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ESRC WHITE ROSE DTC NETWORK

Exploring the influence of 'selective sorting'  
between area-types and social classes on ethnic  
health gradients between 1991, 2001 and 2011:  
What can Census data tell us?

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# Context

- Ethnic inequalities in health represent a ‘significant gap in current evidence and policy’ (Nazroo, 2014)
  - Lack of understanding as to nature of ethnic health gradients and a focus on explanations based in culture or genetics
  - Inherent methodological problems of conducting quantitative research with an ethnic perspective
    - Changing categories
    - Lack of robust data
  - Lack of generalisable evidence/research

# What can we do?

- Use **existing** data to explore **wider explanations** for ethnic health inequalities.
- Test hypothesis that:  
*ethnic inequalities in health are **rooted** in socioeconomic and spatial difference and may be perpetuated by a process of **selective sorting** between area-types and social classes.*
- SARs and ONS LS – ethnic differences in health
- SARs: explore relationship between socioeconomic and spatial difference, ethnicity, health and migration
- ONS LS: explore how relationship between migration *and* deprivation change *and* social mobility *and* health varies by ethnicity

# Influence on health gradients

Area B



Area A

- Lower social classes
- Overcrowding
- Less green space
- High unemployment
- Poorer health

- Differences in health between migrants and non-migrants?
- Differences in health between the migratory flows?
- Size of the migratory flows?
- Health of those 'left behind'?
- Demographic and socioeconomic attributes of migrants and non-migrants?

- Higher social classes
- More sparsely populated
- More green space
- Low unemployment
- Better health



• **Social mobility?**

• **Variations by ethnicity?**

# Data and Methods

## SARs

- Cross-sectional extract of census data (1991, 2001, 2011...)
  - 2% and 3% sample of England and Wales
- England household population, excludes international migrants
  
- SIRs (not shown)
- Modelled odds of LLTI
- Calculated probability of LLTI for different population subgroups by migrant status, ethnicity, socioeconomic status, age and region

## ONS LS

- Longitudinal extract of census data (1971... 1991, 2001, 2011)
  - 1% of linked census and vital events data for England and Wales
- England household population, excludes international migrants
- Excludes ill at 91 (91-01) or 01 (01-11)
  
- SIRs for transition categories at extremes of deprivation scale and social class structure
  - Q1: Q5
  - I and II: IV and V
- Compare migrants and non-migrants by ethnic group

# Probability of LLTI: adjusting for demographic and socioeconomic attributes, migrant status and an interaction between migrant status and housing tenure

Probability of LLTI (1991 2001)	White	Black Caribbean	Black African	Indian	Pakistani & Bangladeshi
Non-migrant SC I&II	2.5%	2.8%	1.6%	3.2%	3.2%
	3.2%	3.4%	1.9%	4.1%	3.7%
Migrant SC I&II	2.3%	2.6%	1.5%	3.0%	3.0%
	3.0%	3.2%	1.8%	3.9%	3.4%
Non-migrant SC IV&V	3.7%	4.1%	2.4%	4.7%	4.7%
	5.0%	5.3%	3.0%	6.3%	5.7%
Migrant SC IV&V	3.4%	3.8%	2.3%	4.4%	4.4%
	4.7%	5.0%	2.8%	6.0%	5.3%

