British Heart Foundation

Worlds Apart: The Heart Health of the Ten Most and Least Deprived Local Authorities in England

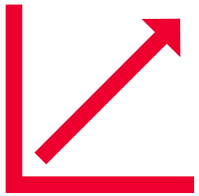
August 2025

Key findings

Cardiovascular mortality rates amongst under-75s and working age adults in England differ significantly between the ten most and least deprived local authorities.

Premature mortality rates for many cardiovascular diseases are three- or four- times greater in the most deprived local authority compared to the least deprived.

Working-age mortality from cardiovascular disease has increased over the past five years. This change has been more pronounced in the most deprived local authorities.



The prevalence of important risk factors for cardiovascular disease, such as obesity and diabetes, is higher in the most deprived local authorities.

Why we did this analysis

Previous BHF analysis has shown the significant role that deprivation plays in cardiovascular disease in England.[1]

In this new analysis, we focus on the most extreme parts of the deprivation spectrum: the ten most and least deprived local authorities.

This helps to further demonstrate the scale of inequality across the cardiovascular disease pathway, using commonly understood and politically relevant geographies (i.e. local authorities) that are familiar to most audiences.

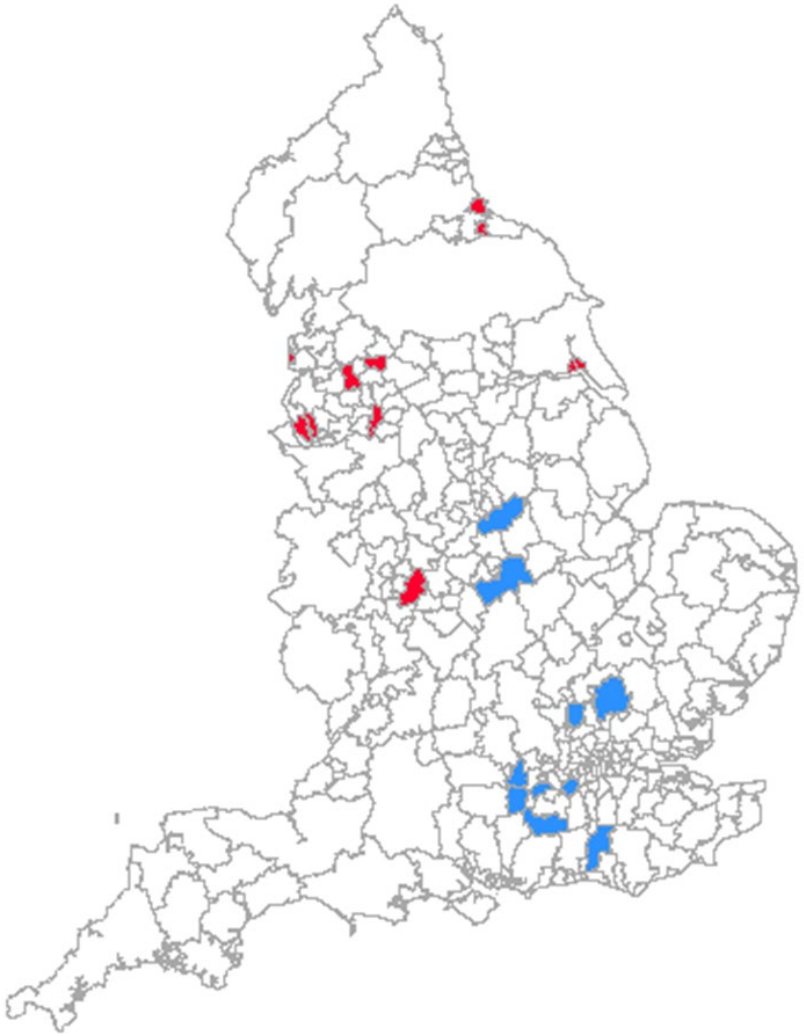


Figure 1: Map of ten most and least deprived local authorities in England

Where are the ten most and least deprived local authorities in England?

Most deprived	Least deprived
Blackpool	Hart
Knowsley	Wokingham
Liverpool	Rushcliffe
Kingston upon Hull	Waverley
Middlesbrough	Mid Sussex
Manchester	Elmbridge
Birmingham	Harborough
Burnley	Surrey Heath
Blackburn with Darwen	East Hertfordshire
Hartlepool	St Albans

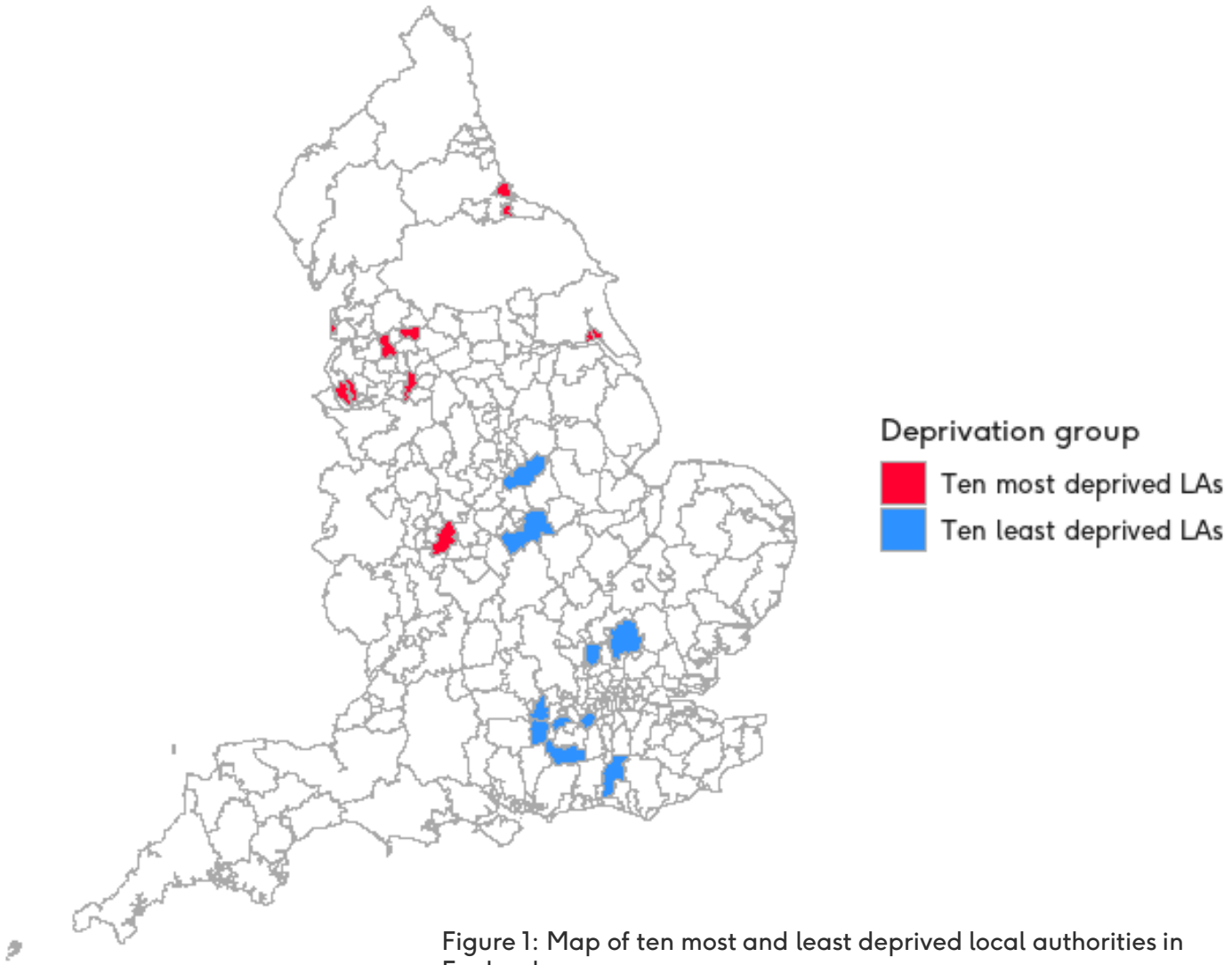
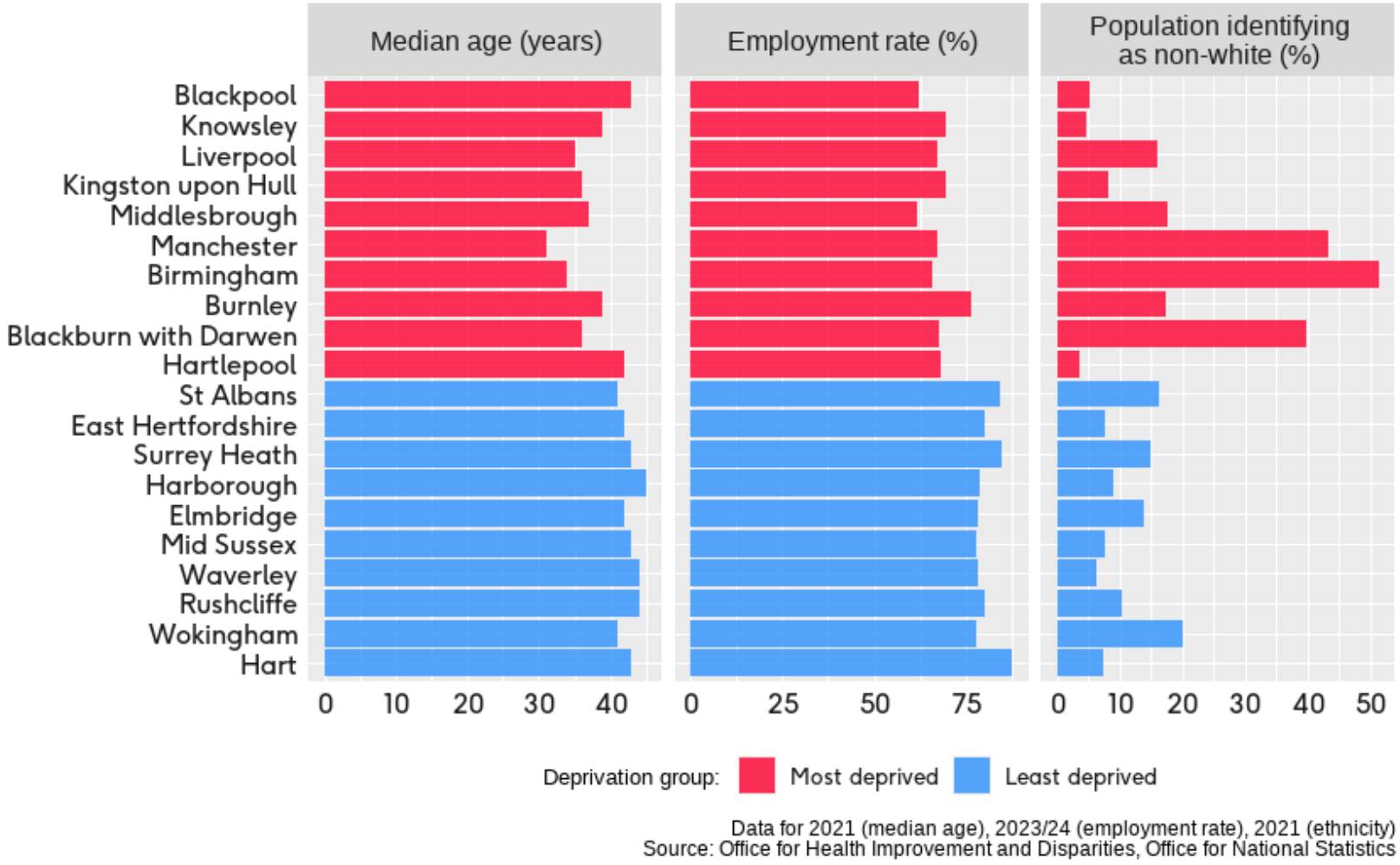


Figure 1: Map of ten most and least deprived local authorities in England

Characteristics of the most and least deprived local authorities

Figure 2: Characteristics of the ten most and least deprived local authorities in England



Data for 2021 (median age), 2023/24 (employment rate), 2021 (ethnicity)
Source: Office for Health Improvement and Disparities, Office for National Statistics

The median age in these local authorities ranged from 31 in Manchester, to 45 in Harborough. The most deprived local authorities generally had younger populations than the least deprived authorities.

