



# Inequalities in health expectancies at small area level: England & Wales, 2001

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# Health questions in the 2001 Census, EW

## HLE (Healthy Life Expectancy)

- *Over the last 12 months, would you say your health has on the whole been:*

	» Males	Females	Persons
• Good	71%	66%	69%
• Fairly good	20%	24%	22%
• Not good	9%	10%	9%

## DFLE (Disability-free Life Expectancy)

- *Do you have any long-term illness, health problem or disability which limits your activities or the work you can do? Include problem due to old age.*

	» Males	Females	Persons
No	83%	81%	82%
Yes	17%	19%	18%

# Overview of Analyses

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- Comparative
  - by wards grouped into population 20ths by deprivation
  - between and within Region (GOR) variation
  - by area types (e.g. industrial, countryside etc)
- Explanatory
  - Linear regression: socio-economic predictors of HLE
  - Multi-level modelling: contextual effects
- Both above types of analysis
  - Separately by sex (2)
  - For HLE, DFLE (2)
  - At birth, at age 65 (2)

# Sources & Methods

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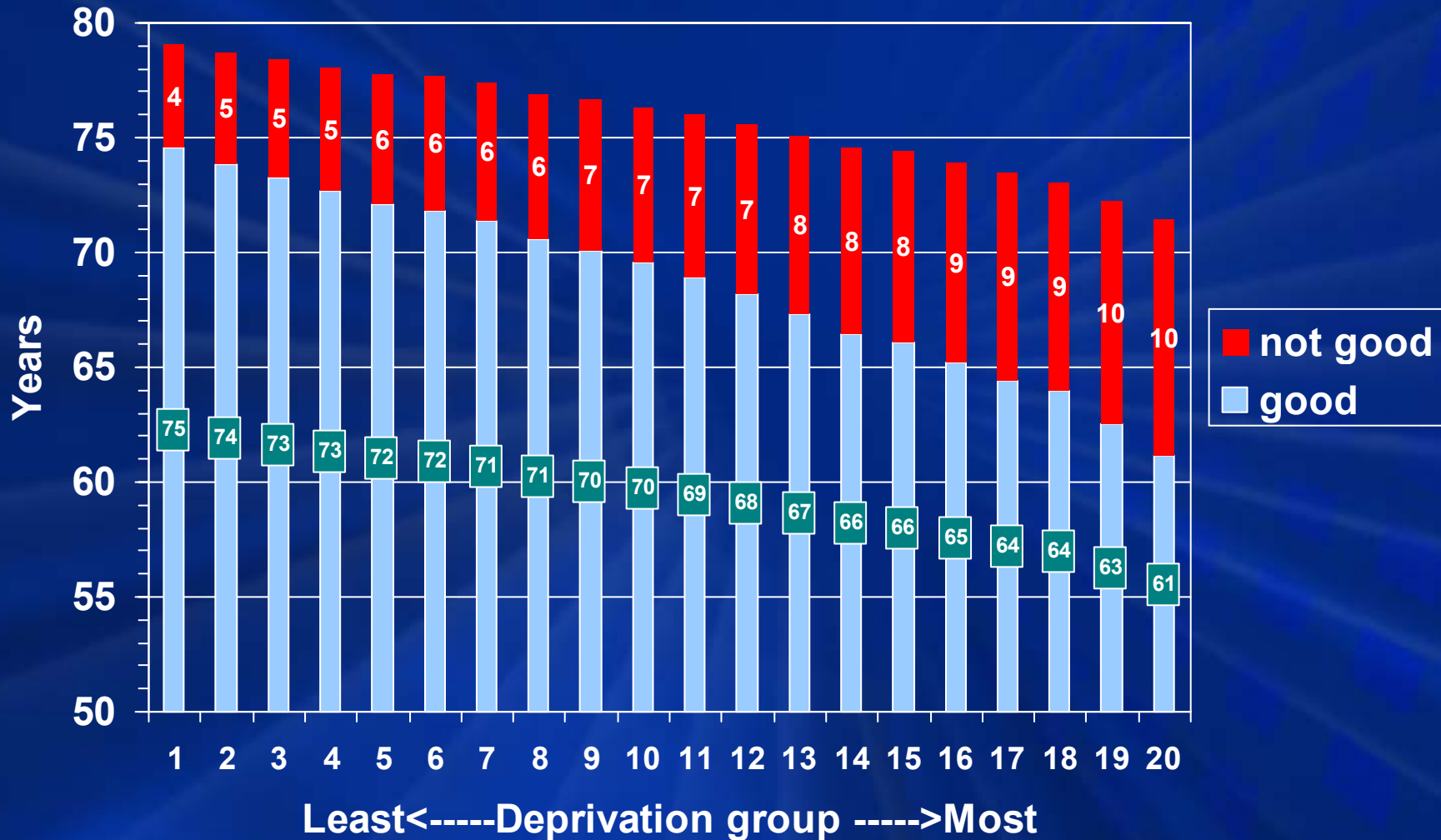
- Data sources: ward level, E&W
  - Mid-year population estimates, 2001
  - Deaths: 1999 to 2003 (n=2,691,749)
  - Health status: rates of 'good' and 'fairly good' health and with no limiting illness, 2001 Census (incl those in institutions)
  - Area deprivation: Carstairs index of deprivation, 2001
  - Area typology: ONS Classification of Areas, 2001
- Method:
  - Abridged life tables (<1, 1-4,5-9..85+)
  - Sullivan's method to calc health expectancies

