Public Health England

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East Midlands Health Inequalities and deprivation: Sept 2016 Briefing

Local Knowledge and Intelligence Service East Midlands v1.2 27th Oct 2016

Deprivation and inequalities in life have a marked impact upon all aspect of life. The poorer a person is the poorer health and societal outcomes they will experience. Life expectancy is linked to deprivation, poverty and inequalities with those living in the most deprived area having the lowest life expectancy.

Life expectancy: Life expectancy at birth across the East Midlands is varied; a man living in Rutland Unitary Authority can expect to live to about 81 years, 4 years more than a man living in Nottingham

A woman living in Rutland can expect, at the age of 65, to live for a further 23 years; about 3 years more than a woman living in Leicester

Education and employment:
Derby, Leicester, Nottingham, and Northants all have significantly higher numbers of 16-18 year olds NEET.

Leicester and Nottingham both have a significantly lower percentage of adults in employment compared to England. The region overall, Leicester, Nottm and Notts also have significantly higher percentages of working days lost to sickness.

Best start in life: Within the region, the city areas of Nottingham, Leicester, and Derby having the highest percentage of children in poverty and are all significantly worse than the England average.

The proportion of children achieving a good level of development by the end of reception is significantly worse in the East Midlands compared to England with boys in the city areas at a particular disadvantage

Mortality: Across the East Midlands mortality rates from causes consider preventable are similar to the rate for England; however, in parts (Derby, Leicester, and Nottingham) the rates are significantly higher than England.

For the East Midlands, mortality rates for <75 years from cardiovascular diseases considered preventable is significantly higher for all persons and Males compared to England.

Life expectancy: all measures (current data)

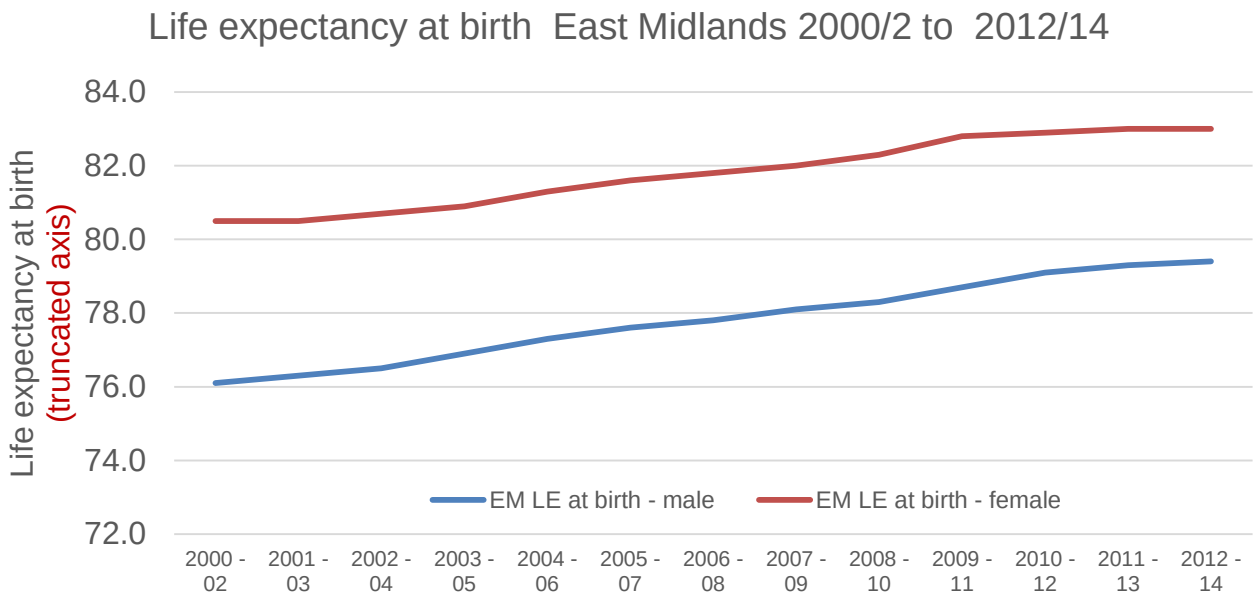
- When compared with England, life expectancy indicators for the East Midland region are all significantly worse, apart from healthy life expectancy at birth for females, which is similar.
- The majority of LA areas within the region are also either significantly worse or similar to England apart from Leicestershire, Rutland, and HLE for females in Lincolnshire.
- The city areas of Derby, Leicester and Nottingham are in the main significantly worse than England across all life expectancy measures

