

Emerging Trends in Mortality and Longevity Symposium 2011

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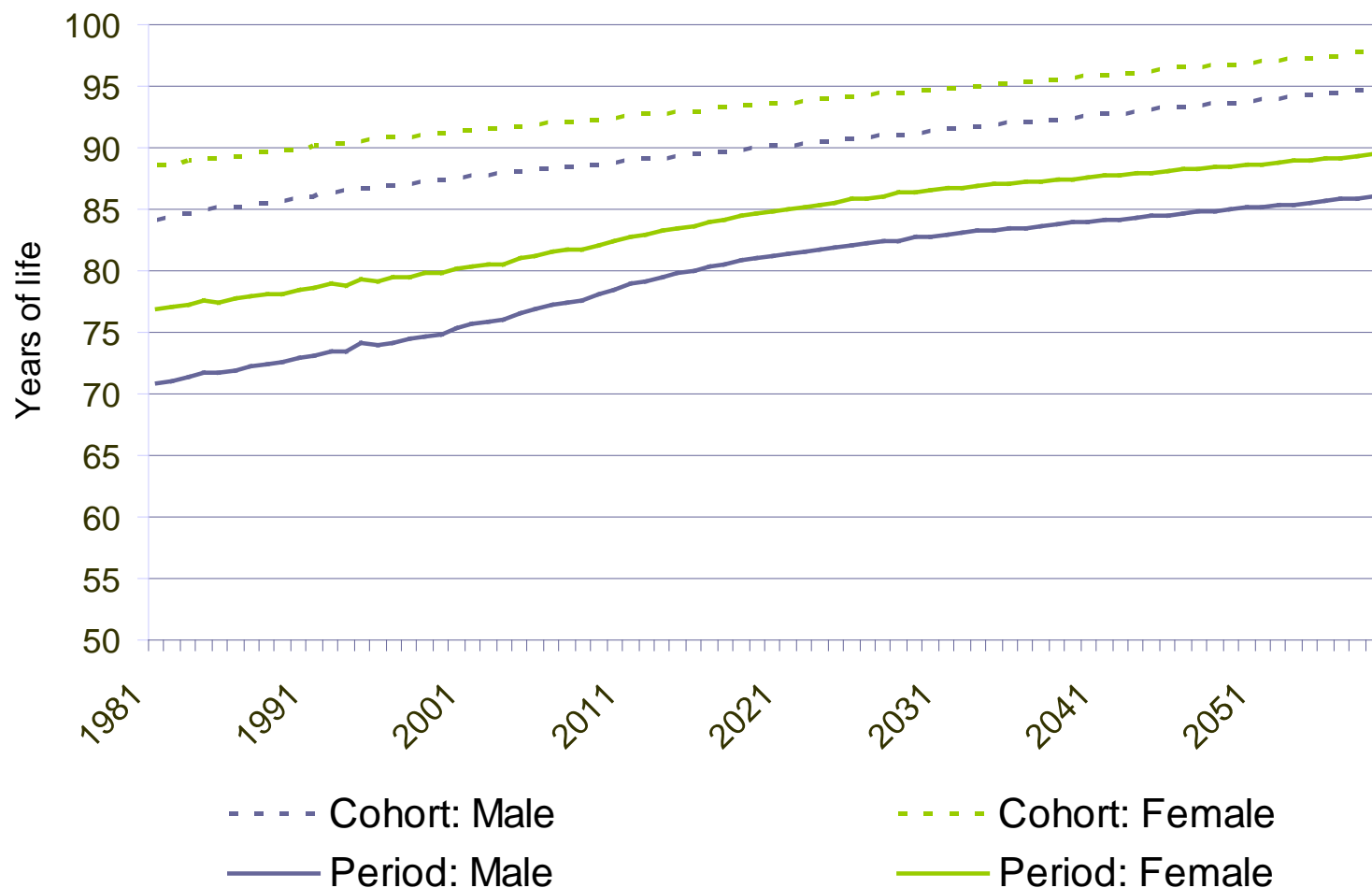


Overview of known patterns and trends in longevity

Overview structure

- Long-term trends in period and cohort life expectancy
- Geographical differences in longevity
- Geographical differences: methodological issues
- Socioeconomic differences in longevity
- Socioeconomic differences: methodological issues