# Results:

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- In this presentation, we focus on results for:
  - Health life expectancy (HLE)
  - Males
  - At birth
  - Wards (n= 8000, av pop 5,500)
- Comparative (by deprivation, region, area type)
- Linear regression (socio-economic predictors)

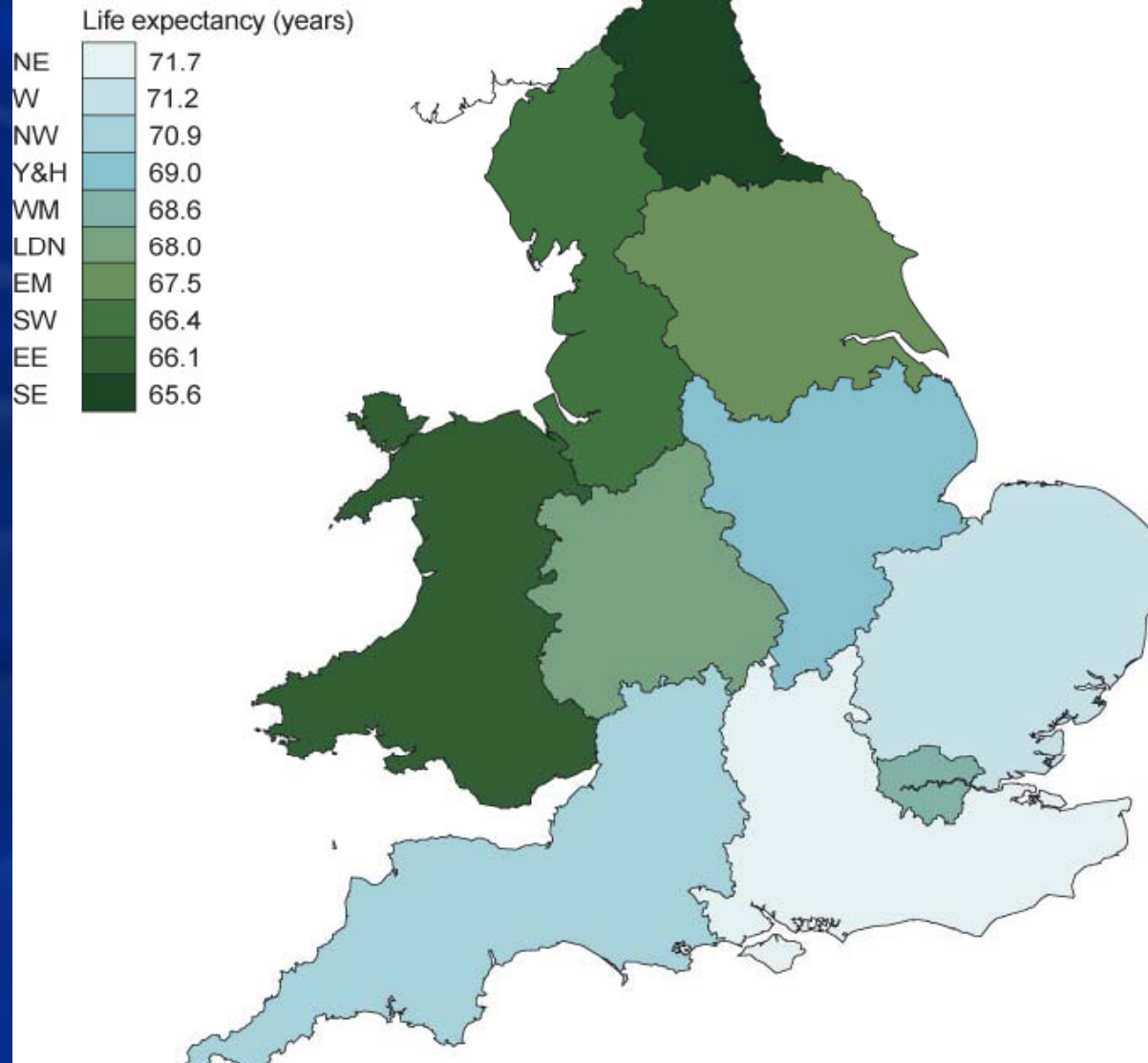
# HLE by deprivation 20ths: Males@birth



# Magnitude of health