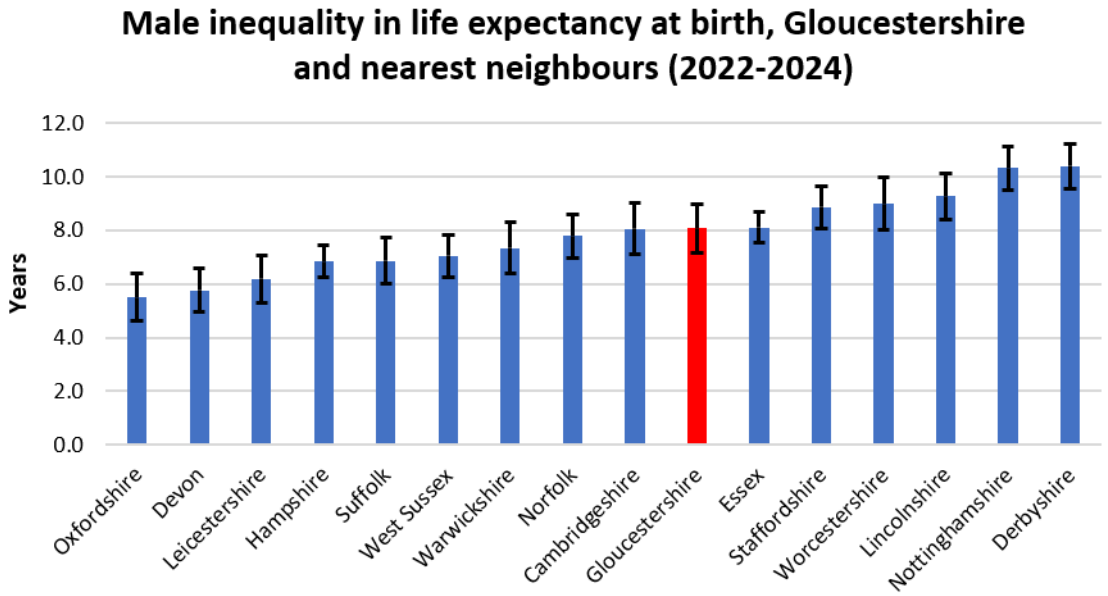


Figure 29: Male inequality in life expectancy at birth, Gloucestershire and nearest neighbours (2022-2024)[38]

When looking at female inequality in life expectancy at birth the county also ranks as 10th out of 16 similar authorities. However, when confidence intervals are considered, the county has a similar female life expectancy inequality at birth to 12 authorities and a higher life expectancy inequality than Devon and Oxfordshire, and a lower inequality in life expectancy than Derbyshire.

[37] This list is based on the CIPFA nearest neighbour model, which provides a list of Local Authorities which may not be close to one another geographically but share similar characteristics meaning they are useful to compare to one another

[38] PHOF, OHID

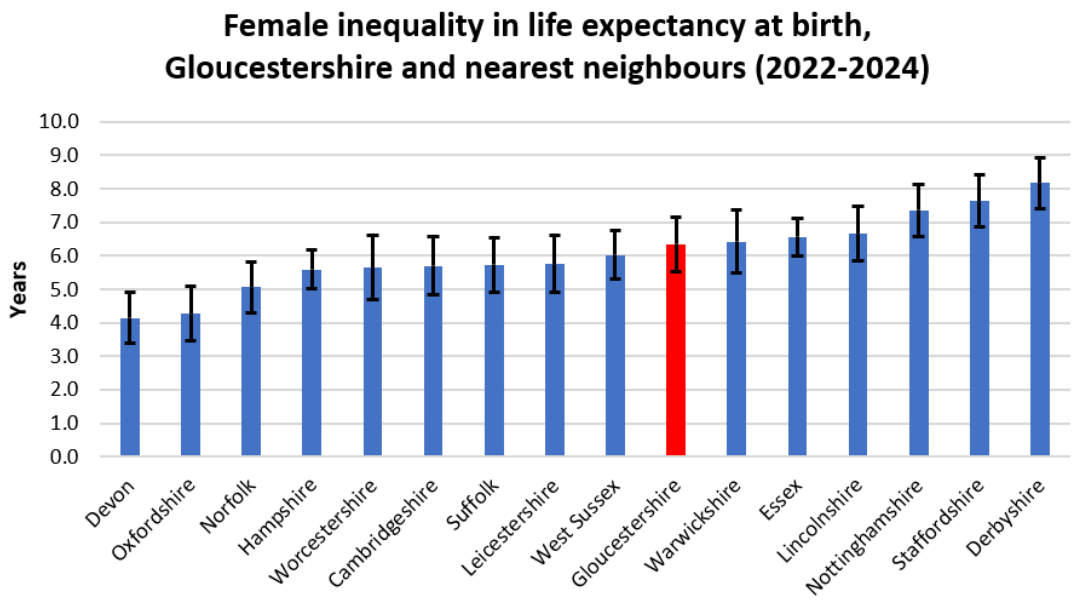


Figure 30: Female inequality in life expectancy at birth, Gloucestershire and nearest neighbours (2022-2024)[39]

In absolute terms, the county ranks 7th out of 16 similar authorities when looking at inequality in male life expectancy at age 65. However, when confidence intervals are considered, the county has a similar male inequality in life expectancy at age 65 to 11 authorities, a higher life expectancy inequality than Devon, and a lower life expectancy inequality than Derbyshire, Staffordshire and Nottinghamshire.

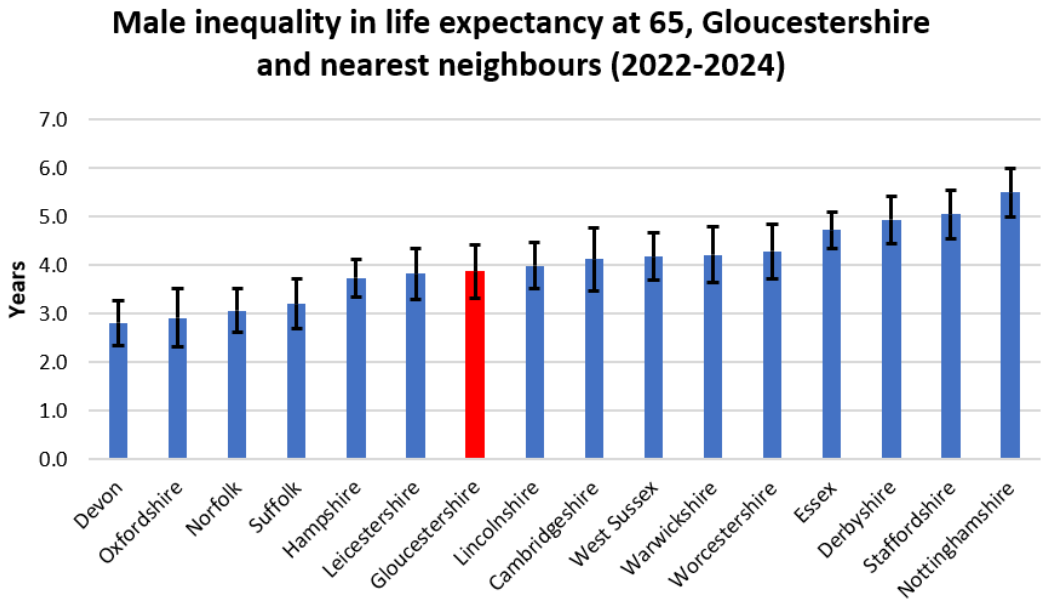


Figure 31: Male inequality in life expectancy at age 65, Gloucestershire and nearest neighbours (2022-2024)[40]

[39] *Ibid.*

[40] *Ibid.*

When looking at female inequality in life expectancy at age 65 the county ranks 8th out of 16 similar authorities. However, when confidence intervals are taken into account, the county has a similar female inequality in life expectancy at age 65 to 11 authorities, a higher life expectancy inequality than Devon, Suffolk and Norfolk, and a lower life expectancy inequality than Nottinghamshire.

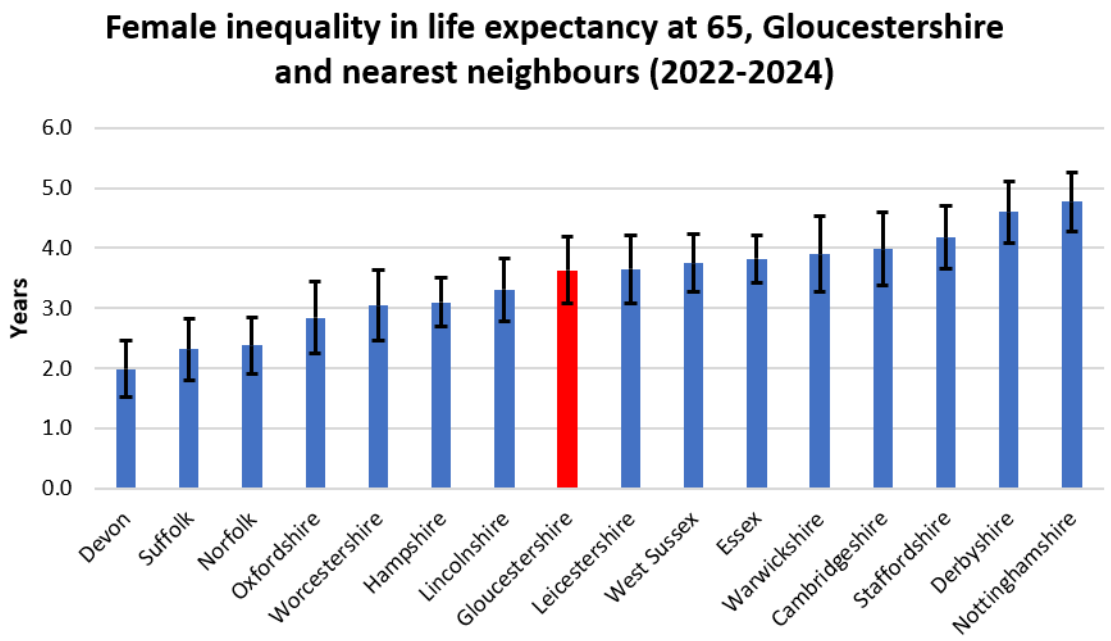


Figure 32: Female inequality in life expectancy at age 65, Gloucestershire and nearest neighbours (2022-2024)[41]

2.5 Variation across Gloucestershire's districts

The inequality in life expectancy data is provided at district level which means the data allows us to understand geographical variation across Gloucestershire. Generally, the urban centers of Cheltenham and Gloucester had the highest inequality in life expectancy values, this is to be expected as they include some of the most deprived and least deprived LSOAs in the county.

In 2022-2024, Cheltenham had the highest male inequality at birth with a male living in the most deprived areas expecting to live 12 years and 2 months less than a male living in the least deprived areas. In contrast, Cotswold had the lowest deprivation inequality with a male living in the most deprived areas of Cotswold expecting to live 1 year and 3 months less than a male living in the least deprived areas. The inequality difference between Cheltenham and Cotswold is equivalent to 10 years and 11 months, meaning Cheltenham males experience a greater difference in life expectancy between the least and most deprived areas compared to Cotswold.

[41] Ibid.

In comparison, Cheltenham had the highest female life expectancy inequality, with a female living in the most deprived areas experiencing a life expectancy of 9 years and 10 months fewer than a female living in the least deprived areas. Cotswold had the smallest inequality, with a 6-month negative gap between the most and least deprived areas. This indicates that females in the most deprived areas are living slightly longer than those in the least deprived areas. There is a difference of 10 years and 4 months between the two districts.

When compared to the Gloucestershire average, Cheltenham is indicated to have a significantly higher male inequality in life expectancy and Cotswold has a significantly lower inequality. In addition, Cheltenham is the only district to have a significantly higher female inequality in life expectancy compared to Gloucestershire, while Cotswold and Stroud have a significantly lower inequality than the Gloucestershire figure.

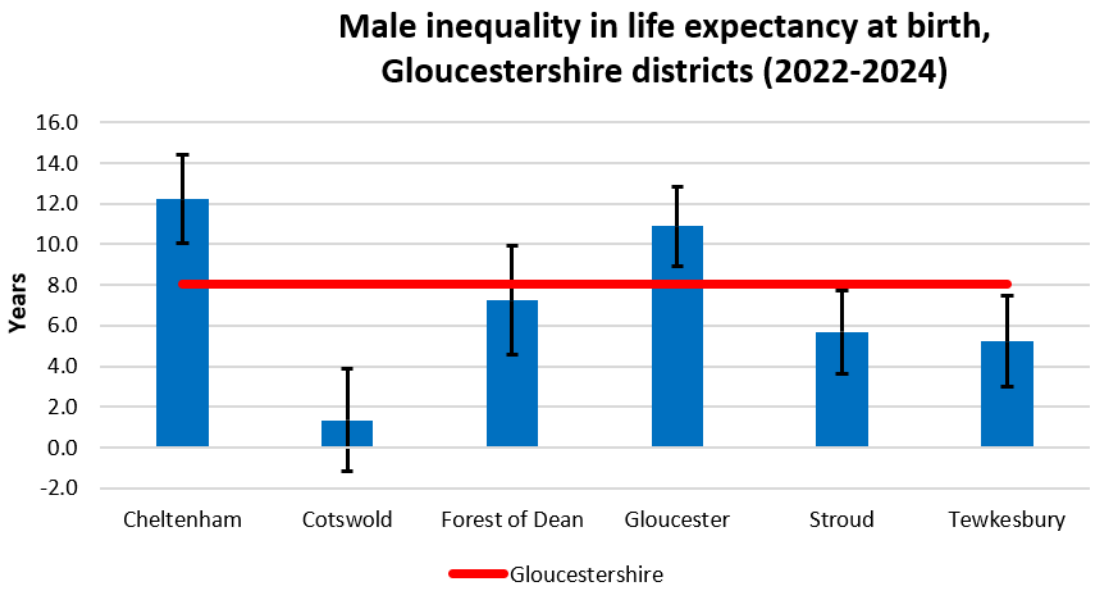


Figure 33: Male inequality in life expectancy at birth, Gloucestershire districts (2022-2024)[42]

[42] *Ibid.*

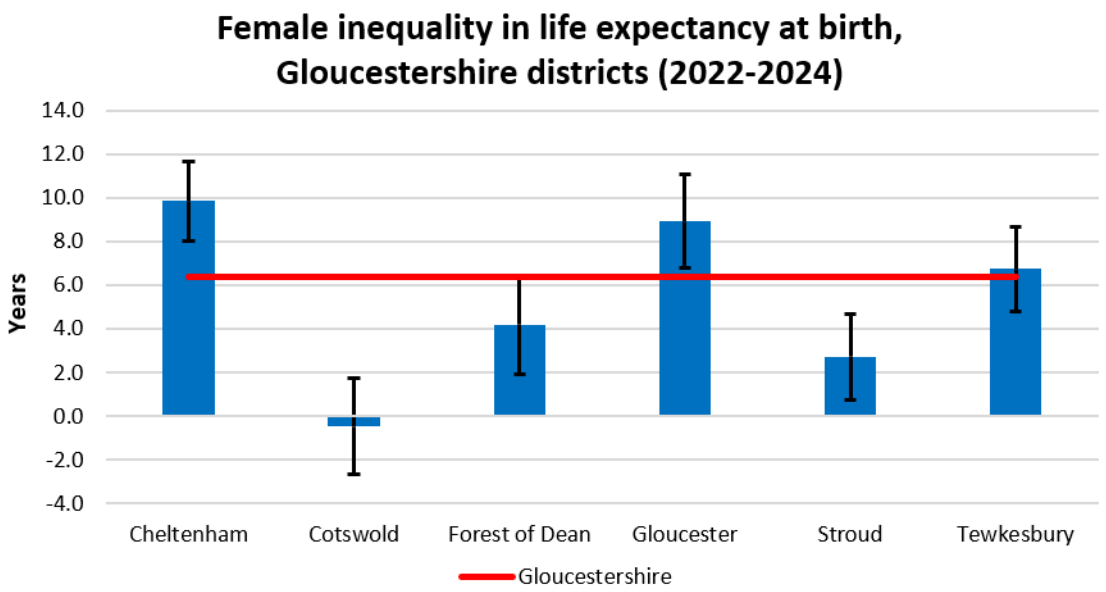


Figure 34: Female inequality in life expectancy at birth, Gloucestershire districts (2022-2024)[43]

Male inequality in life expectancy at age 65 is highest in Cheltenham, where a male living in the most deprived areas can expect to live 6 years and 6 months less than a male living in the least deprived areas. In contrast, the inequality in life expectancy is lowest in Cotswold where there is a negative difference of 1 year, this means that males living in the most deprived areas can expect to live 1 year longer than males living in the least deprived areas. The inequality difference between Cheltenham and Cotswold is equivalent to 7 years and 6 months, meaning Cheltenham males experience a greater difference in life expectancy between the least and most deprived areas compared to Cotswold.

In comparison, female inequality in life expectancy at age 65 is highest in Gloucester with a difference of 6 years and 4 months between females living in the most and least deprived areas and lowest in Cotswold which has a negative inequality of 8 months. The inequality in life expectancy difference between Gloucester and Cotswold is 7 years.

Cheltenham and Gloucester have a significantly higher male inequality in life expectancy at age 65 than the Gloucestershire average, however, Cotswold has a significantly lower value than Gloucestershire. In comparison, Cheltenham and Gloucester have significantly higher female inequalities in life expectancy at age 65 than the Gloucestershire average and, Cotswold, Forest of Dean and Stroud have significantly lower values.