The proportion of 16–64-year-olds in employment ranged from 61.6% in Middlesbrough to 87.6% in Hart. The rate of employment was higher in the least deprived areas compared to the most deprived.

The proportion of the population who identified as non-white ranged from 3.5% in Hartlepool to 51.3% in Birmingham.

Mortality

Mortality in under 75s and working-age people

Premature mortality (under-75s)

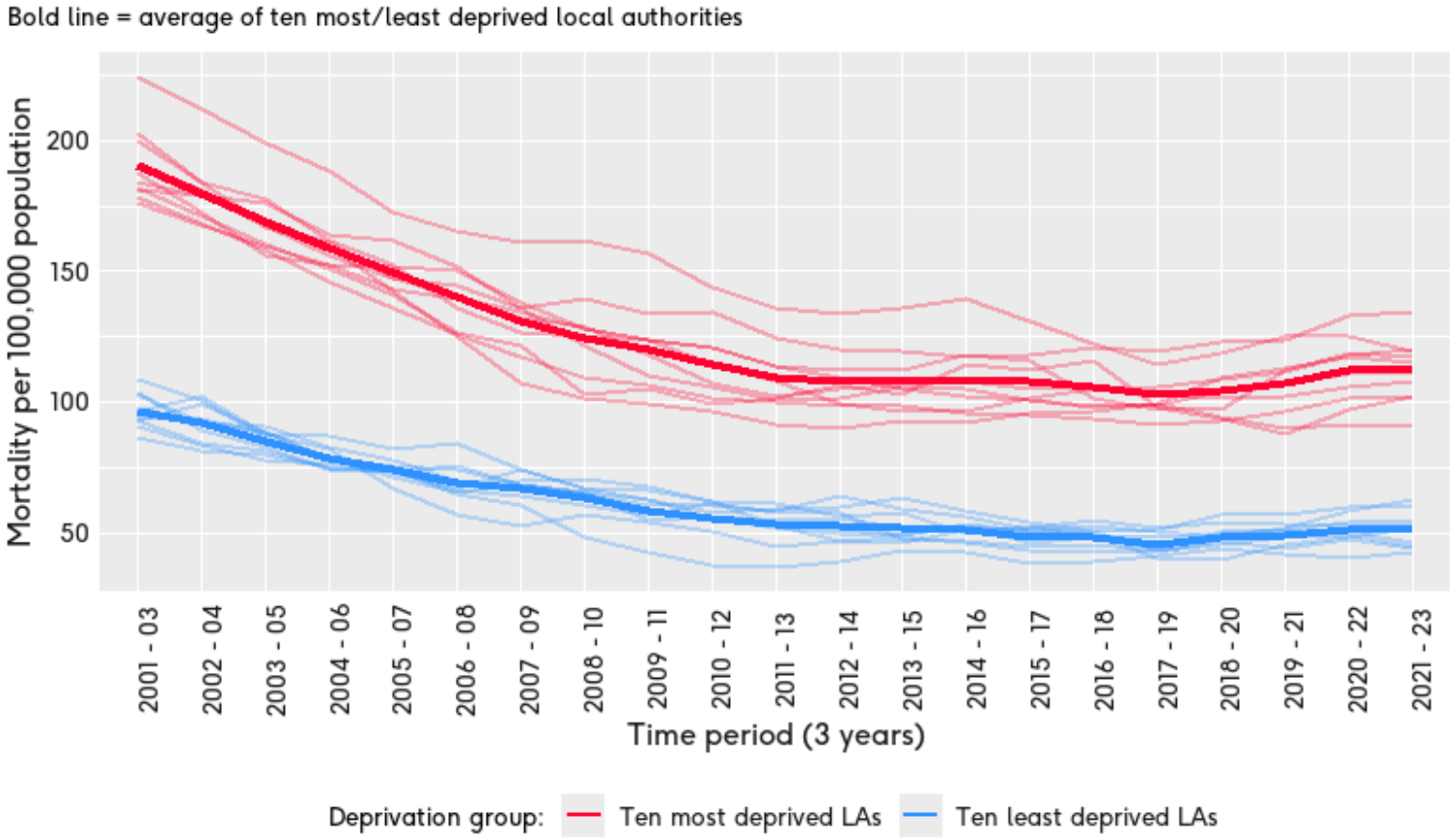
Cardiovascular disease

Coronary heart disease

Stroke

Cardiovascular mortality in people under 75 (1)

Figure 3: Under-75 age-standardised death rate (3-year average) from CVD in the ten most and least deprived local authorities in England



Source: Office for Health Improvement and Disparities

In the ten most and least deprived local authorities (LAs), premature (under-75) mortality rates from cardiovascular disease (CVD) fell over the two decades leading up to 2020, though improvements slowed significantly in the 2010s.

The ten most deprived local authorities have consistently experienced higher premature age-standardised death rates (ASDRs) than the ten least deprived LAs, and this inequality has deepened over time.

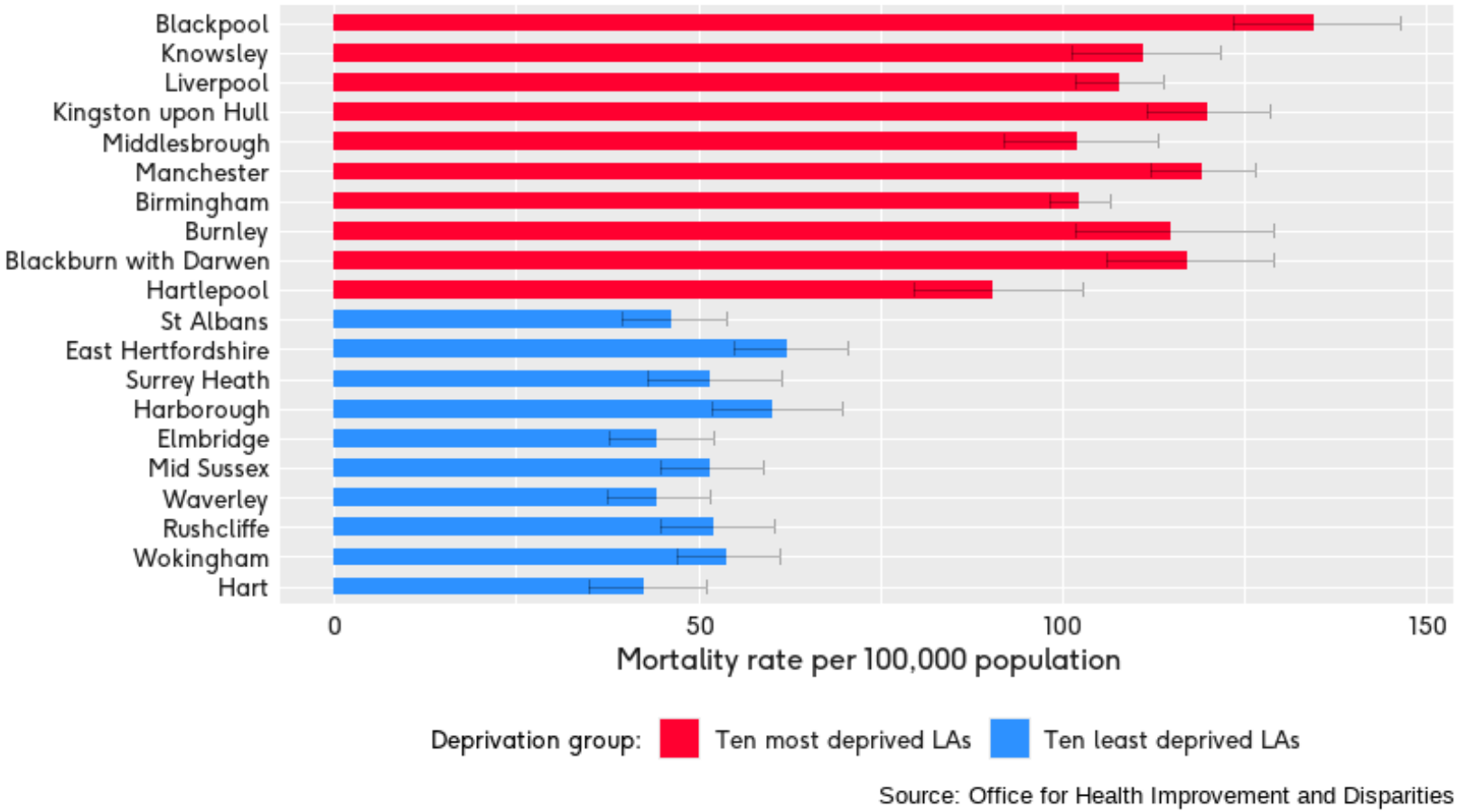
In 2001–03, the average ASDR in the 10 most deprived LAs (191 per 100,000 people) was 98% higher than the 10 least deprived (97 per 100k). In 2020–23, it was 120% higher (112 per 100k, vs 51 per 100k).

In the past 5 years mortality has increased on average, at both ends of the deprivation spectrum. Between 2017–19 and 2021–23, the average premature mortality rate from CVD in the most deprived LAs increased by 9 deaths per 100,000 people (a 9% increase). In the least deprived LAs death rates rose 5 per 100,000 (a 12% increase).

