



How have inequalities in LE and DFLE changed for local areas in England and Wales between 1991 and 2001?

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"Inequalities in health by socio-economic status: Is it a universal fact?"

InHALE -

Inequalities in Healthy Active Life Expectancy: the role of time, place, person and methods

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Content

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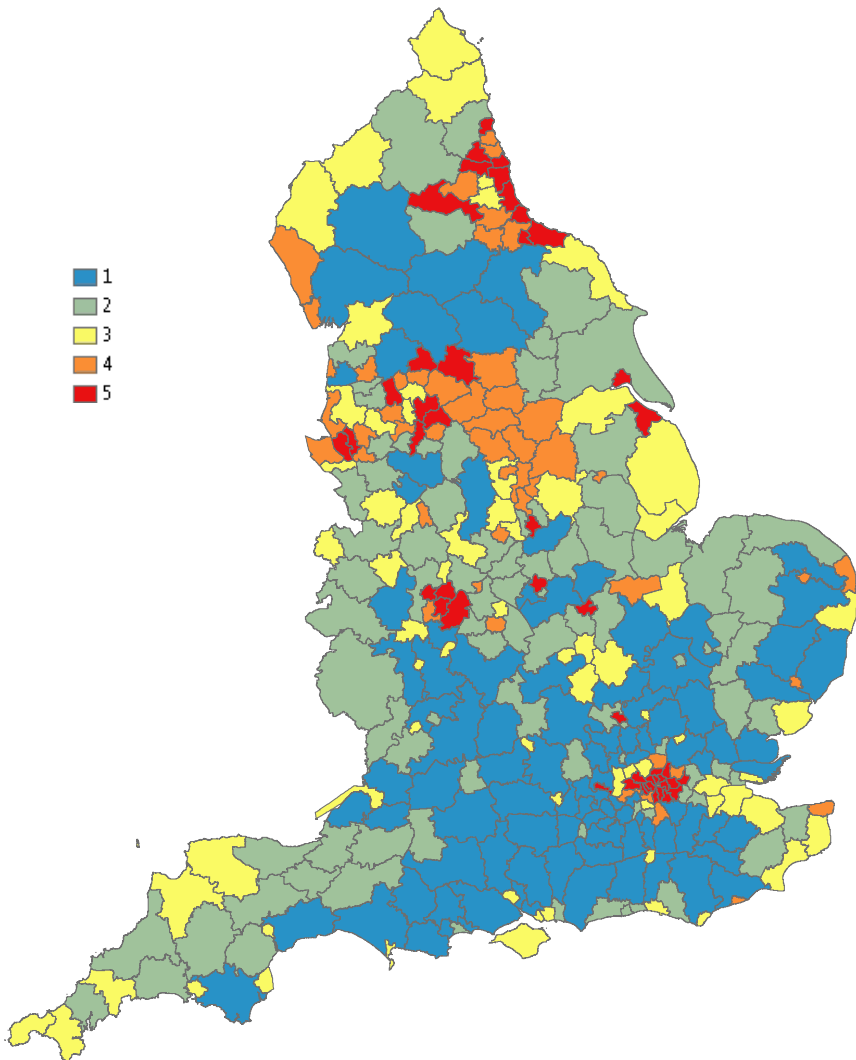
Research questions

- How have life expectancy (LE) and disability free life expectancy (DFLE) in England and Wales changed between 1991 and 2001?
- Are the patterns of change the same for LE and DFLE?
- How have inequalities in LE and DFLE changed over time?