[43] *Ibid.*

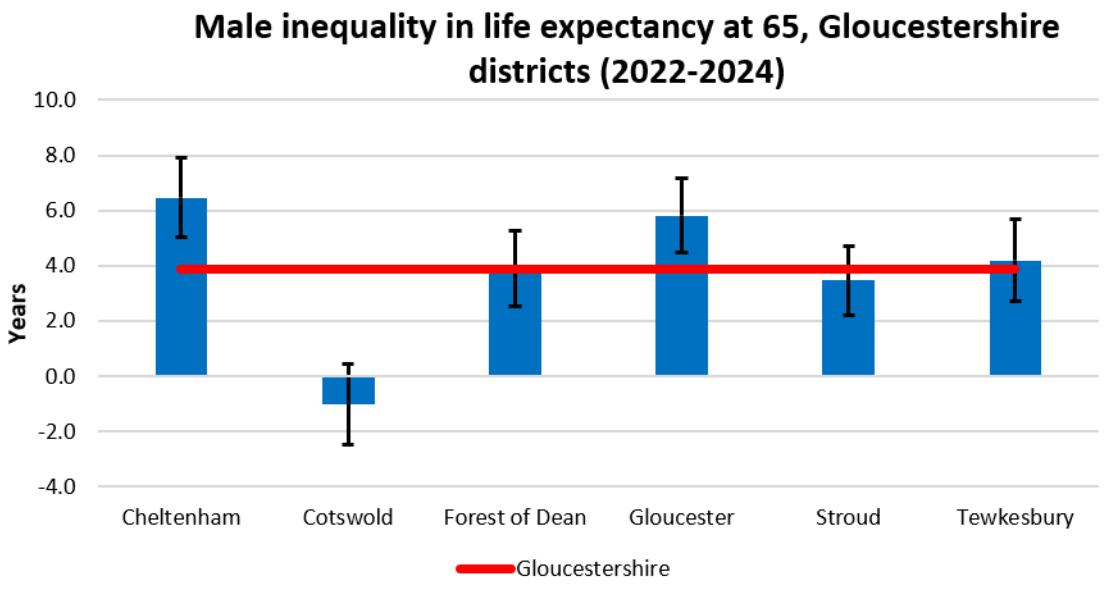


Figure 35: Male inequality in life expectancy at age 65, Gloucestershire districts (2022-2024)[44]

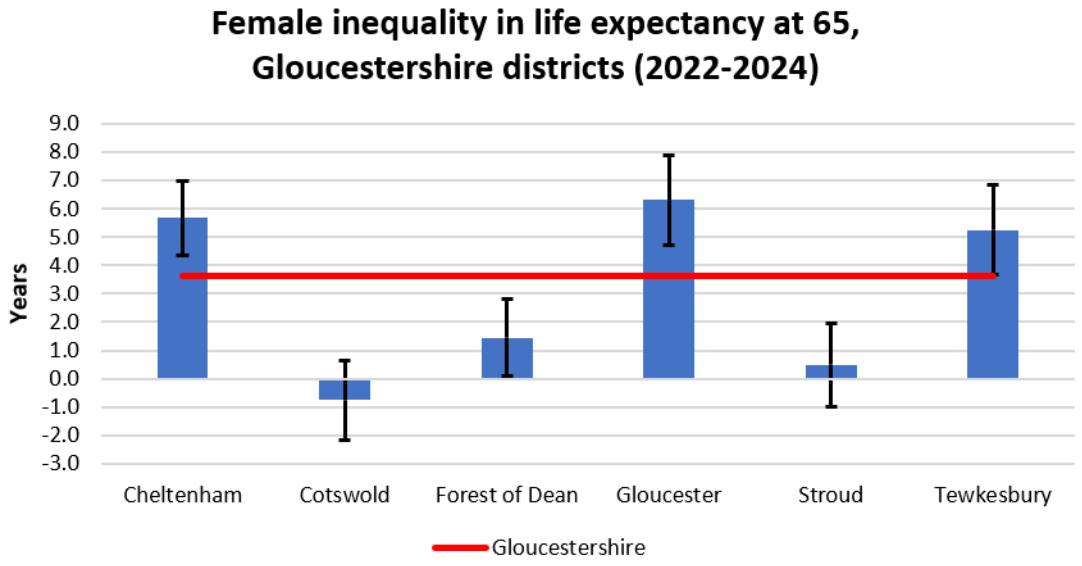


Figure 36: Female inequality in life expectancy at age 65, Gloucestershire districts (2022-2024)[45]

2.6 Change over time

Between 2011-2013 and 2022-2024, there has been no significant change in the life expectancy at birth inequality gap for both males and females. There has also been no significant change in the male and female life expectancy inequality gaps at age 65.

[44] *Ibid.*

[45] *Ibid.*

2.6.1 Sex differences

Between 2012-2014 and 2017-2019, there was a significantly higher inequality at birth gap for males than females in Gloucestershire. However, since 2018-2020, the data indicates that there is no difference between the male and female life expectancy inequalities caused by deprivation, as indicated in Figure 37.

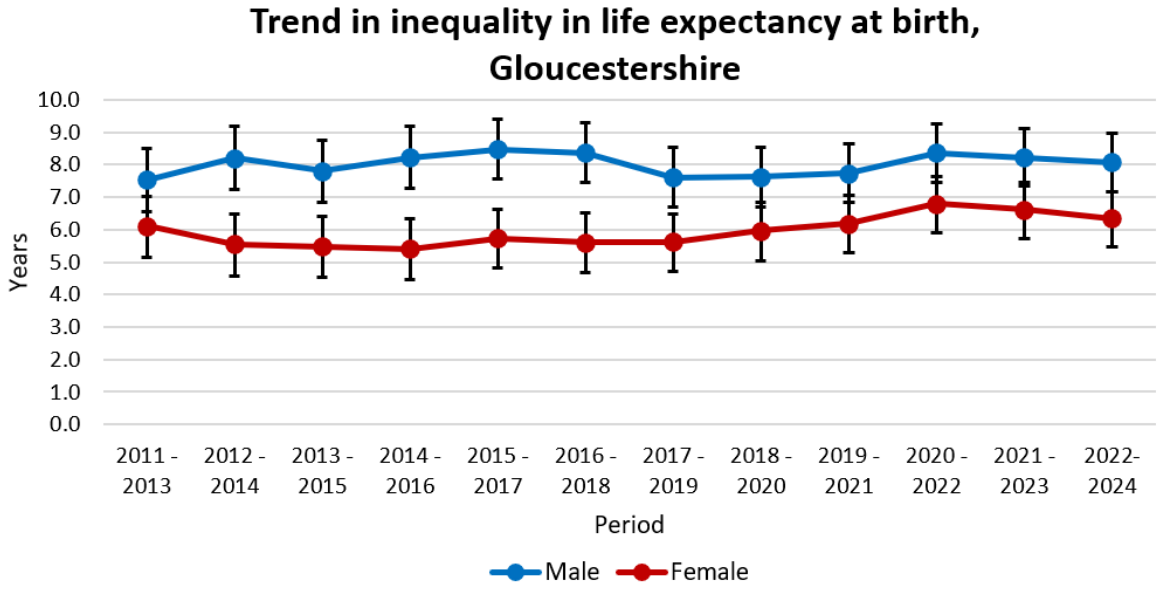


Figure 37: Trend in inequality in life expectancy at birth, Gloucestershire[46]

At age 65, there was also no significant differences between the male and female life expectancy inequality gaps in the periods shown in Figure 38.

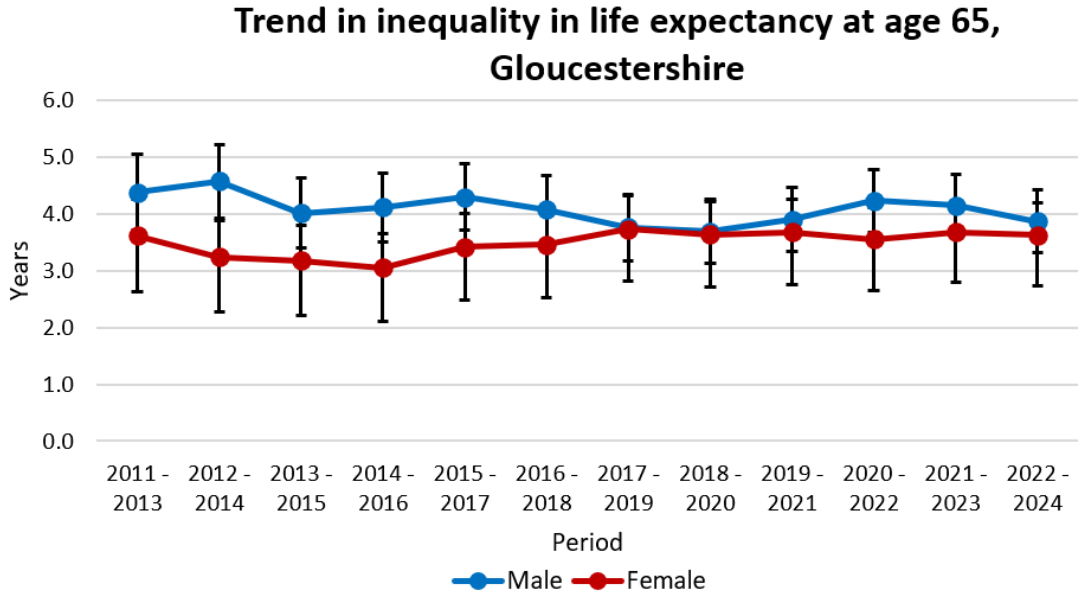


Figure 38: Trend in inequality in life expectancy at age 65, Gloucestershire[47]

[46] *Ibid.*

[47] *Ibid.*

2.6.2 *Variation across Gloucestershire's districts*

Gloucestershire's districts have shown some fluctuation over time; however, the more urban districts of Cheltenham and Gloucester generally had the highest levels of life expectancy inequality across all four indicators.

Between 2021–2023 and 2022–2024, changes in the inequality gap varied across districts, with some increasing and others decreasing. As the confidence intervals are large, these changes were not statistically significant.

Comparing the male inequality in life expectancy at birth indicator, Figure 39, shows that between 2021-2023 and 2022-2024, the life expectancy gap between the least and most deprived areas increased in Cheltenham, Forest of Dean and Stroud. In comparison, the gap decreased in Cotswold, Gloucester and Tewkesbury. The largest increase was by 1.9 years in Forest of Dean, and the largest decrease was by 2.4 years in Tewkesbury.

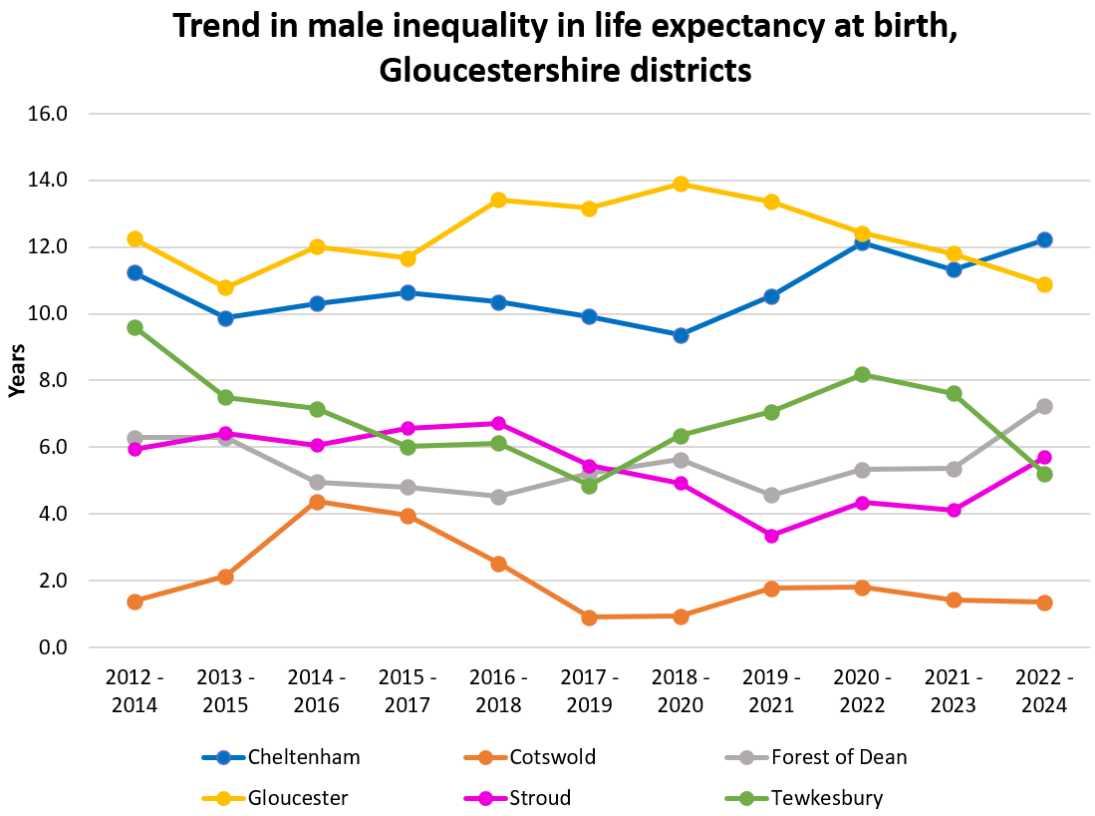


Figure 39: Trend in male inequality in life expectancy at birth, Gloucestershire districts[48]

Figure 40 indicates that there was an increase in the female life expectancy gap in four of the six districts between 2021-2023 and 2022-2024 with the biggest being seen in Forest of Dean, where the gap increased by 1.4 years. In comparison, Cotswold and Stroud saw a reduction in the life expectancy gap, by

[48] *Ibid.*

as much as 2.2 years in Cotswold. The changes for each of the districts are not statistically significant.

Interestingly, the graph shows that the life expectancy at birth gap was a negative value in Cotswold between 2013-2015 and 2018-2020, and in 2022-2024. This means that, in absolute terms, females living in the most deprived areas have been identified as having a slightly longer life expectancy than females living in the least deprived areas. However, due to the negative values not having significant differences to the positive values, it is difficult to know whether the indicated relationship between deprivation and life expectancy was genuine in those time periods or if it was due to the methodology used to calculate the measure.

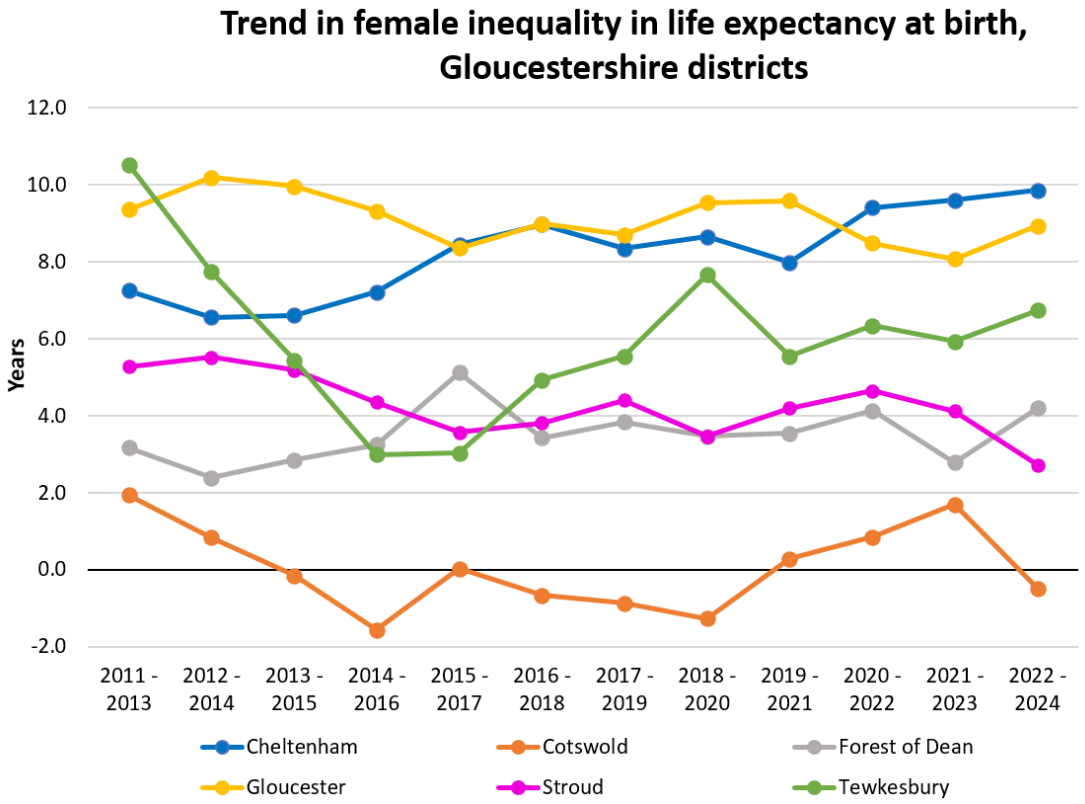


Figure 40: Trend in female inequality in life expectancy at birth, Gloucestershire districts[49]

At age 65, inequalities in male life expectancy within Gloucestershire districts have remained relatively stable over time, with no statistically significant changes observed between 2011-2013 and 2022-2024, as shown in Figure 41. In the most recent period, Cheltenham was the only district to have an increase in the inequality gap (1.2 years), Forest of Dean stayed the same and the other 4 districts saw a reduction, with the biggest reduction occurring in Cotswold by 0.5 years.

[49] *Ibid.*

As with the female life expectancy at birth indicator, the negative values observed in Cotswold suggest that males living in the most deprived areas were estimated to have a slightly higher life expectancy at age 65 than those living in the least deprived areas. However, as these differences are not statistically significant, it is not possible to determine whether this represents a genuine reversal of the usual relationship between deprivation and life expectancy or reflects random variation and the methodology used to calculate the indicator.

