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# **Does migration between differently deprived areas at different ages lead to health inequalities?**

Inequalities Research Network workshops 2017-18

**Inter-disciplinary perspectives into 'Researching Inequalities'**

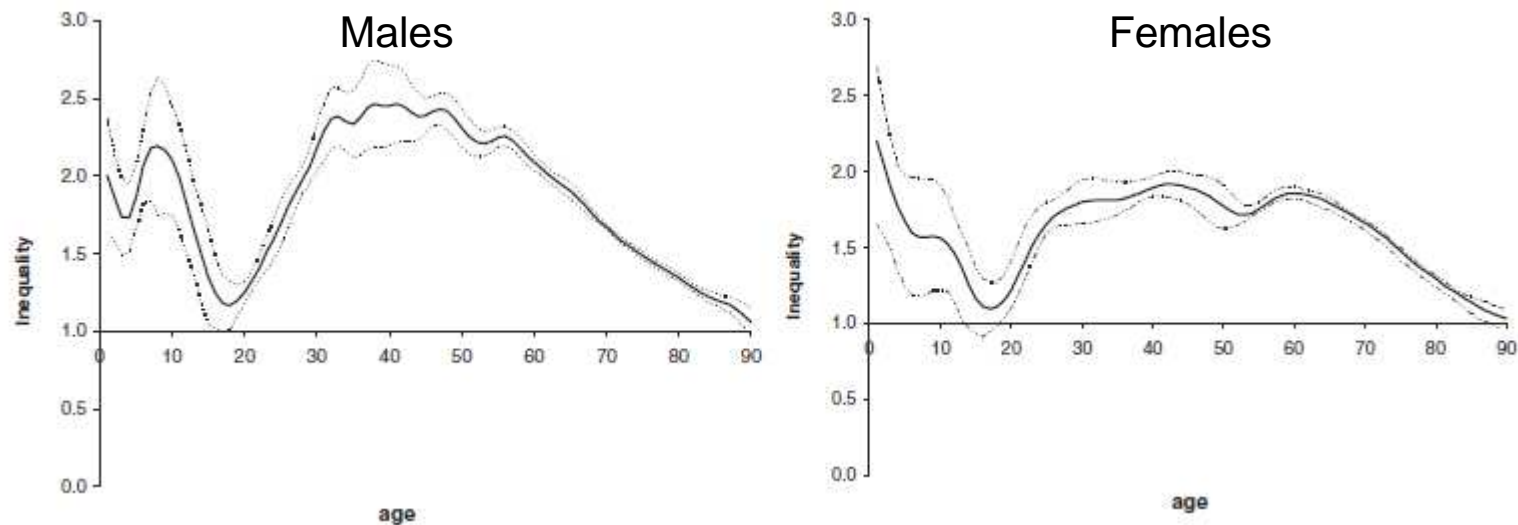
Paul Norman  
School of Geography  
University of Leeds

# Are health inequalities evident at all ages?

There are well established health – deprivation relationships  
The notion that mortality inequalities across area deprivation may vary by age is logical

- Not every cause of death increases with age
- Not every cause of death related to the deprivation