Background

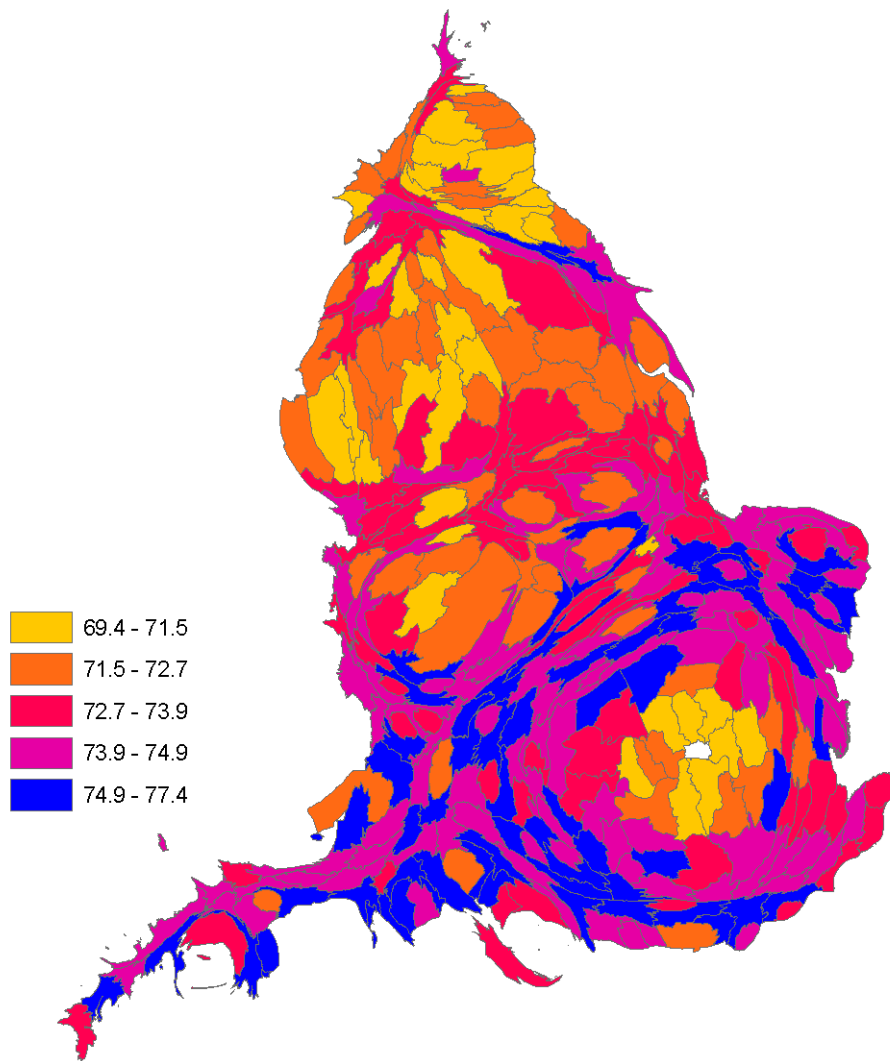
- UK has a long history in health related inequality and significant differences persist in the health of the population both socially and geographically
- The UK has **one of the highest degrees of spatial inequality** in mortality among European countries
- Mortality inequality for the under 75s in Great Britain has been **increasing over the past 40 years**

Deprivation
-Carstairs Deprivation Index 2001
Population based quintiles



Area based map

Life expectancy at birth for men 1991



Population based map

Data

Cross sectional

- LE: Office of National statistics (ONS) vital statistic data (death) and population mid year estimates 1991 and 2001
- DFLE: self reported limiting long term illness and population counts from census 1991 and census 2001

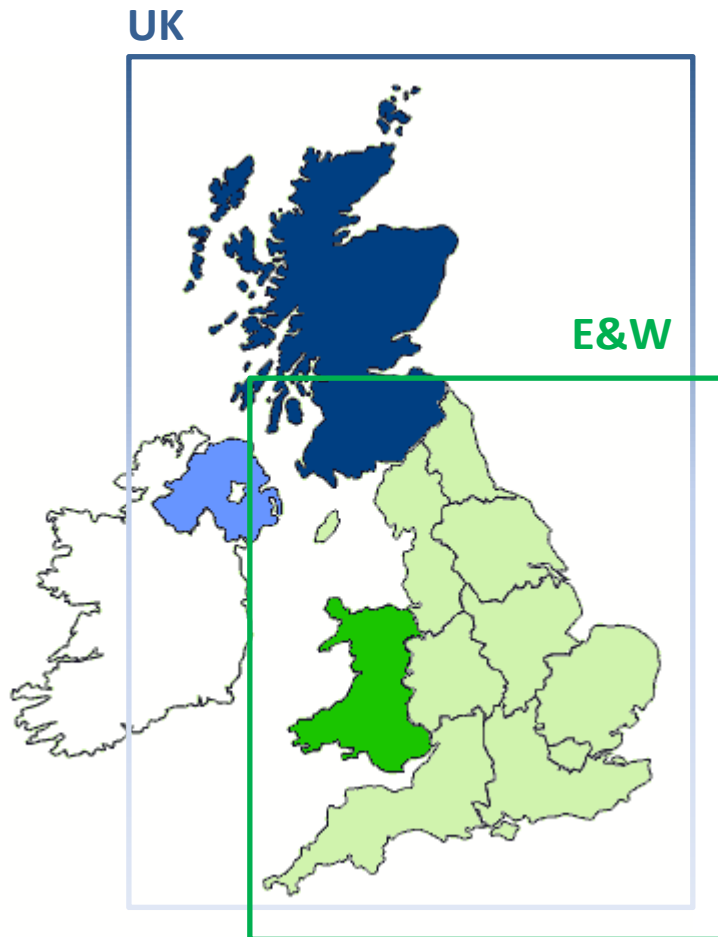
Methods

- Abridged life tables to calculate life expectancies (LE) for 5 year age groups (0,1-4, 5-9,..., 85+) for local authorities in the UK for 1991 and 2001
- Sullivan method to calculate disability free life expectancy (DFLE) for local authorities in the UK for 1991 and 2001

Data preparation

- Geography: boundary changes LA level between 1991 and 2001
- Different age bands for LLTI in 1991 and 2001
- LLTI Question change between 1991 and 2001