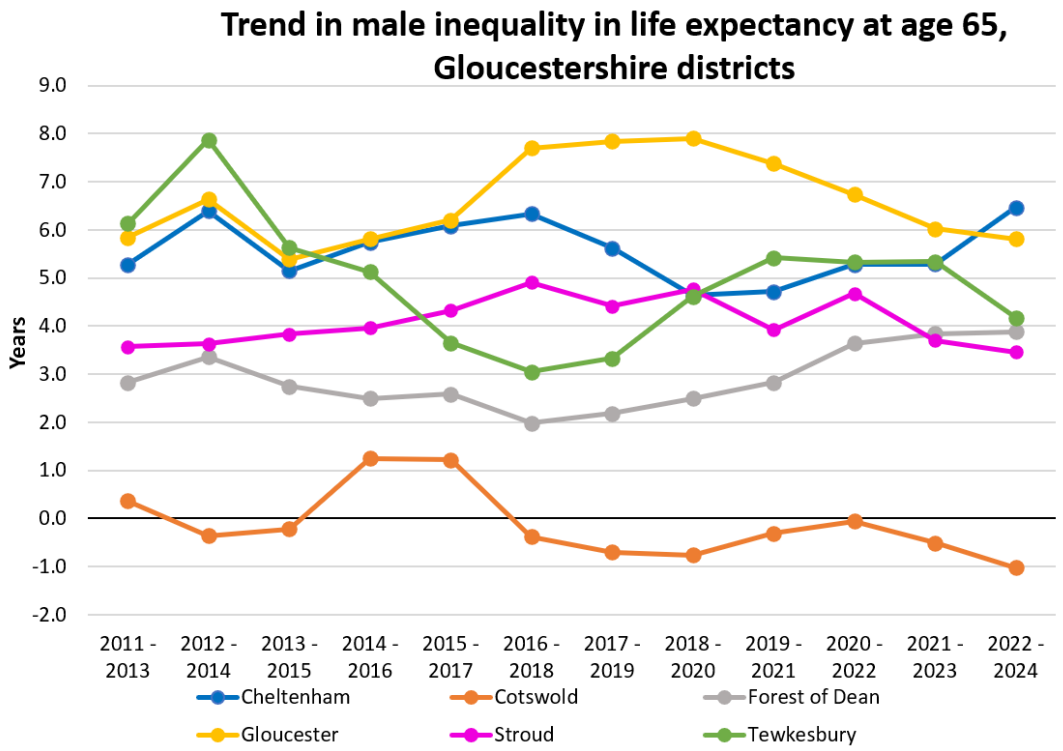


Figure 41: Trend in male inequality in life expectancy at age 65, Gloucestershire districts[50]

In comparison, Figure 42 shows that there was relatively little change in the female life expectancy inequality gap for the districts, with the exception of Tewkesbury which did see a significantly lower inequality gap in 2014-2016 compared to 2011-2013. However, since 2014-2016 there has not been a significant variation in the life expectancy gap between the least and most deprived females living in Tewkesbury. Between 2021-2023 and 2022-2024, Forest of Dean, Gloucester and Tewkesbury saw an increase in the inequality gap with the largest increase seen in Forest of Dean with 0.9 years. Cheltenham, Cotswold and Stroud saw a reduction in the inequality caused by deprivation, with the largest reduction seen in Stroud by 2.0 years. These changes are not statistically significant.

Cotswold also has an indicated negative life expectancy gap for females at age 65.

[50] *Ibid.*

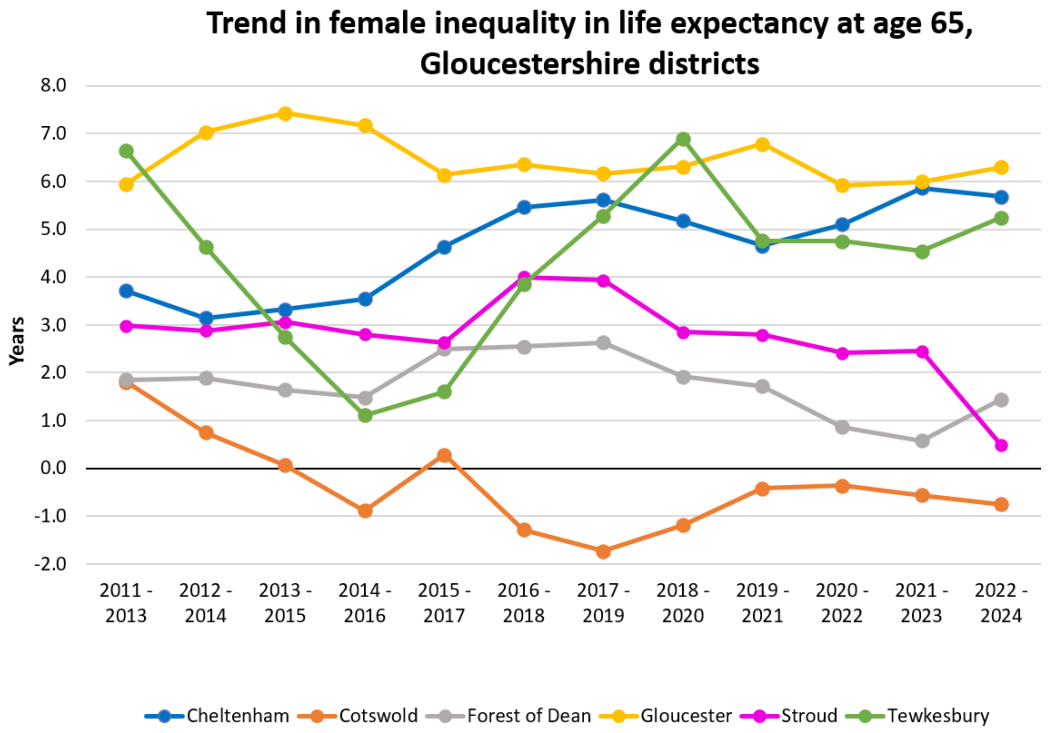


Figure 42: Trend in female inequality in life expectancy at age 65, Gloucestershire districts[51]

3. Drivers of mortality

The causes of mortality that contribute to the life expectancy gap between the 20% most deprived communities in Gloucestershire and the 20% least deprived communities in Gloucestershire, by cause of death for the period 2022-2023, are shown in Figure 43.

Deaths in younger people, especially in babies, contribute to a larger proportion of the gap, as more years of life are lost. The largest difference in life expectancy between the most and least deprived communities for both males and females is circulatory diseases (25.0% for males and 25.3% for females). This was followed by cancer for males (15.0%) and other causes[52] for females (18.3%).

[51] *Ibid.*

[52] Includes all other causes of death not listed

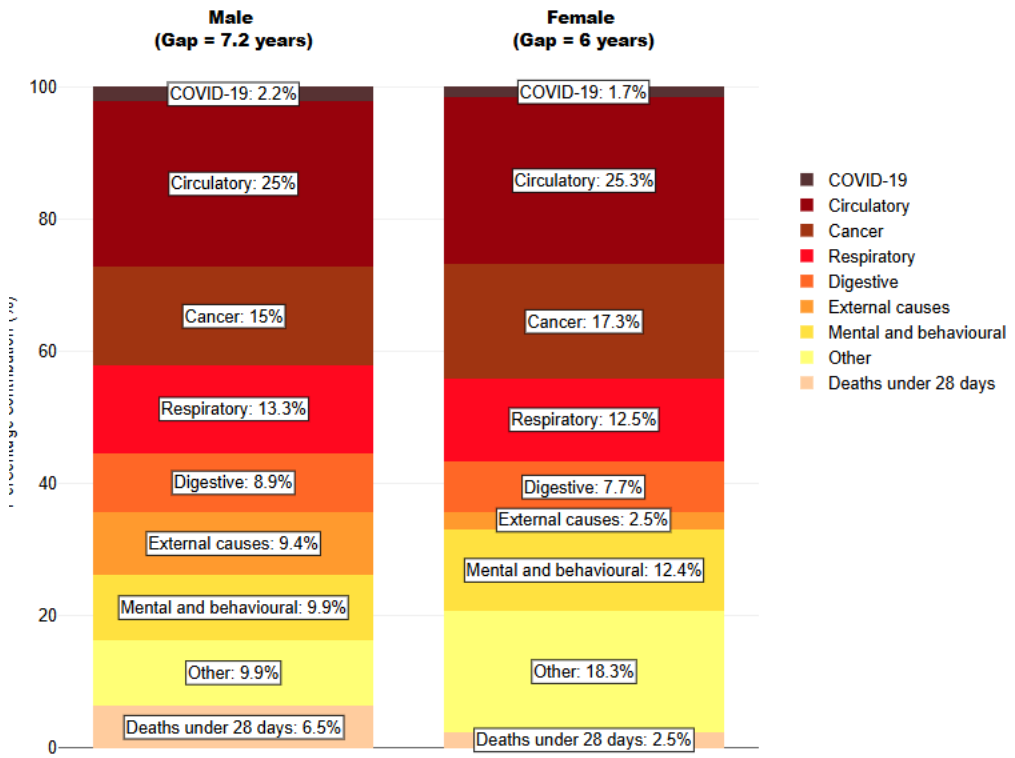


Figure 43: Breakdown of the life expectancy gap between the most and least deprived quintiles of Gloucestershire by cause of death, 2022 to 2023[53]

4. Healthy Life Expectancy

4.1 What is Healthy Life Expectancy (HLE)?

Healthy life expectancy measures the average number of years a person would expect to live in good health rather than with a disability or in poor health. Good health measures an individual's perception of being disability free through a self-reported lack of long-lasting physical or mental health conditions that limit their daily activities. The measure combines death-registration data with survey responses about self-reported health. As a result, the healthy life expectancy estimate is partly based on individuals' subjective assessments of their health. Current picture. Data is available at MSOA, district, county, regional and national level, however, the reference time period is 2019-2023 for the MSOA and district data and 2022-2024 for the county, regional and national data.

4.2 Current picture

In 2022–2024, healthy life expectancy at birth in Gloucestershire was 63.4 years for both males and females. The corresponding estimates were 62.4 years for both sexes in the South West, 60.9 years for males in England and 61.3 years

[53] Segment Tool, OHID

for females in England. The differences between Gloucestershire and the comparator areas were not statistically significant.

At age 65, healthy life expectancy in Gloucestershire was a further 11.1 years for males and 12.6 years for females. The corresponding estimates were 10.8 and 12.4 years in the South West, and 10.1 and 11.1 years in England. Again, the differences between Gloucestershire and the comparator areas were not statistically significant.

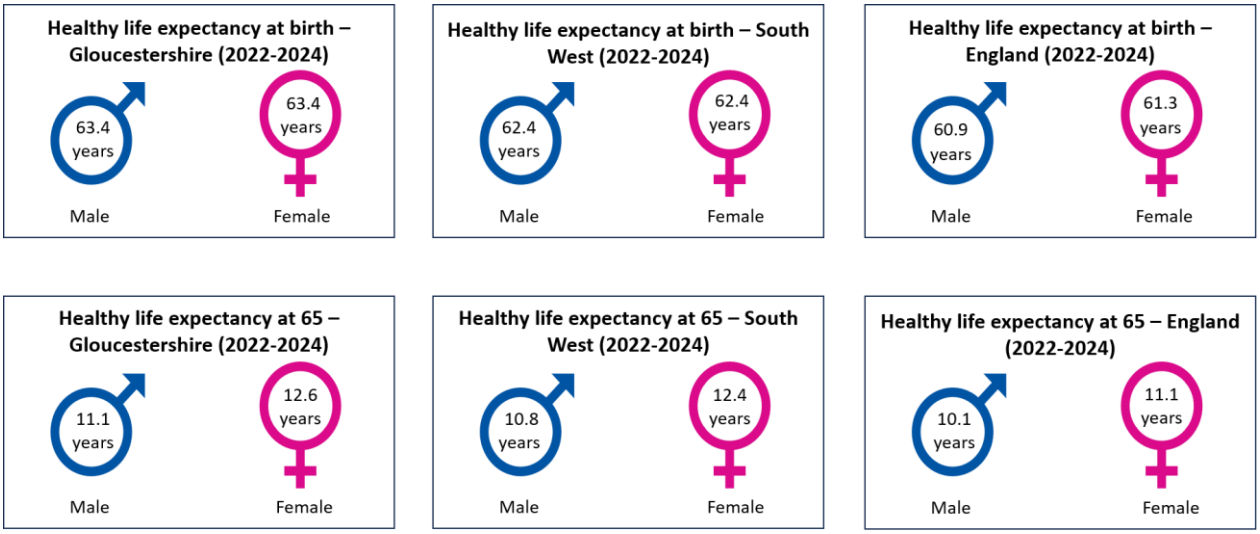


Figure 44: Healthy life expectancy at birth and healthy life expectancy at age 65, Gloucestershire, South West and England (2022-2024)[54]

4.3 Sex differences

There was no healthy life expectancy gap (the difference) between males and females, in Gloucestershire in the period 2022-2024. This means that males are expected to live the same amount of time in good health as females. The absence of a sex gap at birth is also observed in the South West. In England, females have approximately five months more healthy life expectancy at birth than males.

In comparison healthy life expectancy at age 65 indicates that for all three areas, females can expect to live a longer amount of time in good health than males, by 18 months in Gloucestershire, 19 months in the South West and 12 months in England overall.

[54] Healthy life expectancy in England and Wales: between 2011 to 2013 and 2022 to 2024, ONS

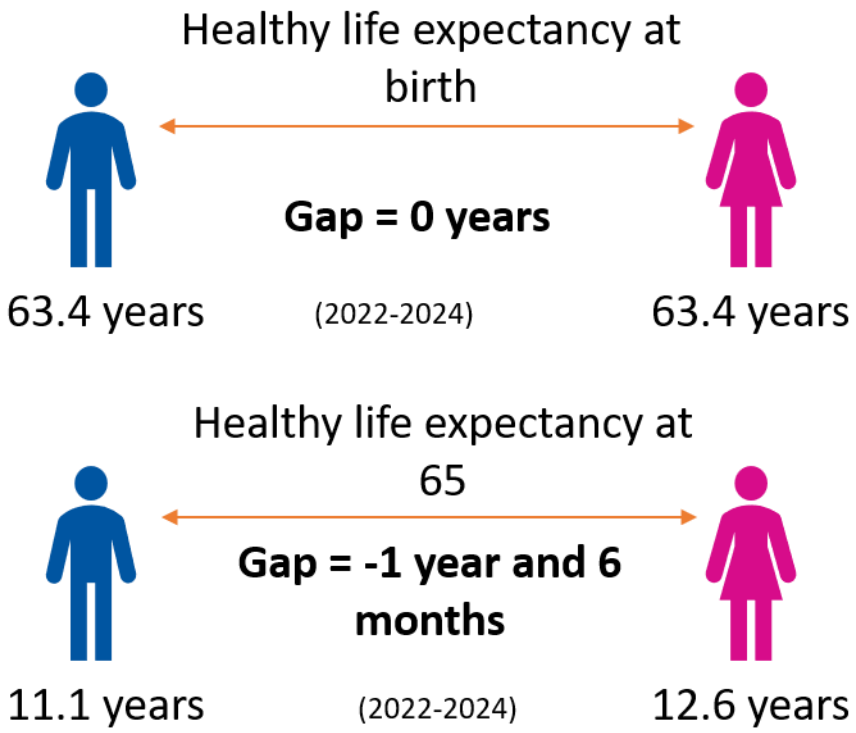


Figure 45: 2022-2024 male and female healthy life expectancy gap at birth and at age 65, Gloucestershire[55]

4.4 How does Gloucestershire compare to other areas?

Although Gloucestershire has a higher estimate for healthy life expectancy at birth than the South West and England, the differences are not statistically significant.

Similarly, Gloucestershire has a higher absolute healthy life expectancy at age 65 value than the South West and England, but the differences are not statistically significant.

[55] *Ibid.*

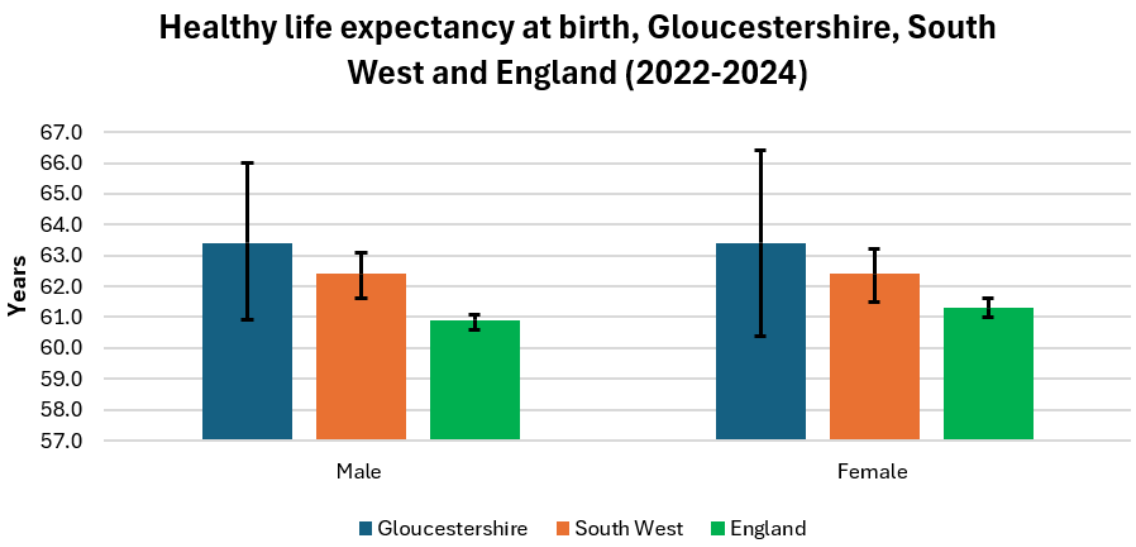


Figure 46: Healthy life expectancy at birth, Gloucestershire, South West and England (2022-2024)[56]

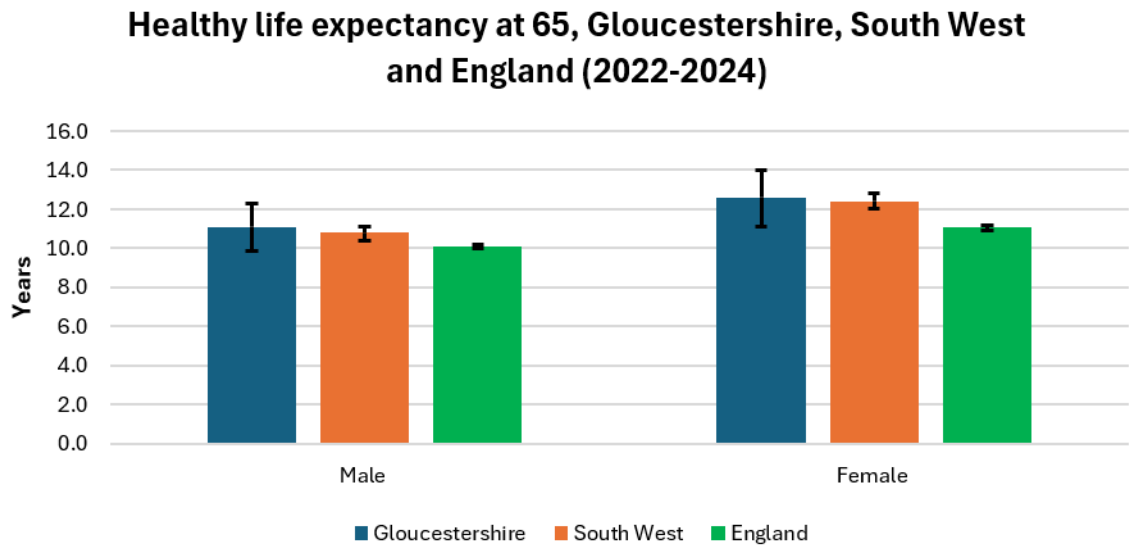


Figure 47: Healthy life expectancy at age 65, Gloucestershire, South West and England (2022-2024)[57]

Comparing Gloucestershire's healthy life expectancy at birth to its nearest neighbours[58], there were no statistically significant differences between the areas for both male and female healthy life expectancy. In absolute terms, the county ranks 3rd out of 16 similar authorities when looking at male healthy life

[56] *Ibid.*

[57] *Ibid.*

[58] This list is based on the CIPFA nearest neighbour model, which provides a list of Local Authorities which may not be close to one another geographically but share similar characteristics meaning they are useful to compare to one another

expectancy at birth, as shown in Figure 48. In contrast, Figure 49 indicates Gloucestershire ranks 5th when comparing female healthy life expectancy.