Trend in cohort and period life expectancy at birth, UK 1981-2058 (ONS principal projection)



Period life expectancy by age, UK 1981 and 2058 (ONS principal projection)



Period life expectancy at birth and age 65, by country, UK 2007-09

Years of life

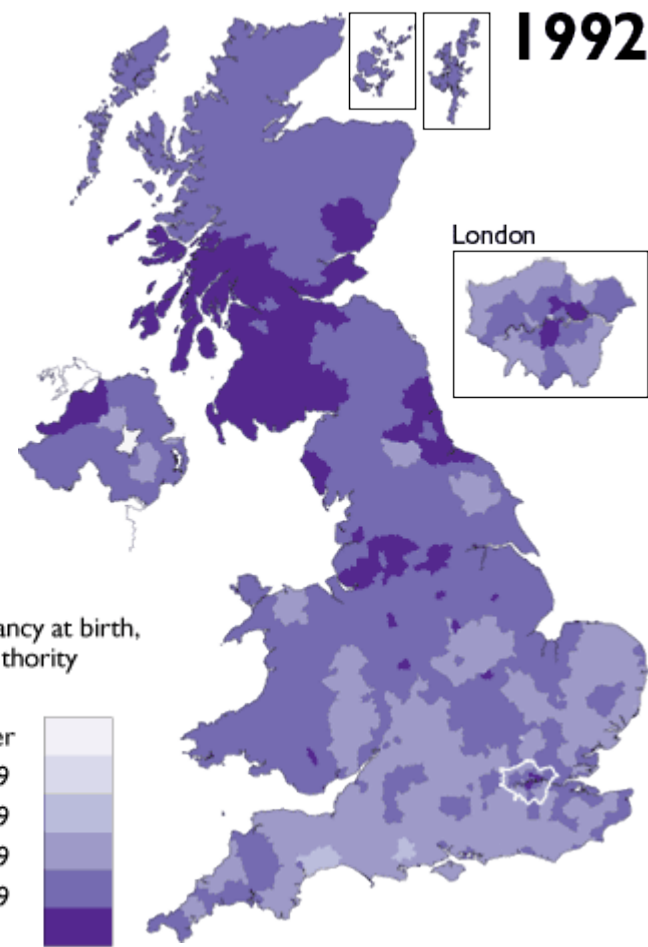
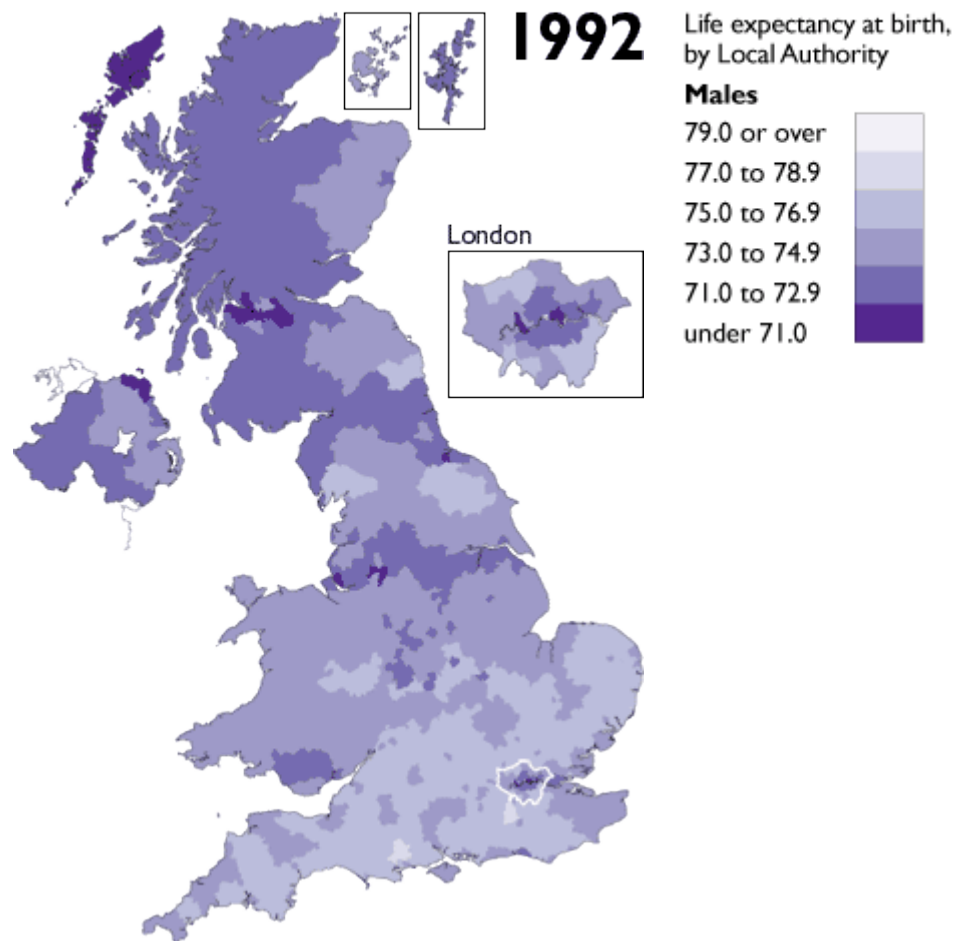
Country	Male		Female	
	At birth	At 65	At birth	At 65
England	78.3	18.0	82.3	20.6
Wales	77.2	17.4	81.6	20.1
Scotland	75.4	16.5	80.1	19.1
Northern Ireland	76.8	17.2	81.4	20.0
United Kingdom	77.9	17.8	82.0	20.4
Difference between UK countries	2.9	1.5	2.2	1.5