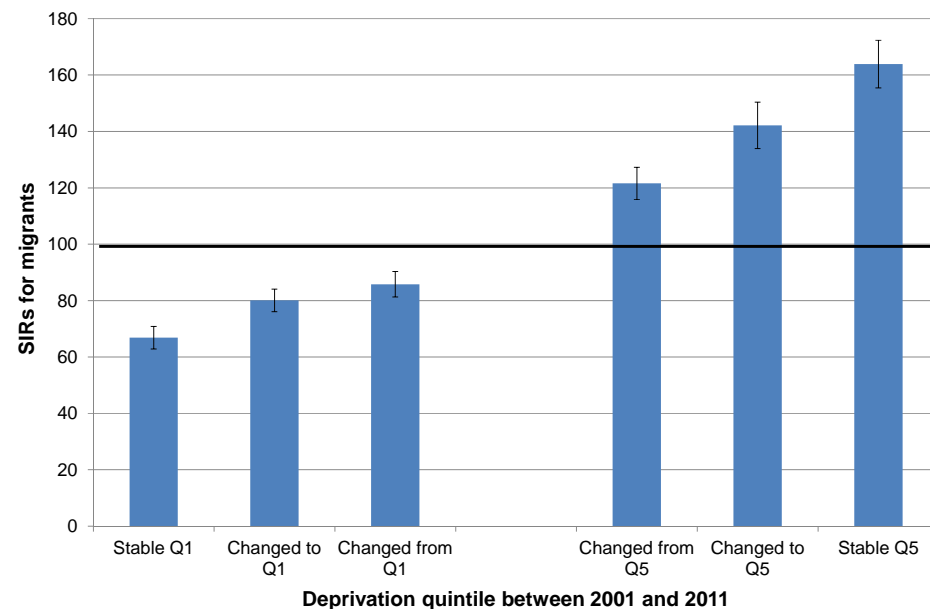
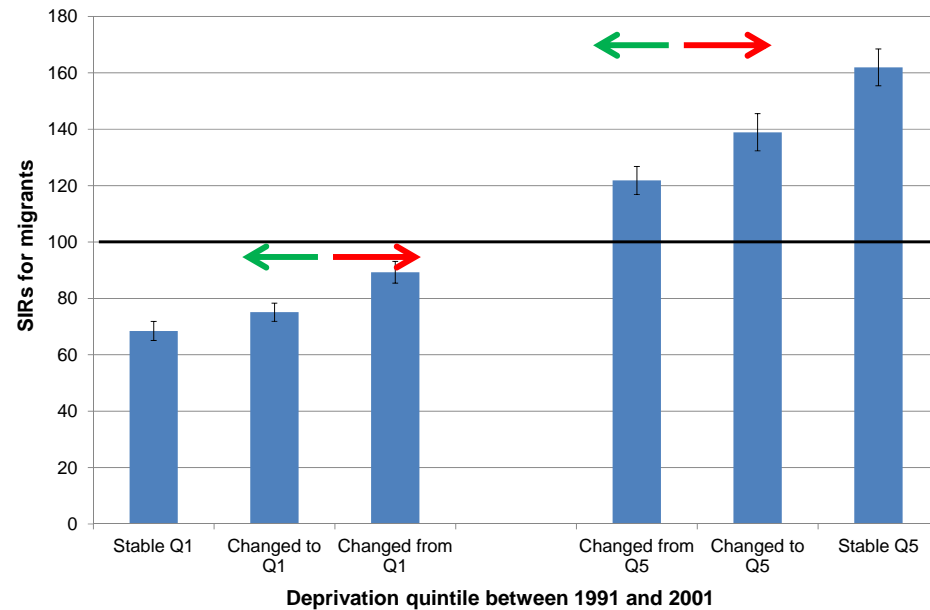
- Migrants always have a lower probability of LLTI than non-migrants
- Lower social classes have higher probability of LLTI than higher social classes
- Black Africans = lowest probability of LLTI, South Asian groups = highest probability of LLTI
- Additional difference between ethnic groups not explained by social class, tenure and education – income? Wealth?