Mortality (1997-99) ratio most : least deprived IMD quintile

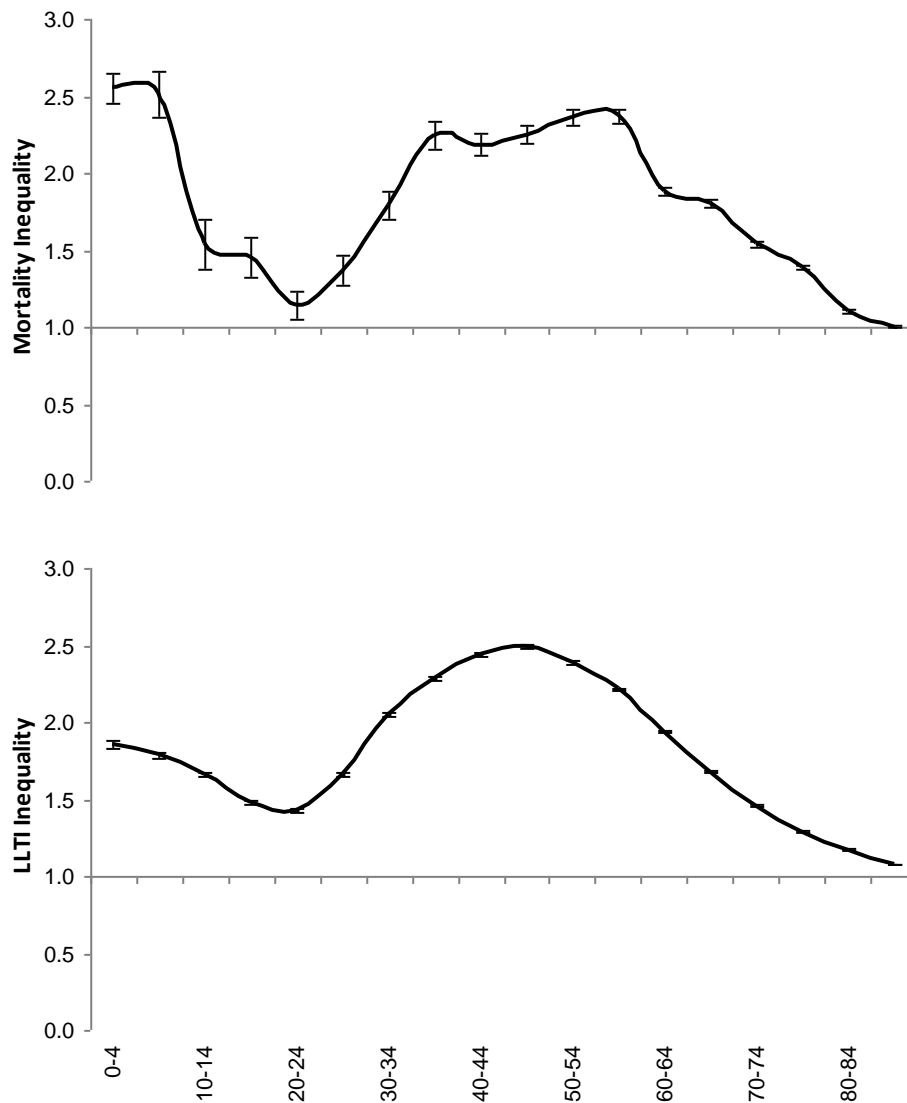


(Dibben & Popham, 2012 for England)

# Cross-sectional inequalities by age

England & Wales  
Ratio Most : Least deprived  
by Carstairs quintile

Mortality  
(2000-02)



Limiting long-term illness  
(2001)

# Variations by age: an alternative / additional 'explanation'

In addition to the cause–age & cause–deprivation relationships ...

Population migration may redistribute the population such that the health–deprivation relationship varies by age

Proposition based on:

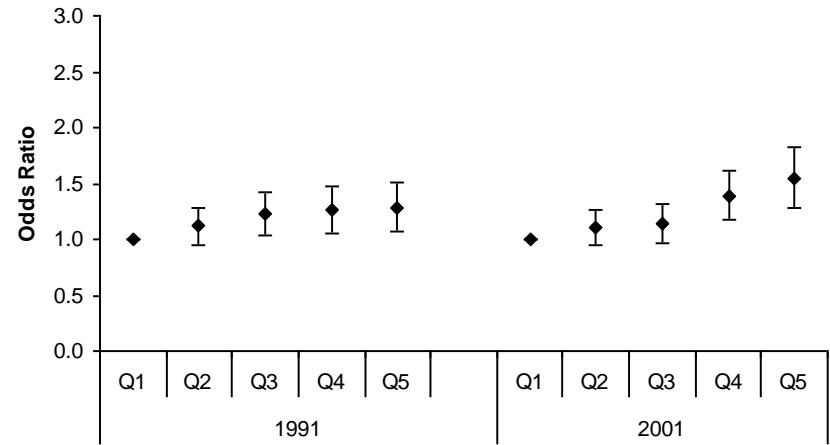
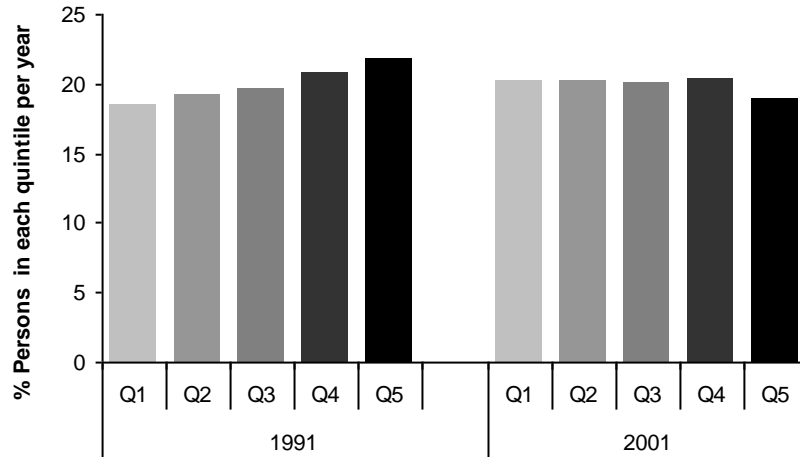
- Distinctive age schedule of migration
- Types of areas people typically move from & to at different ages
- Migration process itself is health selective