Data source: PHOF
Benchmark: Compared with England

Compared with benchmark Better | Similar | Worse — Lower | Similar | Higher

Indicator	Period	England	East Midlands region	Derby	Derbyshire	Leicester	Leicestershire	Lincolnshire	Northamptonshire	Nottingham	Nottinghamshire	Rutland
0.1i - Healthy life expectancy at birth (Male)	2012 - 14	63.4	62.7	61.1	63.4	58.5	65.4	63.0	63.5	57.8	62.1	68.9
0.1i - Healthy life expectancy at birth (Female)	2012 - 14	64.0	63.5	59.1	63.5	57.8	65.1	65.8	64.8	58.4	62.8	70.3
0.1ii - Life expectancy at birth (Male)	2012 - 14	79.5	79.4	78.3	79.5	77.3	80.5	79.6	79.5	77.1	79.5	81.4
0.1ii - Life expectancy at birth (Female)	2012 - 14	83.2	83.0	82.7	83.1	81.8	84.0	83.2	83.0	81.6	83.0	85.9
0.1ii - Life expectancy at 65 (Male)	2012 - 14	18.8	18.6	18.1	18.4	17.1	19.2	18.9	18.8	17.1	18.6	20.4
0.1ii - Life expectancy at 65 (Female)	2012 - 14	21.2	21.1	21.2	20.9	20.3	21.8	21.1	21.0	20.5	20.9	23.3
0.2iv - Gap in life expectancy at birth between each local authority and England as a whole (Male)	2012 - 14	0.0	-0.1	-1.2	0.0	-2.2	1.0	0.1	0.0	-2.4	0.0	1.9
0.2iv - Gap in life expectancy at birth between each local authority and England as a whole (Female)	2012 - 14	0.0	-0.2	-0.5	-0.1	-1.4	0.8	0.0	-0.2	-1.6	-0.2	2.7

Life expectancy (Trends) and comparison to England



Period	2000 - 02	2001 - 03	2002 - 04	2003 - 05	2004 - 06	2005 - 07	2006 - 08	2007 - 09	2008 - 10	2009 - 11	2010 - 12	2011 - 13	2012 - 14
England LE at birth - Male	76.0	76.2	76.5	76.9	77.3	77.6	77.9	78.2	78.5	78.9	79.2	79.4	79.5
EM LE at birth - Male	76.1	76.3	76.5	76.9	77.3	77.6	77.8	78.1	78.3	78.7	79.1	79.3	79.4
England LE at birth - Female	80.7	80.7	80.9	81.1	81.5	81.8	82.0	82.3	82.5	82.9	83.0	83.1	83.2
EM LE at birth - Female	80.5	80.5	80.7	80.9	81.3	81.6	81.8	82.0	82.3	82.8	82.9	83.0	83.0

Compared with benchmark: Better | Similar | Worse

Trends in life expectancy at birth, between 2000/2 to 2012/14, for the region show an increase in both male and female life expectancy (+3.3 years for males and +2.5 years for females).

However, when benchmarked against England, life expectancy at birth for males in the region has, since 2007/09, declined from similar to significantly worse. Life expectancy for females in the region has since 2000-02, apart from 2009/11 always been significantly worse than England

For each of the LA areas within the region there is a similar trend in increased life expectancy for both male and females between 2000/2 to 2012/14 although some areas have some year-to-year decreases in life expectancy during this period.

Best start in life: Poverty in childhood

Compared with benchmark: Better | Similar | Worse

The Marmot Review (2010) suggests there is evidence that childhood poverty leads to premature mortality and poor health outcomes for adults. Reducing the numbers of children who experience poverty should improve these adult health outcomes and increase healthy life expectancy.