Cardiovascular mortality in people under 75 (2)

Figure 4: Under-75 mortality rate from CVD in the ten most and least deprived local authorities in England, 2021-2023

Local authorities ranked from most deprived (top) to least deprived (bottom)
Error bars represent the 95% confidence interval



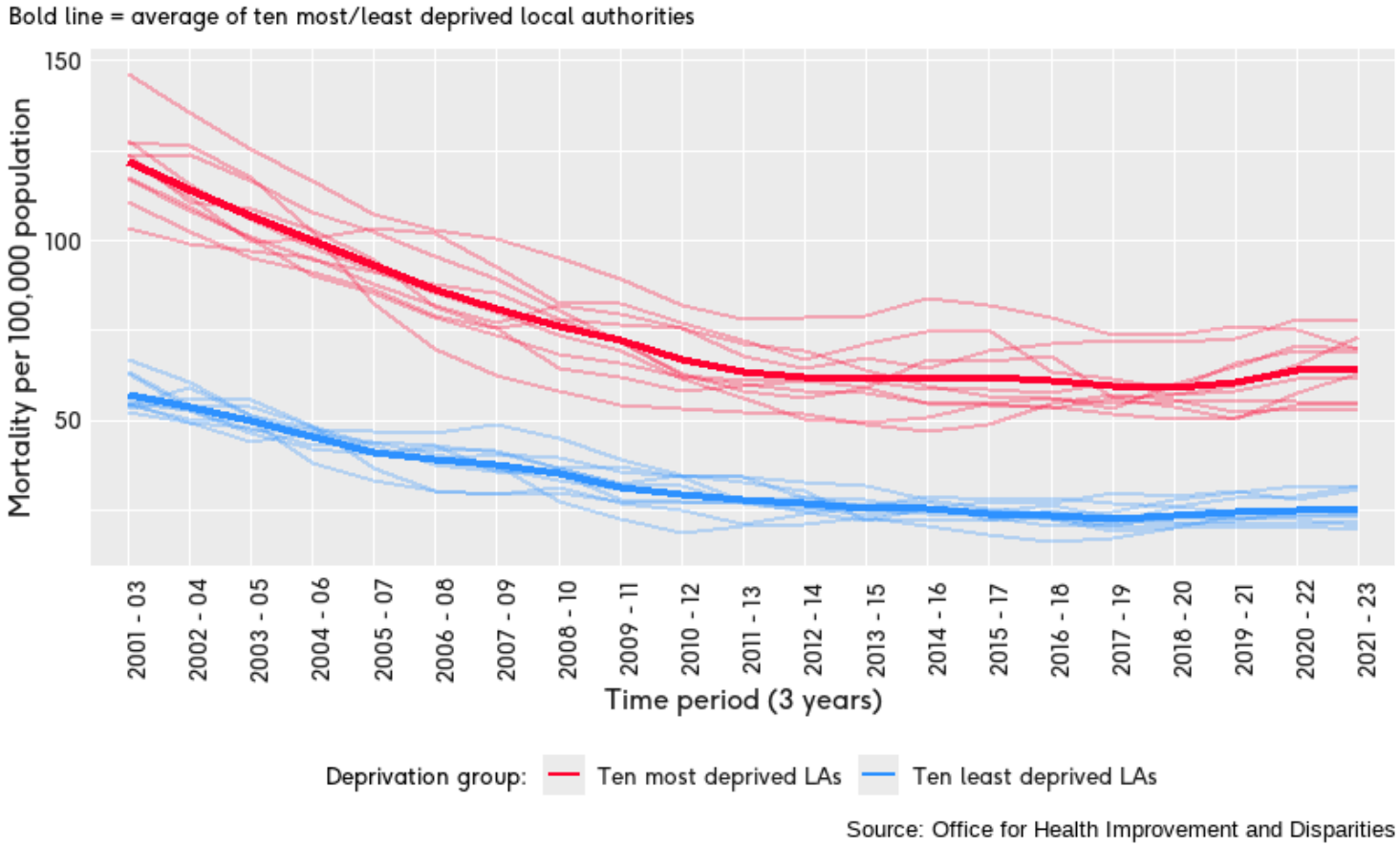
Source: Office for Health Improvement and Disparities

In 2021-23, the rate of premature CVD mortality was significantly higher in all the ten most deprived LAs compared than the ten least deprived.

In Blackpool the premature CVD mortality rate was more than three times as high as the rate in Hart (135 vs 42 per 100,000 population, respectively).

Coronary heart disease mortality in people under 75 (1)

Figure 5: Under-75 age-standardised death rate (3-year average) from CHD in the ten most and least deprived local authorities in England



Source: Office for Health Improvement and Disparities

Coronary heart disease (CHD) is the most commonly diagnosed type of heart disease and the single biggest cause of premature death in England.[2]

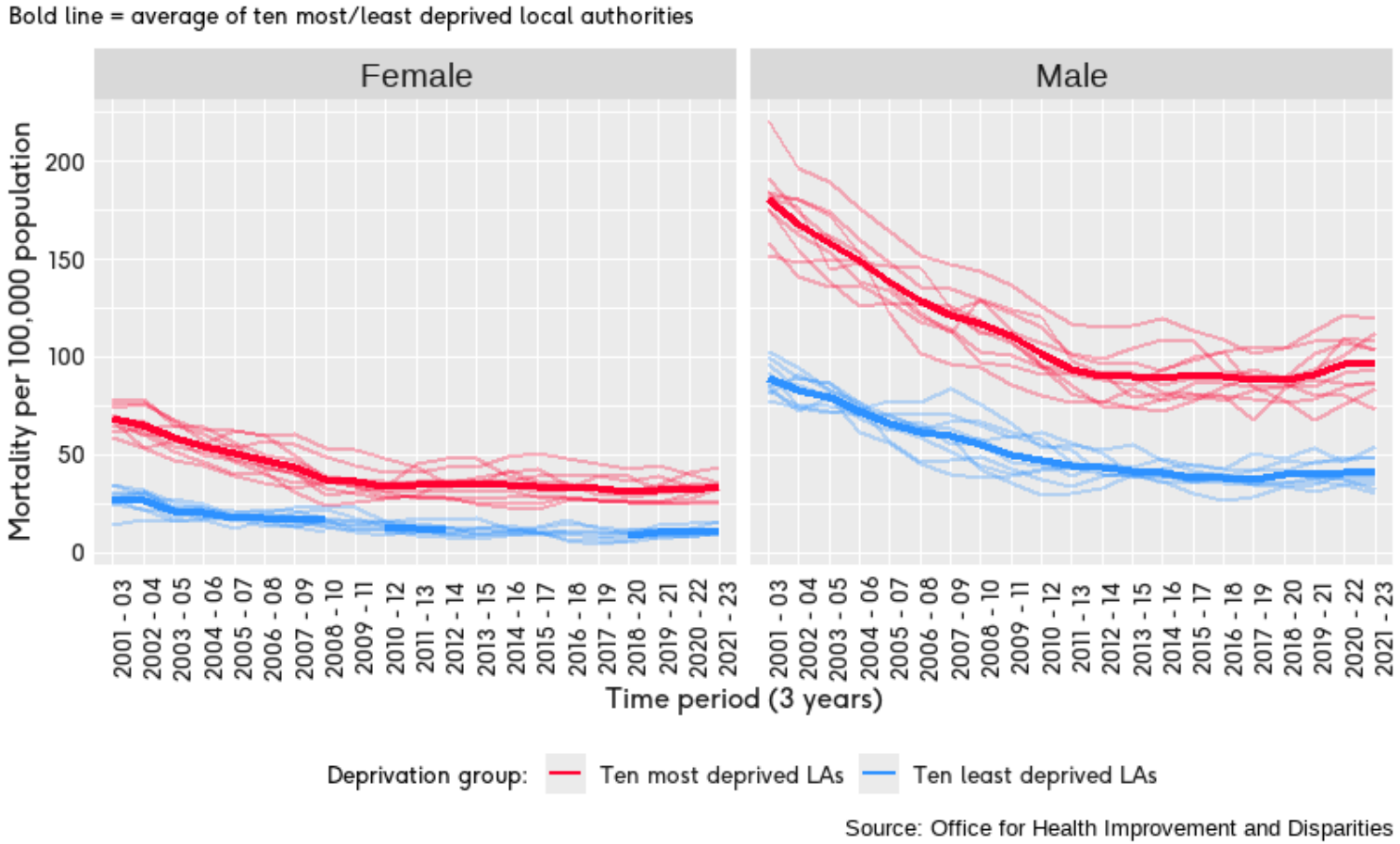
On average, premature deaths from CHD have declined over the past two decades, levelling out since 2010 and increasing slightly post-COVID-19 pandemic. Across this period, the ten most deprived LAs have consistently experienced higher rates of CHD death than the least deprived LAs.

Despite improvements, the average rate of premature CHD death in the most deprived LAs in 2021/23 (65 per 100,000 persons) is still higher than the rate in the least deprived LAs two decades ago (57 per 100k in 2001/03).

Inequality has worsened. Between 2001–03 and 2021–23, the average number of people dying prematurely from CHD fell more proportionally in the least deprived LAs than it did in the most deprived (56% vs 47%, respectively).

Coronary heart disease mortality in people under 75 (2)

Figure 6: Under-75 age-standardised death rate (3-year average) from CHD in the ten most and least deprived local authorities in England



*There are gaps in the average line for women in the ten least deprived LAs for several periods shown, due to death numbers being too small to calculate mortality rates.

For males and females, the largest relative reductions in CHD mortality have occurred in the least deprived LAs.

The recent increase in premature mortality from CHD has also occurred in both males and females. However, it was most pronounced in males from the most deprived LAs, where the average ASDR increased by 10% between 2018–20 and 2021–23.

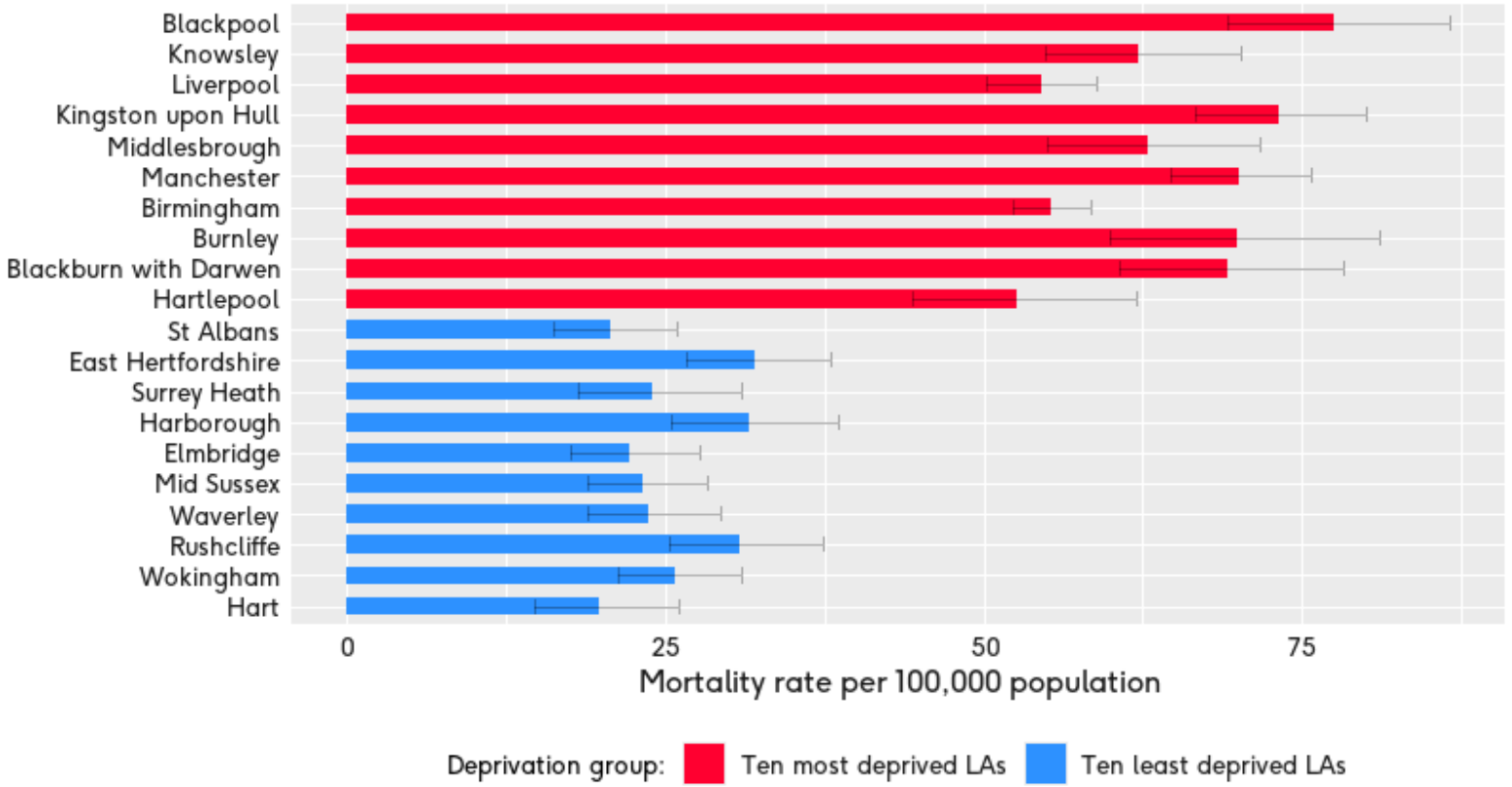
Table 1: Relative change in premature CHD ASDRs between 2001–3 and 2021–23, by sex