Using ONS Longitudinal Study for England & Wales, residents in households:

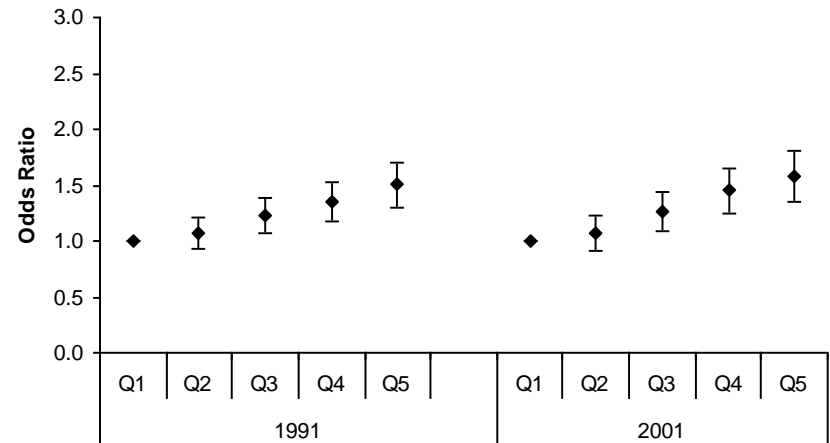
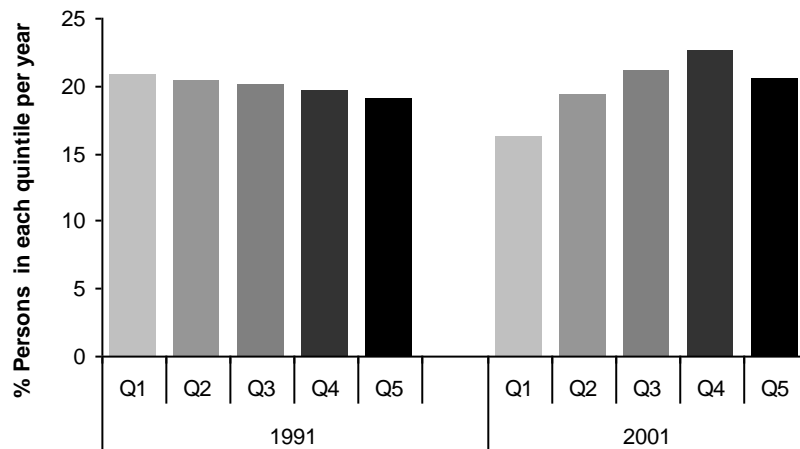
- Aggregations of individuals by deprivation quintile at two time points ...