Period life expectancy at birth and age 65, highest and lowest country/region, UK 2007-09

Years of life

Country or region	Male		Female	
	At birth	At 65	At birth	At 65
South East of England	79.4	18.7	83.3	21.3
North West of England	76.6	17.0	80.8	19.5
Scotland	75.4	16.5	80.1	19.1
Difference within England	2.8	1.7	2.5	0.8
Difference within UK	4.0	2.2	3.2	1.2

Period life expectancy at birth, local authorities, UK 1992 to 2007



Period life expectancy at birth and age 65, highest and lowest local authorities, UK 2007-09

Years of life

Local authority area	Male		Female	
	At birth	At 65	At birth	At 65
Kensington and Chelsea	84.4	23.7	89.0	26.5
Glasgow City	71.1	13.9	77.5	17.6
Difference between UK local authorities	13.3	9.8	11.5	8.9
Difference between regions in England	2.8	1.7	2.5	0.8
Difference between UK countries	2.9	1.5	2.2	1.5

Period life expectancy at birth by electoral ward, England and Wales, 1999-2003

- Life expectancy for all persons
- **Highest ward: 93.4 years (in East of England)**
- **Lowest ward: 65.4 years (in South East)**
- **Difference between highest-lowest: 28.0 years**
- Not all wards could be calculated
- Some extreme outliers excluded, e.g. 120 years
- Significant impact of clusters of nursing homes and hospices (around -2 years)

Geographical differences in longevity: key findings

- There are clear and well-known geographical patterns in longevity (the North-South divide)
- Smaller geographical units reveal greater differences in longevity, but with decreasing statistical reliability
- The difference between highest and lowest areas at ward level is around twice that at local authority level and ten times that at regional level
- Larger areas are not homogenous, e.g. the wards with highest and lowest life expectancy are not in the highest and lowest regions

Geographical differences in longevity: key methodological points

- All deaths can in principle be allocated at postcode level, subject to minor technical limitations
- Geography of deaths relates to place of last residence, not birth or longer-term residence
- The predictive value of place-based analysis is reduced by social change and migration, e.g. gentrification
- Smaller geographical units reveal greater differences in longevity, but with decreasing statistical reliability
- There is an absolute threshold around 5,000 population below which life expectancy calculation is not feasible

Period life expectancy at birth by NS-SEC class, males, England and Wales 1982-06 to 2002-06