Geography



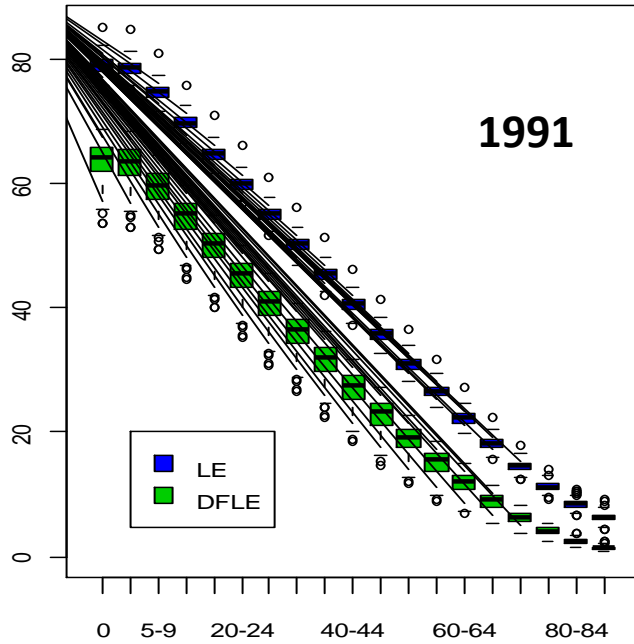
- England and Wales (E&W) 376 (374) local authorities
- England 354 districts, unitary authorities and London boroughs
- Wales is divided into 22 unitary authority areas

Analysis and Results

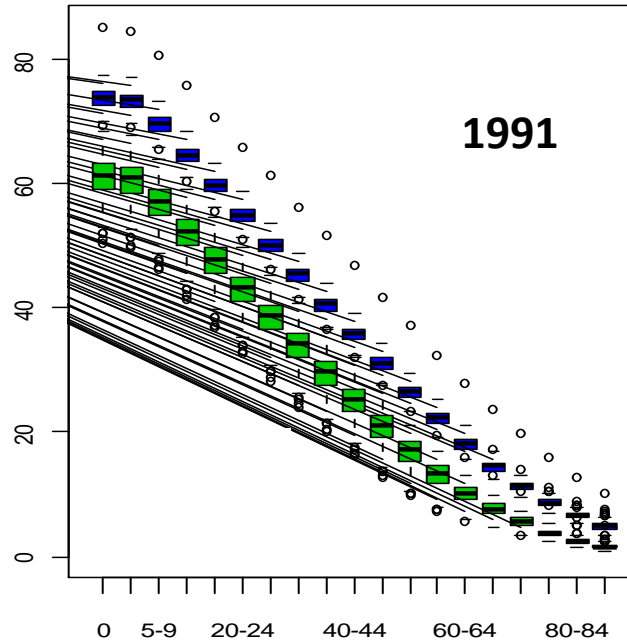
LE and DFLE at Birth, age 65, age 50 and age 85+

- Changes and Dispersion
- Relationship between LE, DFLE and deprivation

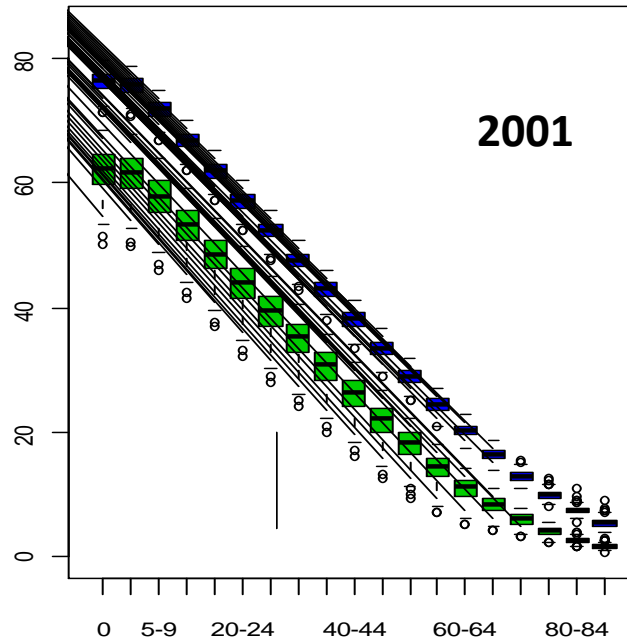
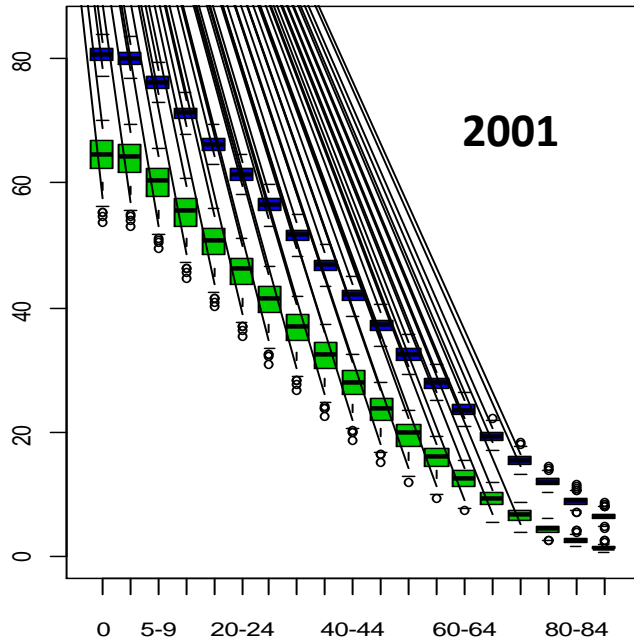
WOMEN



