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 suggest 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**

**OP05** FROM TRIAL TO POPULATION: EFFECT OF A WEIGHT MANAGEMENT INTERVENTION ON BODY MASS INDEX WHEN SCALED UP

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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 total cholesterol, body mass index (BMI) and smoking prevalence. 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 total cholesterol, body mass index (BMI) and smoking prevalence.

**Results** BMI was reduced by similar amounts in the RCT and service delivery (RCT BMI change = –0.91 [95%CI: –1.13 to –0.83]), service BMI change = –0.75 [–0.78 to –0.73]. Service BMI reductions were clinically significant in all socio-demographic groups analysed. However, in multilevel models, pre-BMI, age, sex and ethnicity; families by parent-reported employment, lone parent and housing tenure status; places by residential neighbourhood income deprivation, urbanicity, food and built environments; and programmes by the percentage of sessions attended and variables describing programme composition (e.g. group size).

**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.