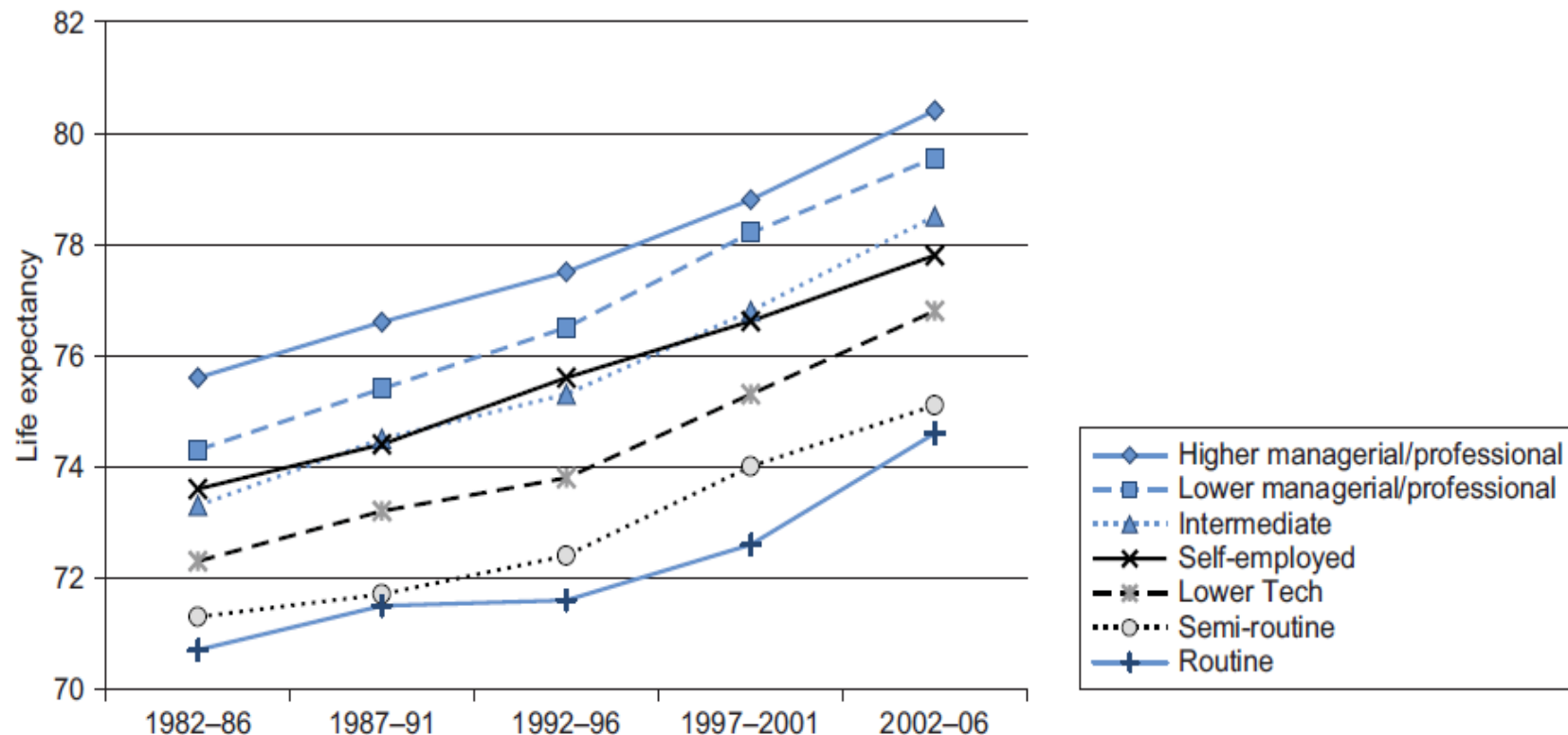
Years of life

NS-SEC class	1982-86	1992-96	2002-06
1. Higher managerial & professional	75.6	77.5	80.4
2. Lower managerial & professional	74.3	76.5	79.6
3. Intermediate	73.3	75.3	78.5
4. Small employers & own a/c workers	73.6	75.6	77.8
5. Lower supervisory & technical	72.3	73.8	76.8
6. Semi-routine	71.3	72.4	75.1
7. Routine	70.7	71.6	74.6
Difference highest-lowest	4.9	5.9	5.8