MEN



LE and DFLE across local areas in England and Wales for the years 1991 and 2001 women and men for five year age groups

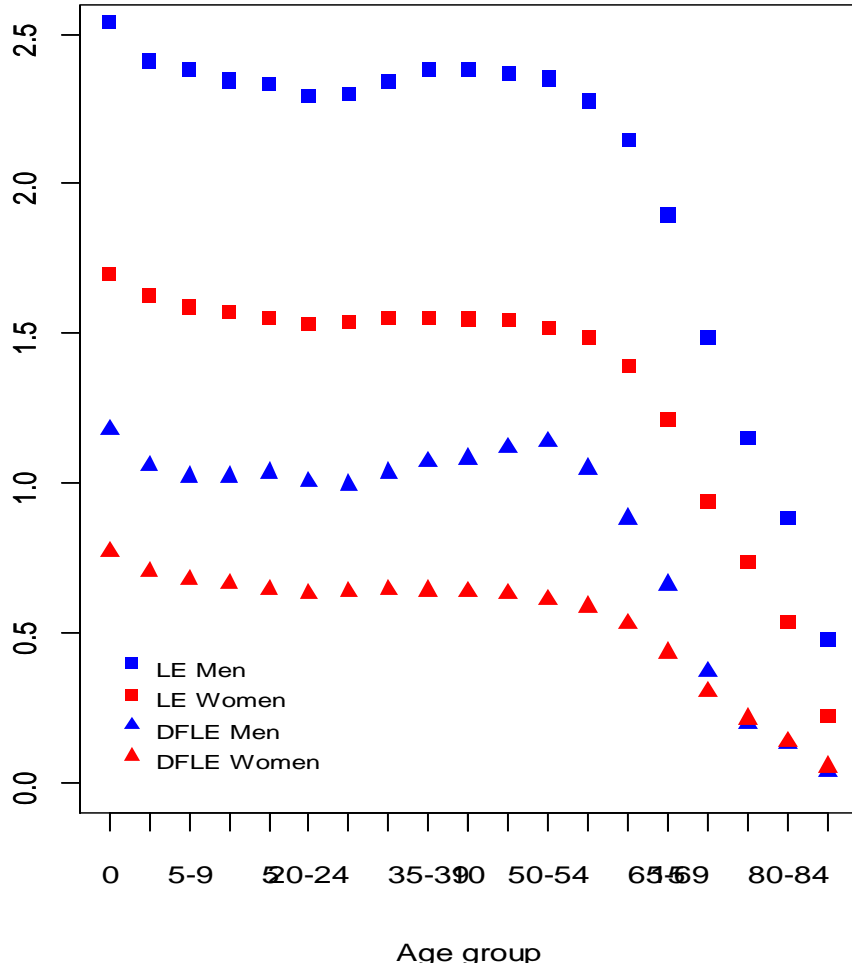


Changes and dispersions in LE and DFLE for England and Wales (1991 and 2001)

