

3. THE POPULATION OF BUCKINGHAMSHIRE

3.3 Life expectancy

Life expectancy, healthy life expectancy and disability free life expectancy are indicators of the overall health status of a population which is influenced by many different genetic, environmental, behavioural, socioeconomic and service factors. They are estimated using population life tables, mortality and morbidity measures obtained from health records and national surveys. They can be calculated from birth or from a specified age, and are defined as follows:

- **Life expectancy** is the average number of years that a person in a particular population is expected to live if current mortality rates continue to apply.
- **Healthy life expectancy** is the average number of years a person in a particular population is expected to live in good or very good health if current patterns of ill-health and mortality continue to apply.
- **Disability free life expectancy** is the average number of years a person in a particular population is expected to live without a limiting long-standing illness or disability if current patterns of mortality and disability continue to apply.

3.3.1 Life Expectancy in the Buckinghamshire population

Table 1 shows life expectancy, healthy life expectancy, and disability free life expectancy at birth in Buckinghamshire, the South East and England. Life expectancy for males in Buckinghamshire in 2011-13 was 81.2 years, significantly better than the national average of 79.4 years. Females in Buckinghamshire had a life expectancy of 84.9 years, significantly better than the national average of 83.1 years. This pattern of longer life expectancy for females than males is well recognised across different countries and populations.

Table 1 Life expectancy, healthy life expectancy and disability free life expectancy at birth in years in Buckinghamshire, South East and England

	Life Expectancy 2011-13		Healthy Life Expectancy 2011-13		Disability Free Life Expectancy 2009-11*	
	Male	Female	Male	Female	Male	Female
Buckinghamshire	81.2	84.9	68.2	69.1	69.7	68.4
South East	80.4	83.9	65.6	66.7	66.4	66.9
England	79.4	83.1	63.3	63.9	63.9	64.4

*Note: 2009-11 is the most recent data available for disability free life expectancy

Source: **Life expectancy/Healthy life expectancy** Public Health England Fingertips Tool, Public Health Outcomes Framework Indicator 0.1i & 0.1II; **Disability free life expectancy** Office for National Statistics (ONS) Sub-national health expectancies, Disability-Free Life Expectancy by Upper Tier Local Authority: England 2009-11

Figures 1 and 2 show trends in life expectancy at birth for males and females in Buckinghamshire, the South East and England since 2000-02. Over the past ten years, the life expectancy for both males and females in Buckinghamshire has increased by around three years. The increase in Buckinghamshire for males was similar to that in England and the South East, but for females the increase in Buckinghamshire was slightly greater than in England and the South East.

Figure 1 Trends in life expectancy at birth – Males in Buckinghamshire, South East and England, 2000-02 to 2012-14

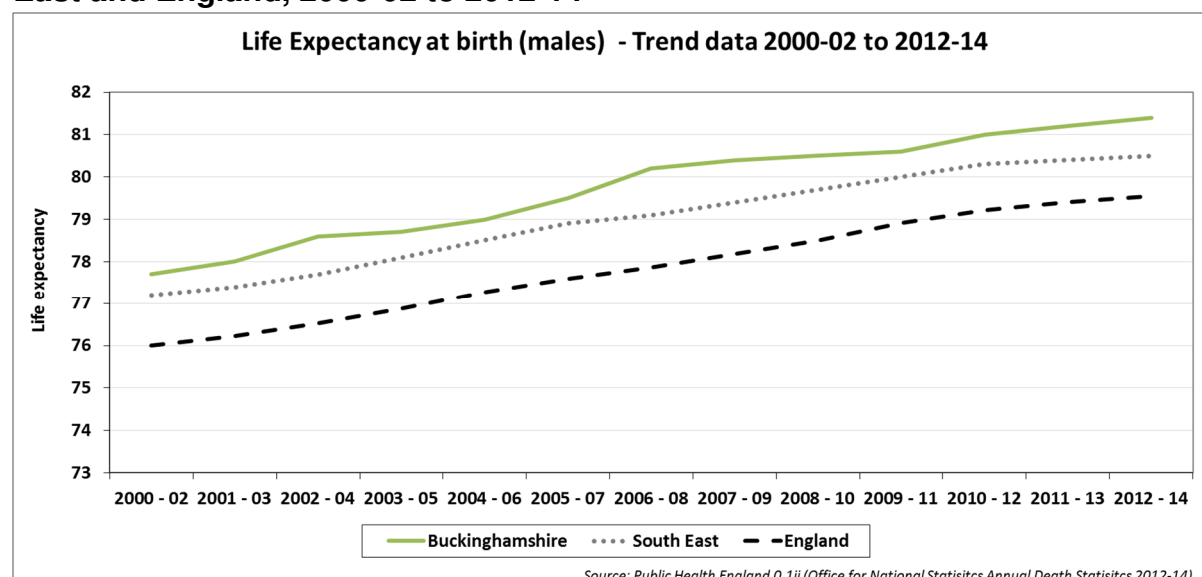
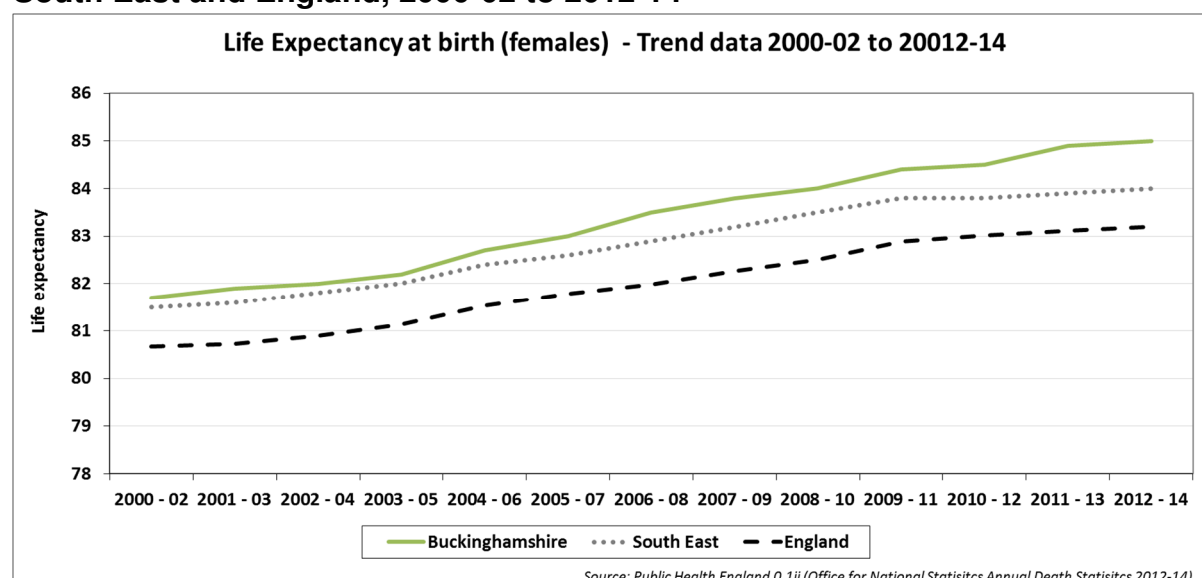


Figure 2 Trends in life expectancy at birth – Females in Buckinghamshire, South East and England, 2000-02 to 2012-14



Figures 3 and 4 compare life expectancy for males and females in Buckinghamshire with similar Local Authority areas (CIPFA peers). Life expectancy for males in Buckinghamshire was significantly better than the South East, England and 11 of the 14 comparator areas. For females, life expectancy was significantly better in Buckinghamshire than the South East, England and all comparator areas.