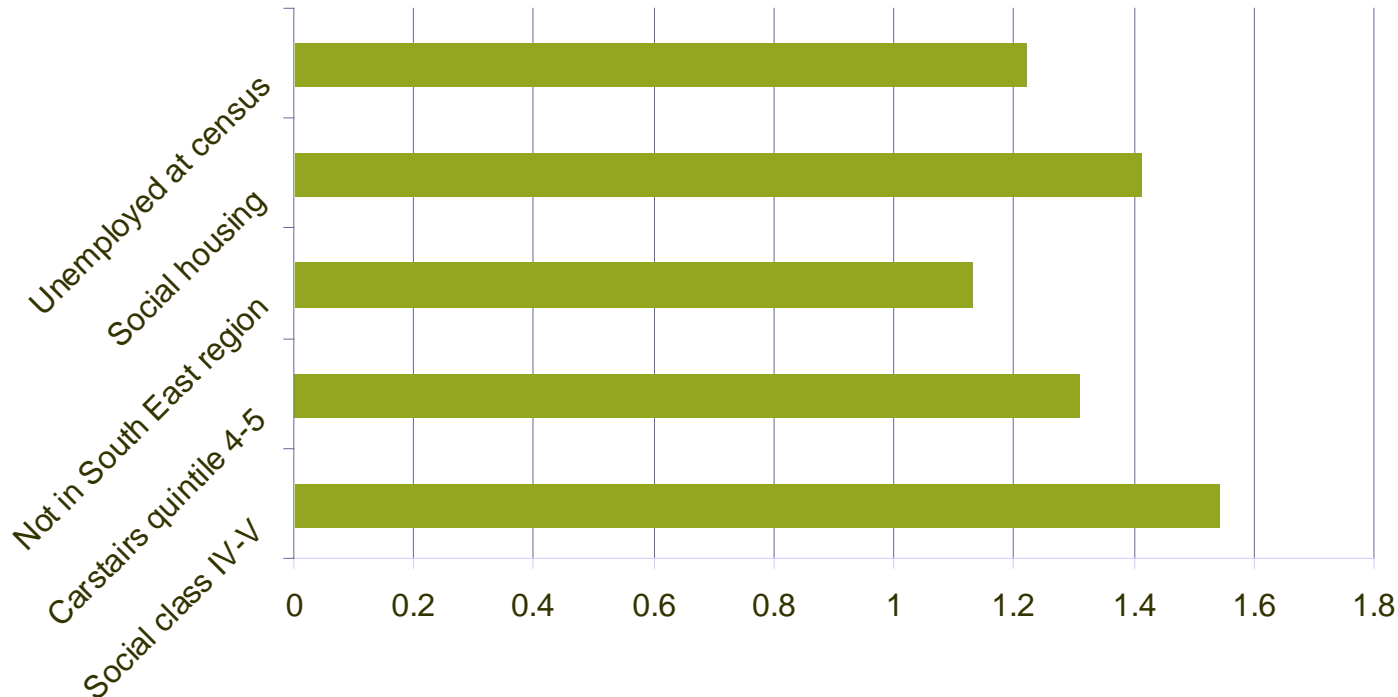
Period life expectancy at birth by NS-SEC class, females, England and Wales 1982-06 to 2002-06

NS-SEC class	Years of life		
	1982-86	1992-96	2002-06
1. Higher managerial & professional	80.9	82.3	83.9
2. Lower managerial & professional	79.7	81.2	83.4
3. Intermediate	79.6	81.4	82.7
4. Small employers & own a/c workers	79.1	80.7	82.6
5. Lower supervisory & technical	78.5	79.4	80.4
6. Semi-routine	78.1	79.2	80.6
7. Routine	77.1	78.3	79.7
Difference highest-lowest	3.8	4.0	4.2

Period life expectancy at birth by NS-SEC class, males, England and Wales 1982-06 to 2002-06