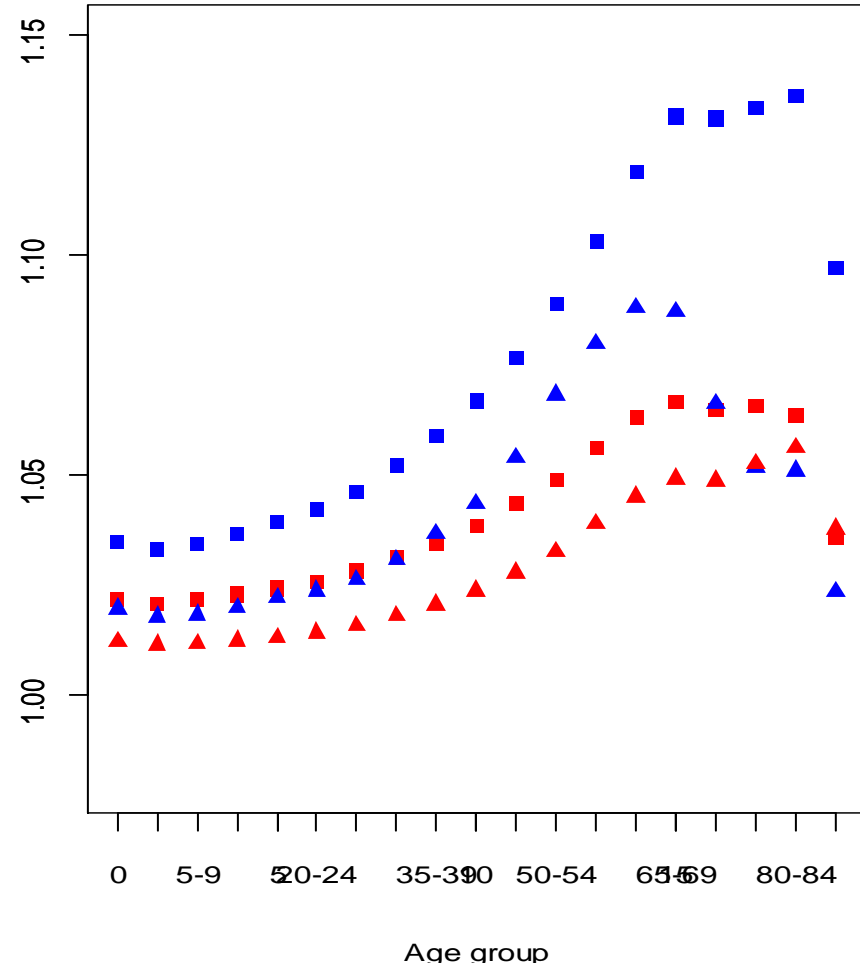
Men																	
Life expectancy									Disability free life expectancy								
1991					2001				1991					2001			
	Birth	50	65	85	Birth	50	65	85		Birth	50	65	85	Birth	50	65	85
MEAN	73.6	26.5	14.5	4.9	76.2	28.8	16.4	5.4		60.8	16.7	7.6	1.6	62.0	17.9	8.3	1.6
SD	1.6	1.3	1.0	0.7	1.6	1.3	1.0	0.6		3.1	2.2	1.1	0.3	3.4	2.5	1.3	0.3
90-10 range	3.7	3.2	2.1	1.6	4.2	3.4	2.6	1.5		8.0	5.7	2.7	0.7	9.1	6.6	3.6	0.8
IQ range	2.1	1.7	1.3	0.8	2.2	1.9	1.3	0.8		4.3	3.2	1.5	0.4	4.9	3.5	1.9	0.4
MEAN			% change		3.3	8.2	11.6	8.8				% change		1.9	6.4	8.0	2.3
SD			between		1.3	-1.1	0.7	-9.4				between		10.4	12.2	19.6	-5.8
90-10 range			1991 and		11.6	7.3	17.9	-8.5				1991 and		12.8	14.3	26.4	10.9
IQ range			2001		4.3	6.5	2.7	3.6				2001		12.0	8.6	21.5	3.3

