

## Cardiovascular Disease Inequalities in the East of England

Stark inequalities exist in health. The pandemic has compounded both the burden of CVD as well as related health inequalities. Cardiovascular Disease (CVD) is a primary driver of these health inequalities. In collaboration with the Eastern Academic Health Sciences Network (EAHSN), this briefing sets out the CVD inequalities in the East of England. Overall we found stark socioeconomic inequalities in the risk factors for CVD as well as moderate inequalities in the prevalence of CVD and patient satisfaction.

Key conclusions are:

1. The most deprived 20% of the population in the East of England tend to be younger than the rest of the population and have the highest percentage of individuals from ethnic minorities.
2. The prevalence of risk factors for CVD such as smoking and obesity is strongly associated with deprivation in the East of England. The association is much stronger than quality of care received or drug treatments. This is not novel but given the huge impact of smoking and obesity on health outcomes, and the strength of the associations, means they represent good targets for interventions aiming at improving health inequalities
3. Areas of deprivation had higher prevalences of all CVD conditions, reflecting the impact of the wider determinants of health outcomes on CVD outcomes. However, the prevalence of AF was reduced with increased deprivation suggesting potential underdiagnosis.
4. Equity-focused Quality Improvement (EF-QI) takes an inequalities perspective in quality improvement (QI) by disaggregating data and ensuring QI indicatives benefit those most in need. We recommend using it to address CVD inequalities.

### Risk factors

Across the East of England, there were strong socioeconomic gradients associated with the risk factors for CVD especially in smoking and obesity, with the most deprived areas seeing the greatest rates of smoking and obesity while the most affluent areas showed the lowest rates of smoking and obesity (figure 1).

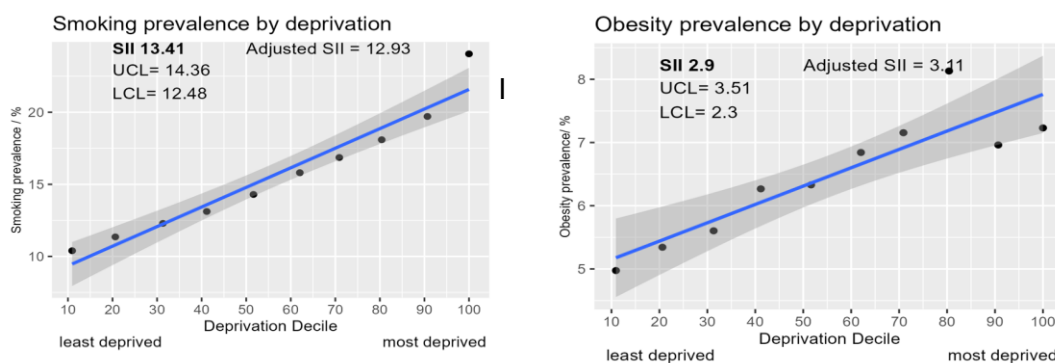


Figure 1.

Socioeconomic gradients of Smoking and Obesity Prevalence. SII = slope index of inequality, describing the percentage difference between the most and least deprived deciles. UCL= upper confidence limit, LCL = lower confidence limit. Adjusted SII = slope index of inequality adjusted for differences in age structure of deciles.

### CVD conditions

More deprived areas tended to have higher prevalences of all CVD conditions<sup>1</sup> after adjusting for differences in average age, with the exception of atrial fibrillation. Atrial fibrillation was found to be less prevalent in the most deprived areas raising the possibility of under-diagnosis (figure 2).

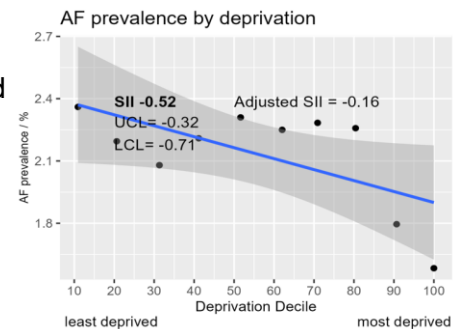


Figure 2. Socioeconomic gradients of Atrial Fibrillation Prevalence. Labels as figure 1.

### **Quality of care and prescriptions**

Quality of care outcomes such as the control of blood pressure in CVD patients tended not be associated with deprivation. For some of the CVD quality of care variables,<sup>2</sup> there were weak associations that showed that more deprived areas received better care, but this may be due to variable pressures (and therefore ability to meet quality of care outcomes) on practices in different areas during the pandemic when the data was recorded. Prescriptions of key cholesterol-lowering drugs were highest in the most deprived areas, however, the data available did not capture the appropriateness of prescribing. Finally, the most deprived areas showed the lowest patient satisfaction rates<sup>3</sup> while the most affluent areas showed the highest satisfaction levels.

### **Multiple disadvantage**

It was difficult to draw meaningful conclusions when examining how age, ethnicity data and multiple deprivation (ethnicity combined with deprivation) affected the CVD metrics described above, due to the overlaps in the ways these variables affect one another and deprivation. People living in the most deprived areas tended to be younger with a higher proportion belonging to minority ethnic groups compared to more affluent areas. Smoking prevalence was higher in areas with high deprivation and minority ethnic groups.

### **Equity-focused quality improvement**

Through equity-focussed quality improvement (EQ-FI) there is the potential to improve quality of care for those with the worst outcomes and address inequalities driven by disadvantage. This involves disaggregating summary metrics by disadvantage, as described here, and then designing initiatives to address inequalities through selecting areas with the largest impact on health outcomes. It may also be done through targeted quality improvement (QI) initiatives to groups which are already known to be particularly disadvantaged - such as those from ethnic minorities.

<sup>1</sup> Coronary Heart Disease, Heart Disease, Stroke and Transient Ischaemic Attack, Peripheral Arterial Disease and Atrial Fibrillation

<sup>2</sup> Percentage of AF patients where stroke risk was assessed, Percentage of HF patients with left ventricular systolic dysfunction (LVSD) treated with  $\beta$  blocker, HF patients reviewed in the last 12 months and stroke patients taking appropriate anticoagulation

<sup>3</sup> Good experience making an appointment, percentage satisfied by phone access, overall positive experience of the GP practice

Further work describing these inequalities is likely to be important 'post pandemic'. Through designing programmes with equity in mind and monitoring results by disadvantaged groups to inform continual improvement, QI programmes can reduce inequalities across the East of England and ensure their benefits favour those who are most disadvantaged.

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