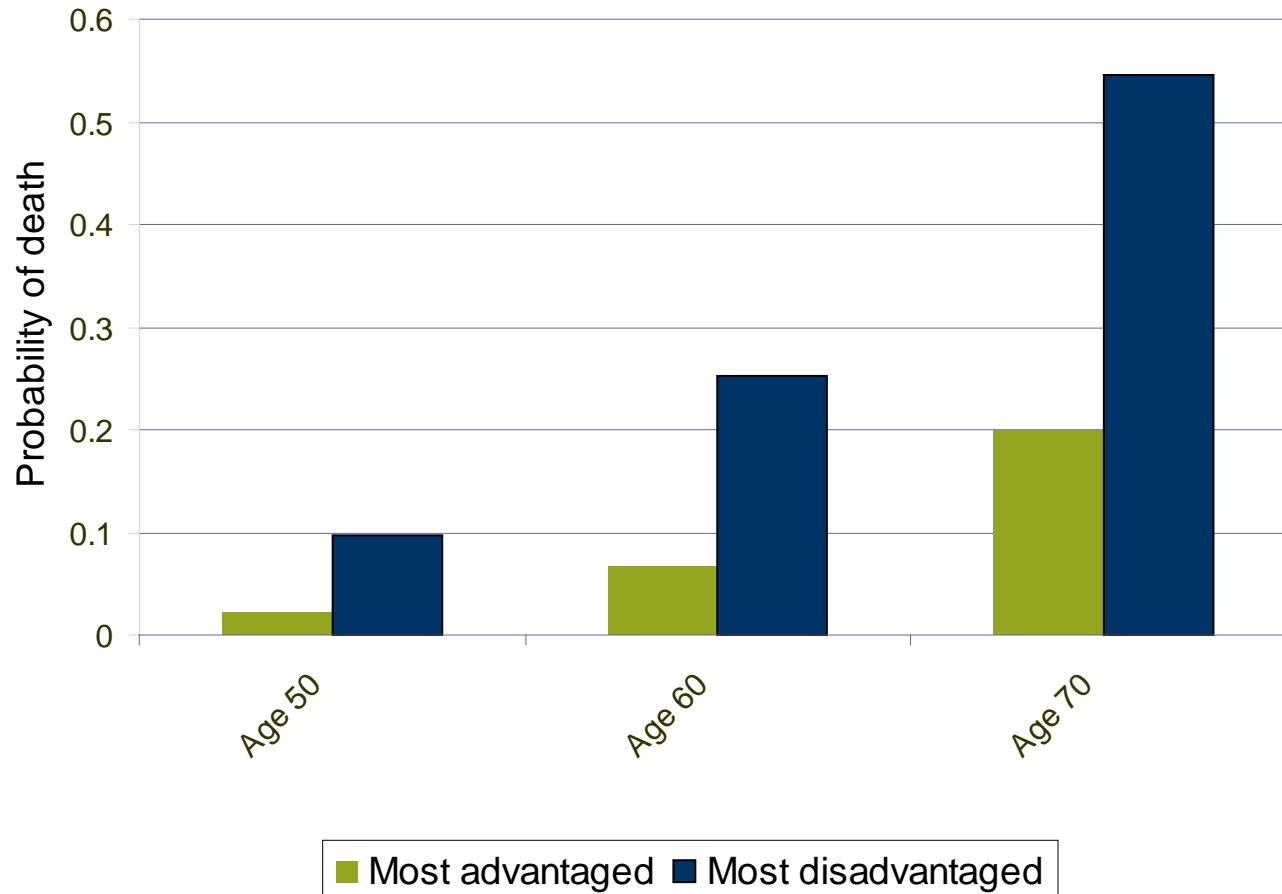


Increased odds of death by selected social characteristics, males, E&W 1995-2001



Odds relative to most advantaged comparator

Probability of death by selected social characteristics, males, E&W 1995-2001



Socio-economic differences in longevity: key findings

- There are consistent patterns of inequality in life expectancy, using a variety of socio-economic measures
- Patterns are clearer in male life expectancies than in female
- Longevity has increased over time for all socio-economic groups, but not equally
- Characteristics of disadvantage can have a cumulative effect on longevity

Socio-economic differences in longevity: key methodological points

- Analysis of mortality/longevity by socio-economic factors is complex, and uninformed use leads to errors
- The most important data source is the ONS Longitudinal Study, but this has its own limitations
- Analysis of socio-economic patterns in female mortality is difficult for both practical and conceptual reasons: ONS now tends to use a household-based measure
- Combination of socio-economic and geographical factors has to be done with caution but can be powerful

Questions or comments?

Expressions of individual views by members of The Actuarial Profession and its staff are encouraged.

The views expressed in this presentation are those of the presenter.