1.01ii - Children in low income families (under 16s) 2013

Area	Recent Trend	Count	Value
England	↓	1,854,005	18.6
East Midlands region	↓	148,720	17.8
Nottingham	↓	18,405	32.7
Leicester	↓	18,695	25.9
Derby	↓	11,740	22.9
Nottinghamshire	↓	23,325	16.8
Lincolnshire	↓	20,520	16.5
Derbyshire	↓	21,100	15.9
Northamptonshire	↓	21,730	15.4
Leicestershire	↓	12,765	11.2
Rutland	→	435	7.2

Source: HM Revenue and Customs (Personal Tax Credits: Related Statistics - Child Poverty Statistics)

About **18%** of children under 16 years in the East Midlands live in low income families, which is significantly better than England. With the city areas of Nottingham, Leicester and Derby having the highest percentage and are significantly worse than the England average. All areas have a decreasing (getting better) trend in relation to childhood poverty with the exception of Rutland which has the lowest percentage in the region and has seen no significant change in their trend.

Best start in life: School readiness

This is a key measure of early years' development across a wide range of developmental areas. Children from poorer backgrounds are more at risk of poorer development and the evidence shows that differences by social background emerge early in life. The East Midland is significantly worse than England for the proportion of children achieving a good level of development at the end of reception year. Regional socio-economic factors add another level of disadvantage within the local authority areas, with only the rural / affluent areas of Derbyshire, Lincolnshire, and Rutland scoring better than England. When sub-divided by gender a smaller proportion of boys in all East Midlands local authority areas achieve a good level of development than girls putting them at a further disadvantage in later life.

Compared with benchmark: Better | Similar | Worse

Indicator	Period	England	East Midlands region	Derby	Derbyshire	Leicester	Leicestershire	Lincolnshire	Northamptonshire	Nottingham	Nottinghamshire	Rutland
1.02i - School Readiness: the percentage of children achieving a good level of development at the end of reception (Persons)	2014/15	66.3	64.0	60.3	68.4	50.7	63.5	69.1	64.6	58.0	65.2	74.8
1.02i - School Readiness: the percentage of children achieving a good level of development at the end of reception (Male)	2014/15	58.6	56.3	52.6	60.0	43.7	55.7	62.4	56.6	50.1	57.1	67.4
1.02i - School Readiness: the percentage of children achieving a good level of development at the end of reception (Female)	2014/15	74.3	72.1	68.6	77.1	57.5	71.8	76.5	73.0	66.3	73.6	81.2

Wider determinants: Education and employment

Young people who are not in education, employment, or training(NEET), are at greater risk of a range of negative outcomes, including poor health, depression, or early parenthood. Regionally we have a lower proportion when compared to England of 16-18 year olds not in education, employment, or training (NEET) however (3.9% compared to 4.2%), however this still equals 6,070 16-18 year olds NEET. Across the region the city areas of Derby, Leicester, Nottinghamshire and the county of Northamptonshire all have significantly higher numbers of 16-18 year olds NEET.

The negative health effects of NEET do not occur equally across the population, as the chance of being NEET is affected by area deprivation, socio-economic position, parental factors (such as employment, education, or attitudes), growing up in care, prior academic achievement and school experiences. Being NEET therefore occurs disproportionately among those already experiencing other sources of disadvantage.

Employment in adulthood, in particular the way work is organised and the work climate are contributory factors to health inequalities. Lower paid workers with fewer skills or qualifications are more likely to experience poor psychosocial working conditions, security of employment and worse health. The region is similar to England in terms of percentage of persons, males, and females in employment however; the cities of Leicester and Nottingham both have a significantly lower percetgae of persons in employment.

For those in work, sickness absence is also an indicator of overall health inequalities and regionally there is a significanlty higher percentage of working days lost to sickness when compared to England, with Leicester, Nottingham and Nottinghamshire also having significantly higher percentages of working days lost to sickness.