inequalities: deprivation 20ths, Males@birth, E&W, 2001

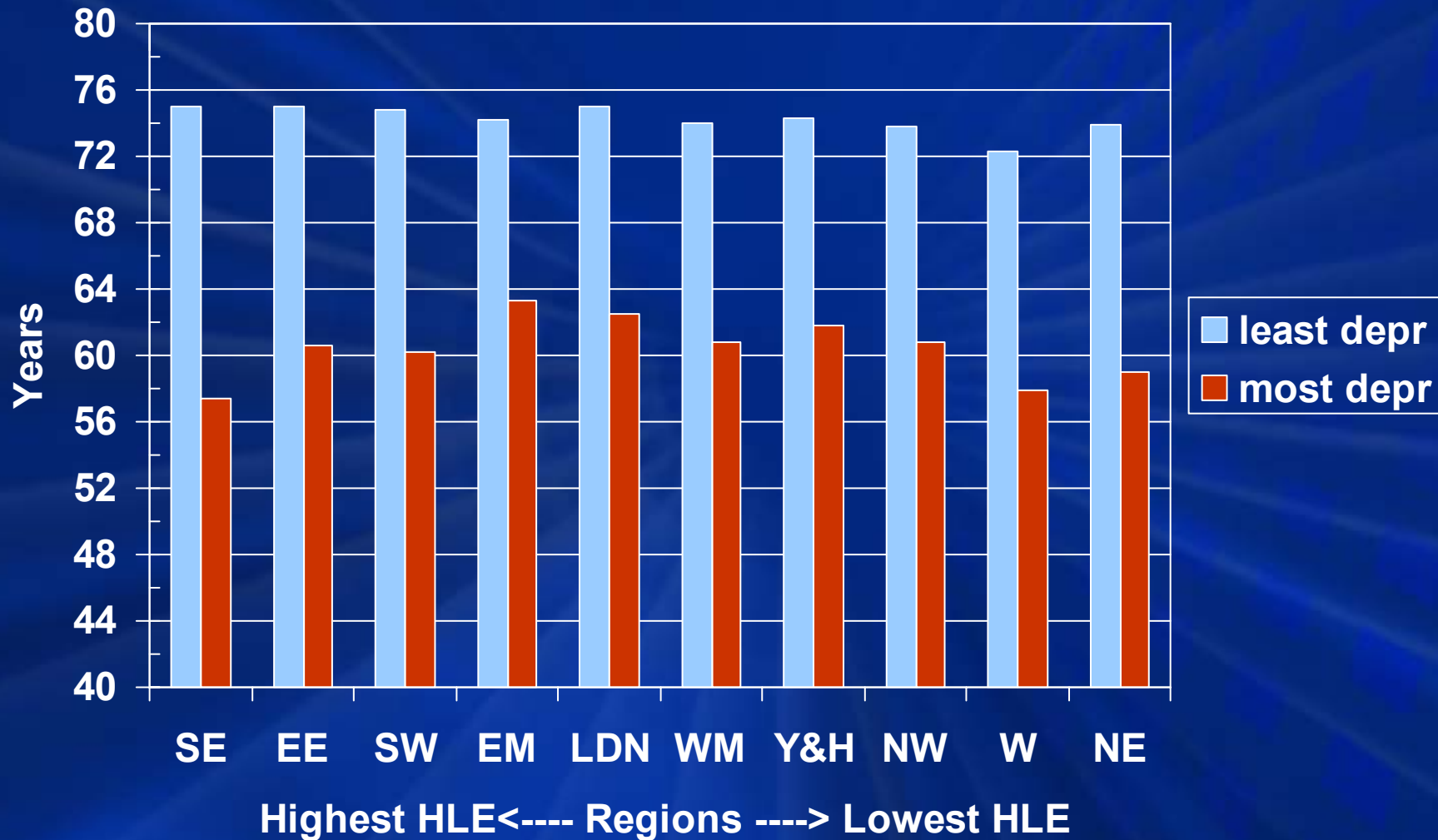
	LE (years)	HLE (years)	Not-good health	% life in not-good
E & W	75.9	68.8	7.1	9.3
Least depr (1)	79.1	74.6	4.5	5.7
Most depr (20)	71.5	61.2	10.3	14.4
<i>Absolute diff</i>				
Diff (1-20)	7.6	13.4	5.8	8.8
Slope Index	7.6	13.2	5.7	
<i>Relative diff</i>				
Rate ratio (20/1)	1.1	1.2	2.3	2.6
Relative Index	1.1	1.2	2.3	