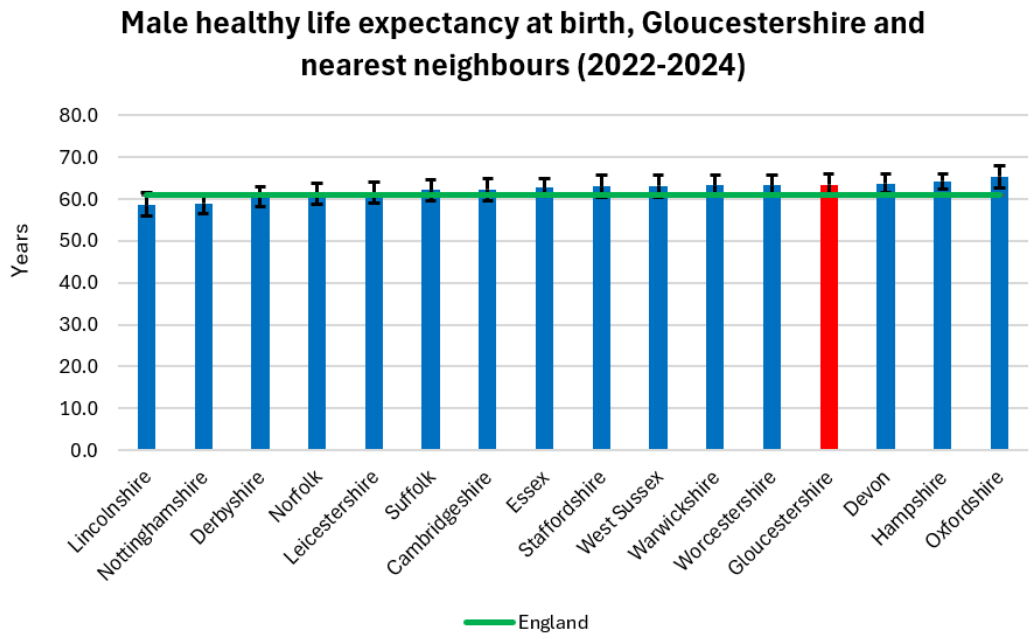


Figure 48: Male healthy life expectancy at birth, Gloucestershire and nearest neighbours (2022-2024)[59]

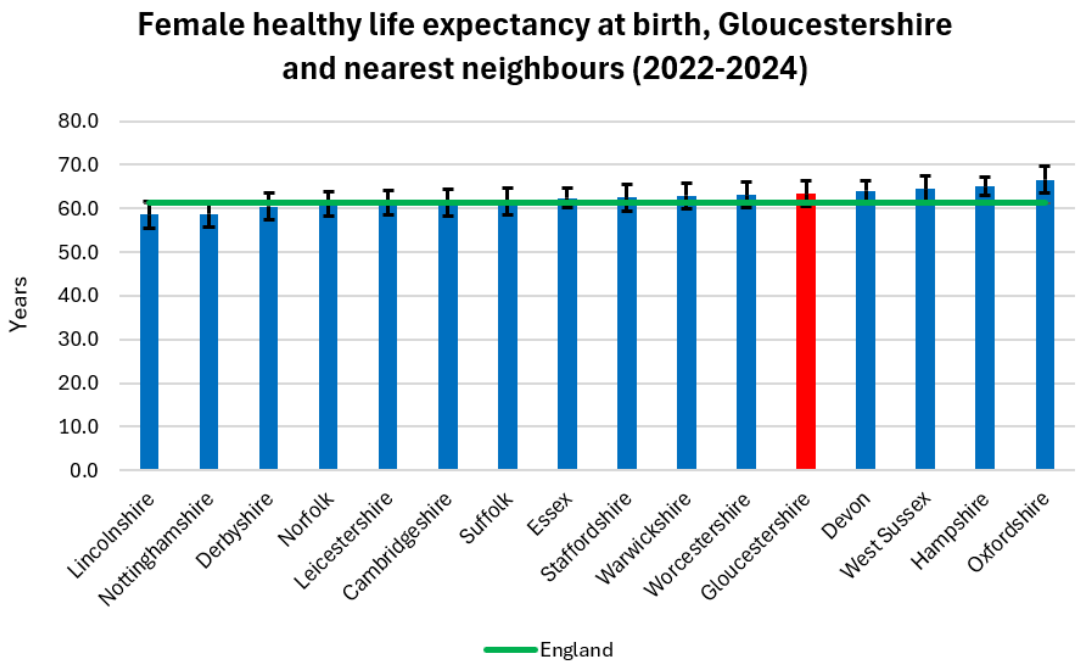


Figure 49: Female healthy life expectancy at birth, Gloucestershire and nearest neighbours (2022-2024)[60]

[59] Healthy life expectancy in England and Wales: between 2011 to 2013 and 2022 to 2024, ONS

[60] *Ibid.*

Looking at healthy life expectancy at age 65, Gloucestershire does not have a statistically different average for males and females when compared to its statistical neighbours. In absolute terms, the county ranks 5th out of 16 similar authorities for its male healthy life expectancy at age 65, as shown in Figure 50. Gloucestershire also ranks 5th when comparing female healthy life expectancy at age 65, as indicated in Figure 51.

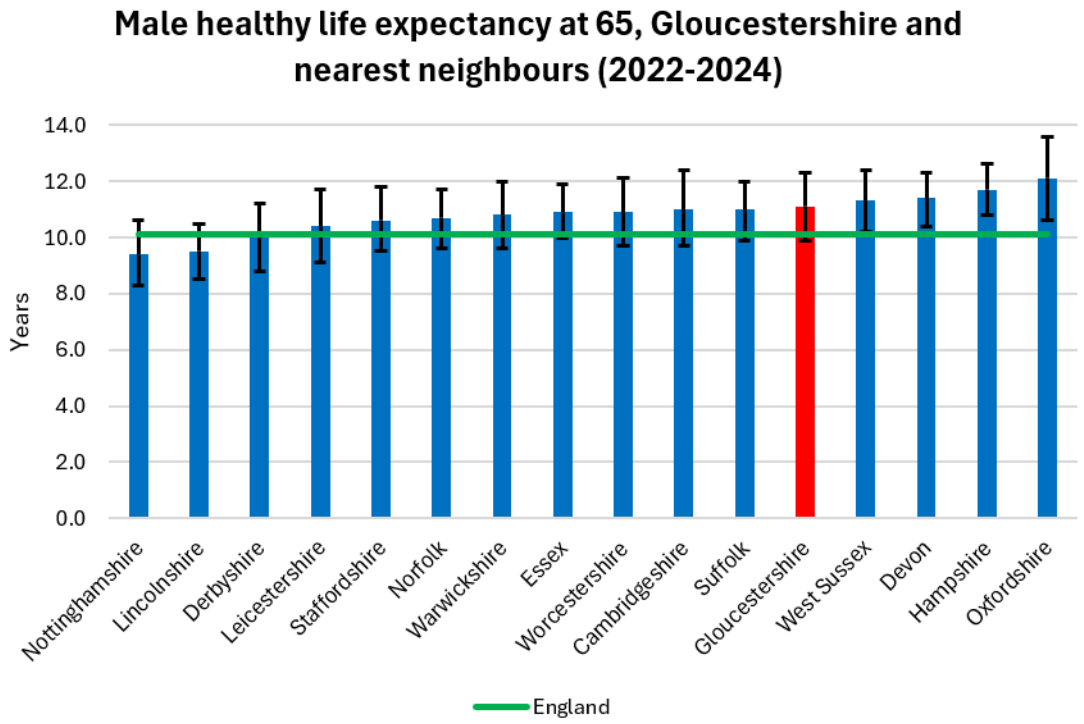


Figure 50: Male healthy life expectancy at age 65, Gloucestershire and nearest neighbours (2022-2024)[61]

[61] *Ibid.*

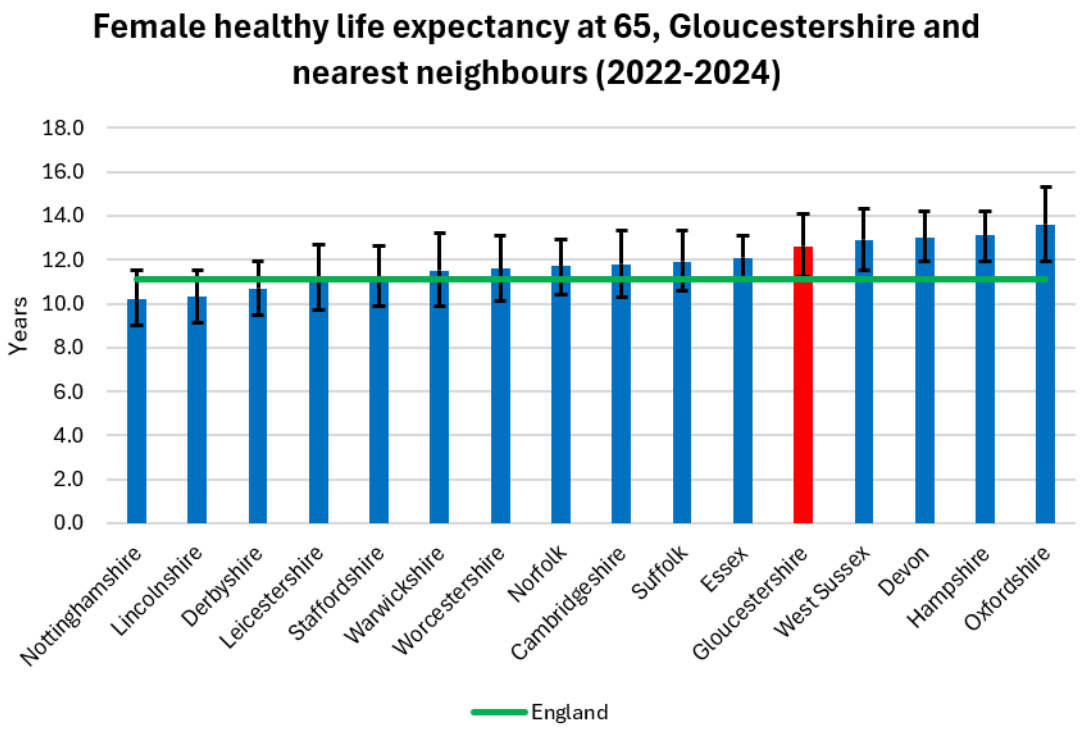


Figure 51: Female healthy life expectancy at age 65, Gloucestershire and nearest neighbours (2022-2024)[62]

4.5 Variation across Gloucestershire's districts

As with life expectancy, there is geographical variation of healthy life expectancy within Gloucestershire. In 2019-2023, male healthy life expectancy at birth ranging from 64.1 years in Gloucester, to 70.2 years in Cotswold, a difference of 6.1 years. Female healthy life expectancy at birth ranges from 65.2 years in Gloucester to 71.6 years in Cotswold, a difference of 6.4 years.

When compared to the national average, Gloucester is significantly worse than England in terms of male and female healthy life expectancy at birth. All other districts have significantly higher male and female healthy life expectancy at birth than England.

[62] *Ibid.*

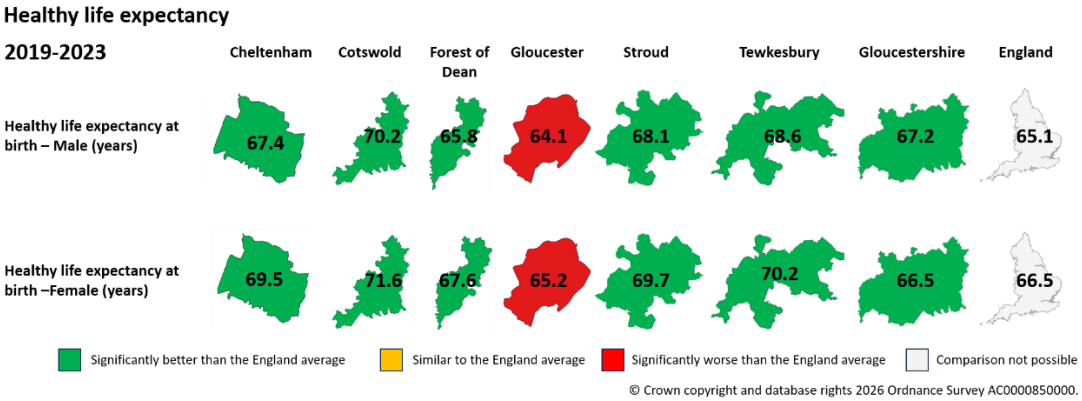


Figure 52: Healthy life expectancy at birth in Gloucestershire's districts (2019-2023)[63]

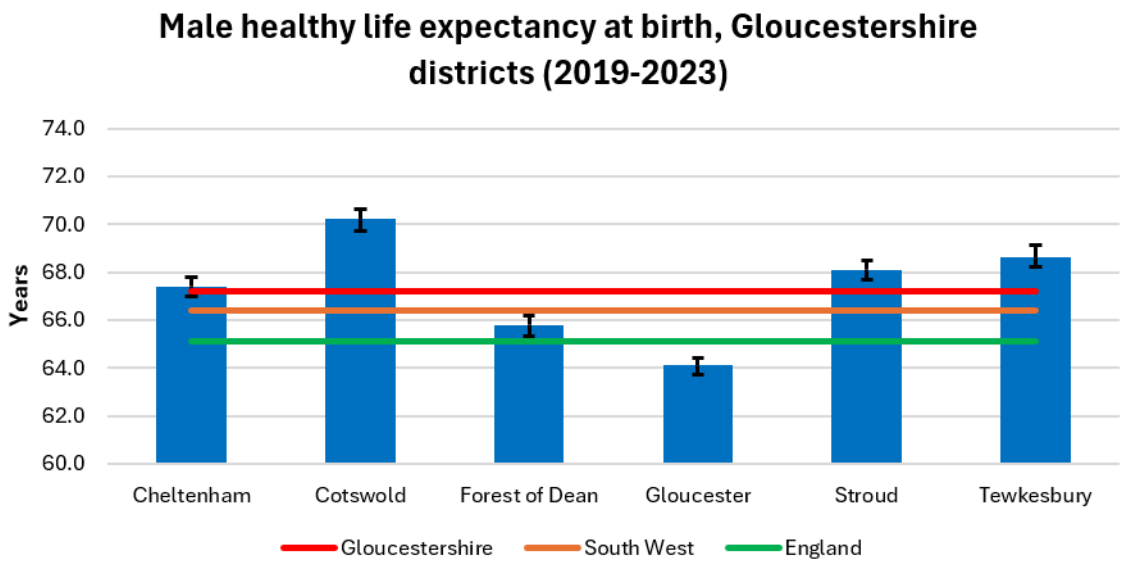


Figure 53: Male healthy life expectancy at birth, Gloucestershire districts (2019-2023)[64]

[63] Health state life expectancy estimates for Middle layer Super Output Areas, England and Wales, ONS

[64] *Ibid.*

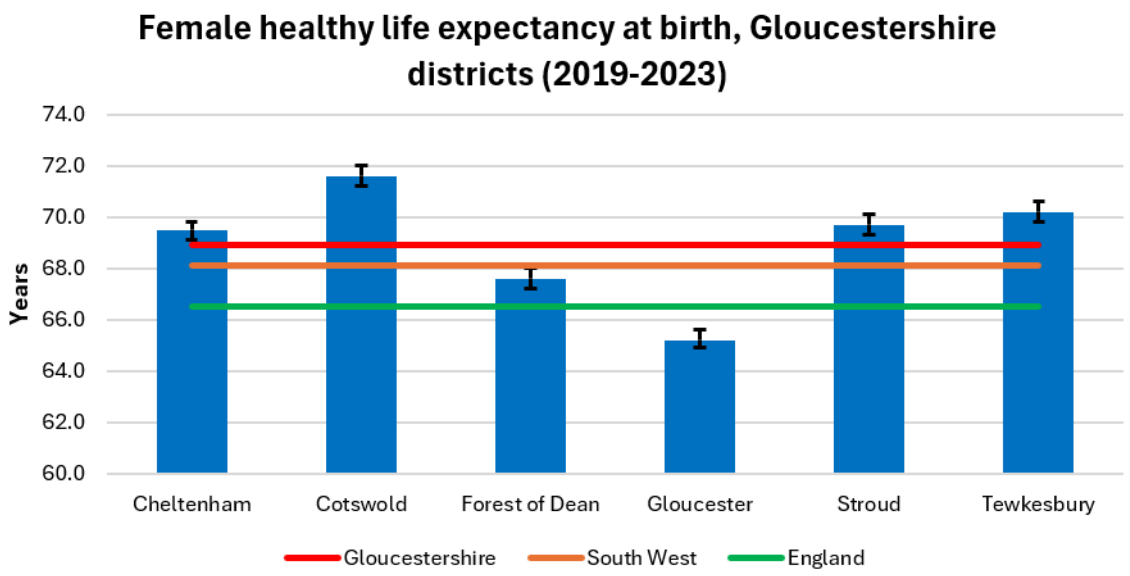


Figure 54: Female healthy life expectancy at birth, Gloucestershire districts (2019-2023)[65]

4.6 Variation across Gloucestershire's Middle Super Output Areas 2019-2023

The ONS have now published estimates of healthy life expectancy by Middle Super Output Areas (MSOAs) for the 2019-2023 period. Across Gloucestershire's MSOAs, male healthy life expectancy ranges between 58.2 years in Barton, Gloucester to 73.7 years in Charlton Park, Cheltenham, a difference of 15.5 years. In comparison, female healthy life expectancy ranges from 59.3 years in Tredworth, Gloucester to 73.7 years in Charlton Park, Cheltenham, a difference of 14.4 years.