Compared with benchmark Better | Similar | Worse

Indicator	Period	England	East Midlands region	Derby	Derbyshire	Leicester	Leicestershire	Lincolnshire	Northamptonshire	Nottingham	Nottinghamshire	Rutland
1.05 - 16-18 year olds not in education employment or training	2015	4.2	3.9	4.8	3.6	6.3	3.0	3.5	4.6	5.8	2.5	2.1*
1.08iv - Percentage of people aged 16-64 in employment (Persons)	2014/15	72.9	73.4	73.4	74.3	64.0	76.6	74.6	78.6	63.4	72.5	78.3
1.08iv - Percentage of people aged 16-64 in employment (Male)	2014/15	78.2	78.5	78.8	77.2	72.0	82.4	80.9	85.5	66.2	76.0	84.1
1.08iv - Percentage of people aged 16-64 in employment (Female)	2014/15	67.6	68.3	67.9	71.4	56.2	70.7	68.5	71.7	60.5	69.0	72.9
1.09ii - Sickness absence - the percent of working days lost due to sickness absence	2011 - 13	1.5	1.7	0.8	1.5	2.1	1.5	1.7	1.7	2.4	2.1	1.1

Mortality (preventable)

There are many indicators for mortality within the “Public Health Outcome Framework” but this brief looks at mortality that could be considered preventable. The basic concept of preventable mortality is that deaths are considered preventable if, in the light of the understanding of the determinants of health at the time of death, all or most deaths from the underlying cause (subject to age limits if appropriate) could potentially be avoided by public health interventions in the broadest sense. (Office for National Statistics)

Across the East Midlands region mortality rates from causes consider preventable are similar to the rate for England; however, in parts of the regions (Derby, Leicester, and Nottingham) the rates are significantly higher than England.

Cardiovascular disease (CVD) is one of the major causes of death in under 75s in England. For the East Midlands, mortality rates for those under 75 years from cardiovascular diseases considered preventable is significantly higher for all persons and Males when compared to England. For females, the rate is similar to England. Four local authority areas within the region have rates significantly higher that England; they are Derby, Leicester, Lincolnshire, and Nottingham.

Compared with benchmark Better | Similar | Worse

Indicator	Period	England	East Midlands region	Derby	Derbyshire	Leicester	Leicestershire	Lincolnshire	Northamptonshire	Nottingham	Nottinghamshire	Rutland
4.03 - Mortality rate from causes considered preventable (Persons)	2012 - 14	182.7	183.8	209.2	182.4	235.3	158.0	177.7	181.3	241.5	183.4	128.6
4.03 - Mortality rate from causes considered preventable (Male)	2012 - 14	230.1	231.7	269.8	232.2	308.5	196.9	222.4	226.5	313.8	228.0	156.3
4.03 - Mortality rate from causes considered preventable (Female)	2012 - 14	138.4	138.7	153.4	135.7	167.5	121.8	135.5	138.0	174.6	141.9	100.2
4.04ii - Under 75 mortality rate from cardiovascular diseases considered preventable (Persons)	2012 - 14	49.2	51.8	57.3	51.5	78.9	42.6	54.3	47.8	73.5	47.0	37.1
4.04ii - Under 75 mortality rate from cardiovascular diseases considered preventable (Male)	2012 - 14	74.1	78.1	88.5	78.9	120.1	64.8	81.3	71.3	102.7	71.1	61.4
4.04ii - Under 75 mortality rate from cardiovascular diseases considered preventable (Female)	2012 - 14	25.6	26.5	27.9	24.7	39.8	21.1	28.6	25.1	45.4	24.0	*

Index of Multiple Deprivation (IMD):

Deprivation covers a broad range of issues and refers to unmet needs caused by a lack of resources of all kinds, not just financial. The English Indices of Deprivation (2015) attempt to measure a broader concept of multiple deprivation, made up of several distinct dimensions, or domains, of deprivation. The IMD score calculated for areas is an overall measure of multiple deprivation experienced by people living in an area and are a relative measures of deprivation. This means it can tell you if one area is more deprived than another, but not by how much

Deprivation score (IMD 2015) 2015

Area	Count	Value
England	-	21.8
East Midlands region	-	-
Nottingham	-	36.9
Leicester	-	33.1
Derby	-	27.8
Lincolnshire	-	20.6
Northamptonshire	-	18.9
Nottinghamshire	-	18.9
Derbyshire	-	18.5
Leicestershire	-	12.5
Rutland	-	9.6