# Healthy Life Expectancy at birth for Males by Region, England & Wales, 2001

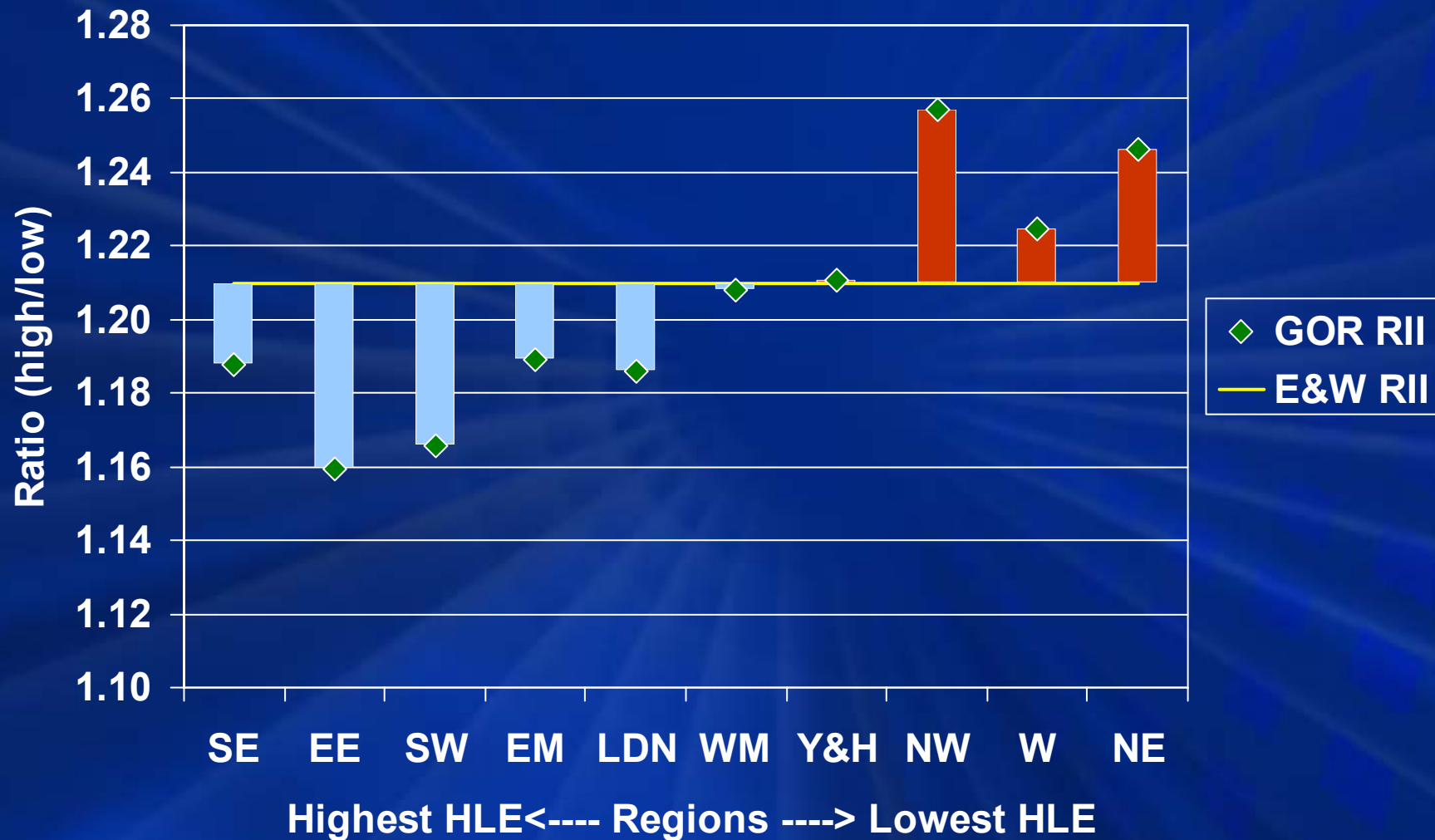




# Within-Region differences in HLE: least & most deprived wards



# Within-Region differences in HLE: Relative Index of Inequality



# By ONS Area Type ( 16 Groups)

	<b>HLE</b>	<b>Not good</b>	<b>LE</b>
<b>Built-up Manufacturing</b>	<b>61.3</b>	<b>10.4</b>	<b>71.8</b>
<b>Transitional Economies</b>	<b>63.8</b>	<b>9.0</b>	<b>72.8</b>
<b>Built-up Areas</b>	<b>64.2</b>	<b>8.3</b>	<b>72.5</b>
<b>Inner City Multicultural</b>	<b>64.2</b>	<b>8.8</b>	<b>73.1</b>
<b>Multicultural Areas</b>	<b>64.5</b>	<b>8.9</b>	<b>73.4</b>
<b>Out of Town Housing</b>	<b>66.0</b>	<b>8.2</b>	<b>74.2</b>
<b>Industrial Areas</b>	<b>66.9</b>	<b>8.4</b>	<b>75.3</b>
<b>Student Communities</b>	<b>68.4</b>	<b>6.9</b>	<b>75.3</b>
<b>Out of Town Manufacturing</b>	<b>68.5</b>	<b>7.3</b>	<b>75.8</b>
<b>Prospering Metropolitan</b>	<b>69.7</b>	<b>6.7</b>	<b>76.5</b>
<b>Countryside</b>	<b>70.3</b>	<b>6.5</b>	<b>76.9</b>
<b>Suburbs</b>	<b>71.5</b>	<b>5.8</b>	<b>77.3</b>
<b>Senior Communities</b>	<b>72.0</b>	<b>6.1</b>	<b>78.0</b>
<b>Commuter Suburbs</b>	<b>72.3</b>	<b>5.5</b>	<b>77.7</b>
<b>Prospering Suburbs</b>	<b>73.1</b>	<b>5.1</b>	<b>78.2</b>
<b>Accessible Countryside</b>	<b>73.8</b>	<b>4.7</b>	<b>78.5</b>