## Predicted probabilities (LLTI): age-specific

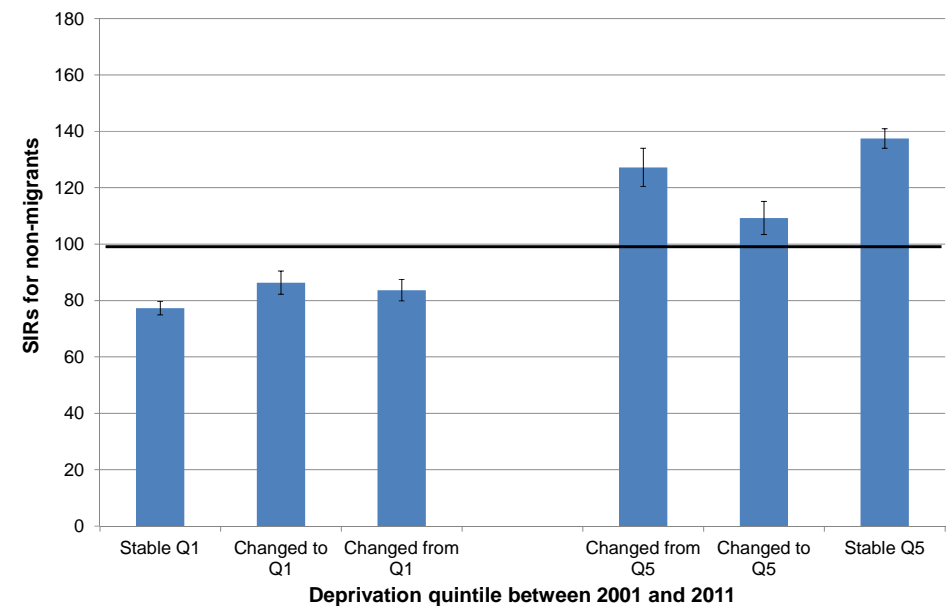
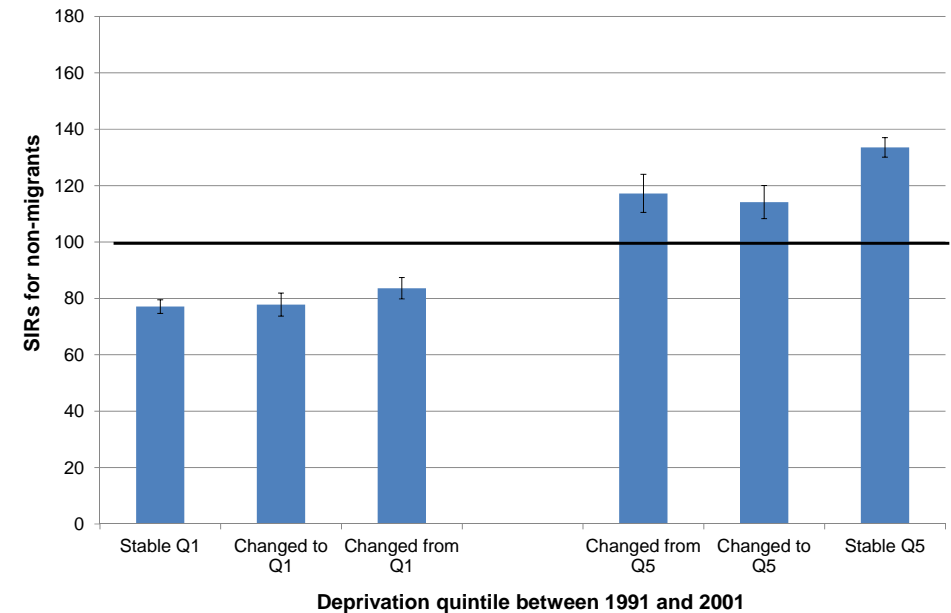
Socioeconomic and migrant status	Ethnicity	Probability of LLTI (2001)			
		16-29	30-44	45-64	65-74
Migrant, social classes I & II	White	3.3%	5.7%	17.2%	39.2%
	Indian	2.6%	6.3%	23.9%	54.6%
	Pakistani & Bangladeshi	2.9%	4.6%	23.1%	56.3%
Migrant, social classes IV & V	White	5.4%	9.6%	24.4%	42.8%
	Indian	4.3%	10.6%	32.8%	58.3%
	Pakistani & Bangladeshi	4.7%	7.9%	31.8%	59.9%
Non-migrant, social classes I & II	White	3.7%	7.0%	16.9%	37.4%
	Indian	3.0%	7.7%	23.5%	52.7%
	Pakistani & Bangladeshi	3.3%	5.7%	22.7%	54.4%
Non-migrant, social classes IV & V	White	6.1%	11.7%	24.0%	41.0%
	Indian	4.8%	12.9%	32.4%	56.0%
	Pakistani & Bangladeshi	5.3%	9.7%	31.4%	58.1%