Source: Department of Communities and Local Government (DCLG)

Although there is no overall regional score the IMD scores for areas within the East Midland show that deprivation is higher in the city areas unitary authorities compared to the rural counties and Rutland. The highest score in England for 2015 was Blackpool at 42.0 and Nottingham is the eight highest score after that. The lowest score in the country is Wokingham at 5.7 and Rutland is the 4th lowest score. This demonstrates the spread of deprivation across our region.

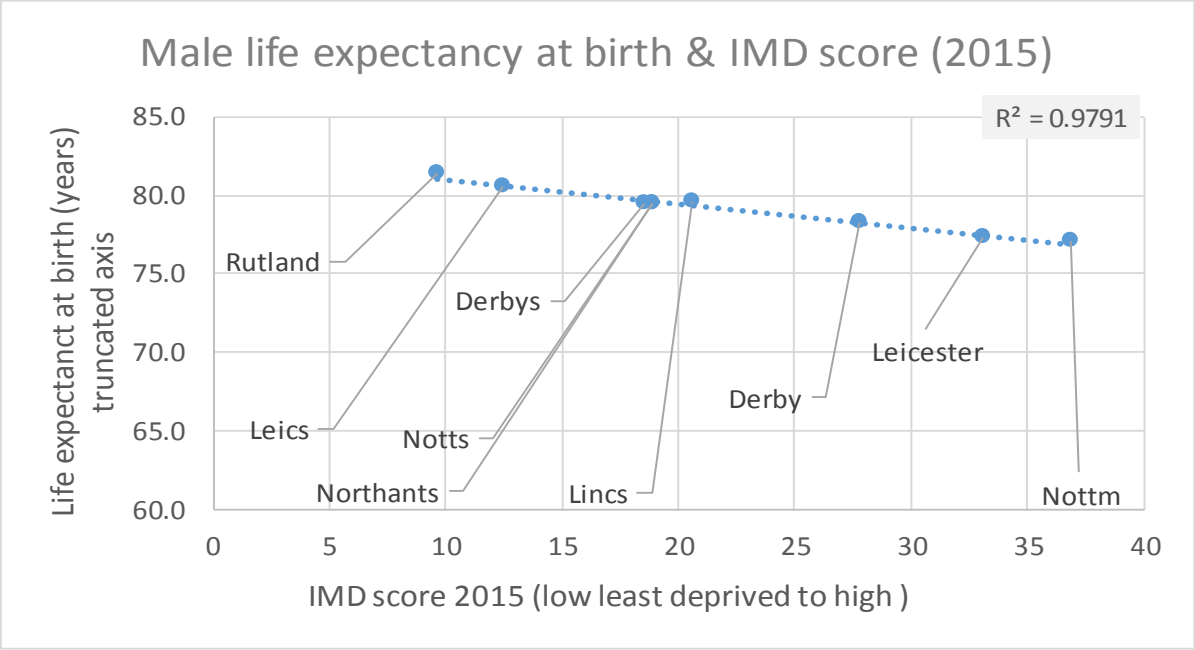
Slope Index:

