Office for National Statistics

Statistical bulletin

Socioeconomic inequalities in avoidable mortality in England: 2020

Avoidable mortality in England, using measures of multiple deprivation to measure socioeconomic inequalities in those aged under 75 years.

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Next release:
To be announced

Table of contents

1 . Other pages in this release

More commentary on socioeconomic inequalities in avoidable mortality is available on the following page:

- Socioeconomic inequalities in avoidable mortality in Wales: 2020

2 . Main points

- Avoidable deaths accounted for 40.1% of all male deaths in the most deprived areas of England compared with 17.8% in the least deprived areas in 2020; for female deaths, it was 26.7% and 11.9%, respectively.
- Avoidable mortality rates in 2020 statistically significantly increased compared with 2019; this increase was substantially greater for those living in the most deprived areas.
- Avoidable mortality rates due to coronavirus (COVID-19) were statistically significantly higher in the most deprived areas compared with the least deprived areas.
- The Slope Index of Inequality (SII) indicated that there were 479.4 additional deaths per 100,000 males and 275.3 additional deaths per 100,000 females living in the most deprived areas compared with the least deprived areas.
- There was a statistically significant increase in the SII in 2020 compared with 2019, indicating inequality widened between the most and least deprived areas.

Statistician's comment

“Today’s data shows those living in the most deprived areas have a substantially higher rate of death from avoidable causes in 2020 than those living in the least deprived areas; deaths due to COVID-19 and other causes such as drugs and alcohol were notably higher in the most deprived areas.

The gap in avoidable mortality between the most and least deprived areas widened to its highest level since 2004 for males, and highest since the data began in 2001 for females. While deaths due to COVID-19 have widened this gap in 2020, it is necessary to undertake further analysis to assess the influence of the pandemic on the change in risk in other causes of avoidable death too and how it impacts on the inequality in future years.”

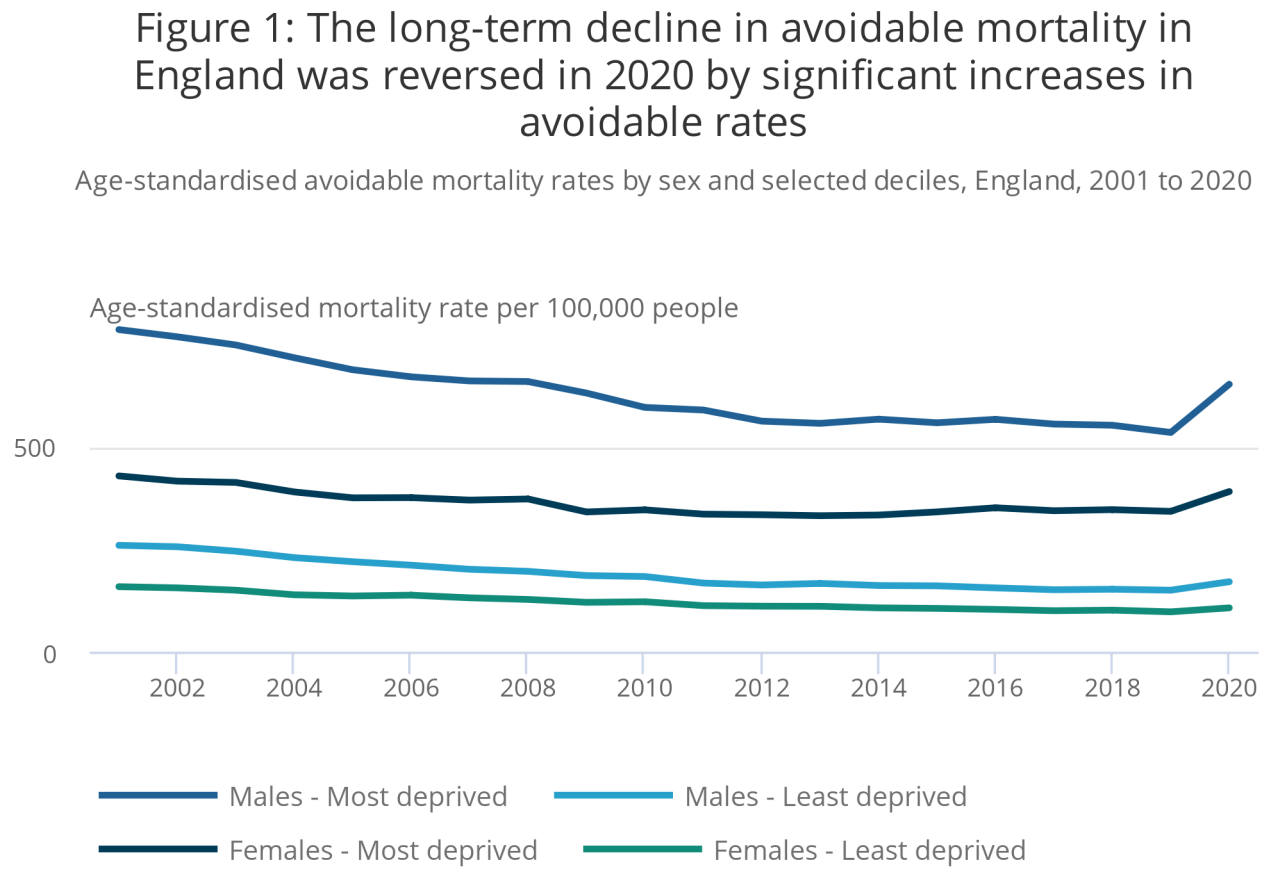
Chris White, Head of Health Inequalities, at the Office for National Statistics.