# LLTI inequalities by age

## Age 0-9 in 1991 & 10-19 in 2001

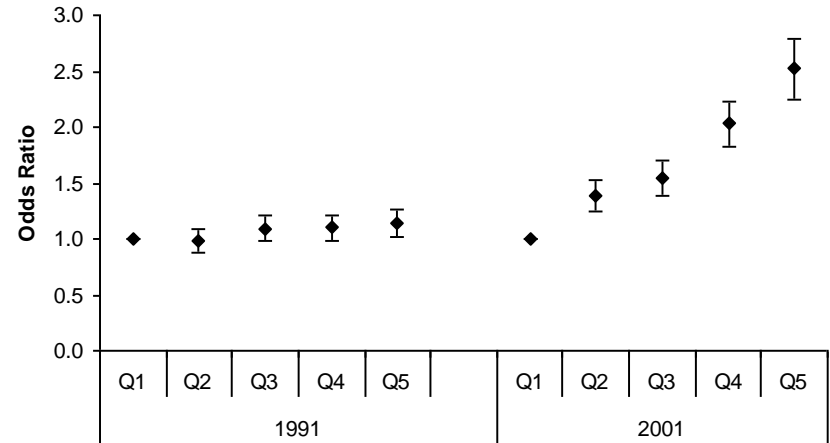
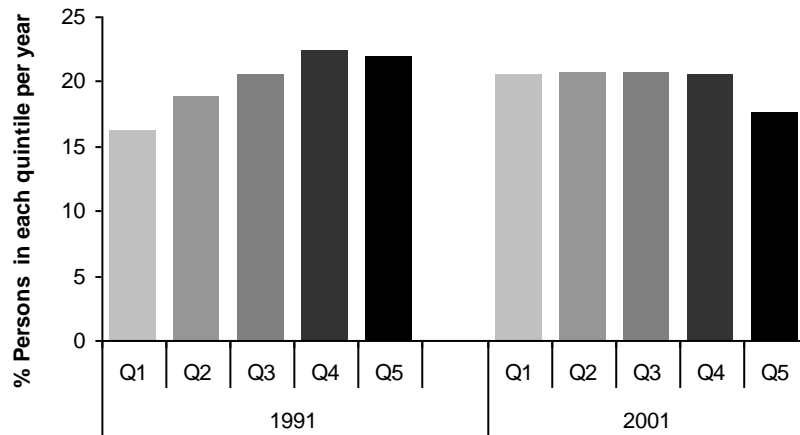


## Age 10-19 in 1991 & 20-29 in 2001

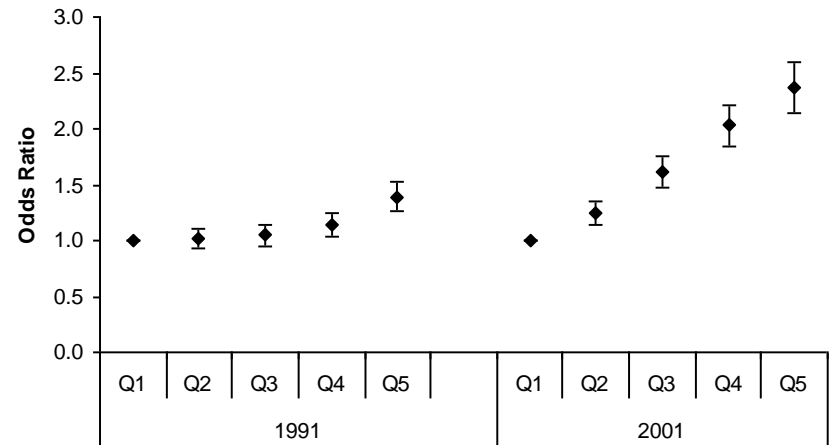
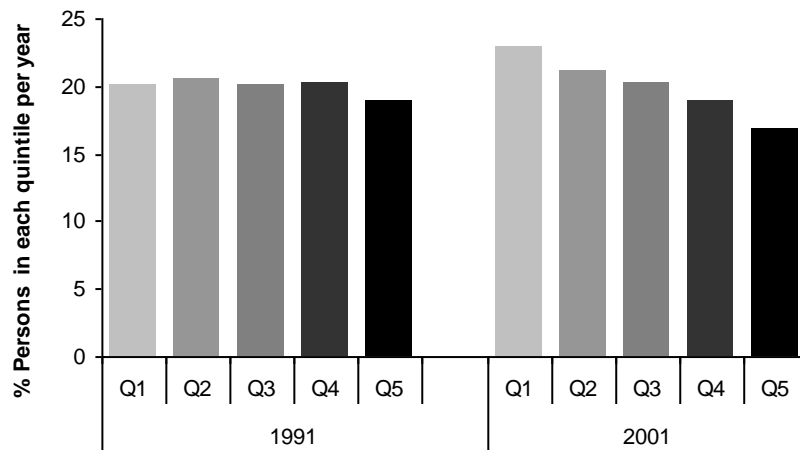