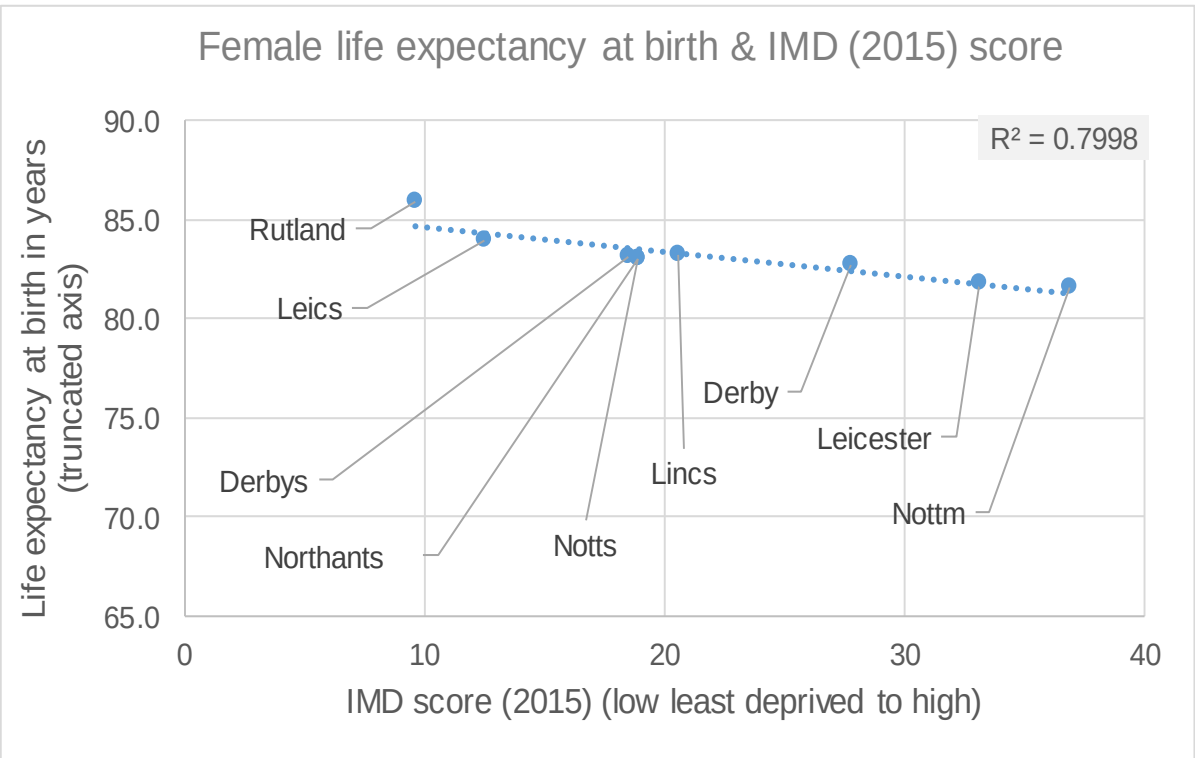
The Slope Index of Inequalities (SII) is a key high-level health inequalities outcome. The SII in life expectancy at birth within English local authorities, based on local deprivation deciles is the range in years of life expectancy across the social gradient within each local authority, from most to least deprived. For example, in Derby males in the lowest deprivation area will have on average 12 years less life expectancy than those males in Derby's least deprived areas. Again this demonstrates the spread of inequalities in LE across the region.

Slope index of inequality in life expectancy at birth within English local authorities, based on local deprivation deciles within each area 2012-14		
Area	Males	Females
Derby	12.1	8.5
Derbyshire	8.2	6.2
Leicester	7.0	6.0
Leicestershire	6.2	5.0
Lincolnshire	6.7	4.9
Northants	8.8	6.0
Nottingham	7.2	7.8
Nottinghamshire	8.9	7.6
Rutland**Value cannot be calculated as number of cases too small*	*	*