Figure 3 Life expectancy at birth for males – Buckinghamshire compared to CIPFA peers – 2012-14

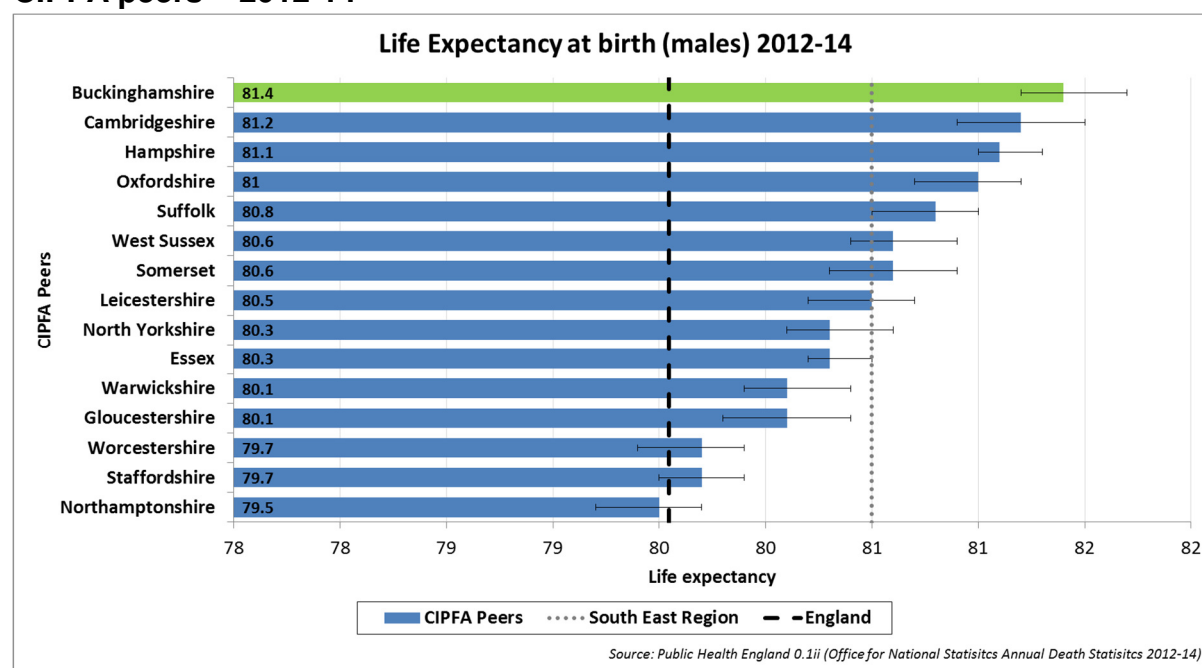
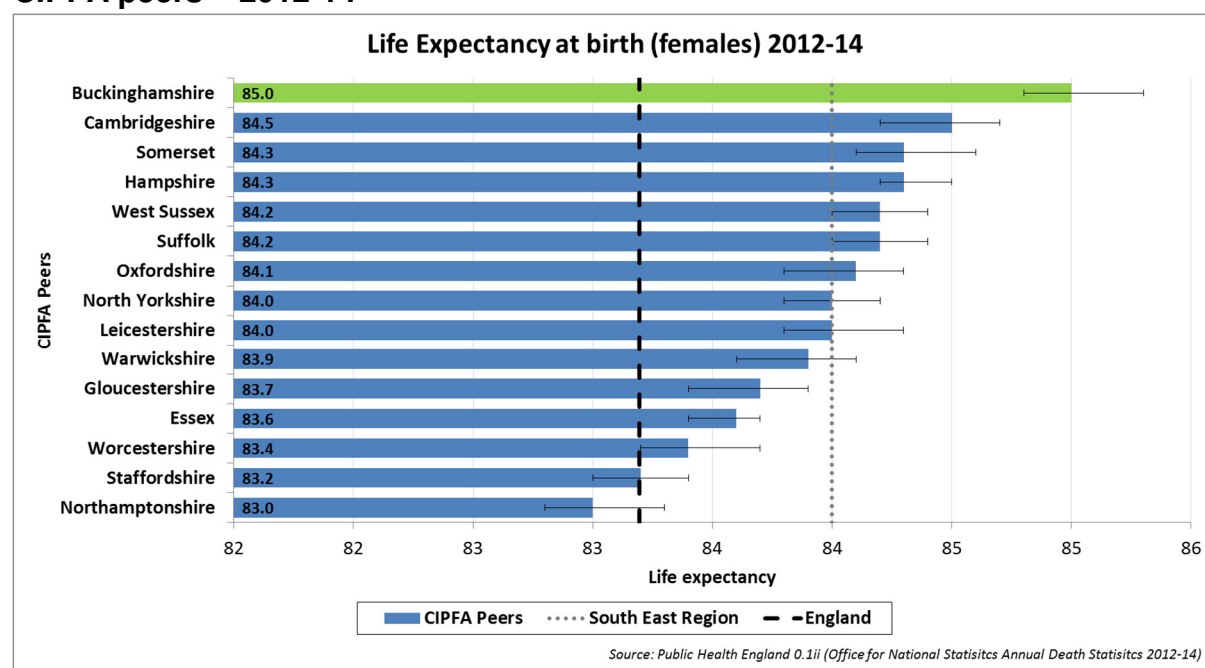
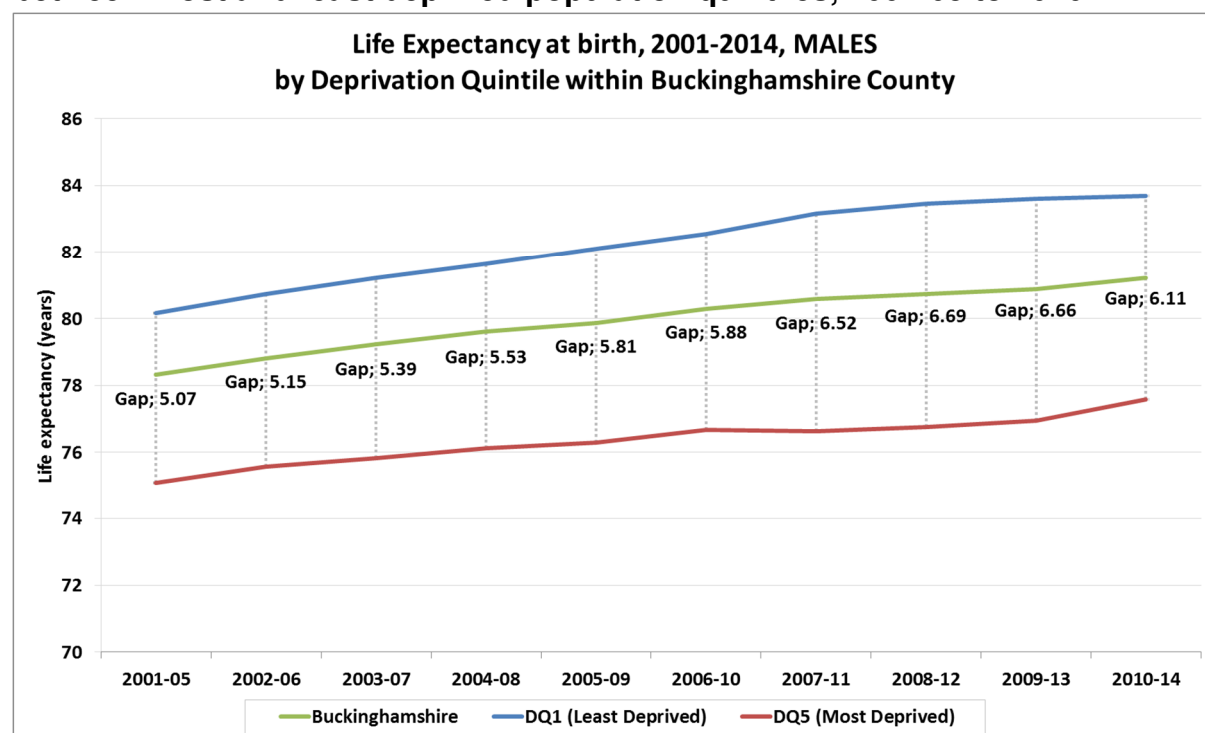


