models were fitted to small-area level data and aggregated to four age bands (0–14 years; 15–29 years; 30–49 years and 0–49 years) and by gender with the logarithm of the “at risk” population as an offset.

Results The study analysed 2566 cases of osteosarcoma and 1650 cases of Ewing sarcoma. After adjustment for age and gender there was a statistically significant negative association for the incidence of osteosarcoma with area-level Townsend deprivation score (RR for one unit increase in level of deprivation 0.975; 95% CI 0.963 to 0.986). For Ewing sarcoma, after adjustment for age and gender, there was a statistically signiﬁcant negative association for incidence with population density (RR for an increase of one person per hectare 0.981; 95% CI 0.972 to 0.989) and also with non-car ownership (RR for an increase of one percent in non-car ownership 0.996; 95% CI 0.993 to 1.000).

Conclusion Higher deprivation appears to have a protective effect on the incidence of osteosarcoma. Higher incidence of Ewing sarcoma was associated with living in less densely populated areas and greater levels of car ownership, both of which are characteristic of rural areas. This study contributes to the growing body of evidence linking risk of Ewing sarcoma to some aspect of agriculture and suggests further study of environmental exposures or land use may be informative.

Objective To analyse the putative association between incidence of primary bone cancer diagnosed in 0–49-year-olds in Great Britain (GB) in 1980–2005 and fluoride in drinking water. The analyses focussed on osteosarcoma and Ewing sarcoma.

Design The study accessed multiple data sources including population census, digital boundary, postcode directory and fluoride distribution and the basis for making all census data compatible with 2001 census geography. Postcode distributions were also used as a proxy for population density and the basis for linking risk of Ewing sarcoma to some aspect of agriculture and fluoride in drinking water.

Setting and methods Small areas (c.1500 people) in England were aggregated into equal quintiles by ascending scores on a composite measure of deprivation. This measure was used to calculate three-year moving averages of overall CHD mortality rates for each quintile group. The authors advised caution and suggested confirmatory research of these potentially important findings.

Results Social inequalities in coronary heart disease (CHD) mortality and differential trends in these by age, gender and social position is crucial for assessing the impact on health inequalities of concomitant changes in risk factors, healthcare, legislation and policy on health inequalities. The authors advised caution and suggested confirmatory research of these potentially important findings.

Conclusions Comparisons across and within countries provide valuable insights into potential drivers of inequality for CHD—a leading cause of death in the UK, and worldwide. The differing results for England and Scotland are intriguing. These differences may be real or may reflect data artefact arising due to higher levels of selective health migration in deprived areas and uncertainties in accurately estimating the population structure.

Coronary heart disease

Objective Understanding the scale of social inequalities in coronary heart disease (CHD) mortality and differential trends in these by age, gender and social position is crucial for assessing the impact on health inequalities of concomitant changes in risk factors, healthcare, legislation and policy on health inequalities. Previous analyses of trends in Scotland suggest that falling CHD mortality rates may have recently begun to level in younger age-groups. Furthermore, the flattening of mortality rates was confined to the most socially deprived groups. Given the uncertainty attached to the estimates, the authors advised caution and suggested confirmatory research of these potentially important findings.

Setting and methods Small areas (c.1500 people) in England were aggregated into equal quintiles by ascending scores on a composite measure of deprivation (with quintile 5 the most deprived group). CHD deaths and populations from 1981 to 2007 for each quintile group were used to calculate three-year moving averages of overall (age-standardised) and age-specific mortality rates for each social group, separately by gender for those aged 35 and over.

Trends by quintiles were analysed using joinpoint regression modelling to calculate annual percentage change estimates and to identify turning points in each series.

Results Social gradients in mortality were large and persistent. The rates of decline in age-standardised CHD mortality were socially patterned with the steepest fall in the most affluent quintile. Thus, while absolute inequalities narrowed over the period, relative inequalities increased slightly. For similar age and deprivation groups, rates fell faster for men than women. From 2000, mortality rates levelled off in the most affluent groups (q1 and q2) for women aged 45–54. For men aged 35–44, rates of fall were significantly lower in the most recent period compared to the early 1990s for all except q5, but are still either higher or at the same level as in the late 1980s.

Conclusions Comparisons across and within countries provide valuable insights into potential drivers of inequality for CHD—a leading cause of death in the UK, and worldwide. The differing results for England and Scotland are intriguing. These differences may be real or may reflect data artefact arising due to higher levels of selective health migration in deprived areas and uncertainties in accurately estimating the population structure.