Higher healthy life expectancy estimates tend to be concentrated in parts of Cheltenham, the Cotswolds and surrounding rural areas, while lower estimates are generally found in parts of Gloucester and the Forest of Dean. These differences are greater than those observed for life expectancy alone, suggesting that inequalities in the number of years lived in good health are more pronounced than inequalities in overall lifespan.

[65] *Ibid.*

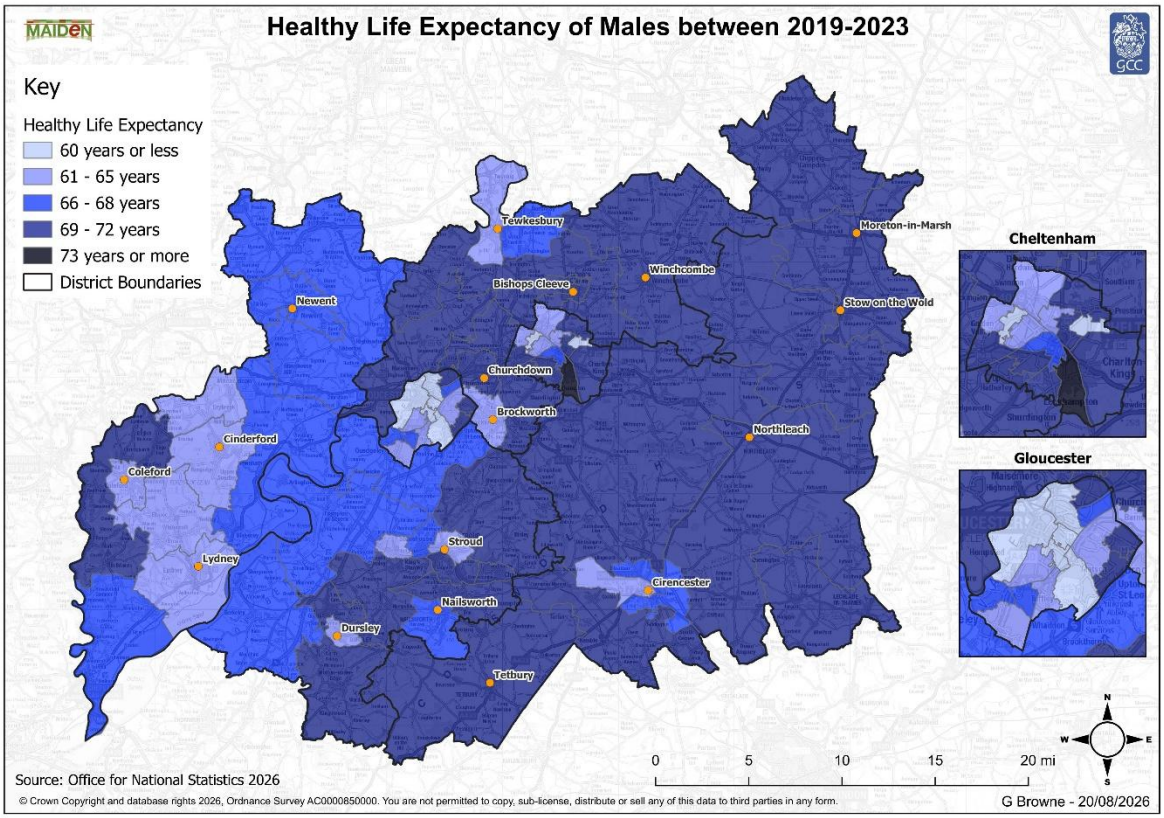


Figure 55: Healthy life expectancy of males between 2019-2023, by Middle Super Output Areas in Gloucestershire[66]

[66] Health state life expectancy estimates for Middle layer Super Output Areas, England and Wales: 2019 to 2023, ONS

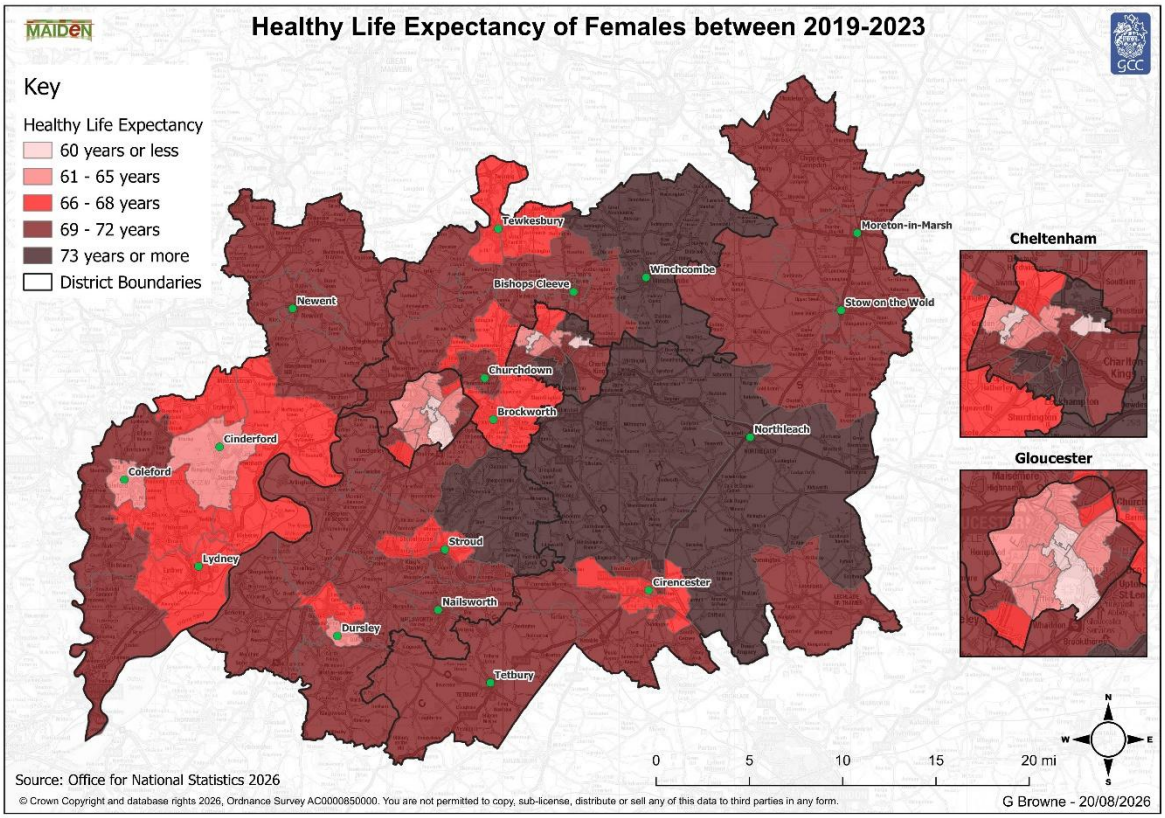


Figure 56: Healthy life expectancy of females between 2019-2023, by Middle Super Output Areas in Gloucestershire[67]

4.7 Change over time

Healthy life expectancy at birth in Gloucestershire did not statistically significantly change between 2011-2013 and 2022-2024. However, in absolute terms there was an increasing trend between the periods 2011-2013 and 2016-2018, followed by a general decreasing trend. Healthy life expectancy at a regional and national level was largely unchanged between 2011-2013 and 2017-2019, but there has also been a decreasing trend in the following years.

Throughout the period shown in Figure 57 and Figure 58, there has been no significant difference in healthy life expectancy at birth between Gloucestershire and the South West. However, between 2013-2015 and 2020-2022, HLE was significantly higher for both males and females in Gloucestershire than England. In the most recent period 2022-2024, there is not a statistically significant difference in healthy life expectancy between Gloucestershire and the South West, and Gloucestershire and England.

[67] Health state life expectancy estimates for Middle layer Super Output Areas, England and Wales: 2019 to 2023, ONS

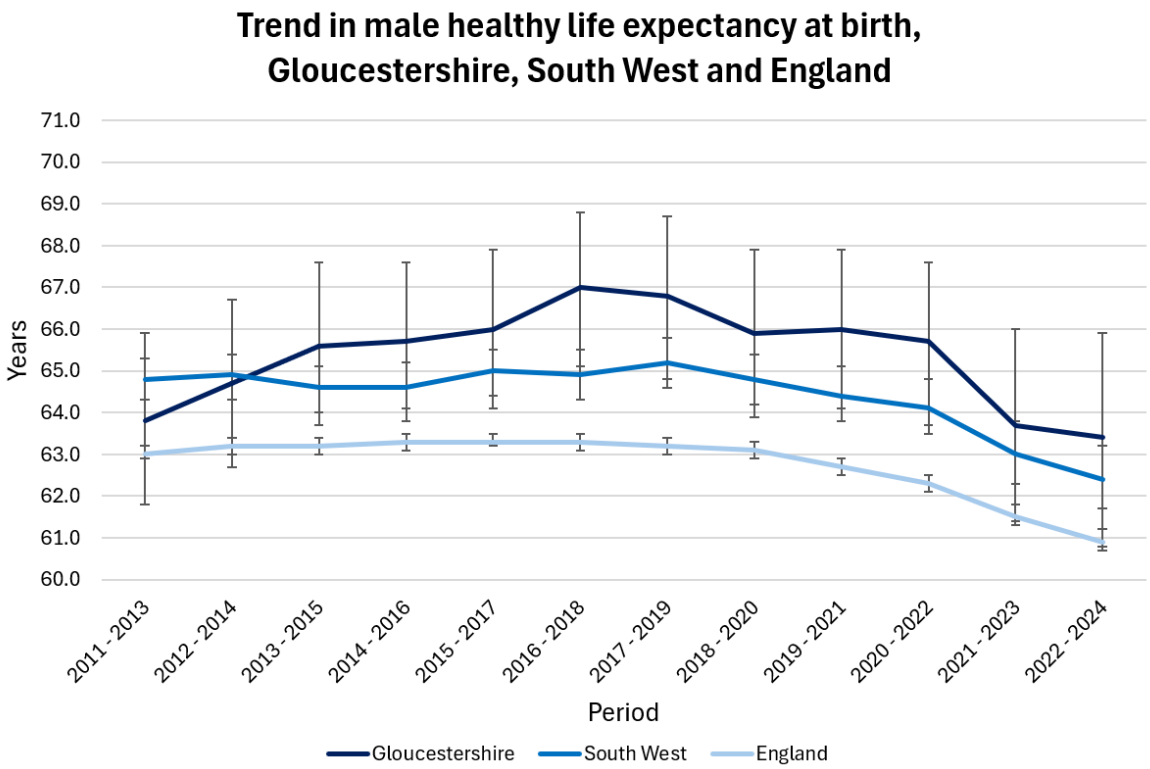


Figure 57: Trend in male healthy life expectancy at birth, Gloucestershire, South West and England[68]

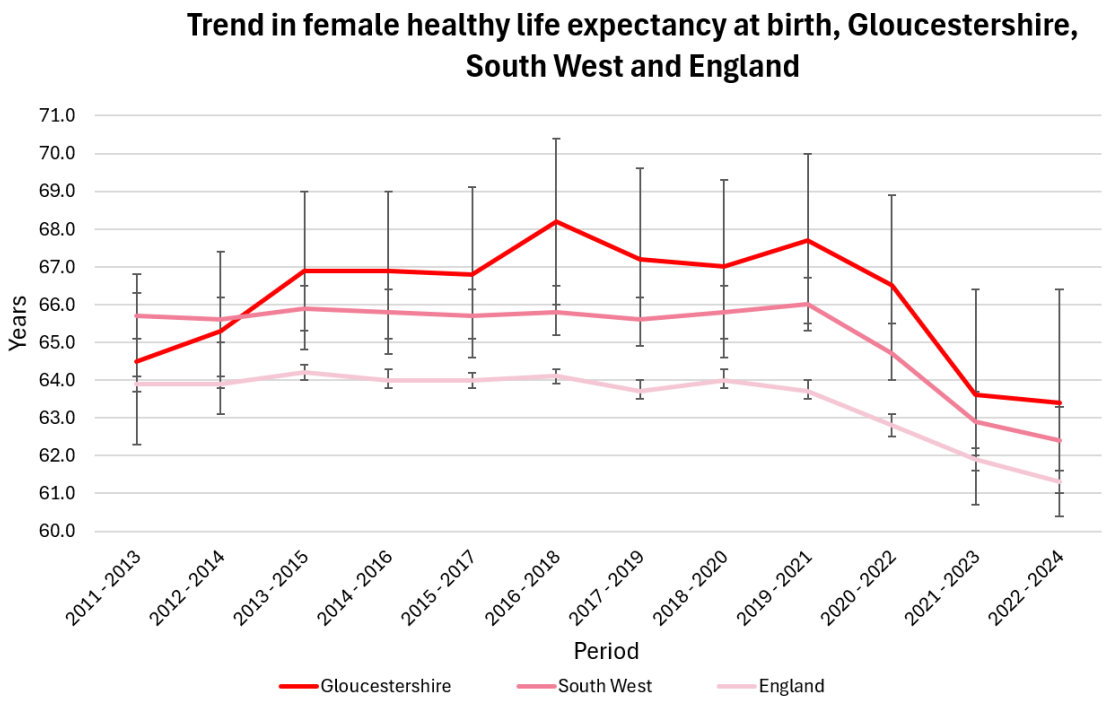


Figure 58: Trend in female healthy life expectancy at birth, Gloucestershire, South West and England[69]

[68] *Ibid.*

[69] *Ibid.*

Healthy life expectancy at age 65 follows a similar trend to healthy life expectancy at birth and likewise the change over time is not statistically significant. The South West trend is similar to Gloucestershire with no significant differences between the areas whilst HLE at a national level is largely unchanged. All three areas saw a decreasing trend in healthy life expectancy at age 65 between 2017-2019 and 2022-2024.

Throughout the period shown in Figure 59 and Figure 60, there has been no significant difference in healthy life expectancy at age 65 between Gloucestershire and the South West. However, between 2014-2016 and 2020-2022, HLE was significantly higher for both males and females in Gloucestershire than England. In the most recent period 2022-2024, there is not a statistically significant difference in healthy life expectancy between Gloucestershire and the South West, and Gloucestershire and England.

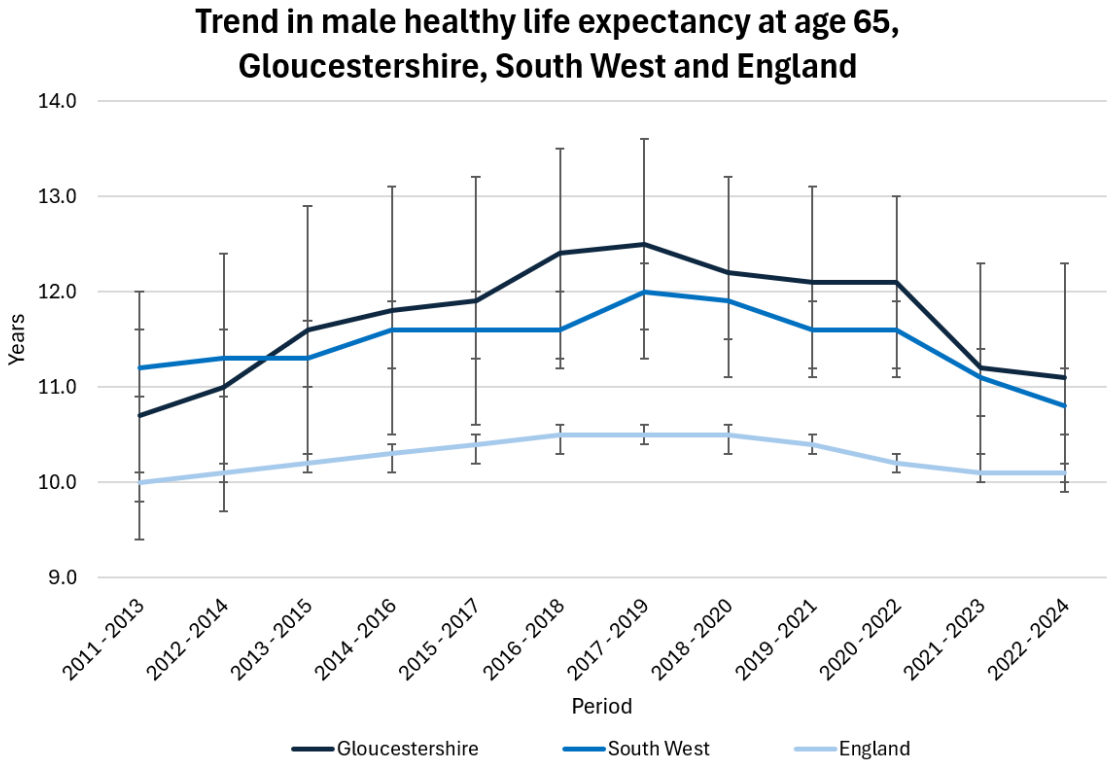


Figure 59: Trend in male healthy life expectancy at age 65, Gloucestershire, South West and England[70]

[70] *Ibid.*

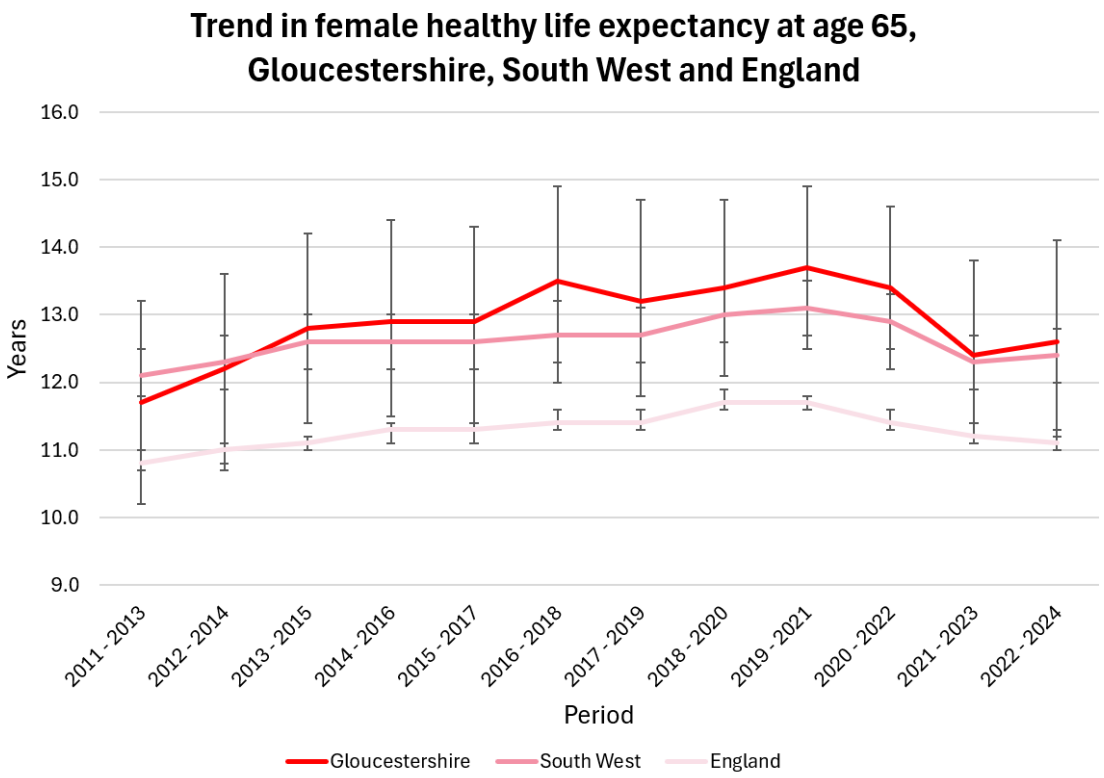


Figure 60: Trend in female healthy life expectancy at age 65, Gloucestershire, South West and England[71]

4.7.1 How does Gloucestershire compare to other areas over time?

The declining trend in healthy life expectancy for males and females, is not unique to Gloucestershire. Comparing to Gloucestershire's statistical neighbours, all areas saw a decline between 2017-2019 and 2022-2024, and most saw a decline between 2021-2023 and 2022-2024.