# Deprivation change/mobility and health

## MIGRANTS



## NON-MIGRANTS

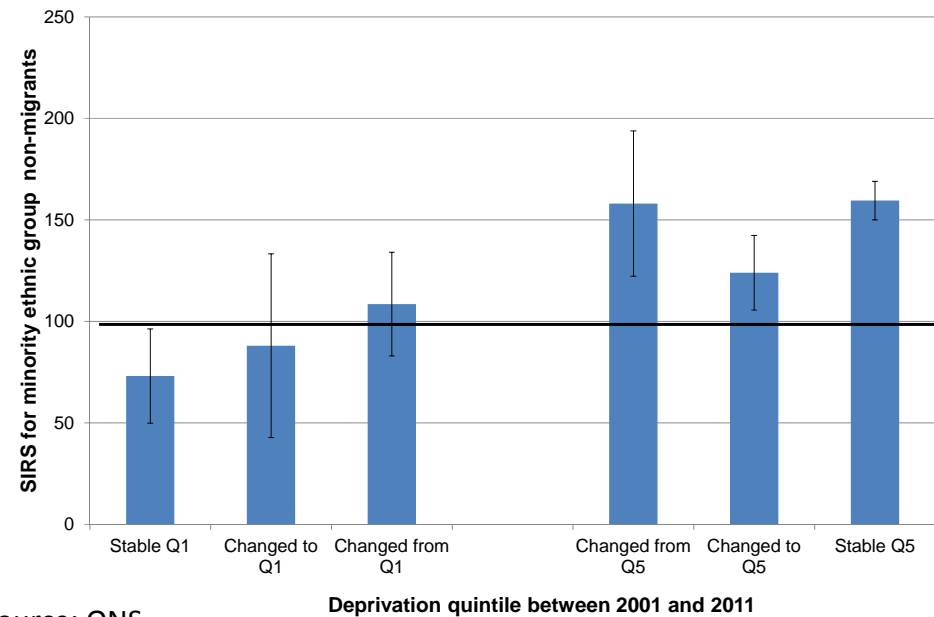
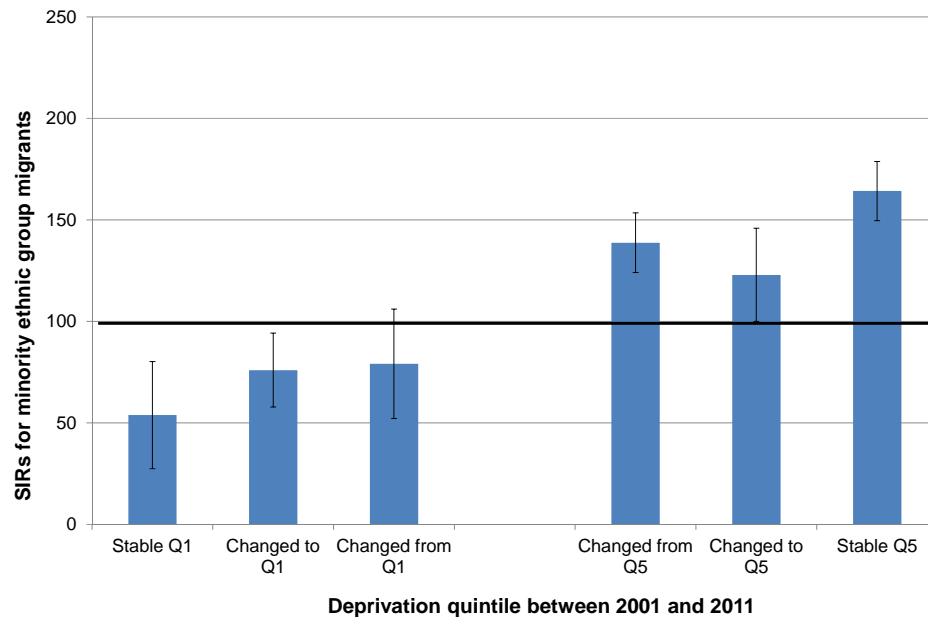