Figure 4 Life expectancy at birth for females – Buckinghamshire compared to CIPFA peers – 2012-14



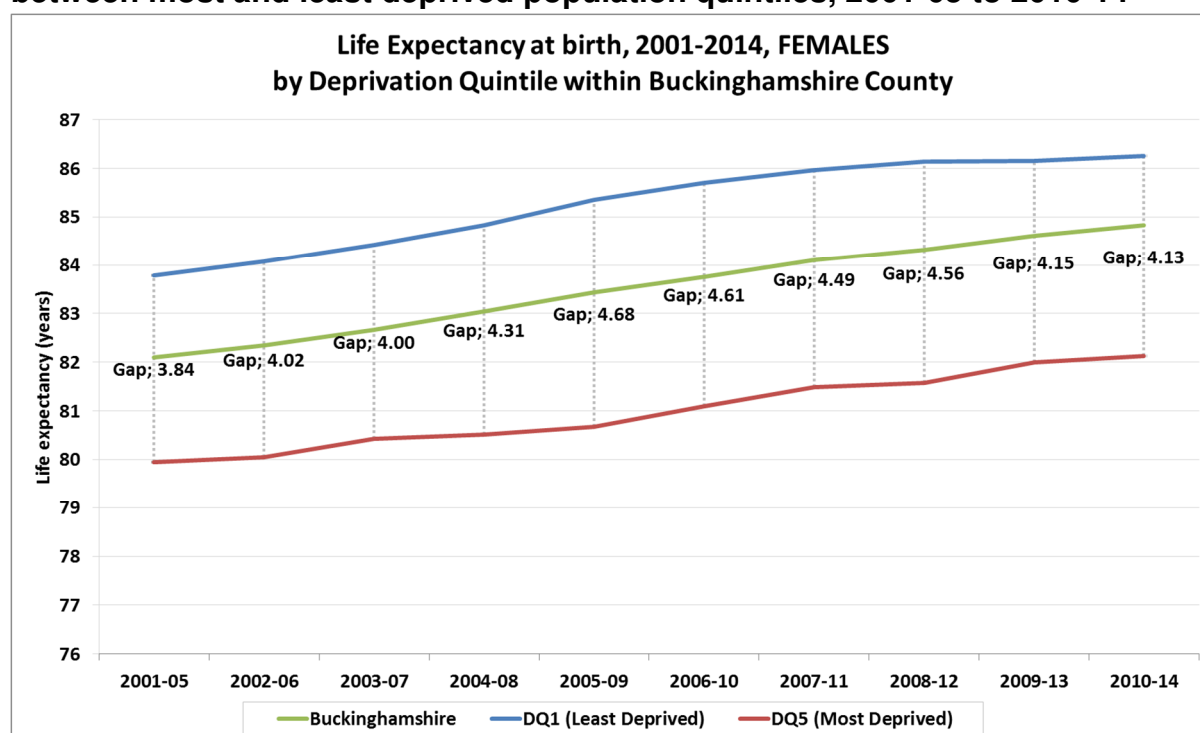
Life expectancy at birth for males in Buckinghamshire's least deprived population quintile is greater than in the most deprived population quintile and the gap has increased from 5.07 years in 2001-05 to 6.11 years in 2010-14 (Figures 5).

Figure 5 Trends in life expectancy at birth – Males in Buckinghamshire, gap between most and least deprived population quintiles, 2001-05 to 2010-14



Source: SEPHO Life Expectancy Calculator; Deprivation Quintiles: DCLG English indices of deprivation 2015 - local quintiles

Figure 6 Trends in life expectancy at birth – Females in Buckinghamshire, gap between most and least deprived population quintiles, 2001-05 to 2010-14



Source: SEPHO Life Expectancy Calculator; Deaths: ONS Annual District Death Extract, 1996-2011. Primary Care Mortality Database (PCMD), 2012 onwards; Populations: ONS Small Area Population Estimates (SAPE) Mid-2002 to Mid-2014 LSOA11; Deprivation Quintiles: DCLG English indices of deprivation 2015 - local quintiles

3.3.2 Healthy Life Expectancy and Disability Free Life Expectancy

It is important to consider healthy life expectancy and disability free life expectancy alongside life expectancy, as improvements in life expectancy are not always associated with corresponding improvements in healthy life expectancy or disability free life expectancy. Services which aim to prolong life should also aim to ensure that the additional years are as free as possible of illness or disability. Table 1 shows the most recent data available for healthy life expectancy and disability free life expectancy. For males in Buckinghamshire with an average life expectancy of 81.2 years and healthy life expectancy of 68.2 years, this suggests that on average, the last 13 years would not be spent in 'good or very good' health. For females in Buckinghamshire with an average life expectancy of 84.9 years and healthy life expectancy of 69.1 years, on average the last 15.8 years would not be spent in 'good or very good' health.