For males, healthy life expectancy in Gloucestershire decreased by around 3.4 years between 2017-2019 and 2022-2024, as shown in Figure 61. This was broadly comparable to many of Gloucestershire's statistical neighbours, although larger declines were observed in areas such as Cambridgeshire, Devon and Leicestershire. The more recent change between 2021-2023 and 2022-2024 was relatively small, suggesting that the longer-term decline may be slowing.

[71] *Ibid.*

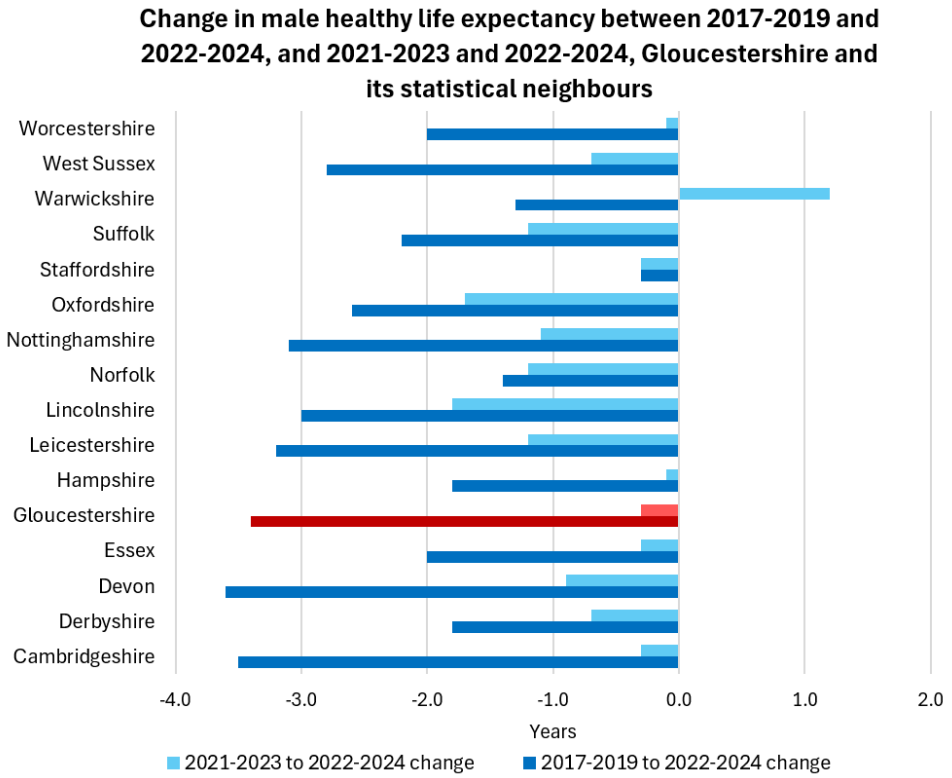


Figure 61: Change in male healthy life expectancy between 2017-2019 and 2022-2024, and 2021-2023 and 2022-2024, Gloucestershire and its statistical neighbours[72]

A similar pattern was observed for females, as indicated in Figure 62. Healthy life expectancy in Gloucestershire decreased by around 3.8 years between 2017-2019 and 2022-2024, placing Gloucestershire towards the middle of its statistical neighbours. While most areas continued to experience declines between 2021-2023 and 2022-2024, the magnitude of these changes was generally smaller than those seen over the longer period.

[72] Health state life expectancy estimates for Middle layer Super Output Areas, England and Wales, ONS

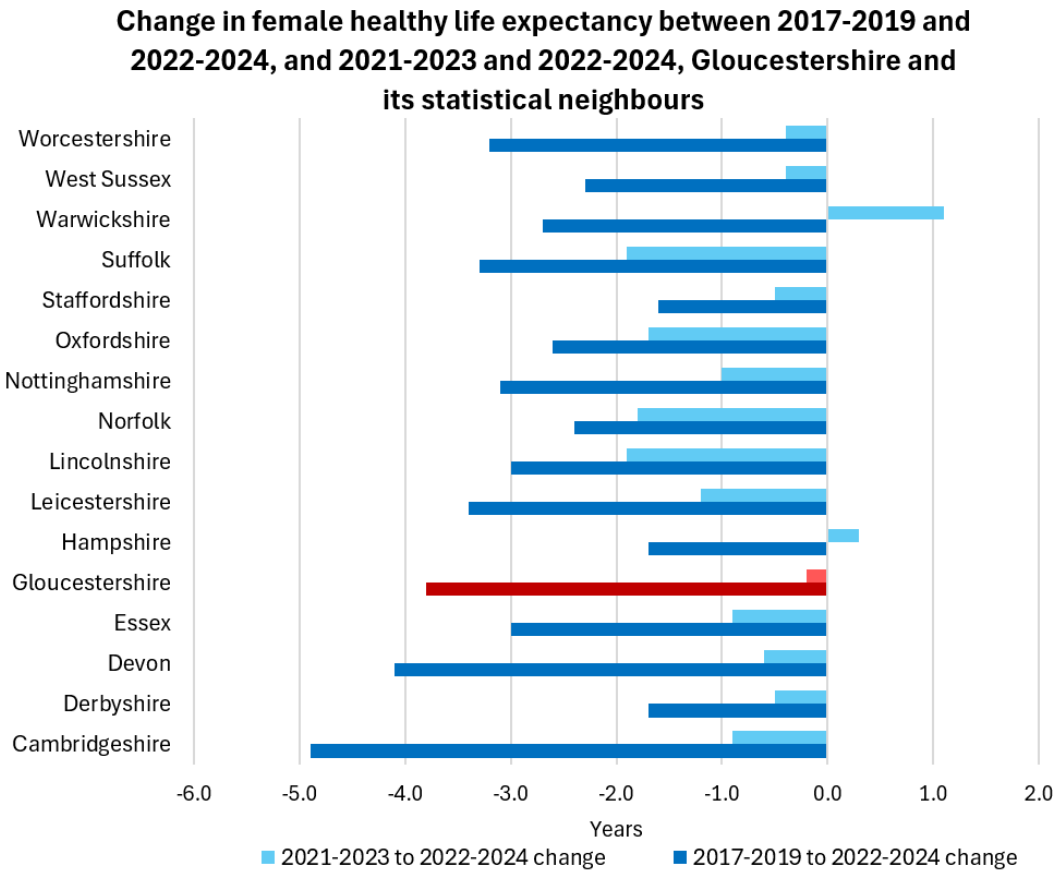


Figure 62: Change in female healthy life expectancy between 2017-2019 and 2022-2024, and 2021-2023 and 2022-2024, Gloucestershire and its statistical neighbours[73]

Overall, the findings suggest that the reduction in healthy life expectancy seen in Gloucestershire reflects a wider national trend rather than a Gloucestershire-specific issue. However, despite recent improvements in overall life expectancy, healthy life expectancy has continued to decline in many areas, indicating that gains in lifespan have not been matched by gains in years spent in good health.

4.8 Change in sex gap over time

Between 2011-2013 and 2020-2022, the gap in healthy life expectancy between females and males in Gloucestershire fluctuated, with females consistently having a higher HLE than males. The gap varied from 0.4 years to a peak of 1.7 years in 2019-2021. However, between 2020-2022 and 2021-2023, female HLE declined more sharply than male HLE, causing the gap to narrow rapidly from 0.8 years to -0.1 years. This resulted in a reversal of the gap in 2021-2023, with males having a marginally higher HLE than females, although this difference was not statistically significant. By 2022-2024, male and female HLE were equal at 63.4 years.

[73] Health state life expectancy estimates for Middle layer Super Output Areas, England and Wales, ONS

In contrast, England maintained a higher female HLE throughout the period, although the gap narrowed from 0.9 years in 2011-2013 to 0.4 years in both 2021-2023 and 2022-2024.

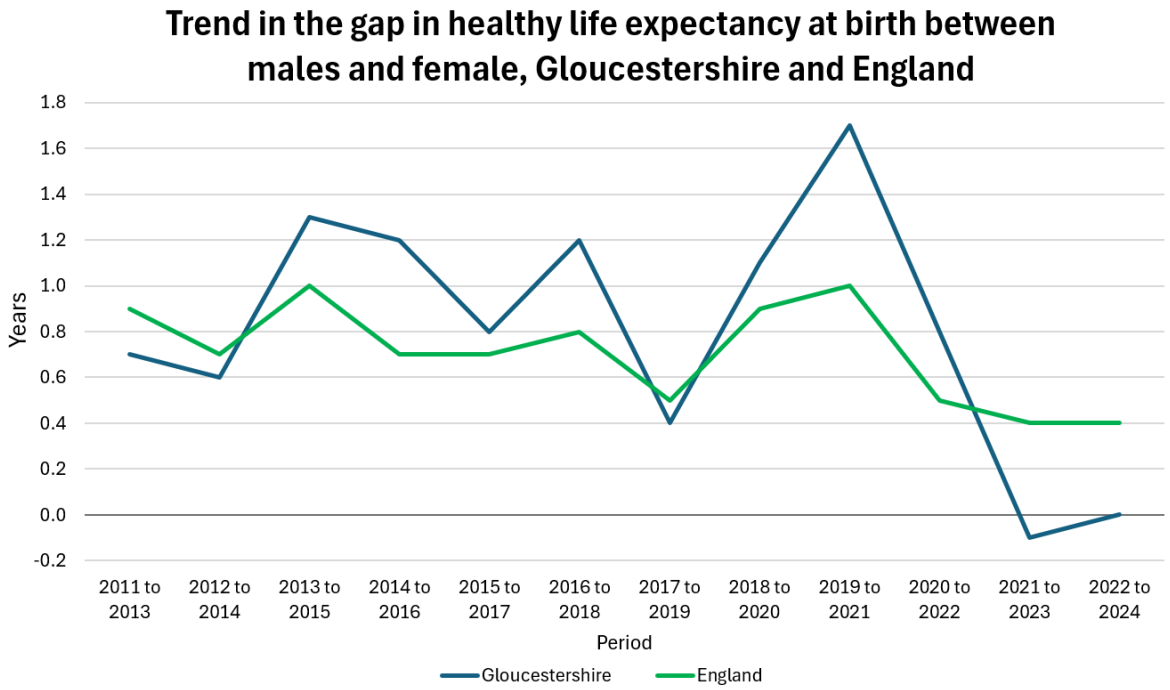


Figure 63: Trend in the gap in healthy life expectancy at birth between males and females, Gloucestershire and England[74]

5. Time spent in poor health

Comparing estimated life expectancy and healthy life expectancy gives an indication of how long someone is likely to live in poor health.

5.1 Current picture

In 2022–2024, males born in Gloucestershire could expect to spend approximately 16.9 years, or 21.0% of their lives, in poor health. This proportion was lower than the corresponding estimates for the South West, at 22.3%, and England, at 23.3% as indicated in Figure 64.

[74] *Ibid.*

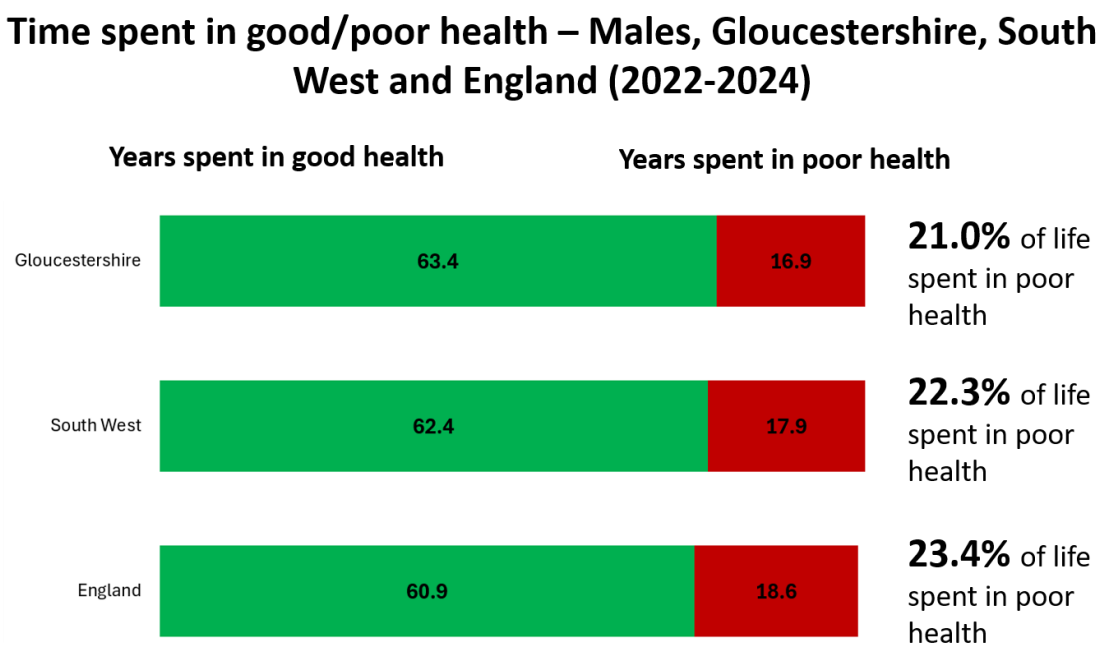


Figure 64: Time spent in good/poor health – Males, Gloucestershire, South West, and England (2022-2024)[75]

In comparison, Figure 65 shows that a Gloucestershire female could expect to live around 20.5 years or 24.4% of their life in poor health. This is lower than the equivalent figures for South West (25.8%) and England (26.9%).

[75] Life expectancy for local areas between 2001 to 2003 and 2022 to 2024, ONS and Health state life expectancies in England, Northern Ireland and Wales: between 2011 to 2013 and 2022 to 2024, ONS

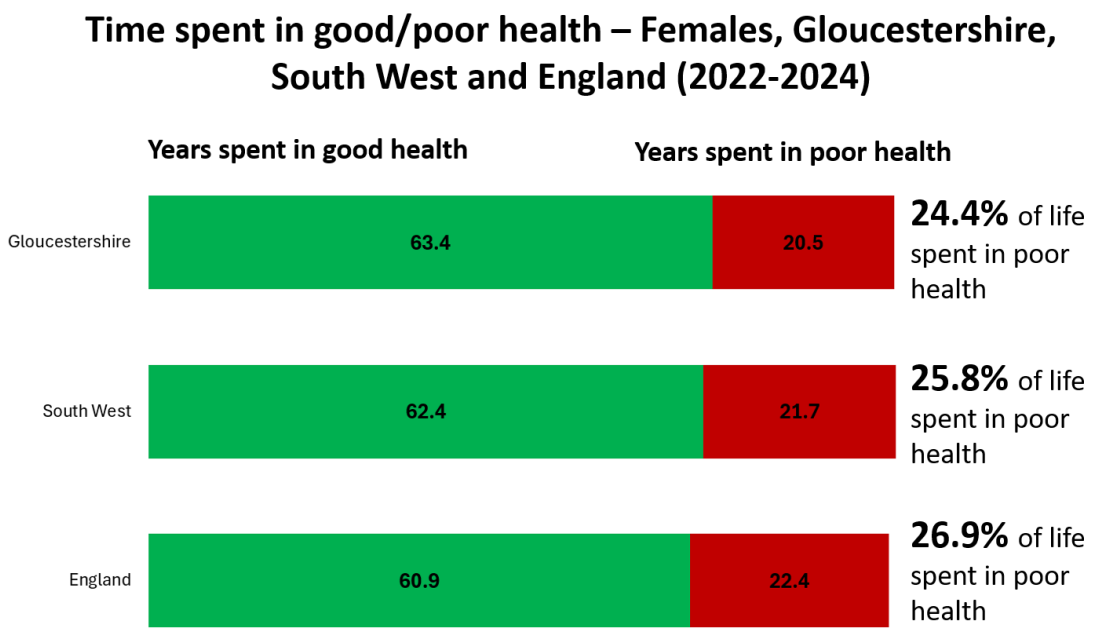


Figure 65: Time spent in good/poor health – Females, Gloucestershire, South West and England (2022-2024)[76]

5.2 Inequalities

5.2.1 Sex

Data for Gloucestershire, the South West and England suggest that while females live longer, they spend longer in poor health than males.