# Deprivation change/mobility and health for MEGs

## MIGRANTS

## NON-MIGRANTS

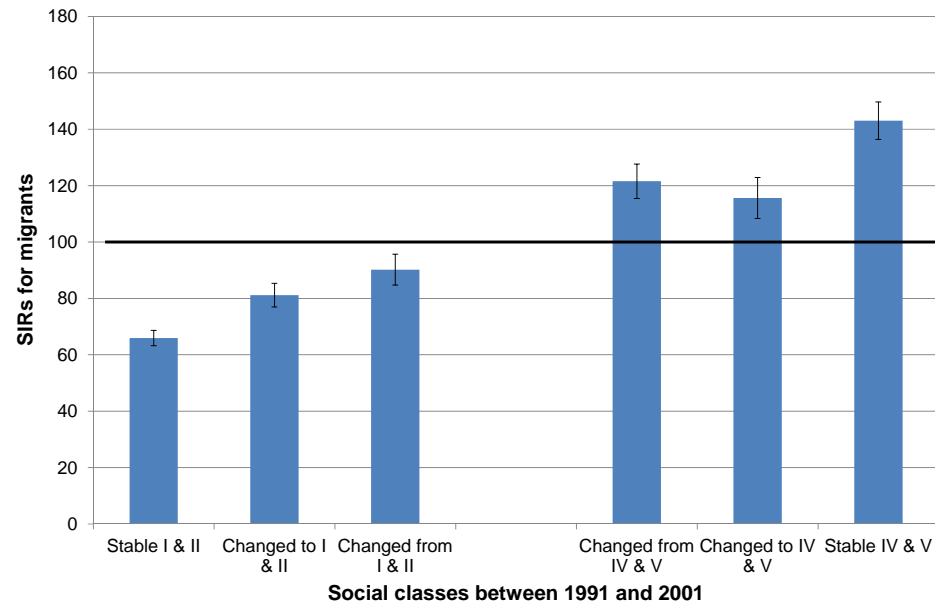


Source: ONS

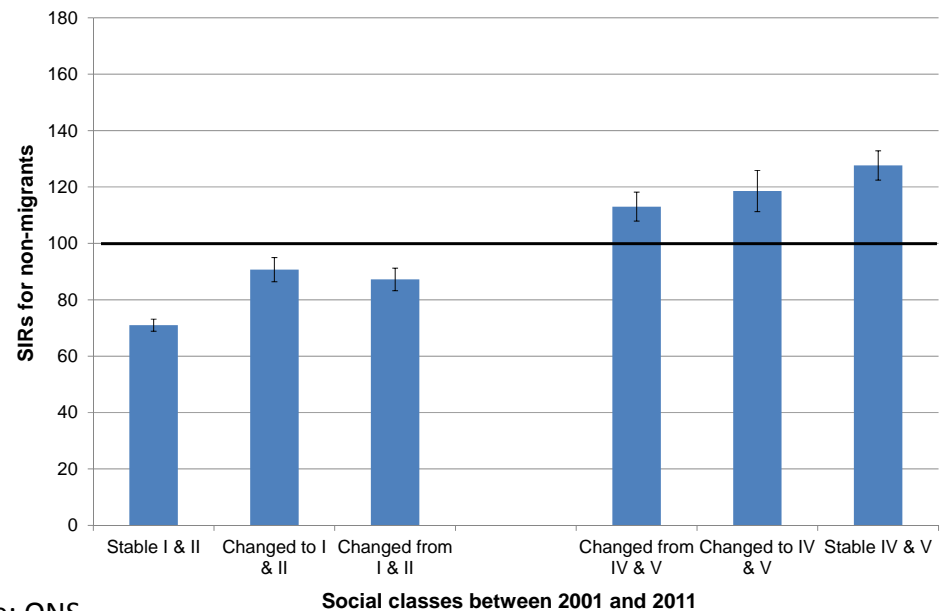
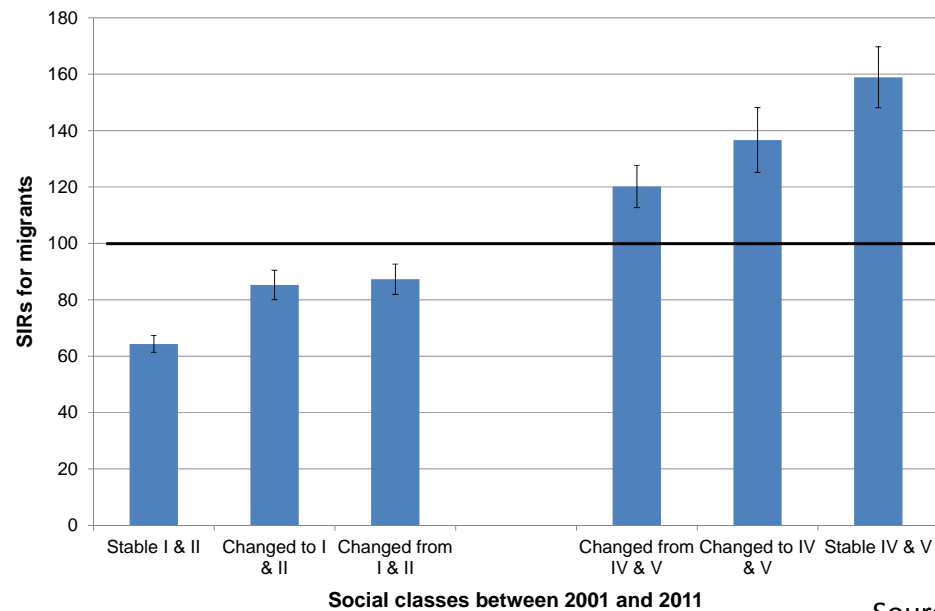
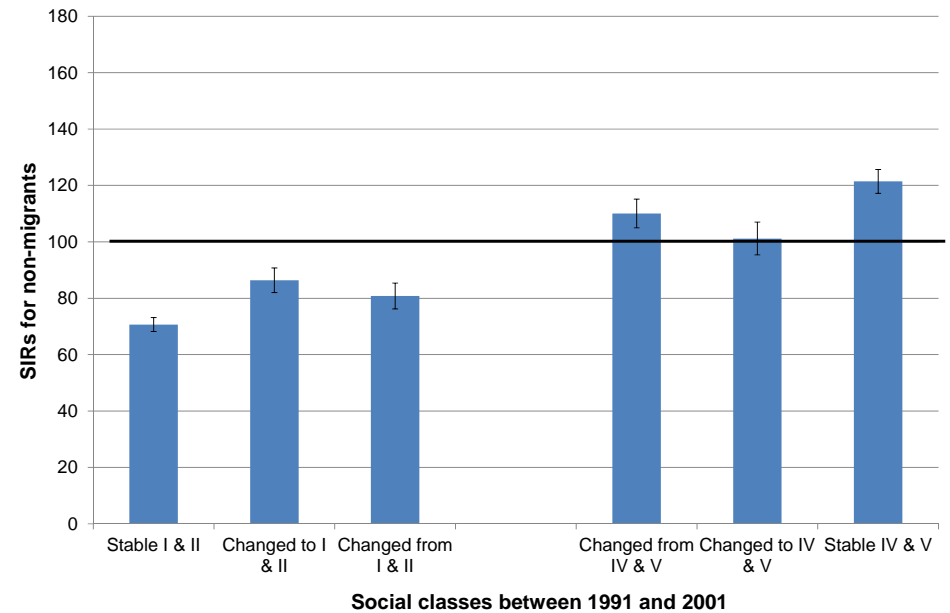
- Comparable patterns between 1991 and 2001, and 2001 and 2011 (shown)
- Patterns of health penalty/advantage of least deprived and most deprived areas comparable to those for all-persons
- Health of migrants better than non-migrants for all transition categories apart from those who remain in the most deprived areas
- Greater inequality for migrants compared to non-migrants; and greater inequality between minority ethnic groups than for all persons