Sex	Most deprived LAs	Least deprived LAs
Males	-51%	-60%
Females	-46%	-54%

CHD mortality in people under 75 (3)

Figure 7: Under-75 mortality rate from CHD in the ten most and least deprived local authorities in England, 2021-2023

Local authorities ranked from most deprived (top) to least deprived (bottom)
Error bars represent the 95% confidence interval



Source: Office for Health Improvement and Disparities

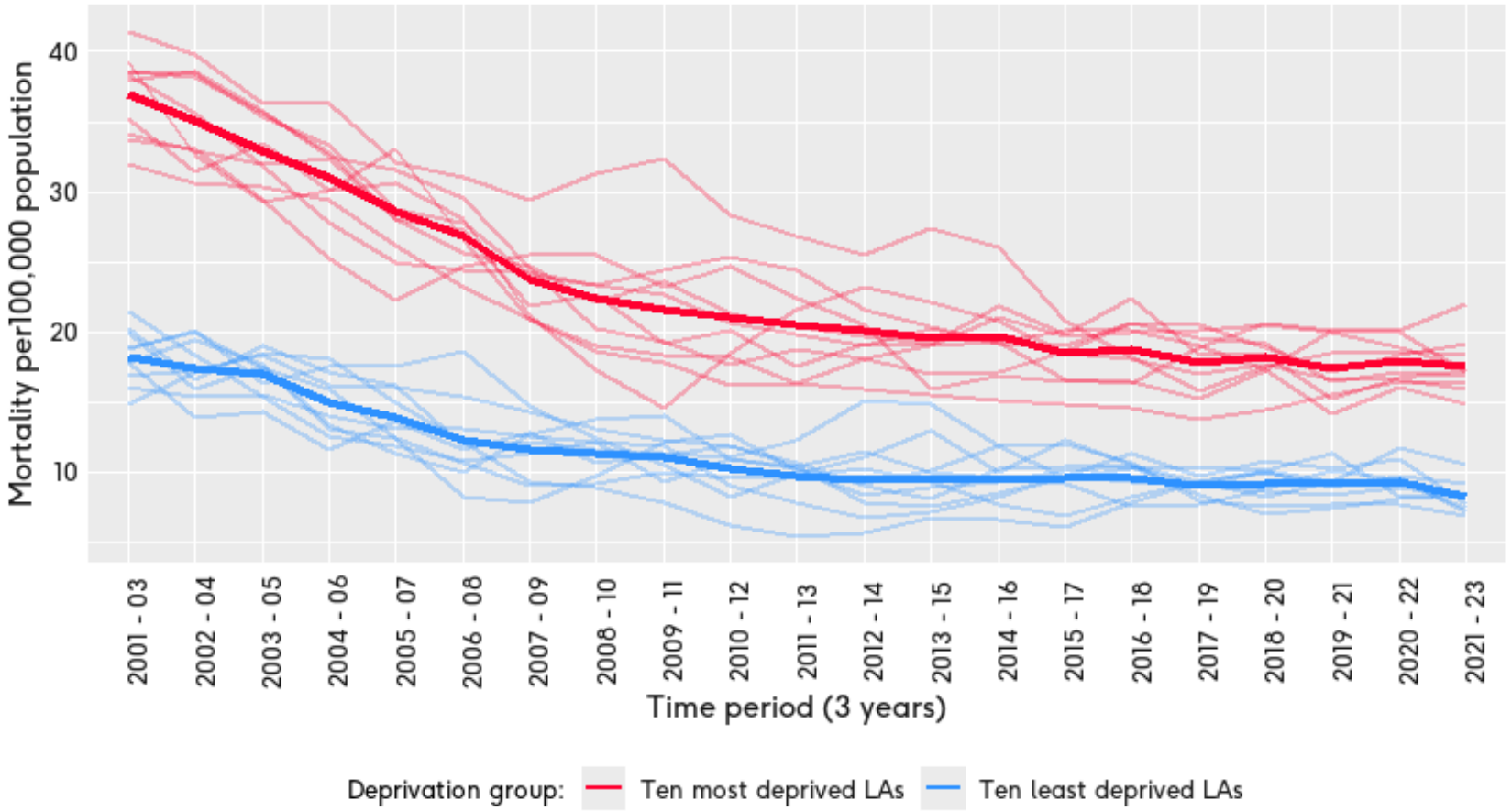
The most recent data for 2021-23 further illustrates this division, with the ten most deprived local authorities recording significantly higher premature CHD mortality than all the ten least deprived LAs.

Blackpool had the highest rate of premature CHD death, at 78 per 100,000 people. This was almost four times the rate in Hart (20 per 100,000).

Stroke mortality in people under 75 (1)

Figure 8: Under-75 age-standardised death rate (3-year average) from stroke in the ten most and least deprived local authorities in England

Bold line = average of ten most/least deprived local authorities



Source: Office for Health Improvement and Disparities

On average, premature deaths from stroke have declined over the past two decades, although this progress has slowed since the 2010s.

As with premature deaths from CVD overall, the ten most deprived local authorities consistently experienced higher ASDRs from stroke than the ten least deprived local authorities.

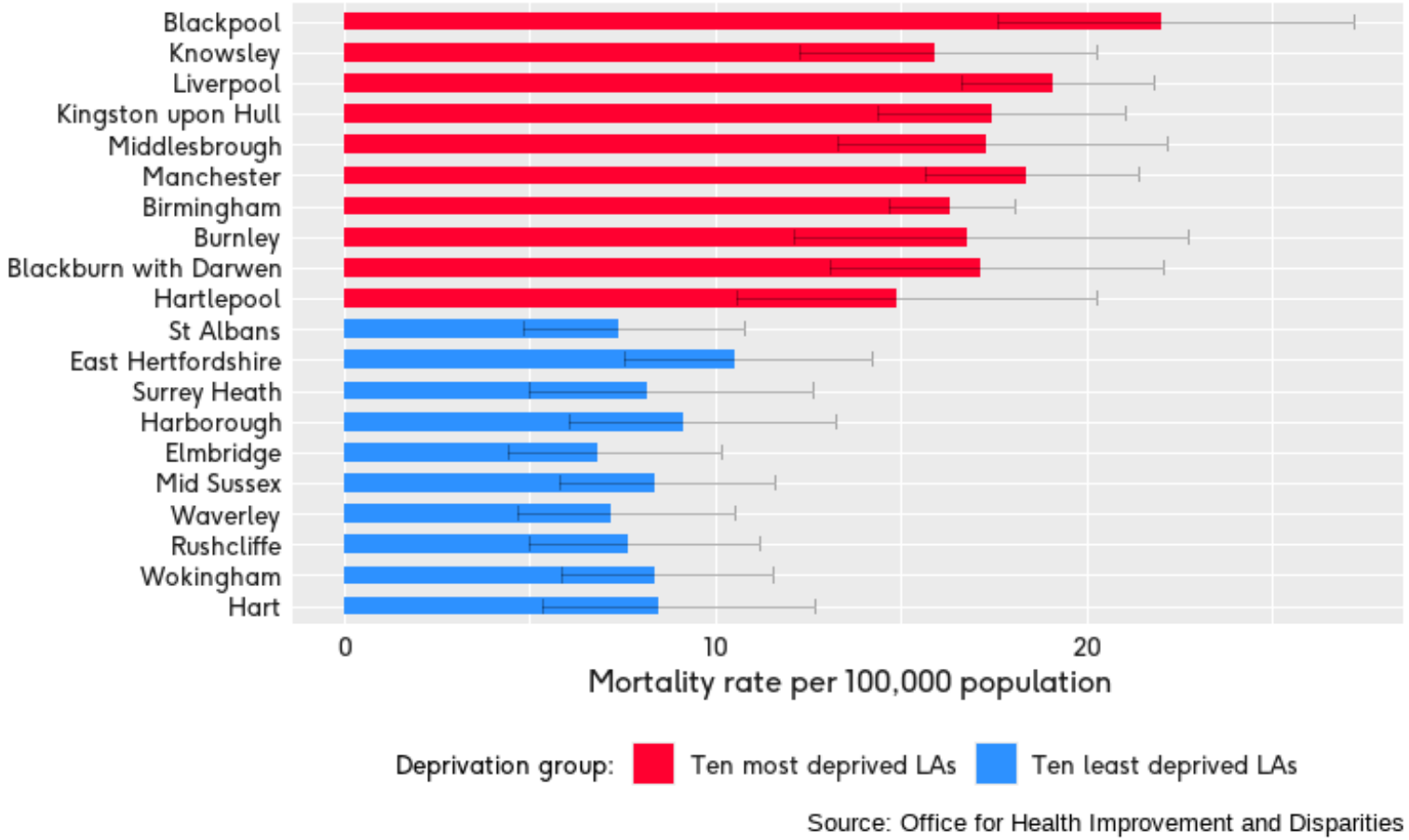
Between 2001–03 and 2021–23, the average premature ASDR from stroke fell by 53% and 55% in the ten most and least deprived LAs, respectively.

The relative difference between the average rates of the two groups did not change substantially over the past two decades – the rate in the most deprived group remained roughly double that of the least deprived (18 and 8 deaths per 100,000 people, respectively, in 2021–23).

Stroke mortality in people under 75 (2)

Figure 9: Under-75 mortality rate from stroke in the ten most and least deprived local authorities in England, 2021-2023

Local authorities ranked from most deprived (top) to least deprived (bottom)
Error bars represent the 95% confidence interval



Source: Office for Health Improvement and Disparities

The most recent data for 2021/23 further illustrates this division, with the ten most deprived local authorities recording substantially higher ASDRs for stroke compared to the ten least deprived.