Although there was no sex difference in healthy life expectancy at birth in Gloucestershire in 2022–2024, females were estimated to spend 3.4 percentage points more of their lives in poor health than males, at 24.4% compared with 21.0%. This gap is not unique to Gloucestershire and is also observed at a regional and national level.

This reflects the conclusions of a global study which found non-fatal conditions that cause illness and disability, such as musculoskeletal problems, mental health issues and headache disorders, particularly affect women. At the same time men are disproportionally affected by conditions that cause premature death, such as cardiovascular diseases, respiratory and liver diseases, COVID-19 and road injuries. The health differences between women and men continue to grow with age, leaving women with higher levels of illness and disability throughout their lives, as they tend to live longer than men[77].

[76] *Ibid.*

[77] Differences across the lifespan between females and males in the top 20 causes of disease burden globally: a systematic analysis of the Global Burden of Disease Study 2021, Vedavati Patwardhan, PhD, Gabriela F Gil, MPH, Alejandra Arrieta, Jack Cagney, Erin DeGraw, Molly E Herbert et al

6. Long-term conditions

6.1 What are long-term conditions?

This section looks at the age of diagnosis of long-term conditions that carry a high risk of mortality or negatively impact a person's daily function or quality of life.

Examples of long-term conditions include diabetes, heart disease and chronic obstructive pulmonary disease. Effective management of these conditions is widely recognised to be one of the greatest challenges facing the NHS and Social Care. They can affect many parts of a person's life, from their ability to work and have relationships to housing and education opportunities.

The prevalence of long-term conditions tends to increase with population ageing. There are two reasons for this. Firstly, for many conditions such as cardiovascular disease and dementia, the probability of developing the condition increases with age. Secondly, many health conditions are chronic and incurable, so levels of illness are cumulative.

Differences in average age at diagnosis of these long-term conditions should not be interpreted as measures of service performance or population health in isolation. They may reflect differences in population age structure, disease prevalence, detection, access to services and coding practices.

6.2 Current picture in Gloucestershire

The data presented in the long-term conditions chapter is a snapshot in time and was obtained in July 2026.

Analysis produced by Gloucestershire ICB gives an insight into the average age of first diagnosis[78] for the most commonly diagnosed long-term conditions[79]. In addition to being some of the most commonly diagnosed long-term conditions, they were also selected for this analysis due to them being potentially preventable, and well coded in primary care (as part of a Quality Outcomes Framework (QOF)). This approach ensures that only conditions where there are consistent coding and high completion are used, which as well as giving a more accurate summary, better enables comparisons between sex and districts.

This analysis uses locally sourced data, this has benefits as it means we have the ability to further explore the data if required, breaking it down by smaller geographies or additional characteristics. However, there are also limitations, we

[78] The ICB is not able to see exact dates of birth for patients, therefore the ages used have been calculated using the diagnosis date minus their current age. As such some accuracy may be lost but the general picture will be largely unaffected.

[79] These include Atrial Fibrillation, Cancer, Chronic Kidney Disease, Chronic Obstructive Pulmonary Disease, Coronary Heart Disease, Dementia, Diabetes, Heart Failure, Hypertension, Osteoporosis, Peripheral Arterial Disease, Rheumatoid Arthritis, Stroke and TIA and Lung Disease.

do not have equivalent data for other areas, meaning we are not able to see how we compare to areas outside of the county.

The results below show the majority of included diagnosed conditions are diagnosed when an individual is in their late 50's or 60's.

Amongst males, diabetes was diagnosed on average at the youngest age (55.4 years), this is statistically similar to the age of diagnosis for Rheumatoid Arthritis but significantly younger than the average age of diagnosis for all other conditions (56.2 to 79.3 years). Rheumatoid arthritis was the earliest diagnosed condition amongst females (52.4 years) and was diagnosed significantly earlier than all other conditions (56.0 to 81.2 years).

Dementia was diagnosed significantly later than all other conditions amongst both males and females.

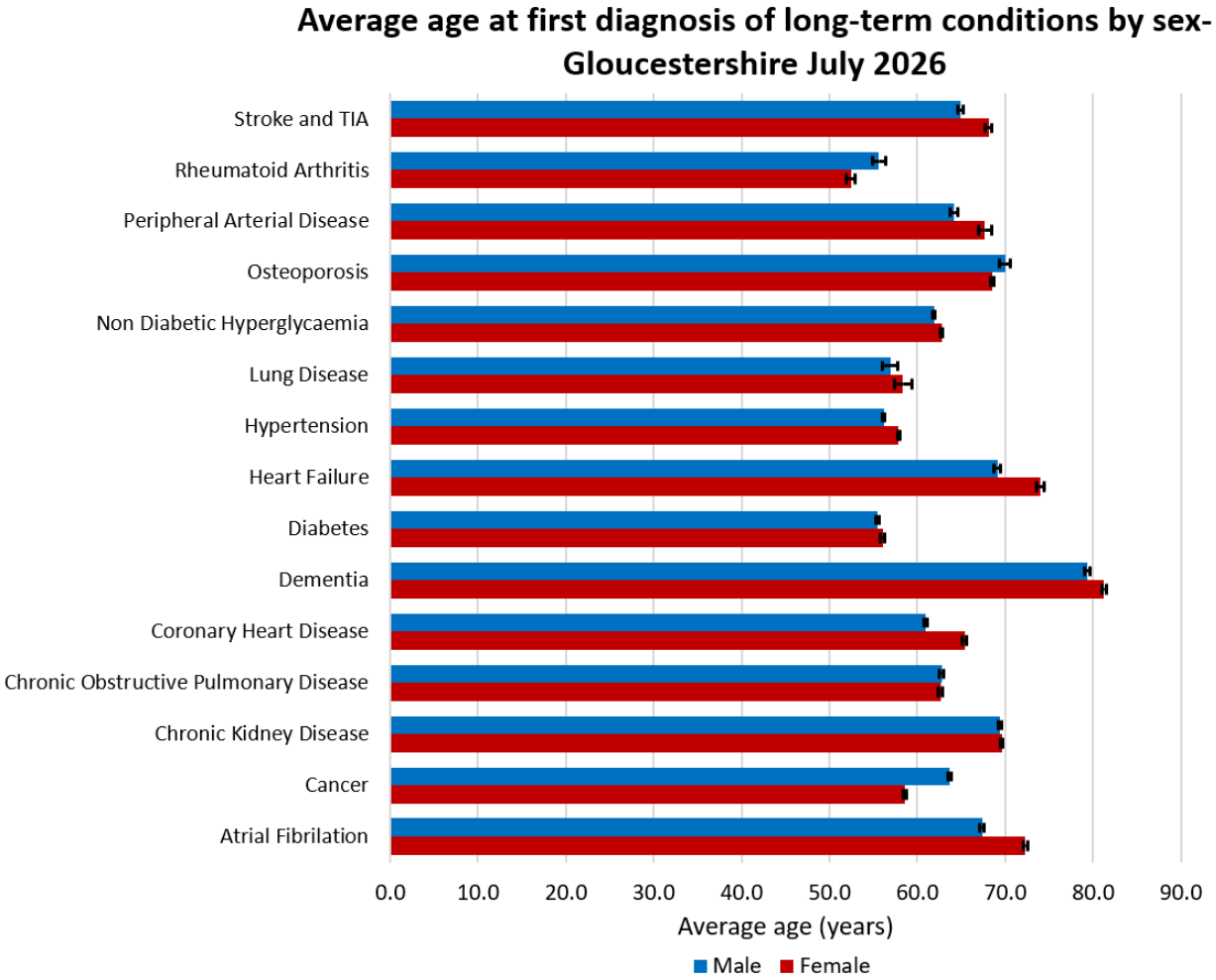


Figure 66: Average age of first diagnosis by sex – Gloucestershire July 2026[80]

[80] Gloucestershire ICB, July 2026

6.3 Variation across Gloucestershire

Gloucestershire's districts broadly reflect the picture seen at the county level. Amongst males, rheumatoid arthritis is the earliest diagnosed condition in Cheltenham, Cotswold, Forest of Dean, and Stroud, while in Gloucester and Tewkesbury diabetes was the earliest diagnosed condition.

Dementia was the latest diagnosed condition in all districts for males.

Among males, Stroud had the earliest average age at diagnosis for all conditions except cancer and rheumatoid arthritis, of which Cotswold had the earliest diagnoses. Conversely Cheltenham had the latest age of diagnosis for all conditions except cancer, chronic kidney disease, osteoporosis and rheumatoid arthritis, which were all diagnosed at an average later age in Gloucester.

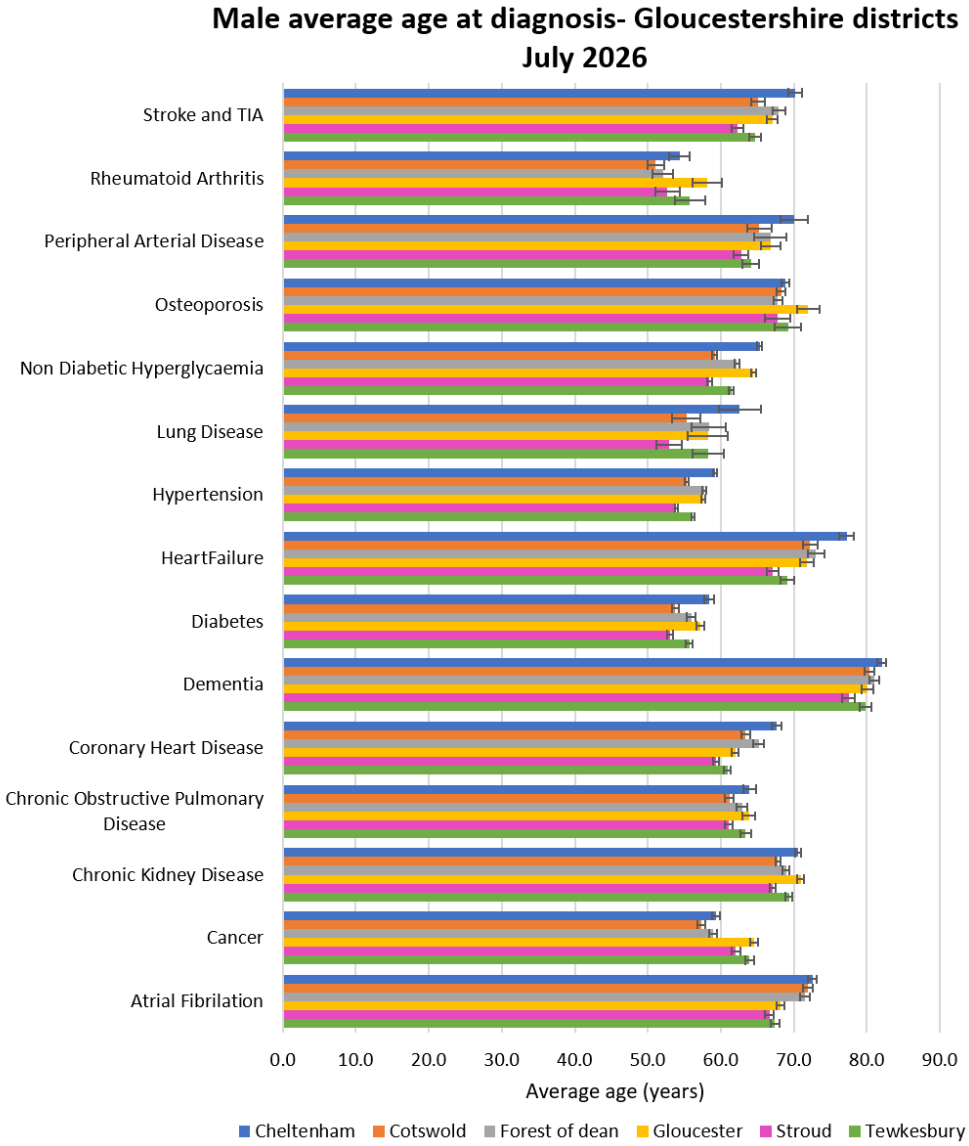


Figure 67: Male average age of first diagnosis – Gloucestershire districts July 2026[81]

[81] *Ibid.*

When looking at variation in the age of diagnosis amongst females, the pattern is broadly similar to that observed at county level. Rheumatoid arthritis was the earliest diagnosed condition in Cheltenham, Cotswold, Forest of Dean and Stroud, while diabetes was the earliest diagnosed condition in Gloucester and Tewkesbury. Dementia was the latest diagnosed condition in all districts.

Gloucester generally had the youngest average age of diagnosis for most conditions, including atrial fibrillation, chronic obstructive pulmonary disease (COPD), coronary heart disease, diabetes, heart failure, hypertension, lung disease, non-diabetic hyperglycaemia, peripheral arterial disease and stroke/TIA. However, the youngest average age of diagnosis was observed in Cheltenham for cancer and rheumatoid arthritis, in Cotswold for chronic kidney disease and dementia, and in Forest of Dean for osteoporosis.

In contrast, the oldest average ages of diagnosis were more commonly observed in Cheltenham and Forest of Dean. Cheltenham had the oldest average age of diagnosis for atrial fibrillation, chronic kidney disease, heart failure, peripheral arterial disease and stroke/TIA, while Forest of Dean had the oldest average age of diagnosis for dementia, diabetes, hypertension, lung disease and non-diabetic hyperglycaemia. Cancer had the oldest average age of diagnosis in either Stroud or Tewkesbury, while Tewkesbury also had the oldest average age of diagnosis for rheumatoid arthritis.

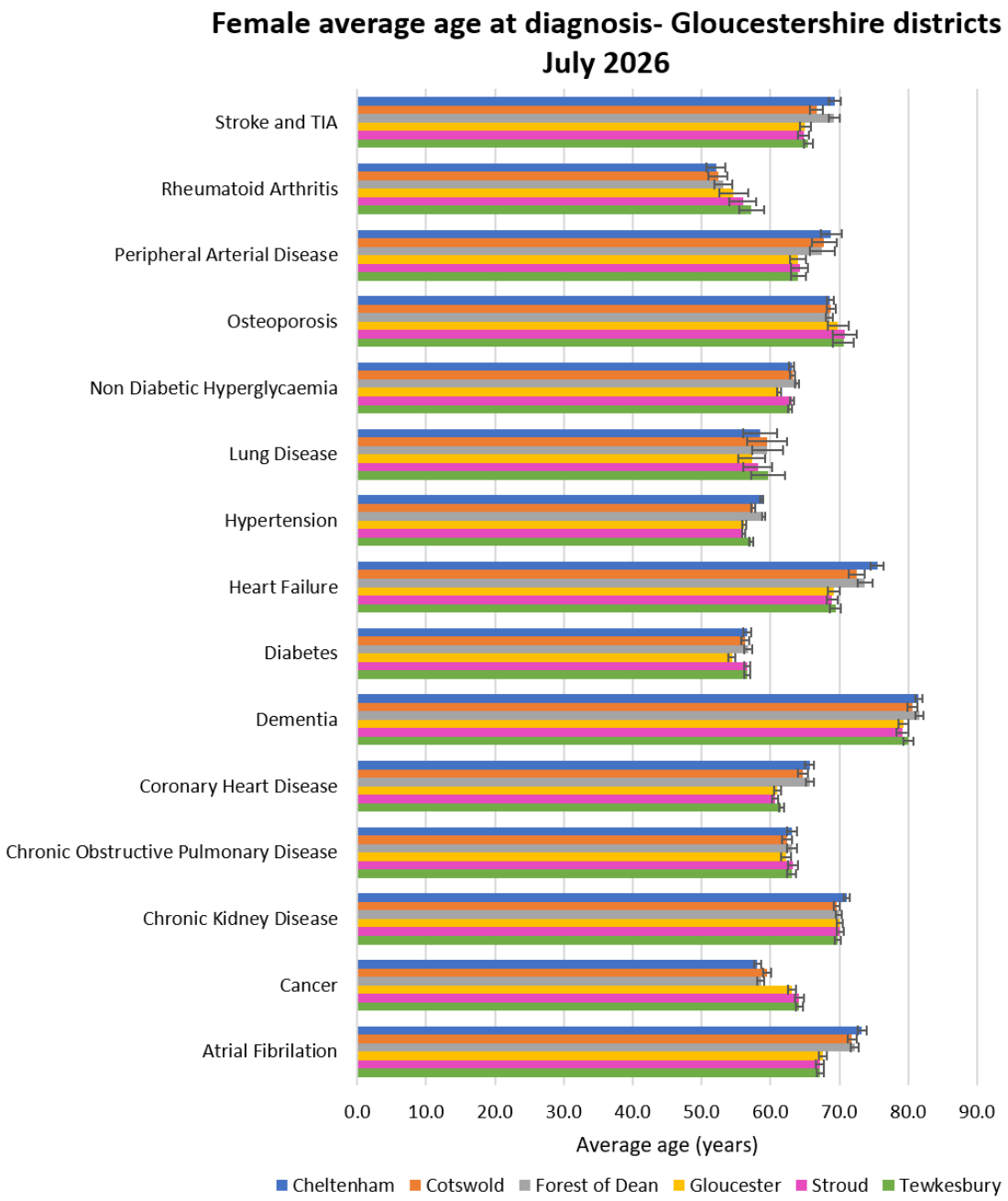


Figure 68: Female average age of first diagnosis – Gloucestershire districts July 2026[82]

[82] *Ibid.*

Figure 69 shows how the districts compare to the county in terms of the average age of diagnosis for males as of July 2026, the key findings for each district are summarised below:

Cheltenham

- Cancer is diagnosed significantly earlier in Cheltenham compared to the county average.
- Osteoporosis and rheumatoid arthritis are diagnosed at a similar age to the county value.
- All other conditions are diagnosed at a significantly later age compared to the county average.