# Social mobility and health

## MIGRANTS



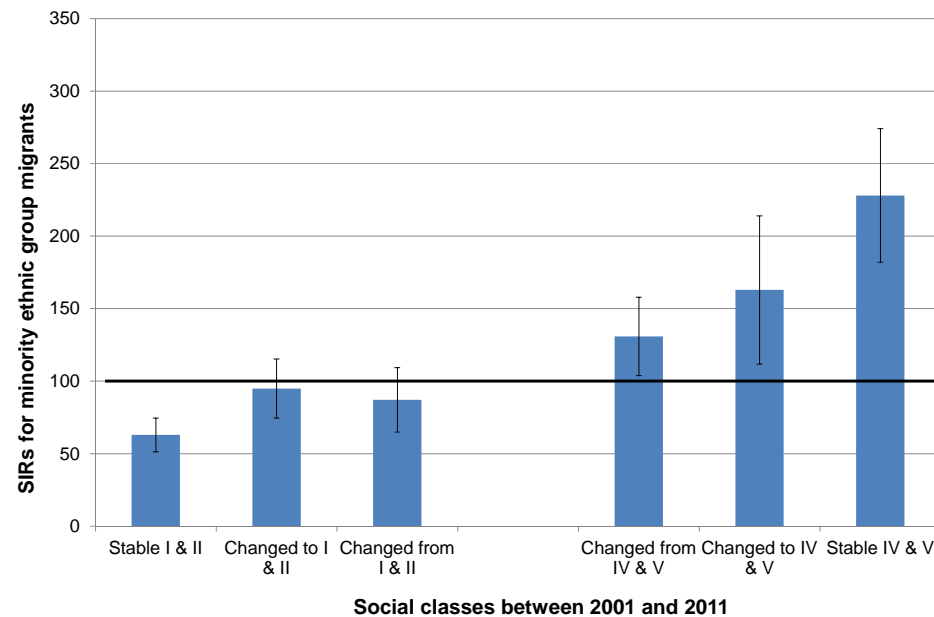
## NON-MIGRANTS



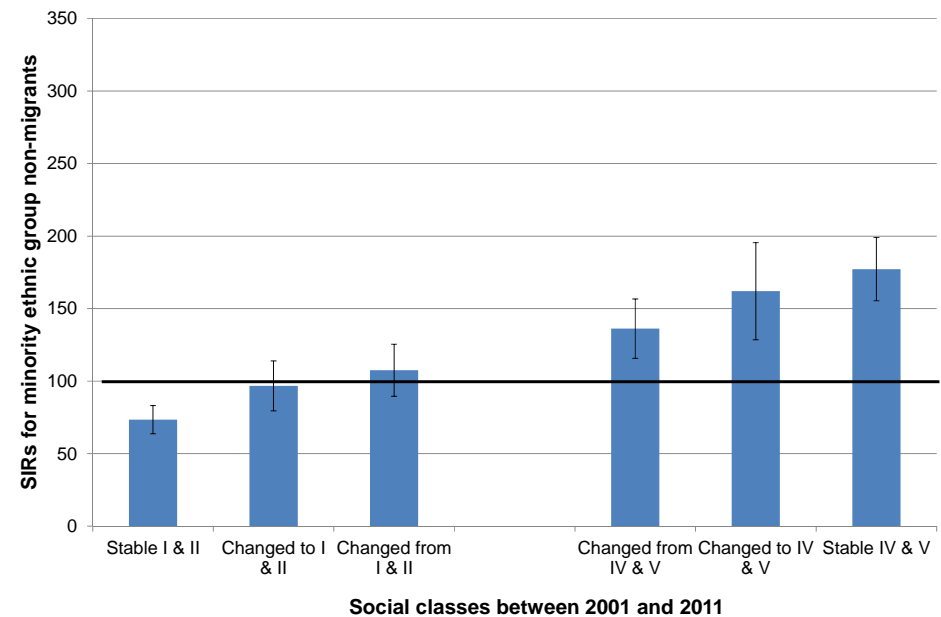
Source: ONS

# Social mobility and health for MEGs