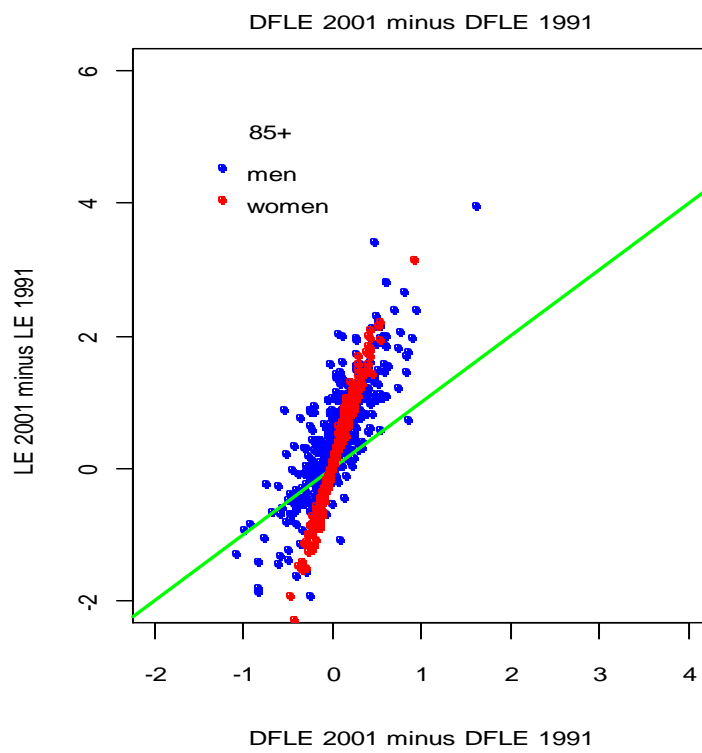
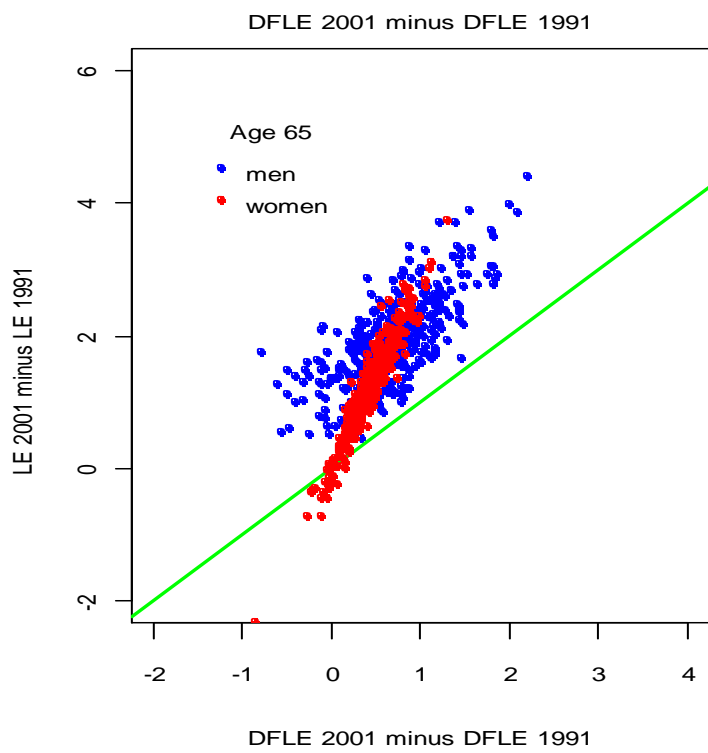
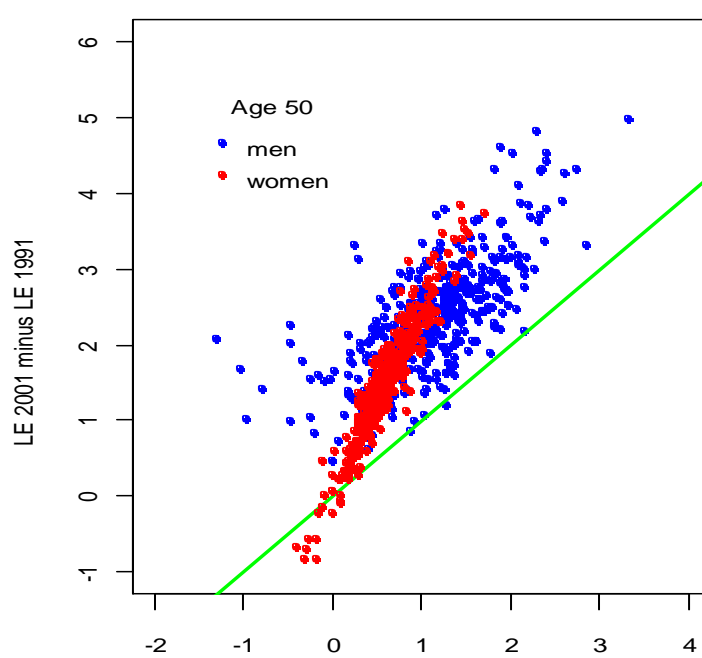
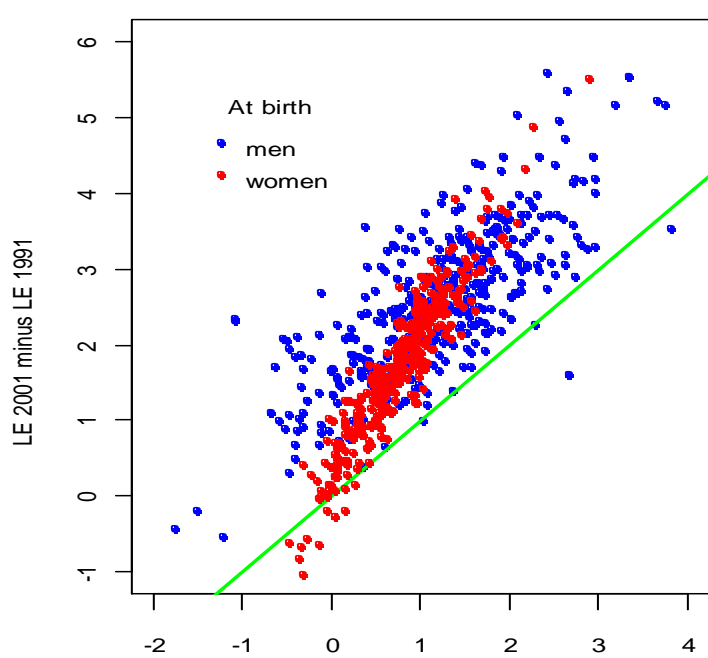
Women																	
Life expectancy									Disability free life expectancy								
1991					2001				1991					2001			
	Birth	50	65	85	Birth	50	68	85		Birth	50	65	65	Birth	50	65	85
MEAN	78.9	31.0	18.2	6.2	80.6	32.5	19.4	6.5		63.6	18.8	8.8	1.4	64.4	19.4	9.3	1.4
SD	1.2	1.1	0.9	0.6	1.3	1.2	0.9	0.6		3.0	2.3	1.3	0.3	3.1	2.3	1.3	0.3
90-10 range	3.0	2.8	2.2	1.6	3.3	3.0	2.4	1.5		7.9	6.0	3.3	0.7	8.1	6.1	3.5	0.8
IQ range	1.7	1.5	1.2	0.8	1.8	1.7	1.3	0.8		4.1	3.1	1.9	0.4	4.3	3.4	1.9	0.4
MEAN			% change		2.1	4.7	6.2	3.5				% change		1.2	3.1	4.7	3.6
SD			between		3.7	3.4	5.1	-2.4				between		3.9	3.4	5.3	6.4
90-10 range			1991 and		7.5	6.2	6.8	-3.0				1991 and		3.4	1.3	6.0	9.0
IQ range			2001		5.1	12.3	7.0	-2.0				2001		6.8	8.5	3.0	8.8

