DID HEALTH INEQUALITY INCREASE IN ENGLISH CHILDREN AND YOUNG PEOPLE BETWEEN 1999 AND 2009? EVIDENCE FROM TWO CROSS-SECTIONAL SURVEYS AND INPATIENT ACTIVITY DATA

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Background From 1999, the English government pursued a systematic strategy to reduce health inequalities. For interventions affecting children and young people, intermediate indicators may be more useful for evaluating short/medium term impact than the mortality targets chosen. This article investigates trends in inequalities for self/parent-reported health and use of health services by children and young people between 1999 and 2009.

Methods Through the UK Data Archive (http://www.data-archive.ac.uk/), data were accessed for the Health Survey for England 1999 (SN4865) (N=2638(0–12 years), 874(13–16), 1148(17–24), 5573(25+)) and the Health Survey for England 2009 (SN6752) (N=3022(0–12), 969(13–16), 451(17–24), 4160(25+)). Self-reported health and General Health Questionnaire data (participants aged 15+) and parent/carer report of health (participants aged 0–12) were used, with appropriate binary outcomes created. Using logistic regression in SPSS (v19), adjusted odds ratios (AORs) of poor health were calculated between the highest and lowest socio-economic tertiles, defined by occupation of household members. Analyses were stratified by age, adjusted for sex and weighted to be nationally representative. Hospital Episode Statistics on Finished Consultant Episodes were analysed by Index of Multiple Deprivation decile, derived from the patient’s postcode. Concentration indices of inpatient activity were calculated using the slope index of inequality (SII). Since high fat mass may increase muscle loading and lead to higher lean mass, associations with lean mass were adjusted for fat mass.

Results Compared to those in the highest occupations, parents/carers in the lowest tertile were more likely to report poor health in their children. The difference increased significantly from 1999 (AOR 1.7, 95% CI 1.2–2.4) to 2009 (AOR 4.1, 95% CI 2.5 to 6.7). Among adolescents, there was a non-significant increase in poor self-reported health over this time (AOR 2.3(1.2–4.3) vs. 3.2(1.6–6.4)). For young adults, there was a persistently weaker association between low socio-economic status and poor health (AOR 1.3(0.8–2.2) and 1.3(0.7–2.4)) than for older adults (AOR 3.1(2.6–3.6) and 3.2(2.6–3.9)). AORs for high General Health Questionnaire scores by age group showed a similar pattern.

The concentration index for inpatient activity in adolescents (13–19) decreased from −0.102 in 1999 to −0.082 in 2009 (Males) and −0.247 to −0.189 (Females). The changes in the concentration index for 0-12s were much smaller (Male −0.136 vs. −0.139; Female −0.136 vs. −0.142).

Conclusion Despite the policy importance given to tackling health inequalities, this decade saw inequality in parents’ reports of their children’s health widen significantly. Adolescent findings were mixed, with a non-significant increase in inequality for self-reported health but a reduction in inequality related to inpatient activity.
the spatial isolation of poor people in cities (the “spatial poverty trap”) as one of the major challenges in developing countries. As people and cities in the developing world get richer, the worry is that the spatial socioeconomic segregation of poor people increases, which in turn may increase their risks of mortality and poor health.

**Methods** Data from 15 major Brazilian cities were analysed, with spatial measures of socioeconomic segregation (“isolation of the poor”) estimated for Brazilian districts within cities. The association of the spatial isolation of the poor with district level mortality rates was examined using multiple membership multilevel Poisson regression models to take account of the multilevel (districts within cities) and spatial nature of the data.

**Results** Increasing spatial isolation of the poor tends to be associated with higher mortality rates, with an interaction between income and spatial isolation. There is not much difference in mortality rates among the poorest districts in terms of spatial isolation. However, in the richest districts, districts where the poor are spatially isolated have the highest mortality rates, whereas districts where the poor are not isolated have the lowest mortality rates.

**Conclusion** As cities in the developing world get richer, there is a risk that this leads to increasing spatial socioeconomic segregation of the poor within those cities. The results from this study suggests that the spatial dimension of poverty within cities may be just as important to health as poverty levels.

**Public Health Interventions: Area and Weight Management**

**OP04**

**THE ENGLISH NORTH-SOUTH DIVIDE: RISK FACTORS FOR CARDIOVASCULAR DISEASE ACCOUNTING FOR CROSS-SECTIONAL SOCIOECONOMIC-POSITION**

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**Background** Geographic inequalities in health are widely discussed, with an English North-South divide a popular notion. Data indicate the North-South divide in all cause mortality has persisted, even widening in recent years. Given the impact of cardiovascular disease (CVD) mortality on health inequalities, we aimed to assess the extent of a salient North-South divide in risk factors for CVD, controlling for markers of socioeconomic-position (SEP).

**Methods** We conducted a cross-sectional analysis using the 2006 Health Survey for England using respondents aged 16 years and over. We assessed the population means of systolic blood pressure, total cholesterol, body mass index (BMI) and smoking prevalence. We built nested regression models (all linear regression except for logistic) adding; demographic (age/sex/ethnicity), SEP indicators (individual income, education attainment, housing tenure, car ownership, occupational classification and area level IMD), behavioural risk factors and vascular disease status. We tested variables for multi-collinearity, assumptions of normality for linear outcomes, and use valid survey weights. We finally examine interactions between the North-South divide and age and sex on the risk factors.

**Results** The North of England showed more deprived characteristics across markers of SEP, except for greater home-ownership. Controlling for demographic variables, we found a significant North-South difference (excess in North) in systolic blood pressure (1.94 [se=0.38]), BMI (0.47 [0.11]) and smoking prevalence (2.93% [0.50]). The difference in smoking prevalence was entirely abolished by markers of SEP, both systolic blood pressure and BMI differences were attenuated by SEP, behavioural and vascular disease indicators (1.52 [0.58] & 0.31 [0.11] respectively), but remained significant. The North-South divide in systolic blood pressure was attributed to differences in men (2.18 [0.54]), being non-significant in women; and in middle age groups (2.70 [0.76] aged 40-59, compared with 2.29 [0.78] aged 16–59) and was non-significant aged 60 and over.

**Conclusion** Smoking is a major factor behind morbidity and mortality. In line with work from different settings, patterns in smoking can be explained through adverse, cross-sectional patterns of SEP. Addressing underlying poverty and disadvantage may be required to fully tackle smoking inequalities. Using a suite of measures designed to address different constructs of SEP, although cross-sectional, we find excesses in blood pressure and BMI in the North of England. These differences may, in part, explain previously found differences in mortality. If we are to understand, and therefore reduce, geographic inequalities, current measures of SEP may require improvement, for example accounting for aspects of the life-course.