## MIGRANTS



## NON-MIGRANTS



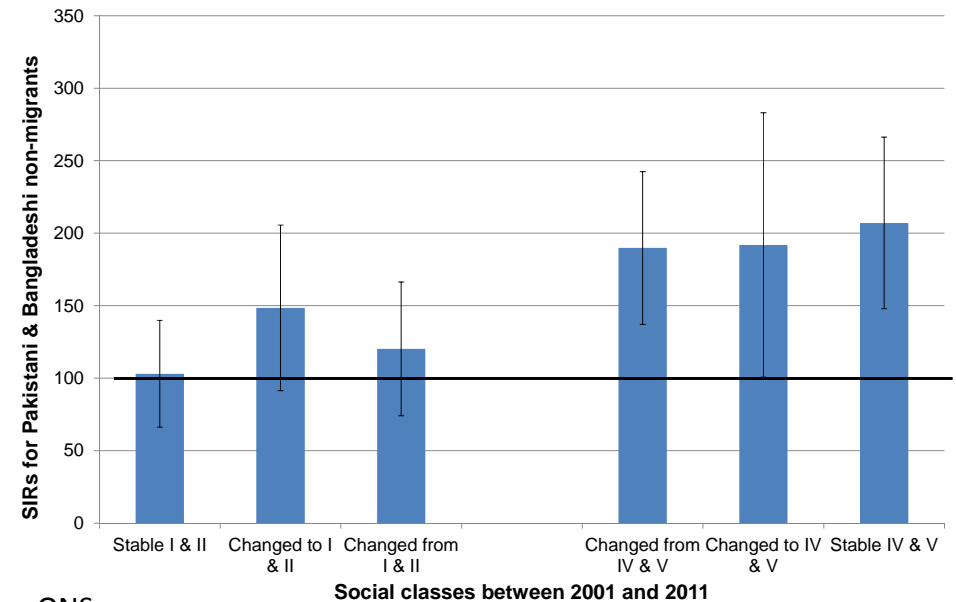
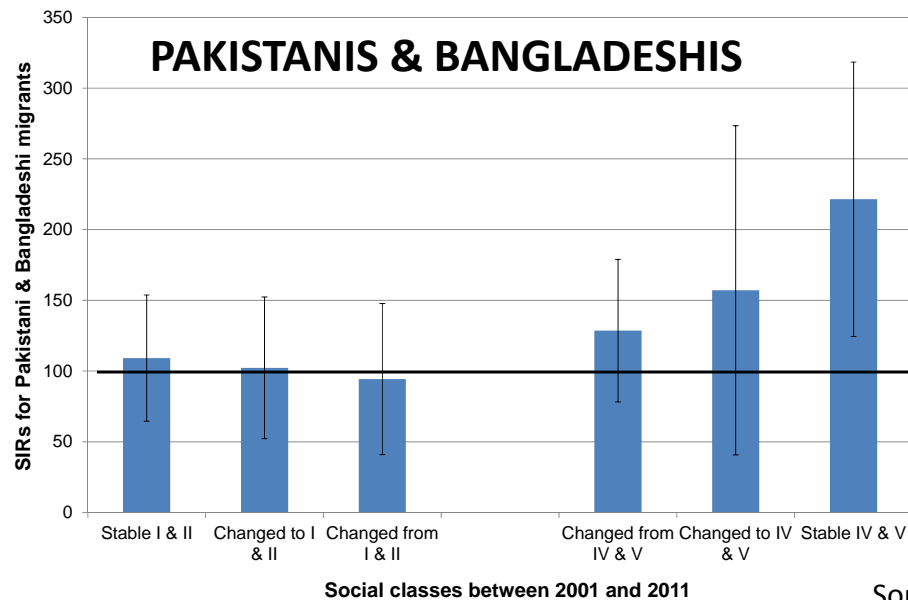
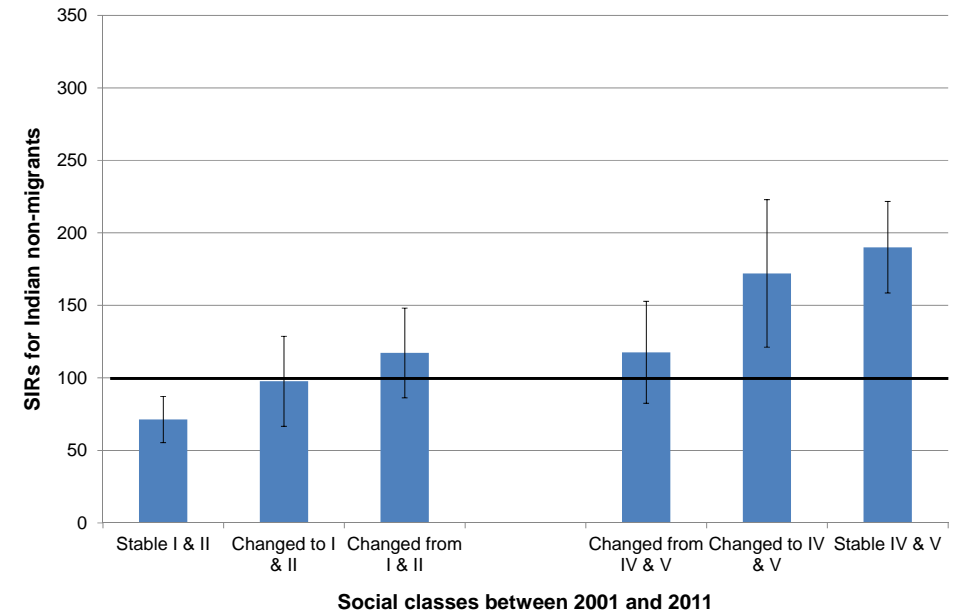
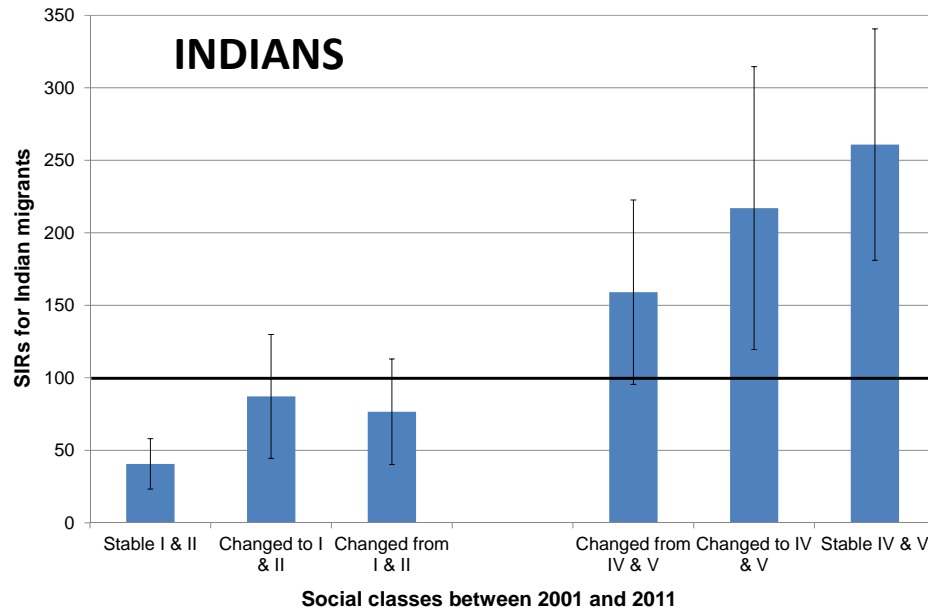
Source: ONS