In 2021–23 Blackpool experienced the highest number of premature deaths from stroke, at 22 per 100,000 population. This was more than 3 times the rate in Elmbridge (7 per 100,000 population).

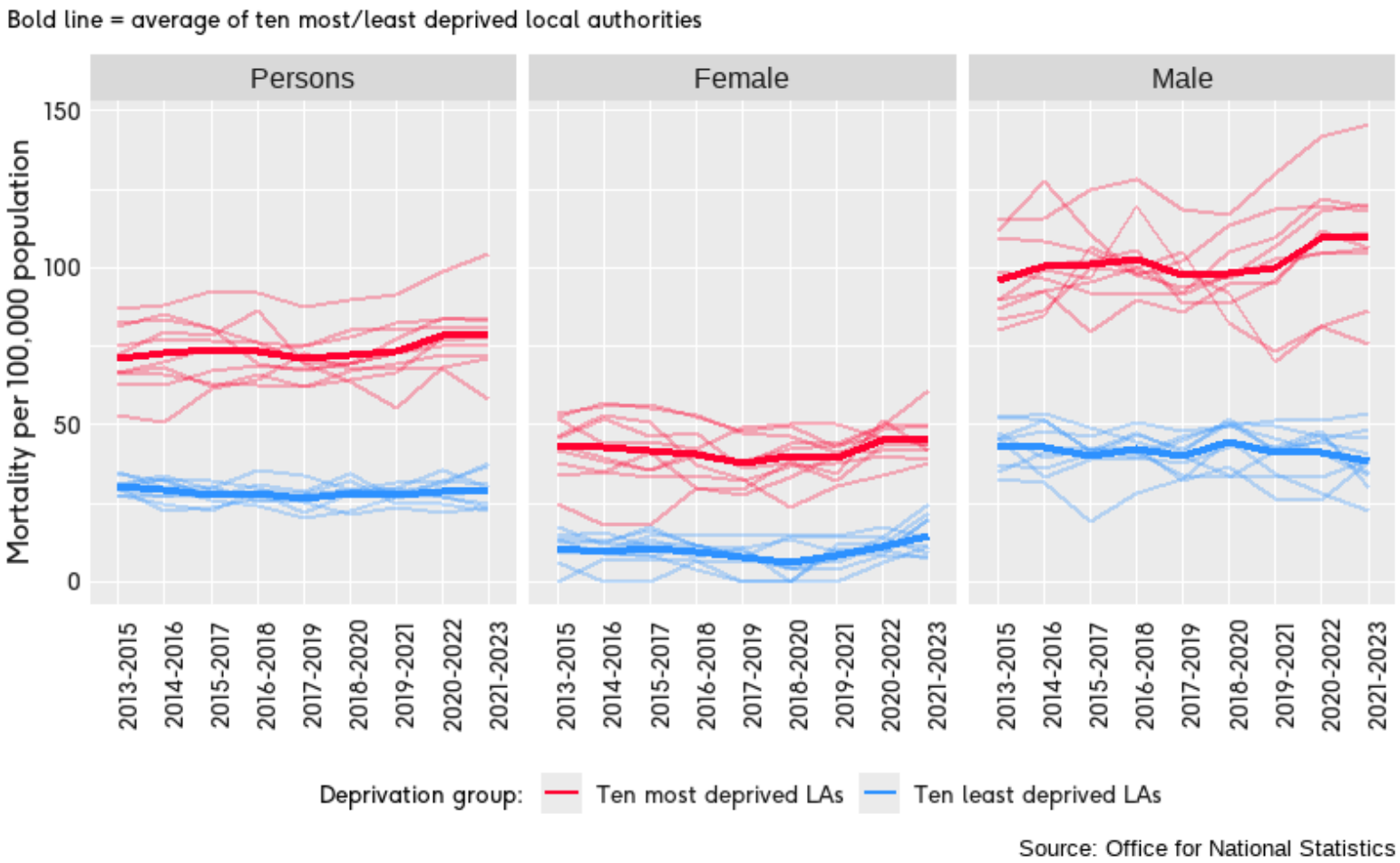
Working age mortality (20-64s)

Cardiovascular disease

Coronary heart disease

Working-age mortality from CVD

Figure 10: Working-age age-standardised death rate from CVD in the ten most and least deprived local authorities in England



Differences in CVD mortality are also apparent if we look at people of working age (20-64).

Over the past decade, working-age CVD mortality has consistently been higher in the ten most deprived LAs compared to the ten least deprived.

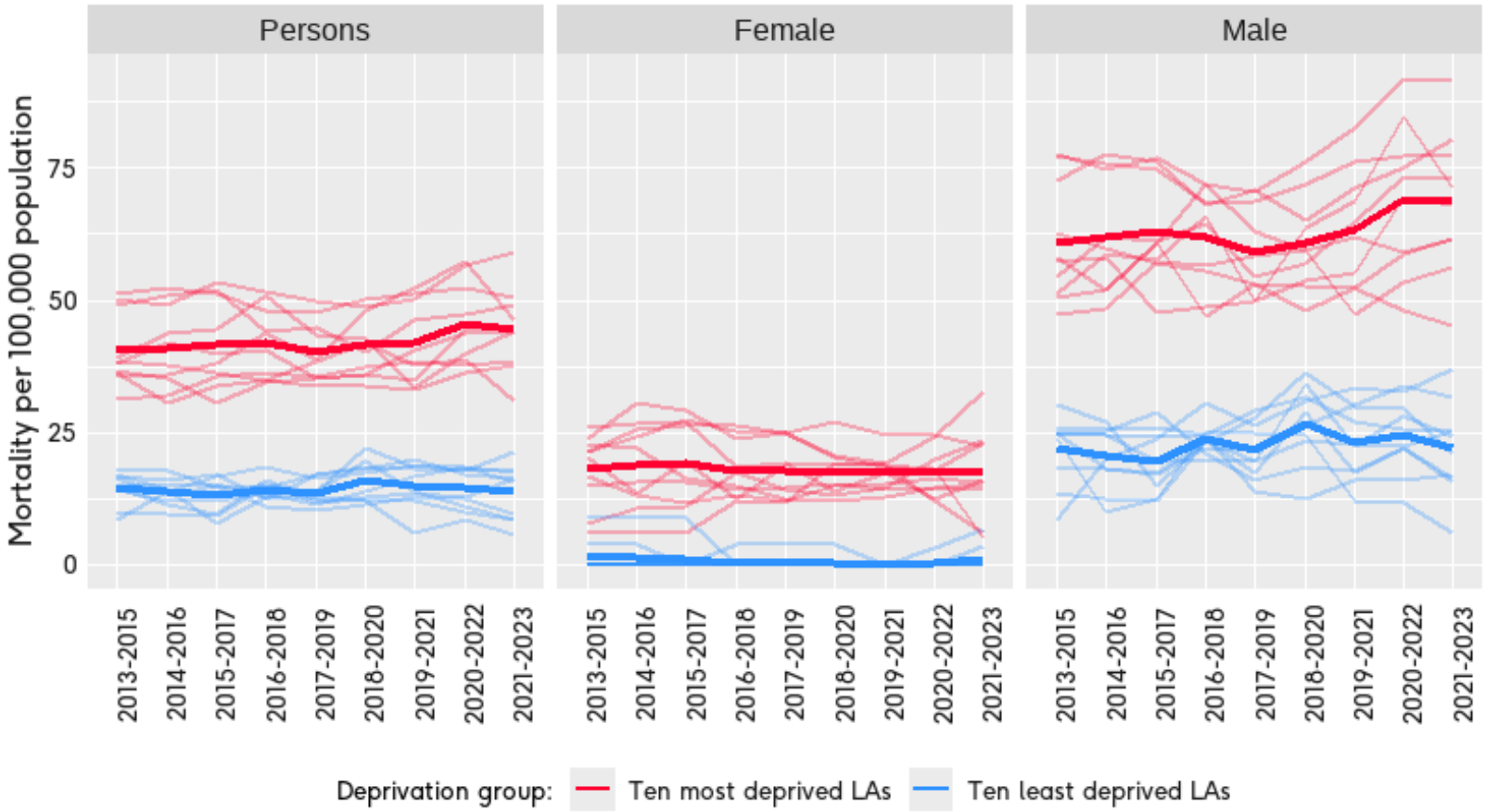
In the most deprived LAs, working age mortality from CVD has increased since over the last decade. For women, this increase only began after 2017–19.

In males, working-age mortality from CVD has increased by 14% in the most deprived LAs and decreased by 11% in the least deprived over the last decade.

Working-age mortality from CHD

Figure 11: Working-age age-standardised death rate from CHD in the ten most and least deprived local authorities in England

Bold line = average of ten most/least deprived local authorities



Source: Office for National Statistics

There is also a large disparity in coronary heart disease mortality in working age adults, between the most and least deprived LAs.

Among working-aged women in the least deprived LAs, deaths from CHD are very rare. In the most deprived LAs, mortality averaged more than 10 per 100,000 throughout the decade.

Among men in the most deprived LAs, average working-age mortality was more than double that of the least deprived LAs and increased by 16% between 2017–21 and 2023–23. In the least deprived LAs there was very little change over this period.