# LLTI inequalities by age

## Age 20-29 in 1991 & 30-39 in 2001

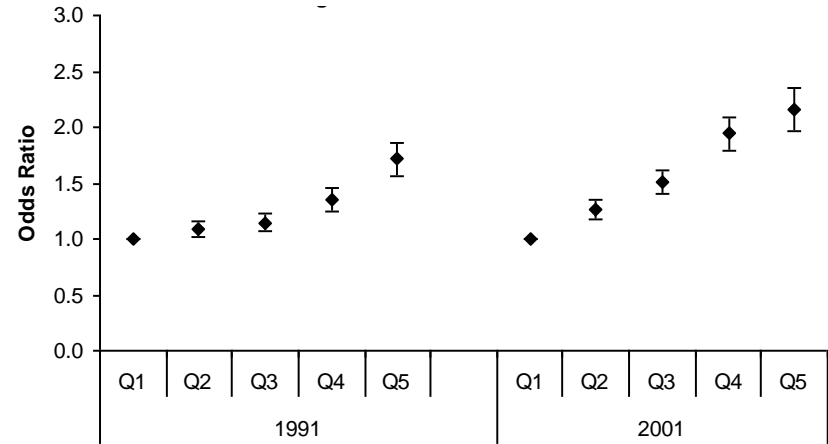
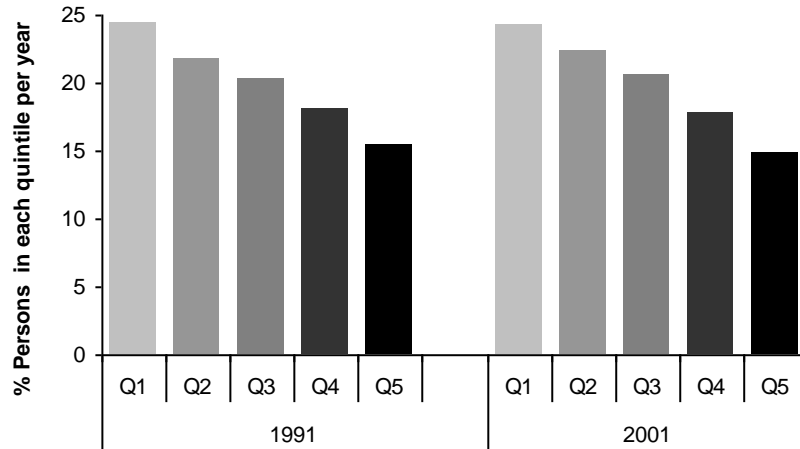


## Age 30-39 in 1991 & 40-49 in 2001

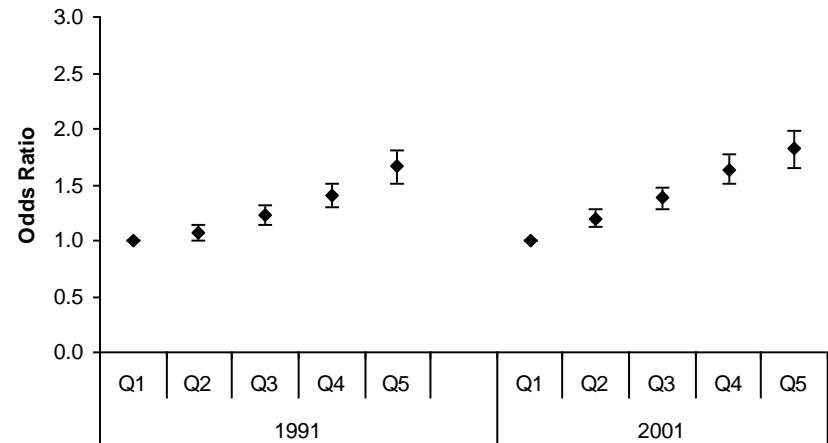
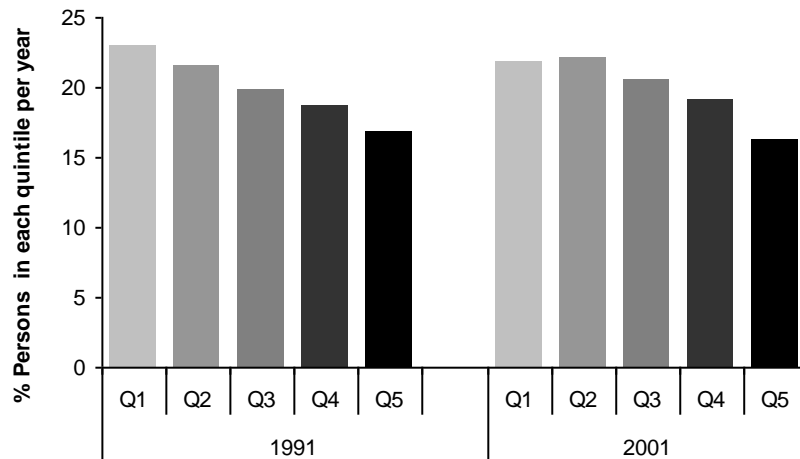