Data in this release have been created using the Organisation for Economic Co-operation and Development’s (OECD’s) international avoidable mortality definition (PDF, 694KB). Avoidable deaths are defined as either preventable or treatable for those aged under 75 years. Coronavirus (COVID-19) has been assigned as a preventable cause of death. For further details, see our Socioeconomic inequalities in avoidable mortality QMI.

3 . Socioeconomic inequalities in avoidable mortality

Figure 1: The long-term decline in avoidable mortality in England was reversed in 2020 by significant increases in avoidable rates

Age-standardised avoidable mortality rates by sex and selected deciles, England, 2001 to 2020



Source: Office for National Statistics – Deaths registered in England

Notes:

1. Figures are for deaths registered in each calendar year and exclude deaths of non-residents.

2. Age-standardised mortality rates are expressed per 100,000 people, stratified by sex and standardised to the 2013 European Standard Population.

3. Deprivation deciles are based on the Index of Multiple Deprivation. Most deprived areas refer to decile 1, and least deprived to decile 10.

In 2020, the male avoidable age-standardised mortality rate (ASMR) in the most deprived areas of England was 653.6 deaths per 100,000 males. This is statistically significantly higher than the 170.9 deaths per 100,000 males observed in the least deprived areas. The female ASMR also showed a statistically significant contrast, with 391.3 deaths per 100,000 females in the most deprived areas compared with 107.1 deaths per 100,000 females in the least deprived areas. Mortality rates for males were statistically significantly higher than females across all deprivation deciles.

Between 2001 and 2019, there have been statistically significant decreases in avoidable mortality for males and females living in the most and least deprived areas (Figure 1). The absolute falls were larger in the first decade compared with the second decade.

However, 2020 saw statistically significant increases in avoidable mortality rates for males and females living in the most and least deprived areas. In the most deprived areas, avoidable mortality rates increased to the highest level since 2008 for males and 2003 for females. The absolute gap in avoidable mortality between the most and least deprived areas widened to the highest level since 2004 for males, and the highest level in the data time series for females.