Morbidity

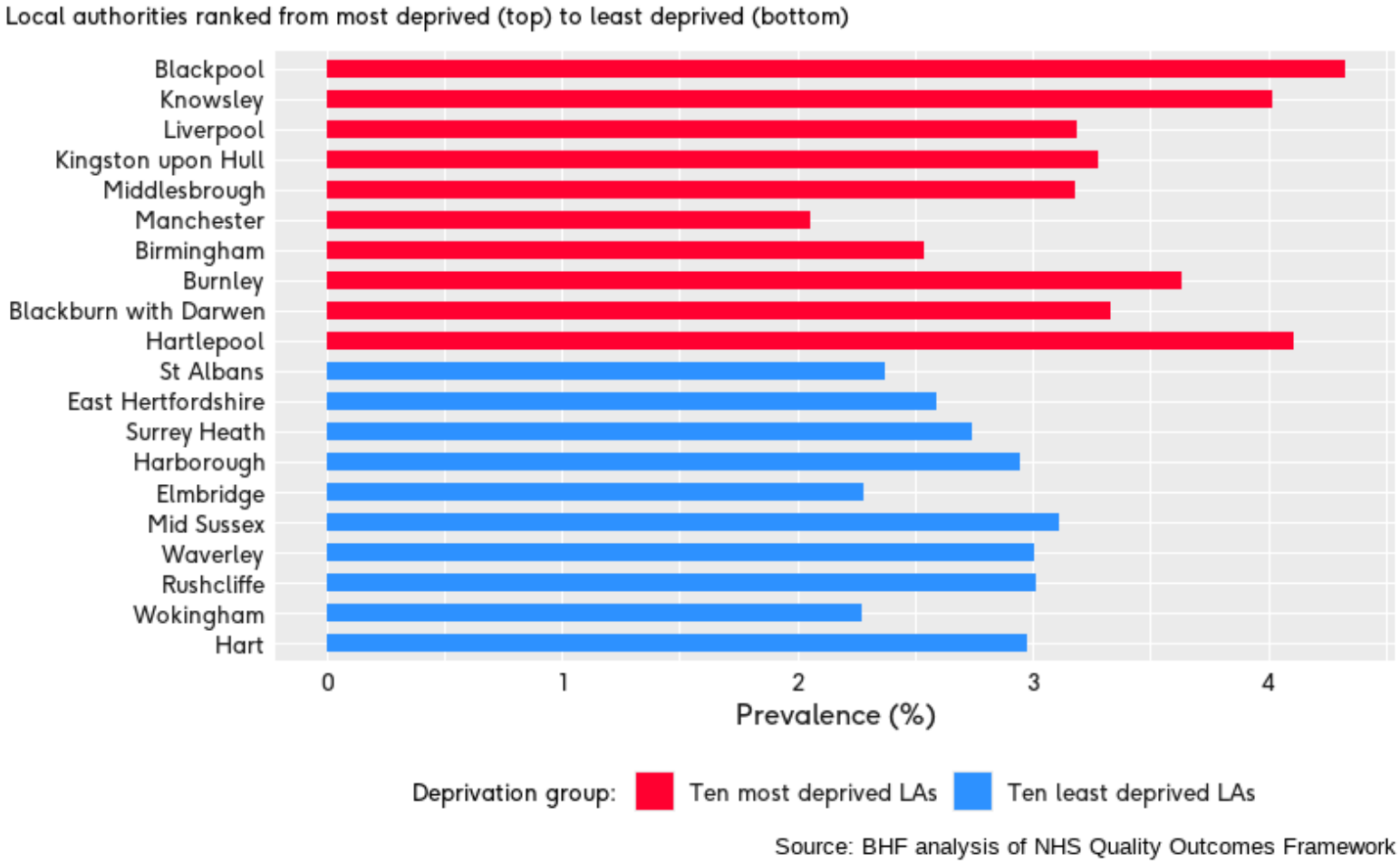
Coronary heart disease

Heart failure

Stroke

Coronary heart disease prevalence

Figure 12: Prevalence of CHD in the ten most and least deprived local authorities in England ranked by IMD, 2023/24



Source: BHF analysis of NHS Quality Outcomes Framework

This graph shows the crude prevalence of diagnosed CHD in each of the ten most and least deprived local authorities in England.

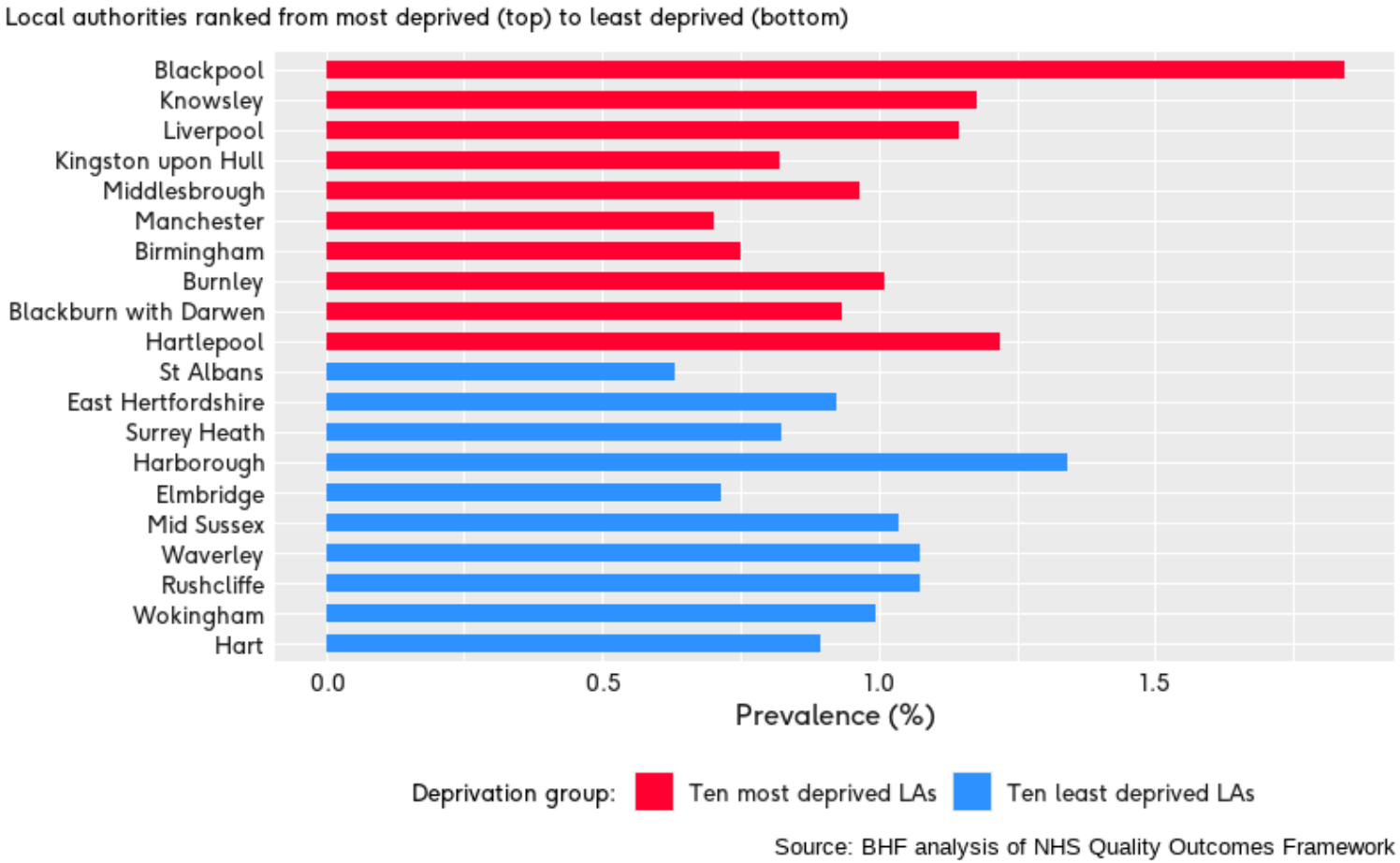
In most cases, the prevalence of CHD is higher in the most deprived areas compared to the least deprived, despite the most deprived areas generally having younger populations (see Figure 2).

Of the twenty LAs in this analysis Blackpool had the highest prevalence of CHD (4.3%).

Manchester and Wokingham had the lowest CHD prevalence (2.1% and 2.2%, respectively), despite the median age in Wokingham being 10 years older than in Manchester.

Heart failure prevalence

Figure 13: Prevalence of heart failure in the ten most and least deprived local authorities in England ranked by IMD, 2023/24



Source: BHF analysis of NHS Quality Outcomes Framework

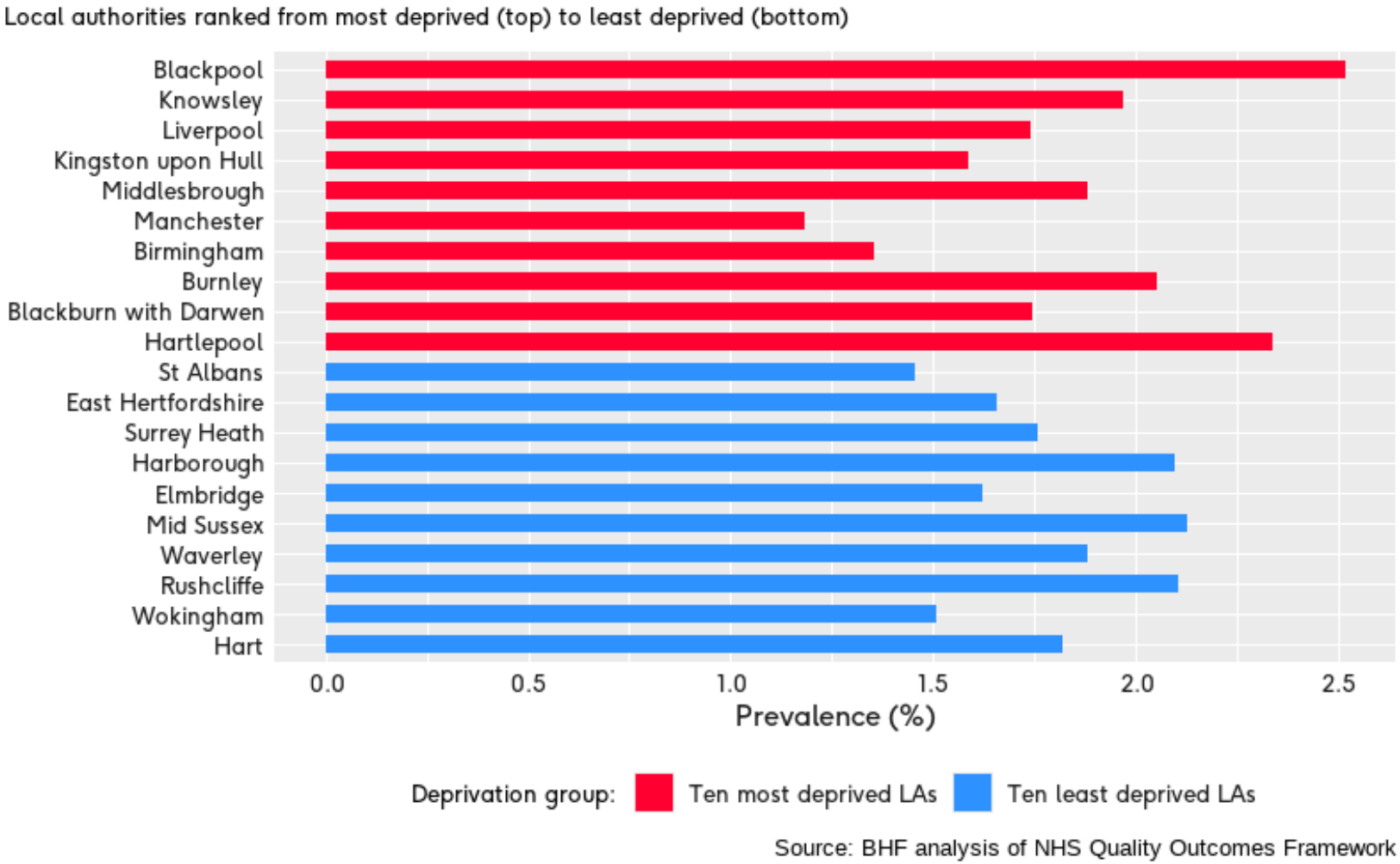
There is no age-standardised heart failure prevalence data available for local authorities. The age-standardised prevalence of heart failure is much higher in more deprived areas of England.[1]

Aside from Blackpool, there is no clear difference between the crude prevalence of heart failure between the ten most and least deprived local authorities. This is likely because the most deprived LAs are, on average, much younger (see Figure 2), and heart failure prevalence increases with age. These demographic differences are likely obscuring the true burden of heart failure in these populations.

In Blackpool, where the median age is 43, the diagnosed prevalence of heart failure was 1.8%. In Surrey Heath, which also has a median age of 43 years old, the prevalence was just 0.8%.