Healthy life expectancy and disability free life expectancy for both males and females in Buckinghamshire are significantly higher than the England average. Figures 7 and 8 show trends in healthy life expectancy; for males there has been small (not statistically significant) decline in 2011-13 in Buckinghamshire compared to 2010-12,

while the healthy life expectancy for females has increased. Trends in disability free life expectancy have been static over the last five years (figures 9 and 10). Therefore, it appears that increases in life expectancy may not be matched by increases in time spent free of ill-health or disability.

Figure 7 Trends in healthy life expectancy – Males in Buckinghamshire, South East and England, 2009-11 to 2011-13

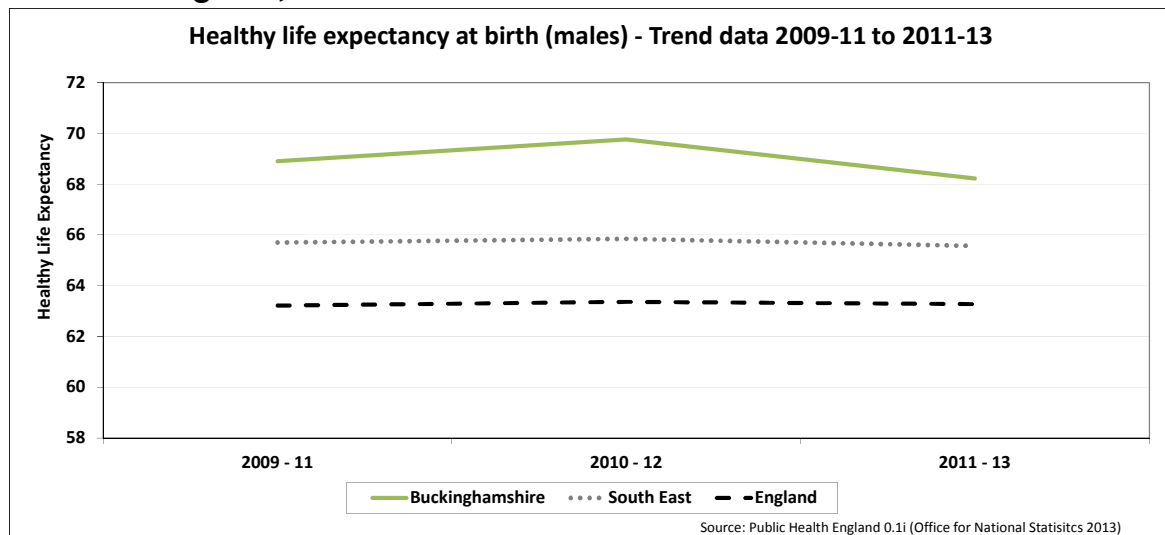


Figure 8 Trends in healthy life expectancy – Females in Buckinghamshire, South East and England, 2009-11 to 2011-13

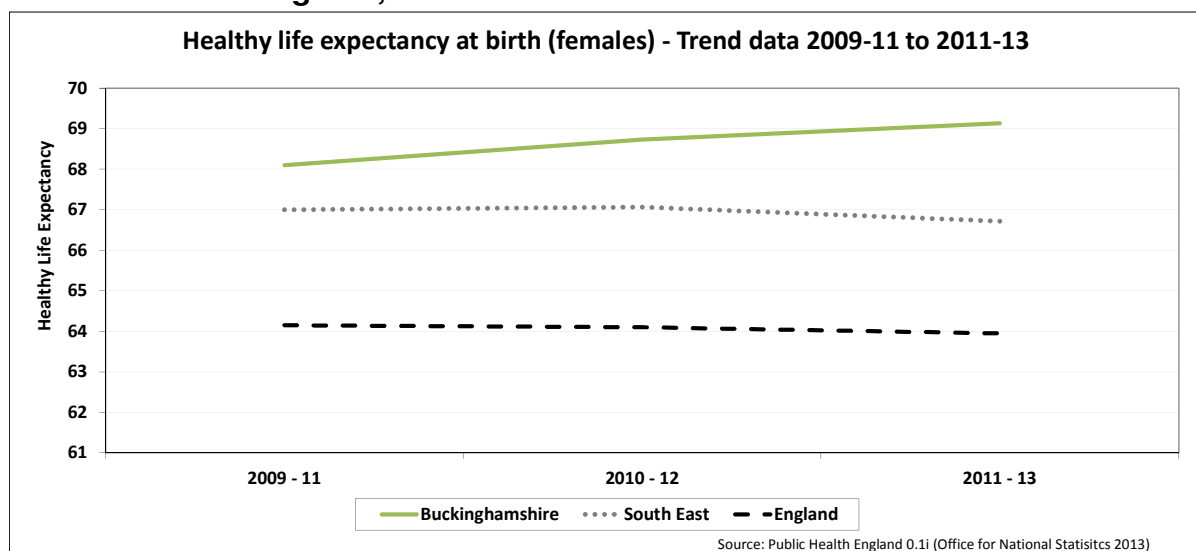


Figure 9 Trends in disability free life expectancy - Males in Buckinghamshire, South East and England, 2006-08 to 2009-11