# LLTI inequalities by age

## Age 40-49 in 1991 & 50-59 in 2001



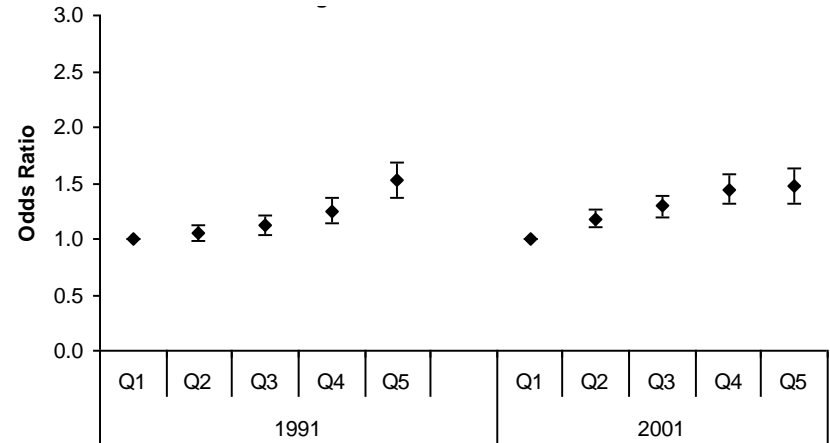
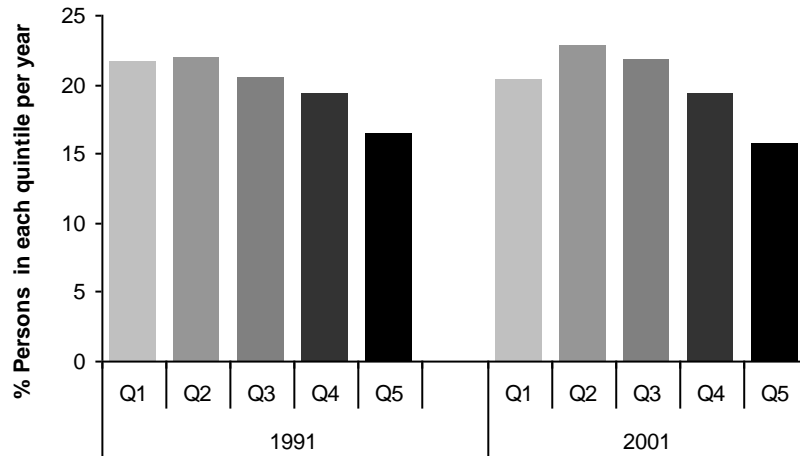
## Age 50-59 in 1991 & 60-69 in 2001