Stroke prevalence

Figure 14: Prevalence of stroke in the ten most and least deprived local authorities in England ranked by IMD, 2023/24



Source: BHF analysis of NHS Quality Outcomes Framework

This graph shows the crude prevalence of diagnosed stroke in each of the ten most and least deprived local authorities in England.

Despite having mostly younger populations, the most deprived LAs tend to have a higher, or comparable, prevalence of stroke to the least deprived LAs.

Blackpool had the highest prevalence of stroke, at over 2.5%.

Risk factors

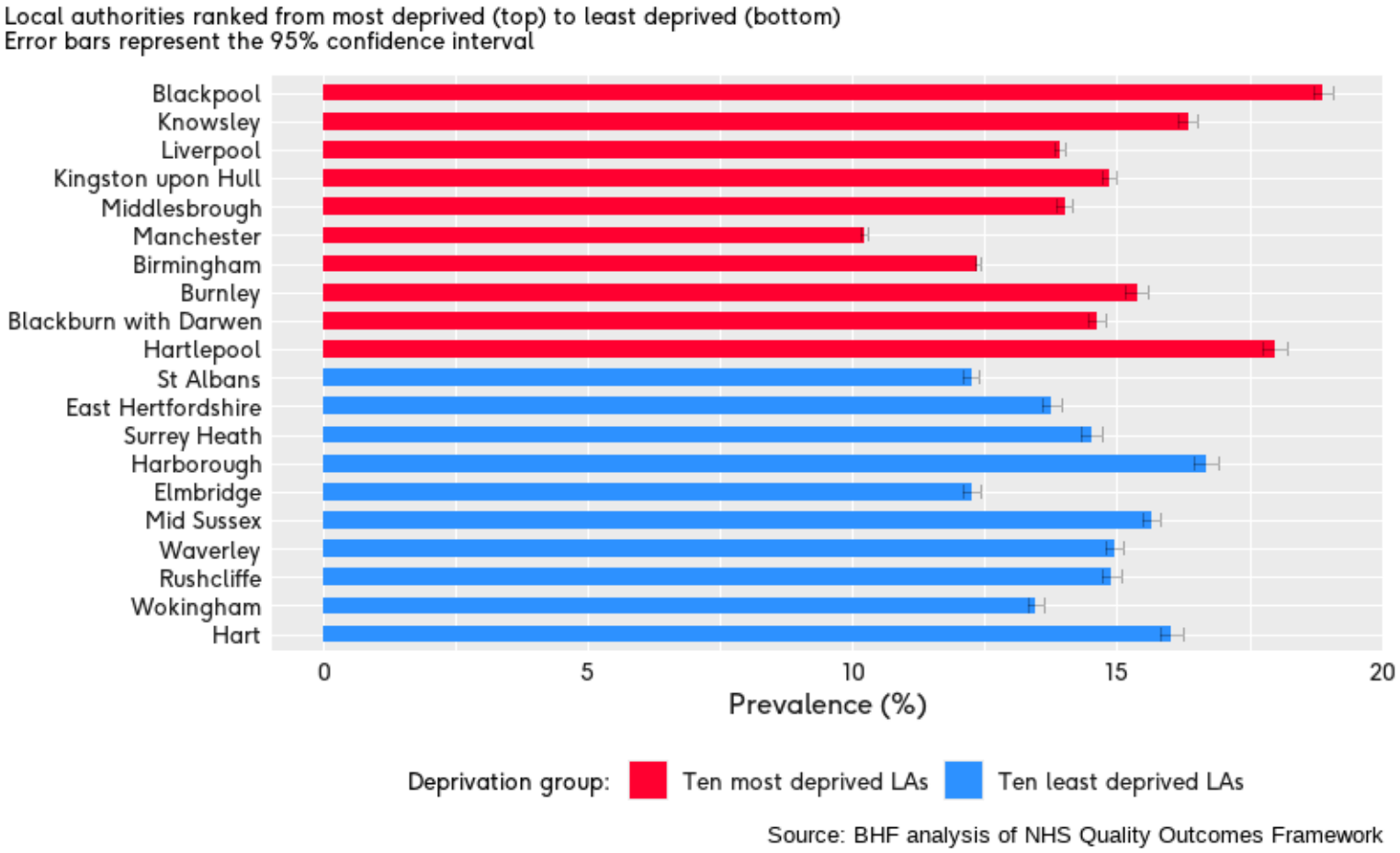
Hypertension

Obesity

Diabetes

Hypertension prevalence

Figure 15: Crude prevalence of hypertension in the ten most and least deprived local authorities in England ranked by IMD, 2023/24



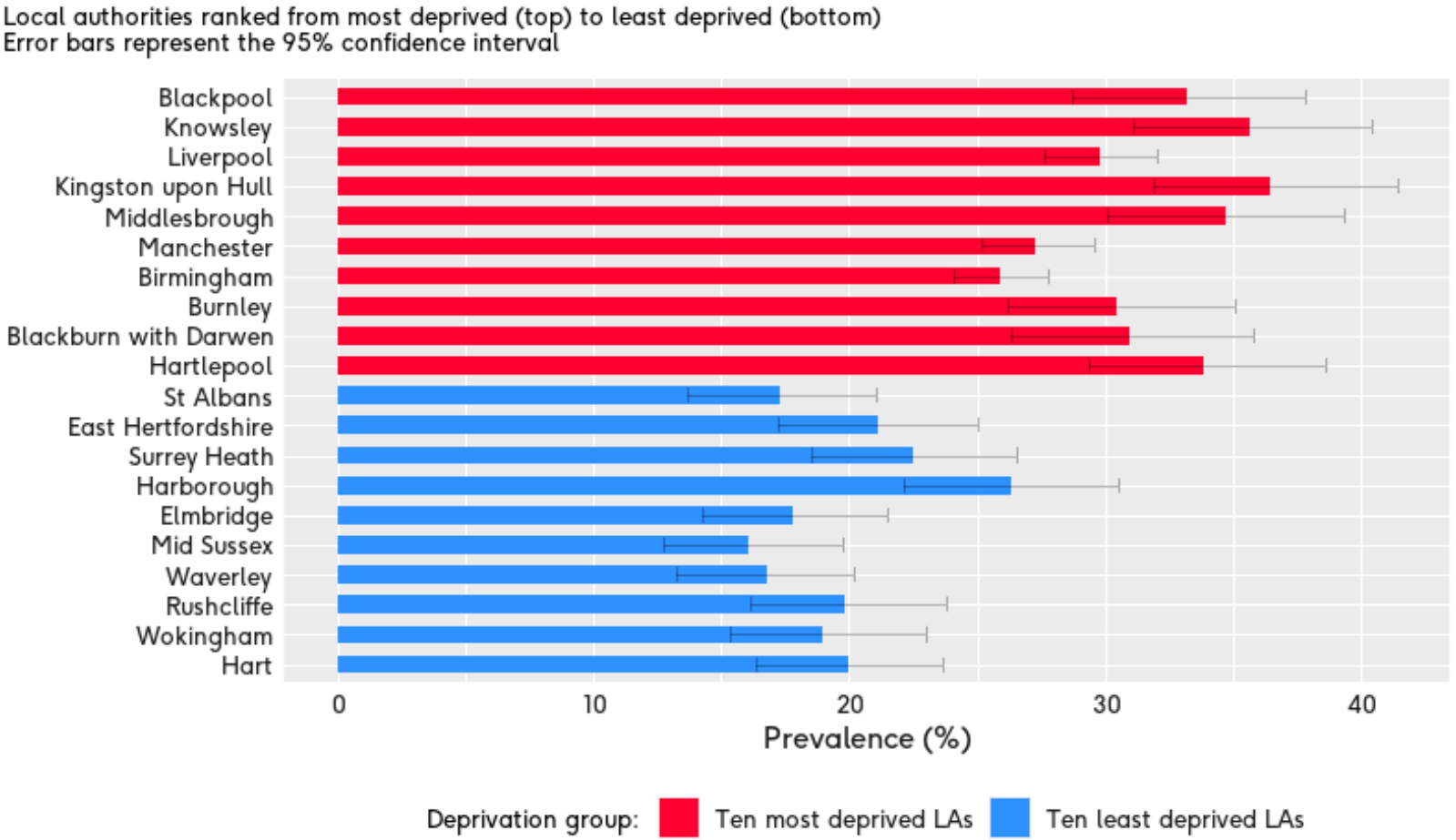
There is no age-standardised hypertension prevalence data available for local authorities. We know that, at a national level, the age-standardised prevalence of hypertension is much higher in more deprived areas of England.[1]

There is no clear difference in the crude prevalence of hypertension between the ten most and least deprived local authorities. This is likely because the most deprived LAs are, on average, much younger (see Figure 2), and hypertension prevalence increases with age.

Blackpool and Hartlepool have the highest prevalence of hypertension of the twenty LAs shown here.

Obesity prevalence

Figure 16: Prevalence of adult obesity in the ten most and least deprived local authorities in England ranked by IMD, 2022/23



Source: Office for Health Improvement and Disparities, Sports England

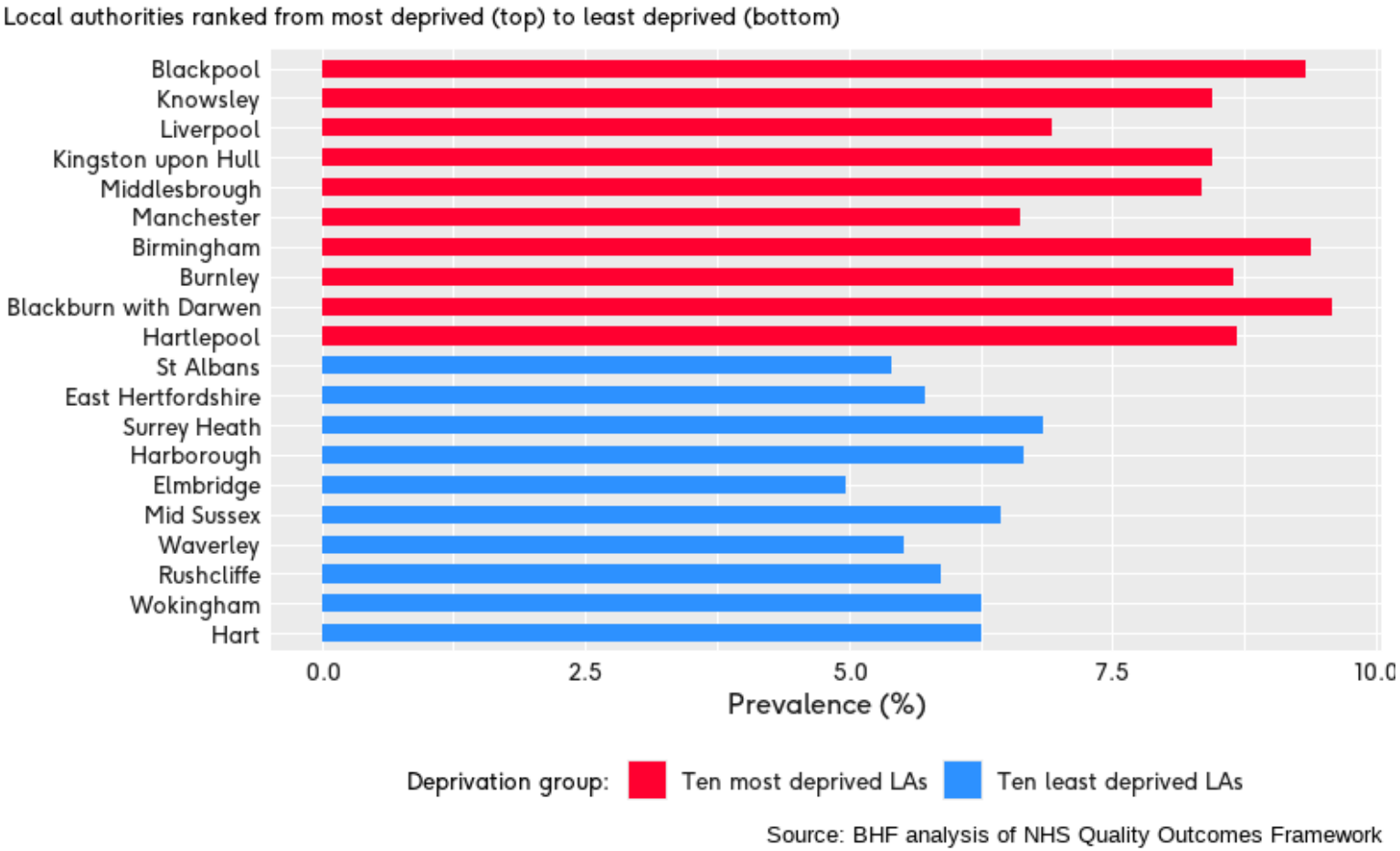
Obesity significantly increases the risk of developing cardiovascular disease. In the UK, around 1 in 9 CVD deaths are associated with high body mass index (BMI).[2]