Deprivation and life expectancy

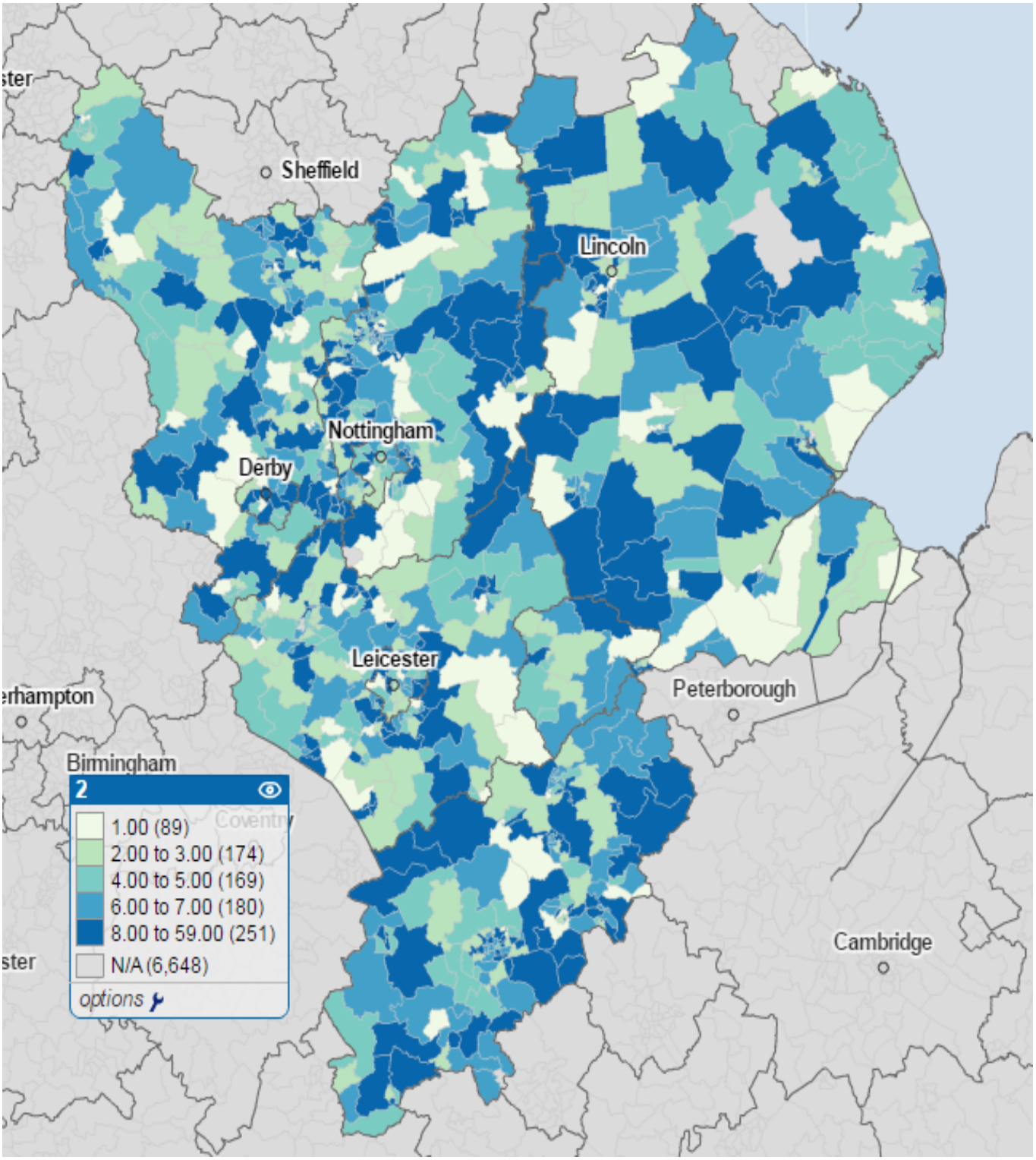
The charts illustrate an association between life expectancy at birth and IMD score. Areas with a low IMD score (least deprived) have a higher life expectancy whereas areas that have higher IMD score (most deprived) have lower life expectancy at birth. The nearer the R^2 score is to 1 the stronger the association. The male R^2 score is 0.9791 which can be described as a strong association whereas the female R^2 score (0.7998) is slightly weaker than the male score and is considered a moderate association.





East Midlands Region: Index of Multiple Deprivation score (2015) by wards

This map demonstrated the spread of deprivation across the region when calculated for small geographic areas (electoral wards 2015) and again shows that for relative deprivation, more deprived areas exists in pockets throughout the region and in areas can be directly adjacent to areas with relatively less deprivation.



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- Designated lead: Sean Meehan
- Prepared by: Sonia Gill, Local Knowledge and Intelligence Service
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- Intended Audience: PHE Centre Director and Centre Executive Team; EMPHIN (via Khub), Local Authorities Inequalities Leads
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Document review plan:

- **Responsibility for review**:
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References and Sources:

- Public Health Outcome Measures: all data extracted from PHOF – data downloaded 27th Sept 2016
- Local Health (wards map)