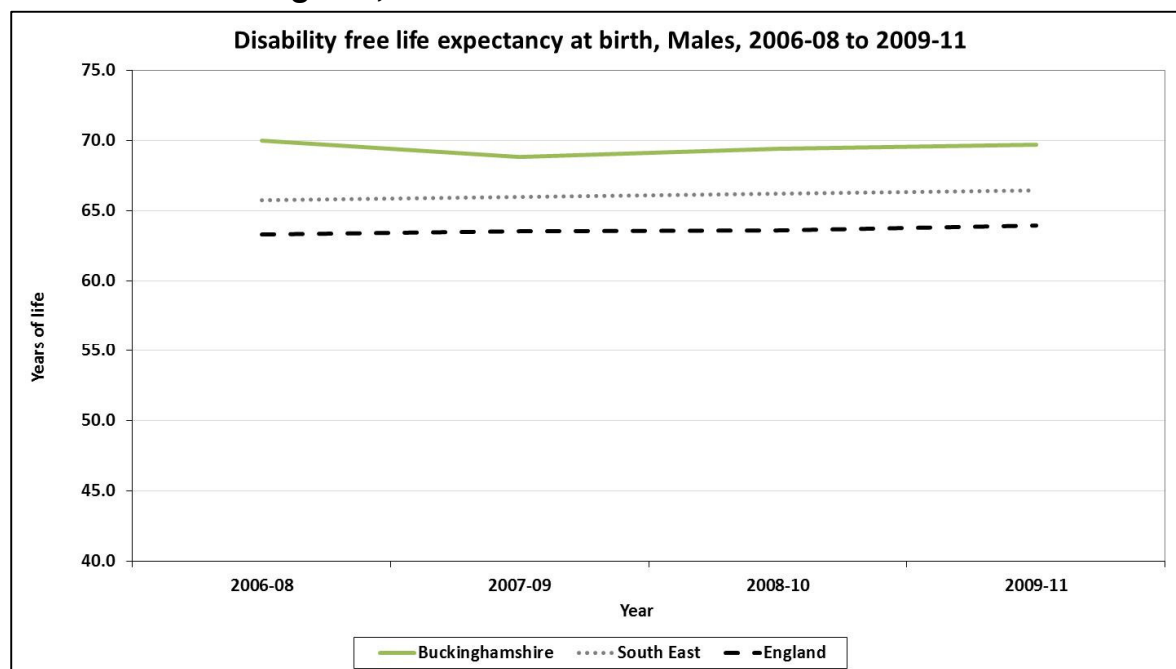
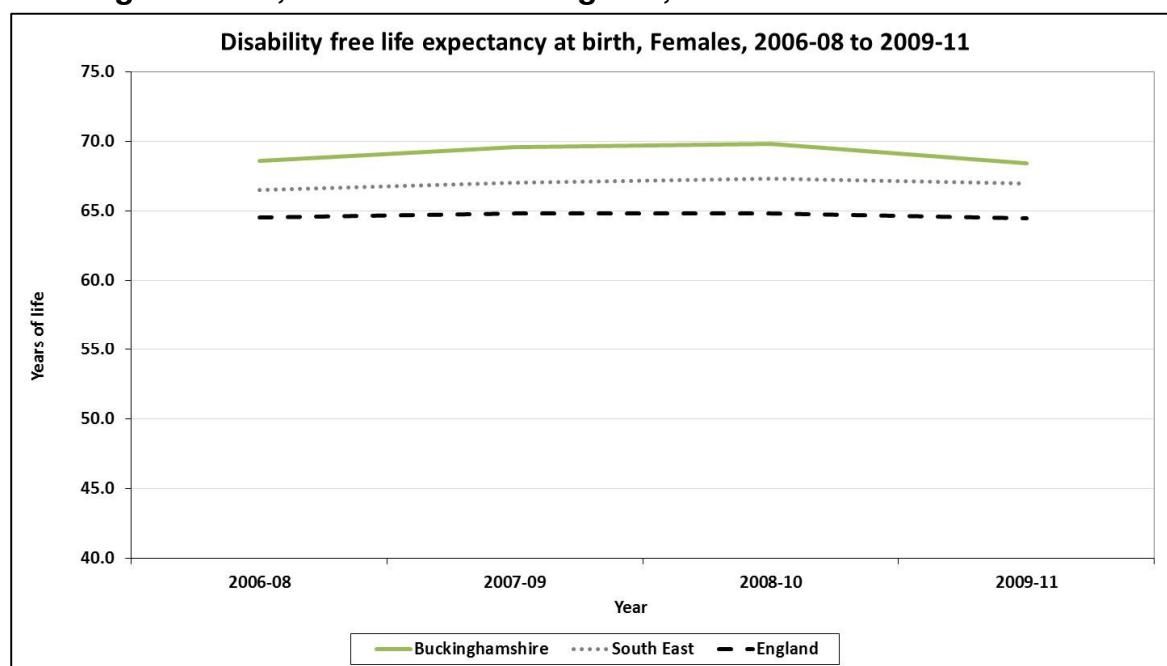


Figure 10 Trends in disability free life expectancy – Females in Buckinghamshire, South East and England, 2006-08 to 2009-11



Source: Office for National Statistics (ONS) Sub-national health expectancies, Disability-Free Life Expectancy by Upper Tier Local Authority: England 2009-11

3.3.3 Life expectancy at District and Ward level

Table 2 shows life expectancy at birth for males and females in Districts in Buckinghamshire. While all are significantly better than the England average there is variation between Districts, from 80.1 for males and 84.1 for females in Aylesbury Vale, to 82.2 for males and 86.4 for females in Chiltern.

Table 2 Life Expectancy in years for males and females at District level in Buckinghamshire, South East and England, 2011-13

	Life Expectancy at birth	
	Male	Female
Aylesbury Vale	80.1	84.1
Chiltern	82.2	86.4
South Bucks	81.7	85.3
Wycombe	81.7	84.7
Buckinghamshire	81.2	84.9
South East	80.4	83.9
England	79.4	83.1

Source: Public Health England Fingertips Tool, Public Health Outcomes Framework Indicator 0.1ii

3.3.4 Inequalities in Life Expectancy

There is wide variation in life expectancy between different wards in Buckinghamshire (table 3). Life expectancy at ward level is estimated over a longer time period (5 years) because of the smaller numbers involved in each ward. The highest male life expectancy at ward level during 2010-14 was 88.0 years in Lacey Green, Speen and the Hampdens ward, and the lowest was 74.0 years in Gatehouse ward, compared to a Buckinghamshire average of 81.2 years. For females the highest ward-level life expectancy was 96.2 years, in Greater Marlow, and the lowest was 78.1 years in Denham North ward, compared to a Buckinghamshire average of 84.8 years. This amounts to a difference of 14 years between the wards with the lowest and highest male life expectancy, and of over 18 years between the wards with the lowest and highest female life expectancy. Maps of ward-level life expectancy for males and females are shown in Appendix 3.3.