# Regression analysis: methods

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- HLE at individual ward level
  - Excl wards in Wales
  - Excl wards with population <1000 (or <5000 PYR)
  - Excl wards with zero population in intermediate age bands
  - **Valid wards: Males n=7125**
- Predictors
  - 50 Socio-economic variables from 2001 Census
  - 6 Domains of multiple deprivation derived mainly from administrative & survey data

# Predictors: socio-economic

% of:	Beta Coeff	Std Error	Stand. Coeff	Sig
<b>Overcrowded</b>	4.22	1.01	0.05	<1%
<b>Semi/routine occupation</b>	-2.85	0.66	-0.07	<1%
<b>Low education (NVQ1 or none)</b>	-5.91	0.59	-0.15	<1%
<b>Unemployed (of EA)</b>	-19.00	1.78	-0.13	<1%
<b>Lone pensioner</b>	14.28	0.99	0.13	<1%
<b>Non-white ethnic (inc mixed)</b>	1.11	0.35	0.03	2%
<b>Informal carers</b>	-7.36	1.92	-0.03	<1%
<b>Married/Cohabiting</b>	18.18	0.74	0.37	<1%
<b>Multi-deprived HH (3/4)</b>	-34.89	1.16	-0.40	<1%
<b>Hi market value housing</b>	2.35	0.24	0.08	<1%
<b>Rural</b>	0.09	0.06	0.01	8%
<b>Constant</b>	64.65			
<b>Adj R-sq</b>	0.82			

# Predictors: domains of deprivation (IMD2004)

	Beta Coeff	Std Error	Stand. Coeff	Sig
<b>Income Deprivation</b> (on income benefits)	-9.53	0.791	-0.19	<1%
<b>Employment Deprivation</b> (registered unemployed)	-34.79	0.940	-0.48	<1%
<b>Education/Skills Deprivation</b> (e.g. not in educ 16+, adults <64 with low/no quals)	-0.04	0.003	-0.13	<1%
<b>Barriers to Housing &amp; Services</b> (e.g. access to shops, GP)	0.02	0.002	0.04	<1%
<b>Crime</b> (incidence)	-0.65	0.045	-0.11	<1%
<b>Environment</b> (house condition, air quality)	-0.03	0.002	-0.08	<1%
<b>Constant</b>	74.91			
<b>Adj R-sq</b>	0.82			

# Summary of results

- Males in the most depr wards spend more than twice the proportion of their life in poor health compared to men in the least depr wards (14% vs 6%)
- Within-Region, inequality gradient largest in North West, and smallest in East of Eng.
- Multiple deprivation within hhld, high unemployment, low education, crime, poor physical environment, all reduce HLE.
- HLE is higher in areas with high % of couple families, high-value housing and in prosperous suburbs.
- After controlling for other factors, HLE higher in areas with high % of ethnic minorities, but not in rural areas

# Future work plan

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- Decompose gap in HLE between deprivation groups by age and cause to inform targeted policy action
- Compare Census and Survey-based HLE for non-institutional populations (impact of non-response on HLE level and trends)
- Compare health-adjusted LE using the 3-point and 5-point general health questions.
- Use Health Survey data to identify how different health conditions and individual characteristics affect reporting of SAH





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