**Absolute change in mean LE and DLFE
Between 1991 and 2001**



**Relative change in mean LE and DLFE
Between 1991 and 2001**





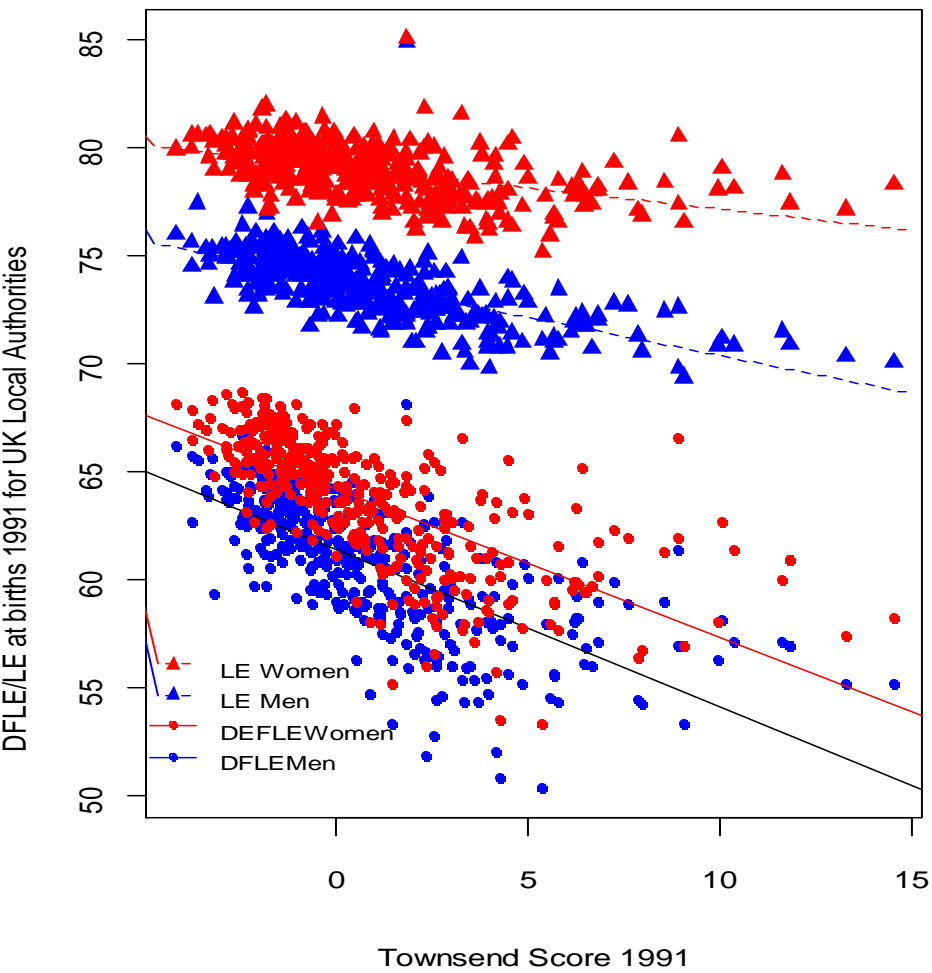
Differences in LE between 1991 and 2001 versus differences in DFLE for the same time for 4 ages (at birth, age 50, 65 and 85+) and men and women