Table 3 Male and female life expectancy, by ward in Buckinghamshire, 2010-2014 (only wards where LE is significantly different from Bucks are shown)

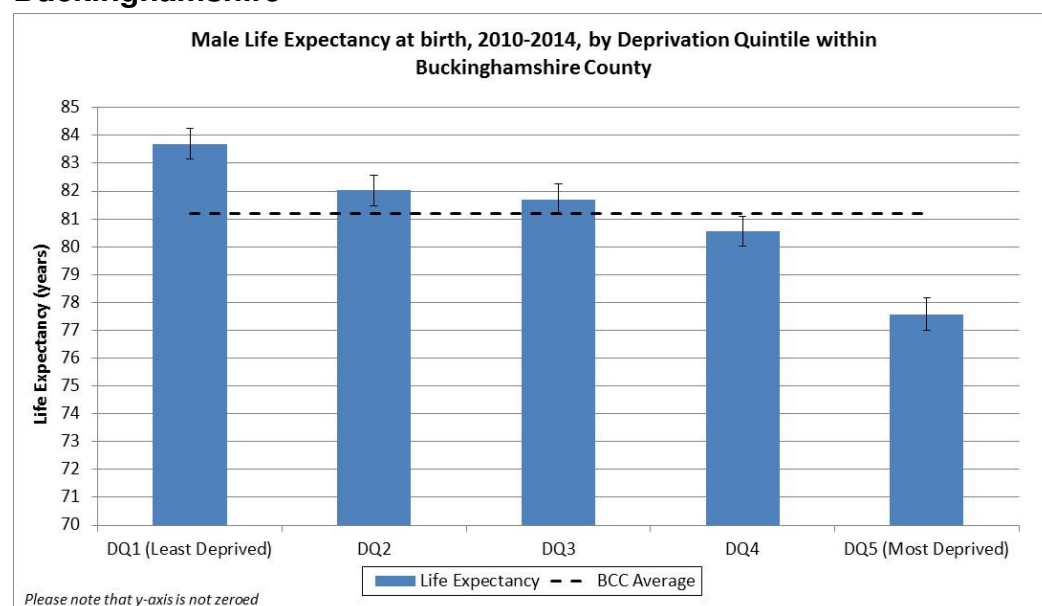
Ward level Life Expectancy At Birth, 2010-2014 (Showing only wards with significant difference)				
	Area Code	Area Name	Male LE	Female LE
	BCC	Buckinghamshire County	81.2	84.8
AVDC	E05002594	Aston Clinton	79.3	82.0
AVDC	E05002602	Coldharbour	78.7	83.9
AVDC	E05002604	Elmhurst and Watermead	77.2	83.6
AVDC	E05002605	Gatehouse	74.0	80.1
AVDC	E05002610	Long Crendon	82.4	89.2
AVDC	E05002616	Pitstone	85.8	87.5
AVDC	E05002618	Quarrendon	74.4	79.8
AVDC	E05002619	Southcourt	77.5	80.7
AVDC	E05002621	Stewkley	84.0	85.8
AVDC	E05002627	Wing	78.8	81.8
AVDC	E05002628	Wingrave	80.6	93.3
CDC	E05002639	Chalfont St Giles	87.4	93.8
CDC	E05002640	Chesham Bois and Weedon Hill	83.5	90.6
CDC	E05002641	Cholesbury, The Lee and Bellingdon	86.9	87.7
CDC	E05002646	Little Chalfont	83.7	89.5
CDC	E05002649	Penn and Coleshill	82.8	89.0
CDC	E05002650	Prestwood and Heath End	82.7	90.8
CDC	E05002651	Ridgeway	74.9	84.7
CDC	E05002653	Seer Green	86.7	88.8
SBDC	E05002655	Beaconsfield North	84.7	88.3
SBDC	E05002657	Beaconsfield West	82.6	93.9
SBDC	E05002660	Burnham Lent Rise	79.7	82.1
SBDC	E05002661	Denham North	77.5	78.1
SBDC	E05002665	Gerrards Cross East and Denham South West	86.1	88.5
SBDC	E05002666	Gerrards Cross North	85.1	88.1
SBDC	E05002667	Gerrards Cross South	84.5	90.0
WDC	E05002674	Abbey	80.2	82.2
WDC	E05002675	Bledlow and Bradenham	86.2	83.9
WDC	E05002676	Booker and Cressex	76.0	81.2
WDC	E05002679	Chiltern Rise	82.3	90.8
WDC	E05002681	Downley and Plomer Hill	80.7	81.0
WDC	E05002682	Flackwell Heath and Little Marlow	82.3	87.0
WDC	E05002683	Greater Hughenden	85.0	89.1
WDC	E05002684	Greater Marlow	85.6	96.2
WDC	E05002687	Hazlemere South	83.6	91.4
WDC	E05002689	Lacey Green, Speen and the Hampdens	88.0	92.7
WDC	E05002693	Oakridge and Castlefield	78.1	83.1
WDC	E05002700	The Wooburns	81.0	80.5
WDC	E05002701	Tylers Green and Loudwater	84.6	87.1
<div>Statistically significantly lower than Bucks</div> <div>No significant difference</div> <div>Statistically significantly higher than Bucks</div>				
Source: SEPHO Life Expectancy Calculator Deaths: ONS Annual District Death Extract, 1996-2011. Primary Care Mortality Database (PCMD), 2012 onwards Populations: ONS Small Area Population Estimates (SAPE) Mid-2002 to Mid-2014 LSOA11 Experimental Quinary Population Estimates				

Figures 11 and 12 show life expectancy by deprivation quintile in Buckinghamshire. Deprivation is measured by the Index of Multiple Deprivation, a composite measure made up of measures in 7 domains: income, employment, education skills and training, health and disability, crime, barriers to housing and services, and the living environment.

In the figures, Deprivation Quintile 1 comprises the fifth of the Buckinghamshire population who are least deprived according to this index, and Deprivation Quintile 5 the fifth who are most deprived. Among males in Buckinghamshire, life expectancy in the least deprived quintile is significantly higher, and life expectancy in the most deprived quintile is significantly lower, than in the rest of the male population. Life expectancy in the most deprived quintile is more than 4 years below the average, and more than 6 years below the least deprived quintile.