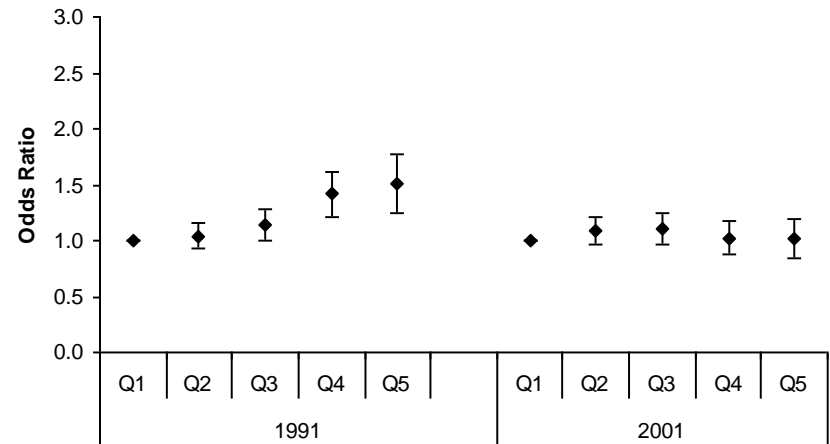
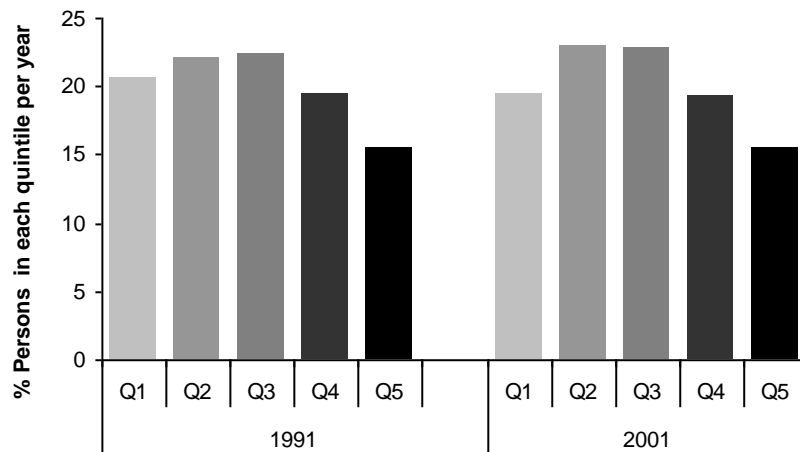