**The relationship between
LE and DFLE and deprivation in
England and Wales**

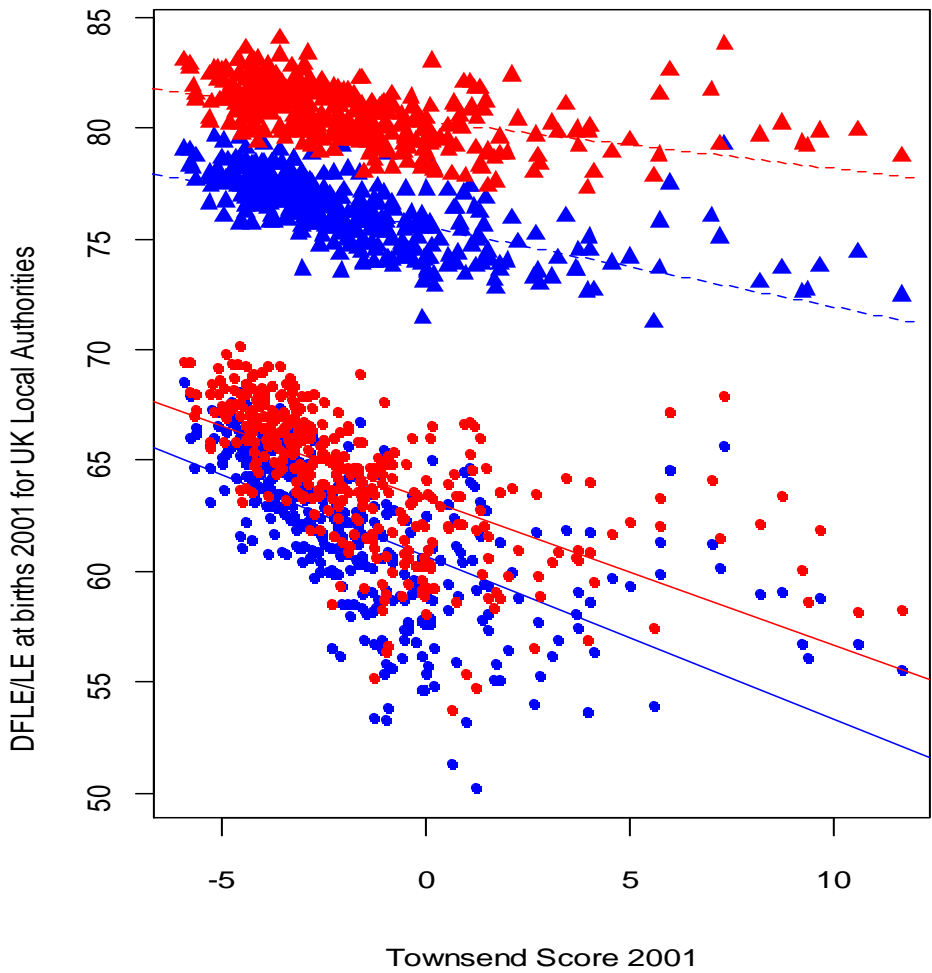
Deprivation index as socioeconomic indicators

- Townsend score (Townsend *et al.* 1988)
 - i. % households with no car
 - ii. % households not owner occupied
 - iii. % persons unemployed
 - iv. % households overcrowded

LE and DFLE at birth- Townsend deprivation index 1991 and 2001



Least deprived Most deprived



Least deprived Most deprived

The relationship between DFLE and LE and the Townsend deprivation index for men and women at various ages in 1991 and 2001

Year	Gender	Age	Variable	r ²	Slope	p	Year	Gender	Age	Variable	r ²	Slope	p
1991	Men	at Birth	DFLE	0.49	-0.73	***	2001	Men	at Birth	DFLE	0.60	-0.81	***
			LE	0.46	-0.36	***				LE	0.59	-0.37	***
		Age 50	DFLE	0.41	-0.47	***			Age 50	DFLE	0.38	-0.53	***
			LE	0.39	-0.28	***				LE	0.43	-0.30	***
		Age 65	DFLE	0.32	-0.20	***			Age 65	DFLE	0.28	-0.25	***
			LE	0.22	-0.15	***				LE	0.26	-0.17	***
		Age 85+	DFLE	0.01	-0.01				Age 85+	DFLE	0.01	-0.01	
			LE	0.00	0.01					LE	0.01	0.02	
	Women	at Birth	DFLE	0.48	-0.69	***		Women	at Birth	DFLE	0.61	-0.73	***
			LE	0.23	-0.20	***				LE	0.39	-0.24	***
		Age 50	DFLE	0.47	-0.51	***			Age 50	DFLE	0.38	-0.49	***
			LE	0.22	-0.18	***				LE	0.22	-0.19	***
		Age 65	DFLE	0.35	-0.25	***			Age 65	DFLE	0.26	-0.23	***
			LE	0.13	-0.11	***				LE	0.12	-0.11	***
		Age 85+	DFLE	0.01	-0.01				Age 85+	DFLE	0.00	0.00	
			LE	0.01	0.02					LE	0.02	0.03	**

Conclusion

- **How have life expectancy (LE) and disability free life expectancy (DFLE) in England and Wales changed between 1991 and 2001 and are the patterns of change the same for LE and DFLE**



LE and DFLE both increased between 1991 and 2001 across most age groups

Larger increase in LE compared to DFLE

Men are catching up with women in both LE and DFLE

Outlook

- Analyse healthy life expectancy in 2001
- Social factors that explain the variation in HLE and DFLE between local authorities (in England and Wales) - meta regression analysis
- Update data with Census 2011 data
 - up to date information
 - time series of DFLE 1991, 2001, 2011
 - change over time in HLE 2001 and 2011

Acknowledgments

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Thanks!