Cotswold

- Atrial fibrillation, coronary heart disease, dementia and heart failure, are diagnosed significantly later in Cotswold than at a county level.
- Lung disease, peripheral arterial disease and stroke and TIA are diagnosed at a similar age to the county average.
- All other conditions are diagnosed significantly earlier than at a county level.

Forest of Dean

- Atrial fibrillation, coronary heart disease, dementia, heart failure, hypertension, peripheral arterial disease and stroke and TIA are diagnosed significantly later in the Forest of Dean than at a county level.
- Cancer, osteoporosis and rheumatoid arthritis are diagnosed significantly earlier than the county average.
- All other conditions are diagnosed at a similar age to the county average.

Gloucester

- Chronic obstructive pulmonary disease, dementia, lung disease, osteoporosis and rheumatoid arthritis are diagnosed at a similar age to the county average.
- All other conditions are diagnosed significantly later than at a county level.

Stroud

- Atrial fibrillation, osteoporosis and peripheral arterial disease are diagnosed at a similar age to the county average.
- All other conditions are diagnosed at a significantly earlier age than the county average.

Tewkesbury

- All conditions are diagnosed at a similar age in Tewkesbury compared to the county average.

Key	
	Significantly later age at diagnosis than the county average
	Similar age of diagnosis to the county average
	Significantly earlier age at diagnosis than the county average

	Gloucestershire	Cheltenham	Cotswold	Forest of Dean	Gloucester	Stroud	Tewkesbury
Atrial Fibrilation	67.36	72.52	71.87	71.55	68.17	66.64	67.38
Cancer	63.67	59.30	57.31	58.91	64.54	62.03	63.92
Chronic Kidney Disease	69.44	70.62	67.82	68.94	70.94	67.16	69.32
Chronic Obstructive Pulmonary Disease	62.75	63.91	61.16	62.90	63.85	61.07	63.39
Coronary Heart Disease	60.92	67.66	63.38	65.18	61.95	59.32	60.88
Dementia	79.32	82.03	80.40	81.00	80.07	77.52	79.82
Diabetes	55.43	58.41	53.76	55.97	57.18	53.05	55.70
HeartFailure	69.11	77.24	72.21	73.05	71.76	67.05	69.08
Hypertension	56.16	59.21	55.36	57.77	57.56	53.90	56.19
Lung Disease	56.92	62.59	55.27	58.37	58.21	52.87	58.28
Non Diabetic Hyperglycaemia	61.87	65.31	59.17	62.17	64.45	58.41	61.47
Osteoporosis	69.97	68.84	68.26	67.81	71.95	67.75	69.19
Peripheral Arterial Disease	64.18	70.08	65.26	66.78	66.86	62.77	64.12
Rheumatoid Arthritis	55.63	54.33	51.07	52.06	58.16	52.67	55.78
Stroke and TIA	64.87	70.18	65.09	67.95	67.03	62.26	64.73

Figure 69: Average age of first diagnosis of long-term conditions for males, districts compared to the Gloucestershire average[83]

Figure 70 shows how the districts compare to the county in terms of the average age of diagnosis for females as of July 2026, the key findings for each district are summarised below:

Cheltenham

- Atrial fibrillation, chronic kidney disease, heart failure and hypertension are diagnosed significantly later in Cheltenham than at a county level.
- All other conditions are diagnosed at a similar age to the county average.

Cotswold

- Cancer is diagnosed significantly later in Cotswold than at a county level.
- Stroke and TIA are the only condition to be diagnosed significantly earlier than the county average.
- All other conditions are diagnosed at a similar age to the county average.

Forest of Dean

- Hypertension and non-diabetic hyperglycaemia are diagnosed significantly later than at a county level.
- All other conditions are diagnosed at a similar age to the county average.

Gloucester

[83] *Ibid.*

- Cancer is diagnosed significantly later in Gloucester than at a county level.
- Chronic kidney disease, chronic obstructive pulmonary disease, osteoporosis, rheumatoid arthritis and lung disease are diagnosed at a similar age to the county average.
- All other conditions are diagnosed significantly earlier than at a county level.

Stroud

- Cancer, osteoporosis and rheumatoid arthritis are diagnosed significantly later in Stroud than at a county level.
- Chronic kidney disease, chronic obstructive pulmonary disease, non-diabetic hyperglycaemia and lung disease are diagnosed at a similar age to the county average.
- All other conditions are diagnosed significantly earlier in Stroud compared to the county average.

Tewkesbury

- Cancer, osteoporosis and rheumatoid arthritis are diagnosed significantly later in Tewkesbury than at a county level.
- Chronic kidney disease, chronic obstructive pulmonary disease, non-diabetic hyperglycaemia and lung disease are diagnosed at a similar age to the county average.
- All other conditions are diagnosed significantly earlier in Tewkesbury than at a county level.

Key	
	Significantly later age at diagnosis than the county average
	Similar age of diagnosis to the county average
	Significantly earlier age at diagnosis than the county average

	Gloucestershire	Cheltenham	Cotswold	Forest of Dean	Gloucester	Stroud	Tewkesbury
Atrial Fibrilation	72.29	73.30	71.82	72.20	67.57	67.20	67.22
Cancer	58.55	58.13	59.50	58.60	63.08	64.20	64.18
Chronic Kidney Disease	69.59	71.09	69.66	69.93	70.01	70.13	69.80
Chronic Obstructive Pulmonary Disease	62.63	63.17	62.37	63.11	62.29	63.26	63.08
Coronary Heart Disease	65.36	65.68	64.74	65.73	61.02	60.71	61.57
Dementia	81.24	81.54	80.58	81.57	79.27	79.14	79.98
Diabetes	56.04	56.60	56.36	56.70	54.38	56.62	56.58
Heart Failure	73.95	75.48	72.53	73.71	69.18	68.95	69.44
Hypertension	57.88	58.71	57.47	58.96	56.21	56.09	57.20
Lung Disease	58.35	58.52	59.50	59.56	57.30	58.17	59.69
Non Diabetic Hyperglycaemia	62.76	63.08	63.22	63.82	61.25	63.13	62.84
Osteoporosis	68.51	68.67	68.80	68.54	69.84	70.74	70.59
Peripheral Arterial Disease	67.67	68.77	67.78	67.52	63.98	64.21	64.06
Rheumatoid Arthritis	52.44	52.07	52.36	53.14	54.61	55.98	57.25
Stroke and TIA	68.11	69.35	66.67	69.22	65.04	64.80	65.50

Figure 70: Average age of first diagnosis of long-term conditions for females, districts compared to the Gloucestershire average[84]

[84] *Ibid.*

6.4 Inequalities

6.4.1 Sex

Figure 66 shows at a county level the average age of diagnosis was earlier for men than women for all conditions except cancer, osteoporosis, and rheumatoid arthritis.

The differences between sexes were statistically significant for all conditions except chronic kidney disease, chronic obstructive pulmonary disease and lung disease.

A similar picture is broadly observed at district level.

7. Multi-morbidity

7.1 What is multi-morbidity?

Multi-morbidity is the presence of 2 or more long-term health conditions in a single individual. It impacts on an individual's quality of life, mental health and wellbeing, daily function, and often results in greater healthcare utilisation the more co-existing conditions they have.

7.2 Current picture

The data presented in the multi-morbidity chapter is a snapshot in time and was obtained in May 2026.

Analysis produced by Gloucestershire ICB gives an insight into the number of people in Gloucestershire with multi-morbidity[85].

This analysis uses locally sourced data, this has benefits as it means we have the ability to further explore the data if required, breaking it down by smaller geographies or additional characteristics. However, there are also limitations, we do not have equivalent data for other areas, meaning we are not able to see how we compare to areas outside of the county.

The results suggest there are around 122,884 people in the county with multi-morbidity. This equates to a rate of 176.7 per 1,000 population.[86]

[85] This includes the following conditions: Asthma, Atrial Fibrillation, Cancer, Chronic Kidney Disease (stages 3a-5), Chronic Obstructive Pulmonary Disease, Coronary Heart Disease, Dementia, Depression, Diabetes, Epilepsy, Heart Failure, Hypertension, Learning Disability, Mental Health Problems, Obesity, Stroke or TIA. It does not match exactly with those used in the section looking at the average age of first diagnosis.

[86] The Gloucestershire total and rate include Gloucestershire patients who do not have a registered address in Gloucestershire, this is because the ICB uses data on patients who are registered at a Gloucestershire GP.

7.3 Variation across Gloucestershire

Gloucester district has the highest number of people with multi-morbidity with 25,924 people having two or more long-term conditions. However, Figure 71 shows the Forest of Dean has the highest rate of people with multi-morbidity with a rate of 195.6 people per 1,000 population. This means the Forest of Dean had a significantly higher rate of people with multi-morbidity than the county average and all other Gloucestershire districts. Conversely, Cheltenham and Tewkesbury have a significantly lower rate than Gloucestershire.

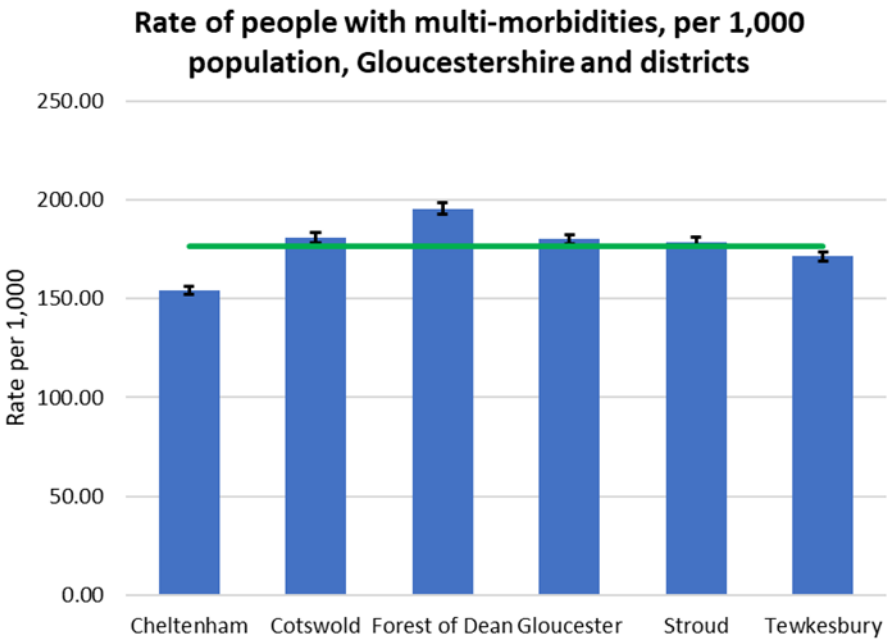


Figure 71: Rate of people with multi-morbidity per 1,000 population, Gloucestershire and districts[87]

7.4 Inequalities

7.4.1 Age

The prevalence of multi-morbidity increases with age. Figure 72 shows that for all age groups, the rate of multi-morbidity is higher than the rate observed for the previous age group. The rate of multi-morbidity is highest amongst those aged 90+, where it stands at 703.8 per 1,000 population. A similar picture is broadly observed across all districts.

[87] Gloucestershire, ICB, May 2026

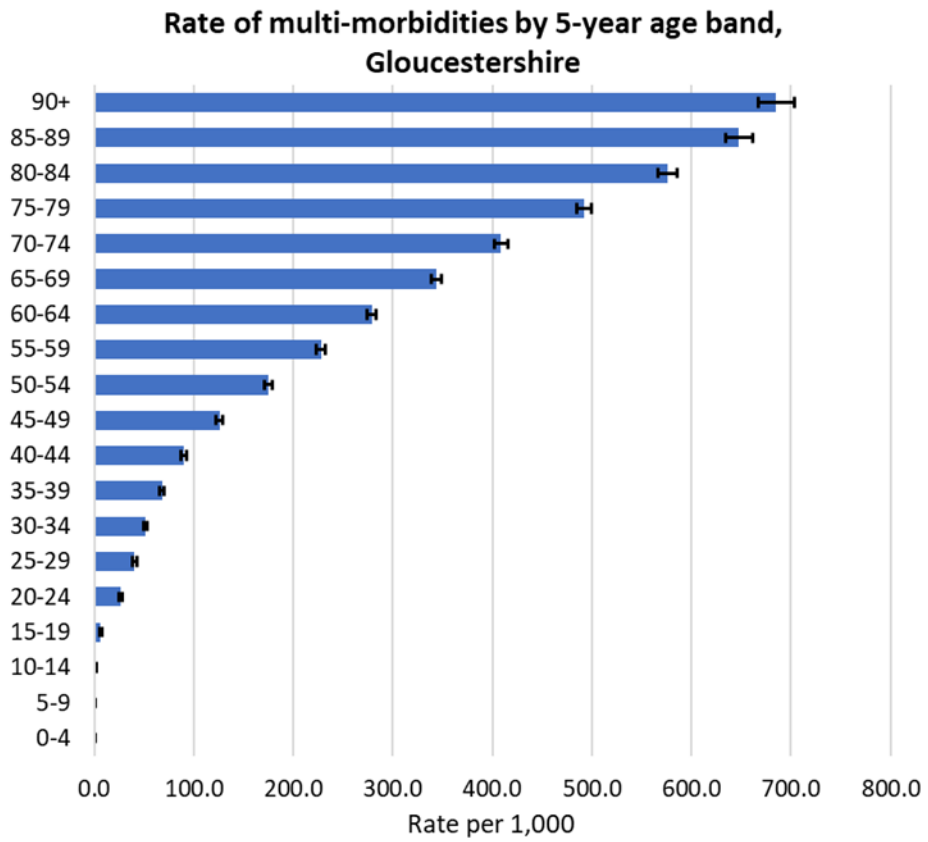


Figure 72: Rate of multi-morbidity by 5-year age band, Gloucestershire[88]

This is not unique to Gloucestershire but is recognised in numerous studies, with a summary by NICE stating 'Multi-morbidity is almost universal in older adults, and prevalence increases with age'[89].

8. Other inequalities

Information about inequalities in life expectancy and health-related quality of life is limited and cannot be broken down by most protected characteristics[90]. However, additional data sources, and national studies can help build our understanding of how life expectancy and quality of life can vary between different groups.

Data around premature mortality shows that in 2022-2024, the risk of someone with severe mental illness (SMI) dying prematurely (under 75 years) is 5.0 times greater than in the general population in Gloucestershire. This inequality is significantly higher than the England average, 3.8 times higher[91].

[88] *Ibid.*

[89] Multi-morbidity – How Common is it? NICE

[90] These include ethnicity, disability, religion, sexual orientation, gender identity, marriage and civil partnership status and pregnancy and maternity

[91] Excess mortality for people referred to secondary mental health services (aged 18 to 74) PHOF, OHID

In 2023-2024, 39 deaths were notified to the Gloucestershire LeDeR programme[92]. The average age of death for people with learning disabilities was 61.9. This is significantly lower than the general population where the 2022-2024 average life expectancy is 80.3 years for males and 83.9 years for females[93]. National research shows the average age of death for people with a learning disability who are from an ethnic minority is 34 years, just over half the life expectancy of white counterparts[94].

Inclusion health is an umbrella term used to describe people who are socially excluded, who typically experience multiple interacting risk factors for poor health, such as stigma, discrimination, poverty, violence, and complex trauma. They include people who experience homelessness, people with drug and alcohol dependence, vulnerable migrants and refugees, Gypsy, Roma, and Traveller communities, people in contact with the justice system, victims of modern slavery, sex workers and other marginalised groups. A systematic review carried out by UCL found that mortality in high-income countries was approximately twelve times higher in women in inclusion health groups compared with the general population, and 8 times higher in men[95].

This shows there are many factors which may influence life expectancy and quality of health, which all need to be taken into consideration.

9. Conclusion

Life expectancy in Gloucestershire remains higher than the England average. However, this overall picture masks substantial variation across the county, with life expectancy in Gloucester lower than in the other districts and clear inequalities associated with deprivation. The local analysis presented in this report shows that people living in more deprived communities generally experience shorter lives, whether they live in urban or rural areas.

Recent data suggest that life expectancy may be beginning to improve following the decline seen during the COVID-19 pandemic. However, these changes are not statistically significant and should be interpreted with caution. More data will be needed to determine whether this represents the start of a sustained recovery or normal year-to-year variation.

Data on healthy life expectancy and the average age at diagnosis of significant long-term conditions suggest that many Gloucestershire residents can expect to spend a substantial proportion of their lives in poor health. This reflects the

[92] LeDeR Programme.

[93] *Life expectancy for local areas between 2001 to 2003 and 2022 to 2024, ONS*

[94] *LeDeR Programme.*

[95] Aldridge et al. (2018) *Morbidity and mortality in homeless individuals, prisoners, sex workers, and individuals with substance use disorders in high-income countries: a systematic review and meta-analysis.* DOI: https://doi.org/10.1016/S0140-6736(17)31869-X

national picture highlighted in the Health trends and variation in England, 2025 report, which shows that people living in more deprived areas not only have shorter lives but also spend a greater proportion of their lives in poor health. These findings reinforce the importance of reducing inequalities in health, preventing disease wherever possible, delaying the onset of long-term conditions and addressing the wider determinants of health that influence both how long people live and how many of those years are spent in good health.

Healthy ageing is not just important for health and care services. Population projections suggest that the proportion of Gloucestershire residents aged 65 and over will increase substantially over the coming decades. As the population ages, all service areas will need to consider the implications of healthy ageing. For example, more people will be managing long-term conditions, disability and caring responsibilities while remaining in work. Supporting healthy ageing will therefore require action across a wide range of services, including health, social care, housing, transport, employment and community support.

9.1 Further resources

At a local level work has been undertaken to explore some of the issues which may influence healthy ageing. These include a 2025/26 DPH report on health through housing[96], a 2022 DPH report on social connections[97], and a JSNA which looks at long-term conditions[98].

10. Notes and caveats

The availability of data means that some inequalities may be masked, particularly those relating to deprivation and ethnicity. Over time we will look to build our understanding of these inequalities by exploring additional data sources, this means this report might be subject to revision if new insights become available.

[96] https://www.gloucestershire.gov.uk/media/scyohwlk/final-0606-gcc_home-is-where-the-health-is-report.pdf

[97] https://www.gloucestershire.gov.uk/media/4dkmit0u/annual-public-health-report-2022_23.pdf

[98] https://www.gloucestershire.gov.uk/inform/health-and-wellbeing/long-term-conditions/