- Class-health gradient more marked for socially mobile minority ethnic group migrants than deprivation-health gradient
- Similar patterns to those for all-persons, although health of the minority ethnic groups who remain in the top classes better than for all persons
- Migrants at the top of the class structure have better health than non-migrants, whereas migrants at the bottom of the class structure have poorer health than non-migrants

# Social mobility for Indian, Pakistani & Bangladeshi groups

**MIGRANTS**

**NON-MIGRANTS**



Source: ONS

# Conclusions and Next Steps

- Health varies within ethnic groups by age, socioeconomic status, region and migrant status
  - Selective sorting of migrants *may* contribute to ethnic health gradients
  - Stable disadvantaged groups have **worst** health
  - Greater inequality for all groups between 91-01, 01-11
  - Selective sorting **appears** to contribute to widening health gradients
- 
- Change between 2001 and 2011 (2011 ISARs?)
  - Differences by age for selective sorting (ONS LS)?
  - Different 'measures' of ethnicity and multi-dimensional measure of SES?
  - Implications of **immobility**?

# References

- Nazroo J. 2014. Ethnic Inequalities in Health: Addressing a Significant Gap in Current Evidence and Policy' in *"If you could do one thing..." Nine local actions to reduce health inequalities*, Newby L, Denison N (eds.); London: The British Academy: London; 91 – 101.

## Pictures

- <http://www.dailymail.co.uk/news/article-2147963/Liverpool-deprived-areas-country-says-Church-England-report-reveals-north-south-divide-richest-poorest-communities.html>
- <http://www.telegraph.co.uk/news/features/3632974/Its-pitchforks-at-dawn.html>

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