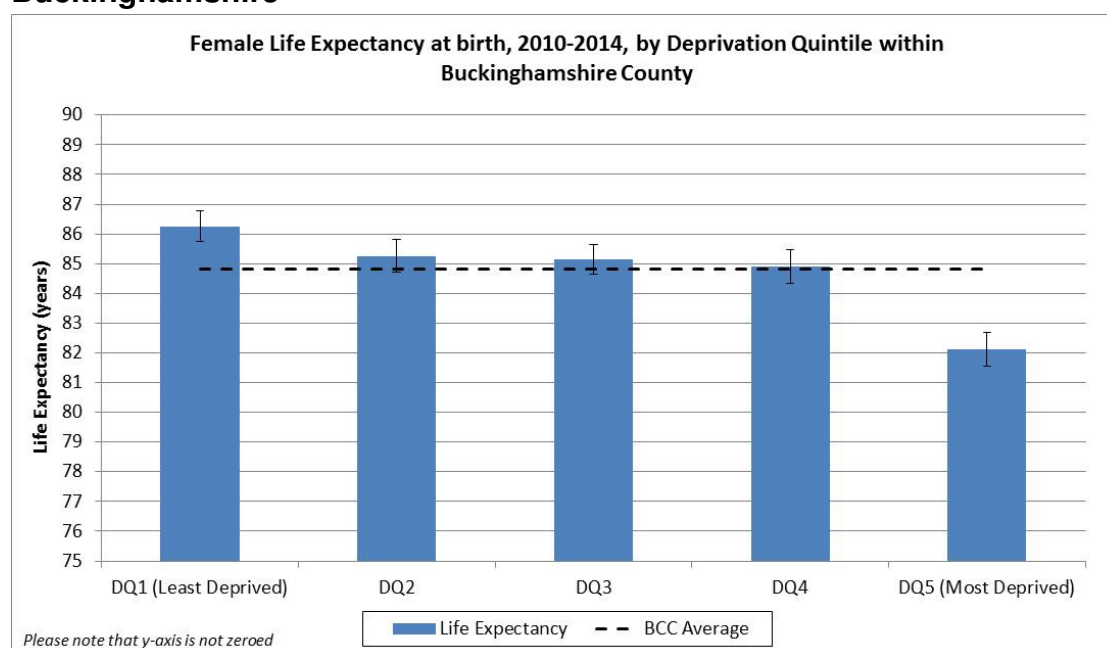
Among females the differences are similar though less marked. Life expectancy in the least deprived 2 quintiles is significantly higher, and in the most deprived quintile is significantly lower, than in the rest of the female population. Life expectancy in the most deprived quintile is more than 2 years below the average, and almost 4 years below that in the least deprived quintile.

Figure 11 Male life expectancy by deprivation quintiles (DQ) in Buckinghamshire



Source: Deaths: ONS Annual District Death Extract, 1996-2011. Primary Care Mortality Database (PCMD), 2012 onwards; Populations: ONS Small Area Population Estimates (SAPE) Mid-2002 to Mid-2014 LSOA11 Experimental Quinary Population Estimates; Deprivation Quintiles: DCLG English indices of deprivation 2015 - local quintiles

Figure 12 Female life expectancy by deprivation quintiles (DQ) in Buckinghamshire



Source: Deaths: ONS Annual District Death Extract, 1996-2011. Primary Care Mortality Database (PCMD), 2012 onwards; Populations: ONS Small Area Population Estimates (SAPE) Mid-2002 to Mid-2014 LSOA11 Experimental Quinary Population Estimates; Deprivation Quintiles: DCLG English indices of deprivation 2015 - local quintiles

The slope index of inequality is a measure of the social gradient in life expectancy. It shows the difference in life expectancy at birth between the most and least deprived deciles of the population within an area. Table 4, and figures 13 and 14 show the trend in slope index of inequality for males and females in Buckinghamshire, the South East and England since 2002-04. The inequality in life expectancy is consistently greater for males than females, and is less wide in Buckinghamshire than in England. In 2011-13 the slope index of inequality for males in Buckinghamshire was 7.5 years compared to the England value of 9.1 years, and the slope index of inequality for females in Buckinghamshire was 4.8 years compared to the England value of 6.9 years. In England and the South East the inequality remained about the same for males, and increased slightly for females, over the period 2002-04 to 2011-13. There was no consistent trend over this time in Buckinghamshire.

Table 4 Slope Index of Inequality in Life Expectancy in years, males and females in Buckinghamshire, South East and England, 2002-04 to 2011-13

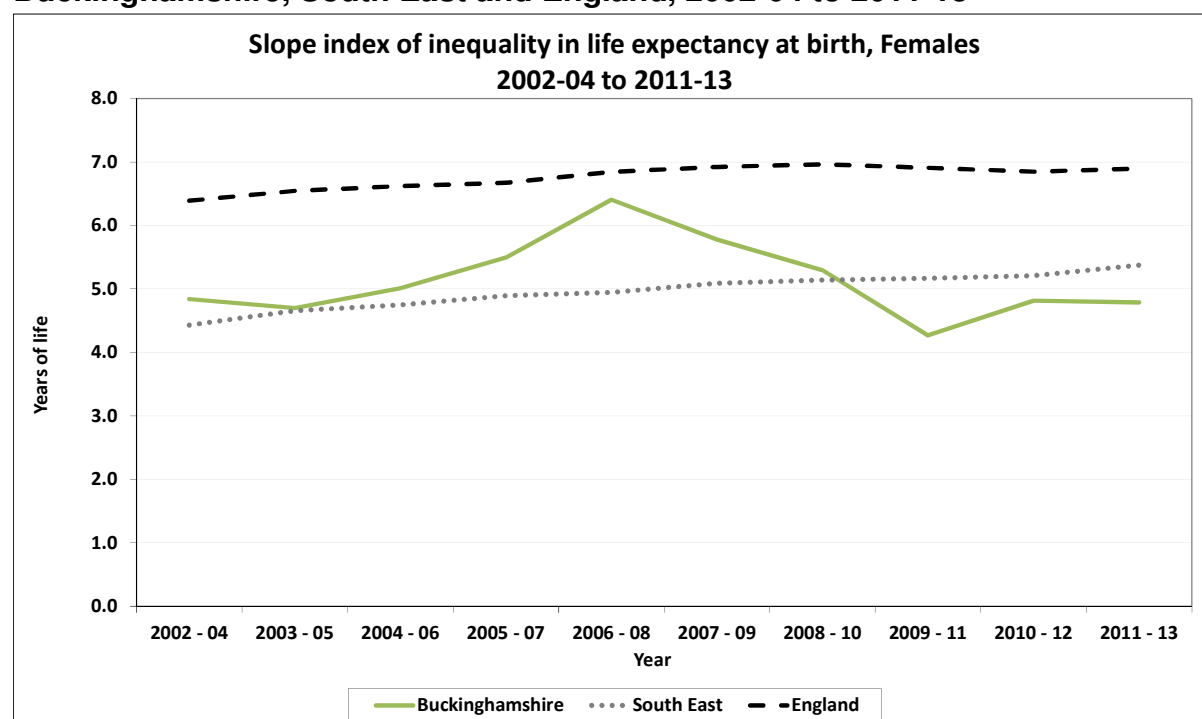
		2002 - 04	2003 - 05	2004 - 06	2005 - 07	2006 - 08	2007 - 09	2008 - 10	2009 - 11	2010 - 12	2011 - 13
Males	Buckinghamshire	6.81	6.87	6.68	6.96	7.05	8.38	8.09	8.38	7.75	7.45
	South East	7.58	7.58	7.73	7.61	7.70	7.77	7.75	7.84	7.63	7.65
	England	9.37	9.39	9.53	9.68	9.84	9.78	9.58	9.42	9.24	9.14
Females	Buckinghamshire	4.84	4.70	5.01	5.49	6.41	5.78	5.30	4.27	4.82	4.79
	South East	4.43	4.66	4.75	4.89	4.95	5.09	5.14	5.17	5.21	5.38
	England	6.39	6.55	6.62	6.67	6.84	6.92	6.97	6.91	6.85	6.90