In the most deprived LAs (except Birmingham), the prevalence of obesity is higher than any of the least deprived LAs.

This is despite obesity being more prevalent among older people and the least deprived LAs being older on average compared to the most deprived.

Diabetes prevalence

Figure 17: Prevalence of diabetes in the ten most and least deprived local authorities in England ranked by IMD, 2023/24



Diabetes is an important risk factor for many cardiovascular diseases. Adults with diabetes are 2-3 times more likely to develop CVD, and nearly twice as likely to die from heart disease or stroke as those without diabetes.[2]

Of the local authorities in our analysis, Blackburn with Darwen had the highest prevalence of diabetes in 2022/23 (9.6%). Elmbridge had the lowest (5.0%).

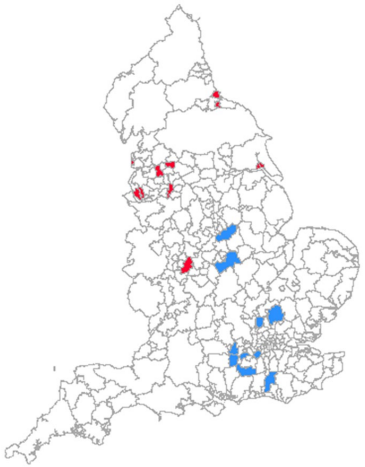
In all but one of the most deprived LAs, the prevalence of diabetes is higher than in all the least deprived LAs. This is despite the fact that the most deprived LAs generally have younger populations.

In Manchester and Liverpool, the prevalence of diabetes was more comparable to that in less deprived areas. This may be partly due to having a younger population.

Conclusions

Conclusions (1)

Previous BHF work has shown the significant role that deprivation plays in cardiovascular disease in England, and in the United Kingdom as a whole[1, 3].



In this new analysis, we highlight how the differences in cardiovascular health are even more extreme when we look at the ten most and least deprived local authorities in England.

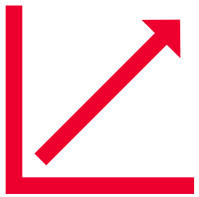
Indeed, Blackpool, which is the most deprived local authority in England, has consistently experienced the highest prevalence and incidence of cardiovascular disease, and cardiovascular mortality, of all the LAs included in this analysis.

Conclusions (2)

Cardiovascular mortality rates amongst under-75s and working age adults in England differ significantly between the ten most and least deprived local authorities.

Premature mortality rates for many cardiovascular diseases are three- or four- times greater in the most deprived local authority compared to the least deprived.

Working-age mortality from cardiovascular disease has increased over the past five years. This change is more pronounced in the most deprived local authorities.



The prevalence of important risk factors for cardiovascular disease, such as obesity and diabetes, is higher in the most deprived local authorities.

Methodology and definitions

Methodology: Index of Multiple Deprivation

We used OHID's Index of Multiple Deprivation (IMD) 2019 ranking of lower tier local authorities (District and unitary authorities), selecting the ten most and ten least deprived based on score.[4]

IMD is an indication of inequality by geography and the official measure of relative deprivation in England. It is a holistic measure of deprivation that encompasses a wide range of factors which affect an individual's living conditions.

Seven domains are combined and weighted to form the IMD2019: income; employment; health deprivation and disability; education and skills training; crime; barriers to housing and services; and living environment.

IMD is calculated for every neighbourhood in England—specifically by Lower-layer Super Output Area (LSOA), a geographical unit often used for local demographic analysis comprising between 400 and 1,200 households. All neighbourhoods are then scored and ranked according to their level of deprivation relative to that of the others. LSOA level output has been aggregated to describe relative deprivation at the local authority district level.

IMD is an area level measure of inequality and, subsequently, deprivation levels do not apply to every individual living in an area.

Methodology: Measures of CVD burden

To compare the burden of CVD between local authorities we extracted data on various measures of cardiovascular disease and associated risk factors. The main sources of data included:

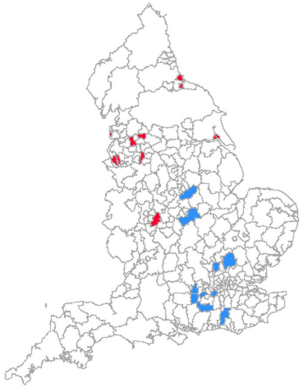
- Office for Health Improvement and Disparities' (OHID) Fingertips
- BHF prevalence estimates
- Office for National Statistics' NOMIS

The mortality data here is presented in three-year averages (e.g. 2021–2023) rather than single years. This is to smooth out annual fluctuations arising from random variation due to a small number of observations.

Data was analysed and plots were produced in R Studio.

Methodology: Strengths

This report provides a high-level summary of the differences in CVD disease burden, and its risk factors, between the ten most and least deprived local authorities in England. As such, it highlights the impact of deprivation in terms of recognisable, politically relevant geographies that will be familiar to most audiences.



Given the Government's target of reducing premature mortality from CVD by 25%,[5] this report highlights some of the political geographies where there exists unacceptably high mortality and morbidity from CVD, where there is most scope for improving cardiovascular health at a population level.

Methodology: Limitations

To best understand the *true* association between deprivation and CVD, it is necessary to use age-standardised data. Whilst this was available for mortality, it was not available for morbidity and CVD risk factors. Please see our national England inequalities report for analysis of these topics using age-standardised prevalence data.

This report is a high-level summary of cardiovascular health, including risk factors, at a local authority level. Missing from this analysis is local authority data on the prevalence of other clinical risk factors (like high cholesterol, or chronic kidney disease), behavioural risk factors (like smoking), and environmental risk factors (like air pollution). Data on many of these is available via OHID's Fingertips tool and in our national England inequalities report.

The Index of Multiple Deprivation is based on area deprivation data for 2019. As a result of this, it is possible that our list of the ten most and least deprived areas does not accurately reflect deprivation in England in 2025. An update of IMD is due in late 2025.[6]

Definitions

Term	Definition
Cardiovascular disease (CVD)	This is an umbrella term that refers to a range of conditions that affect the heart and circulatory system. It includes conditions like coronary heart disease and stroke. In this analysis we have used the International Classification of Diseases, 10th edition (ICD-10) grouping of I00-I99.
Coronary heart disease (CHD)	Coronary heart disease (CHD) is the most commonly diagnosed type of heart disease. It occurs when coronary arteries become narrowed by a build-up of atheroma, a fatty material within their walls. The pain or discomfort felt from such narrowing is called angina and if a blockage occurs it can cause a myocardial infarction (heart attack). It is sometimes referred to as ischaemic heart disease and is represented by the ICD-10 codes I20-I25.
Local authorities	Local authorities are organisations responsible for governing areas of the country. They differ in structure and responsibilities. Here, we have looked at district and unitary authorities.
Premature mortality	In the United Kingdom, in statistical terms, premature mortality is generally defined as people who have died before their 75th birthday.
Prevalence	Prevalence is the proportion of a population who have a disease (like cardiovascular disease) or characteristic (like being current smokers) at a given point in time.
Working age mortality	Official non-medical statistics tend to define 'working age' as people aged 16-64. Here, and in previous BHF analysis, we have used a definition of people aged 20-64. This is because age-standardised mortality rates are calculated—according to ONS standards—at the level of 5-year age bands. This is the definition that ONS have used when looking at working age mortality previously.[7]

References and data sources

References

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7. Office for National Statistics, 2021. Coronavirus (COVID-19) related deaths by occupation, England and Wales: deaths registered between 9 March and 28 December 2020. Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/causesofdeath/bulletins/coronaviruscovid19relateddeathsbyoccupationenglandandwales/deathsregisteredbetween9marchand28december2020

Data sources for figures

Figure number	Data source
1	Office for National Statistics (ONS) Open Geography Portal. Accessible from: https://geoportal.statistics.gov.uk/
2	Office for National Statistics (ONS) Nomis. Accessible from: https://www.nomisweb.co.uk/; Office for Health Improvement and Disparities (OHID) Fingertips. Accessible from: https://fingertips.phe.org.uk/. [Original data from ONS official census and labour market statistics]
3 & 4	OHID Fingertips. Accessible from: https://fingertips.phe.org.uk/. [Original data from ONS]
5, 6 & 7	OHID Fingertips. Accessible from: https://fingertips.phe.org.uk/. [Original data from ONS]
8 & 9	OHID Fingertips. Accessible from: https://fingertips.phe.org.uk/. [Original data from ONS]
10 & 11	Office for National Statistics (ONS) Nomis. Accessible from: https://www.nomisweb.co.uk/
12, 13 & 14	BHF analysis of NHS England Quality and Outcomes Framework. Data available from: https://digital.nhs.uk/data-and-information/publications/statistical/quality-and-outcomes-framework-achievement-prevalence-and-exceptions-data/2023-24
15	BHF analysis of NHS England Quality and Outcomes Framework. Data available from: https://digital.nhs.uk/data-and-information/publications/statistical/quality-and-outcomes-framework-achievement-prevalence-and-exceptions-data/2023-24
16	Office for Health Improvement and Disparities (OHID) Fingertips. Data available from: https://fingertips.phe.org.uk/. [Original data from Sport England Active Lives Survey]
17	BHF analysis of NHS England Quality and Outcomes Framework. Data available from: https://digital.nhs.uk/data-and-information/publications/statistical/quality-and-outcomes-framework-achievement-prevalence-and-exceptions-data/2023-24