# LLTI inequalities by age

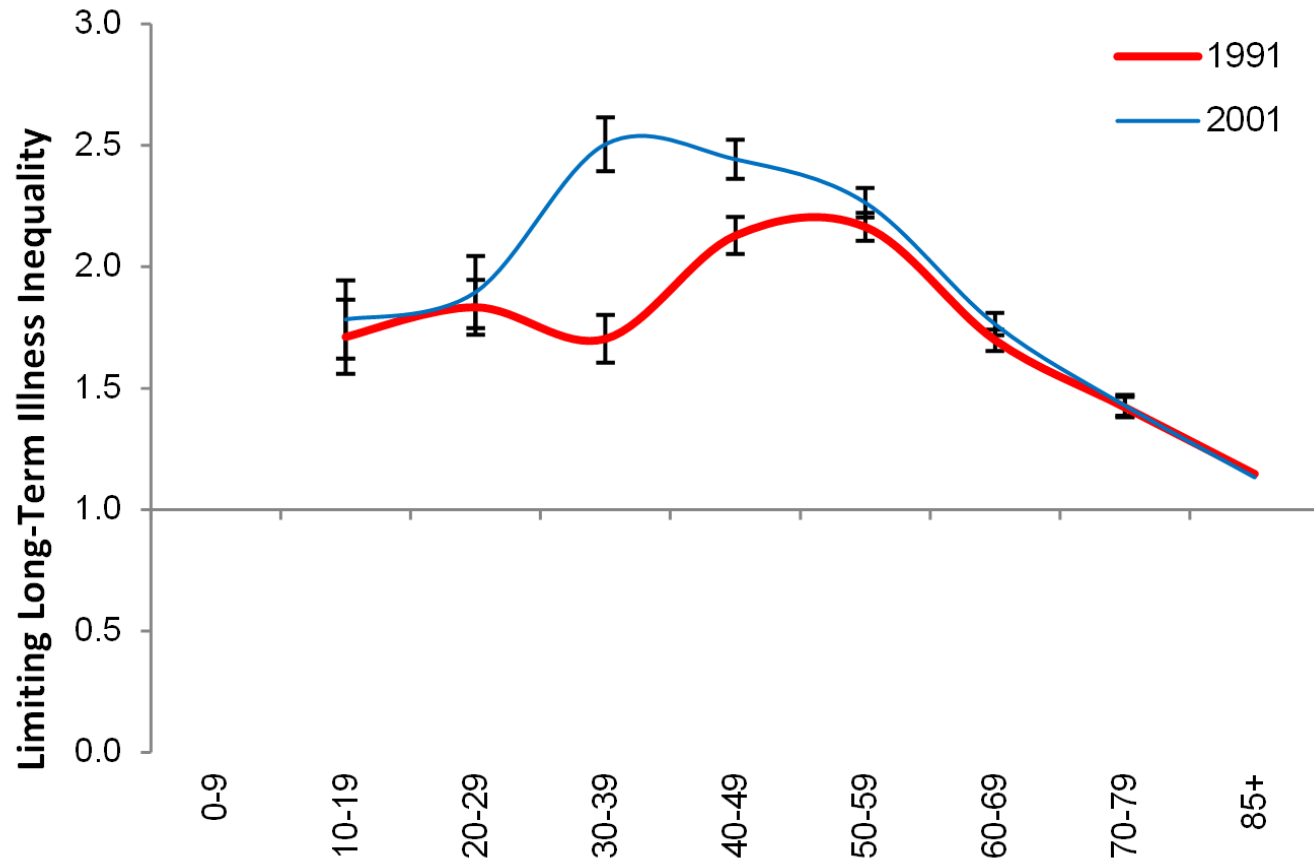
## Age 60-69 in 1991 & 70-79 in 2001



## Age 70-79 in 1991 & 80+ in 2001



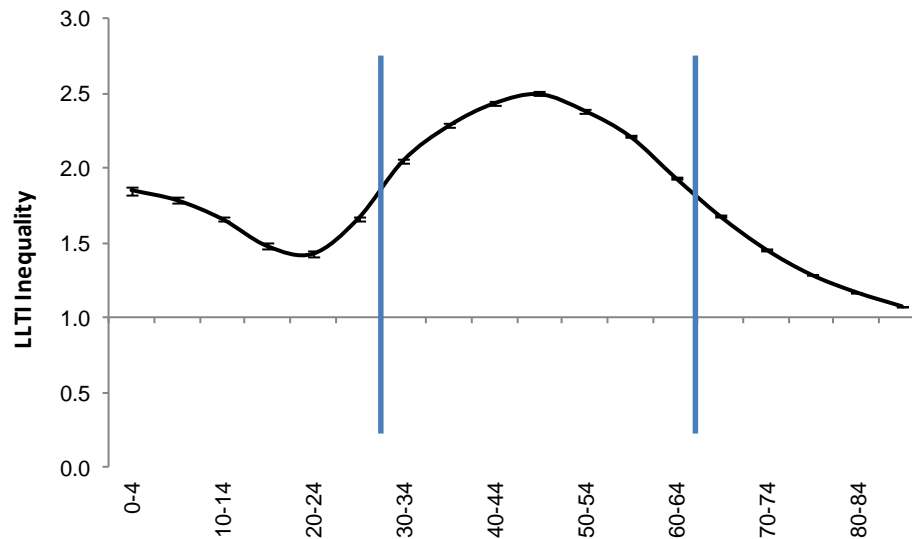
# Effect on inequality: putting people back



# How might we use this information?

## Cross-sectional investigations of health-deprivation relationships

- Direct / Indirect standardisation often all age or 'premature' (excluding elderly)
- What if other age boundaries applied?



# Postscript

Migration through the life course has strong, repeated patterns of moves between differently deprived areas (and urban-rural)

- Re-aggregating individual records across quintiles shows LLTI inequalities greatest in mid life
- Longitudinal / cohort data with individual records linked to area type at different time points can show affect of deprivation trajectories, and / or accumulations of (dis-)advantage

For example:

- 'A life course approach to neighbourhood effects' with Jivraj, Murray & Nicholas at UCL; a range of health outcomes
- 'Area trajectories & mobilities affecting CVD in New Zealand'; with Exeter & Shackleton in Auckland and Darlington-Pollock in Liverpool

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## Data suppliers

- ONS Longitudinal Study access via CeLSIUS is supported by the ESRC Census of Population Programme (award ref. H 507 25 5179), the authors alone are responsible for the interpretation of the data (LS project clearance 30033 & 30163)