Figure 13 Slope index of inequality in life expectancy in years - males in Buckinghamshire, South East and England, 2002-04 to 2011-13



Source: Public Health England Fingertips Tool, Public Health Outcomes Framework Indicators 0.2i, 0.2iii, 0.2vii

Figure 14 Slope index of inequality in life expectancy in years - females in Buckinghamshire, South East and England, 2002-04 to 2011-13



Source: Public Health England Fingertips Tool, Public Health Outcomes Framework Indicators 0.2i, 0.2iii, 0.2vii

3.3.5 Conclusions

Life expectancy is a widely used indicator of health status in the population. Buckinghamshire's population on average experiences good health and has significantly better life expectancy for both males and females compared with the national average, and also when compared with many similar Local Authorities. Life expectancy has also improved over the last 12 years, but there have not been similar increases in healthy life expectancy and disability free life expectancy, suggesting that the extra years of life are not free of ill-health or disability.

There are however wide inequalities in life expectancy within Buckinghamshire, with a difference of over 2 years in life expectancy between Aylesbury Vale, where it is the lowest, and Chiltern, where it is the highest. Between wards in Buckinghamshire the variations are much wider. There is a difference of 14 years between the wards with the lowest and highest male life expectancy, and 18 years between the wards with the lowest and highest female life expectancy.

There is a clear relationship between shorter life expectancy and socioeconomic disadvantage. Life expectancy in the most deprived quintile of the Buckinghamshire population is significantly worse than for the least deprived, with a difference between the most and least deprived of over 4 years for women and 6 years for men. This relationship is also demonstrated by the Slope Index of Inequality, which also shows that there has been no reduction in inequalities in life expectancy over the last 10 years.

These inequalities in life expectancy reflect broader patterns of inequalities in a wide range of health outcomes related to socioeconomic deprivation. People from more disadvantaged socioeconomic groups are more likely to experience many types of ill-health, and to die, sooner than those from more advantaged groups, and these inequalities should be tackled through better prevention and treatment of health problems, but also through tackling the underlying causes of socioeconomic disadvantage and inequalities.

Ash More
Head of Public Health Intelligence
June 2016

Appendix 1

Figure A1 Ward level life expectancy at birth for males, 2010-2014

Life Expectancy (males) 2010-14, by ward within Buckinghamshire County

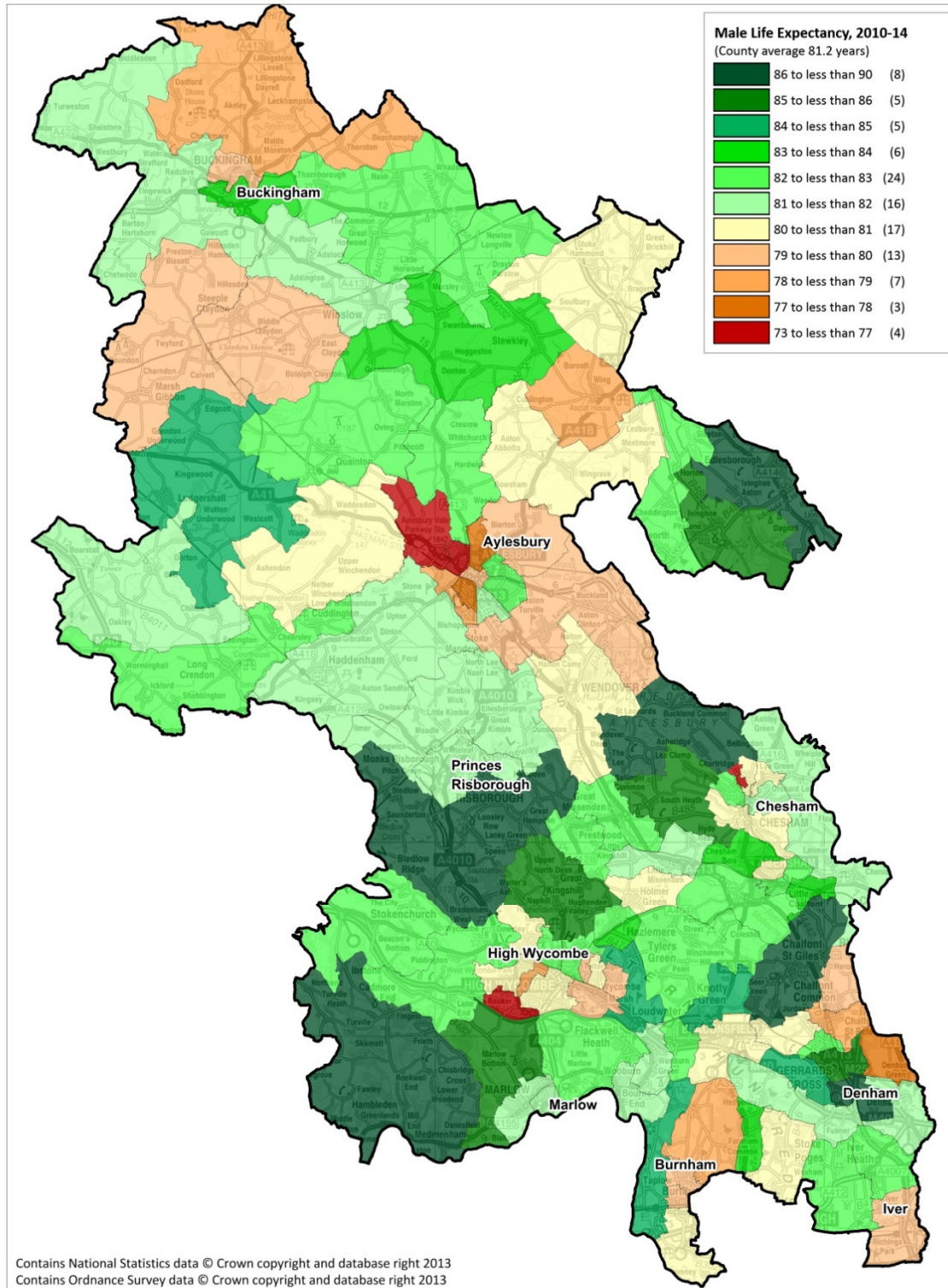


Figure A2 Ward level life expectancy at birth for females, 2010-14

Life Expectancy (females) 2010-14, by ward within Buckinghamshire County

