The impact of internal migration on widening health inequalities in Scotland

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Introduction

• Migration can change the composition of an area’s population over time

• The likelihood and ability of people to move to and from places is associated with their characteristics
  – Age / stage of lifecourse
  – Their socio-economic situation
  – Their health

• The influence of these may vary by the distance moved and age at move

• There may also be “push” factors – lack of employment in area.
Introduction cont.

- So deprived areas may see a loss of population and a net loss of better off and healthier people

- Widening health inequalities both across socio-economic groupings and areas have been observed

- Could this be down to selective migration?
  - Cannot tell from cross-sectional studies
  - Longitudinal data needed

- Selective migration may also mask the impact of area based interventions
Introduction cont.

• Limited evidence to date
  – One study found that 50% of the *widening* health gap may be due to selective migration
  – May depend on the size of the areas being studied

• The gap between Glasgow and the rest of Scotland for premature mortality was found to have grown 1981 thru 1991 to 2001 – a Glasgow effect?
  – Is it selective migration?
Main questions

• Does internal migration change the socio-economic / health profile of areas?
  – and is this why the socio-economic / health gap between areas is widening

• Is the widening mortality gap between Glasgow and the rest of Scotland due to internal migration?
Methods

- Scottish Longitudinal Study. An anonymised 5.3% sample of the Scottish population linking 1991, 2001 census data to vital events data
  - See http://www.lscs.ac.uk/sls/ for more details

- For this study use 1991, 2001 census data and mortality data

- Main sample is a closed sample who appear in both 1991 and 2001 censuses
  - Aged 15 to 64 in 1991
  - 137,073 people
Methods cont.

- Split Scotland into three: Glasgow; Edinburgh, Dundee and Aberdeen combined; and the rest of Scotland

- Created individual level deprivation index using three measures of socio-economic position in 1991.
  - Household car access
  - Tenure
  - Social class (own or partner’s, parents’ etc.)

- Also studied self reported limiting long term illness
Migration results

• Net population change 1991 to 2001
  – Glasgow = -7.1% (Out 18.4%, in 11.3%)
  – 3 cities = -3.4% (Out 14.8%, in 11.4%)
  – Else = +1.7% (Out 3.7%, in 5.4%)

• In and out migration rates tended to be higher amongst the better off and those without a limiting illness (and the young)
Migration results cont.

- As a result less difference in net population change by socio-economic position and health

- So (in this study) although in and out migration are selective, net population change is less so

- As a result it seems to have little impact on the distribution of baseline characteristics in the areas studied
Source: Scottish Longitudinal Study
Limiting illness in 1991 and No limiting illness in 1991

Source: Scottish Longitudinal Study
Mortality analysis

- Aged 25 to 74
- Followed for 3 years
- Deaths in Scotland
  - Exits from Scotland taken into account
- Age and sex standardised rates
Source: Scottish Longitudinal Study
Source: Scottish Longitudinal Study
Conclusions

• In and out internal migration selective but also correlated

• This meant that net population change was not that selective and so distribution of baseline line characteristics little changed

• Little evidence of internal migration leading to the widening gap in mortality observed
  – Migrants relatively unlikely to die (mainly due to their younger age profile)
  – Not the ‘Glasgow effect’?

• However…..
Conclusions cont.

• Glasgow in 1991 was already much poorer and unhealthier than the other areas

• Perhaps need to go back to when areas were more similar to understand impact of subsequent migration

• Population loss per se may be detrimental for health
  – Evidence is mixed on this

• Further study looking at the impact of migration within Greater Glasgow and West of Scotland by area deprivation
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