4 . Socioeconomic inequalities in avoidable mortality by cause

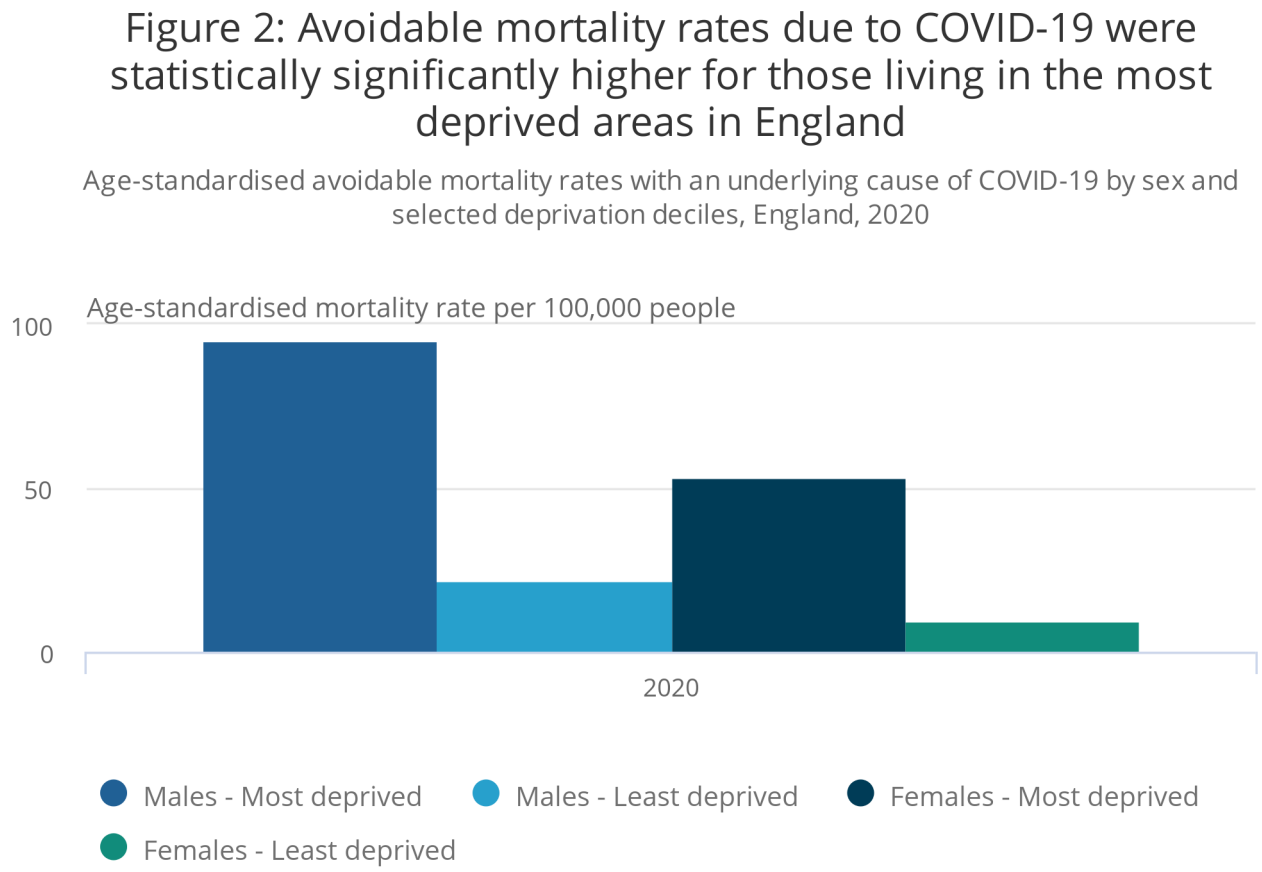
In this section we are focusing on:

- COVID-19; a new cause in the avoidable mortality definition.
- Alcohol and drug-related disorders; the only category of causes where the age-standardised mortality rate (ASMR) has shown statistically significant increases since 2001 for males and females in the most deprived areas and males in the least deprived areas.
- Neoplasms (cancers); the largest cause of avoidable mortality for females in the most and least deprived areas and for males in the least deprived areas in 2020.

Provisional assignment of new diseases

Figure 2: Avoidable mortality rates due to COVID-19 were statistically significantly higher for those living in the most deprived areas in England

Age-standardised avoidable mortality rates with an underlying cause of COVID-19 by sex and selected deprivation deciles, England, 2020



Source: Office for National Statistics – Deaths registered in England

Notes:

1. Figures are for deaths registered in each calendar year and exclude deaths of non-residents.
2. Age-standardised mortality rates are expressed per 100,000 people, stratified by sex and standardised to the 2013 European Standard Population.
3. Deprivation deciles are based on the Index of Multiple Deprivation. Most deprived areas refer to decile 1, and least deprived to decile 10.

Provisional assignment of new diseases is a new category in the Organisation for Economic Co-operation and Development's international definition of avoidable mortality (PDF, 694KB) to accommodate COVID-19 as an avoidable cause of death. There are no other causes of death within the category. In 2020, the avoidable mortality rates for deaths due to COVID-19 were statistically significantly higher for those in the most deprived areas compared with the least deprived areas (Figure 2).

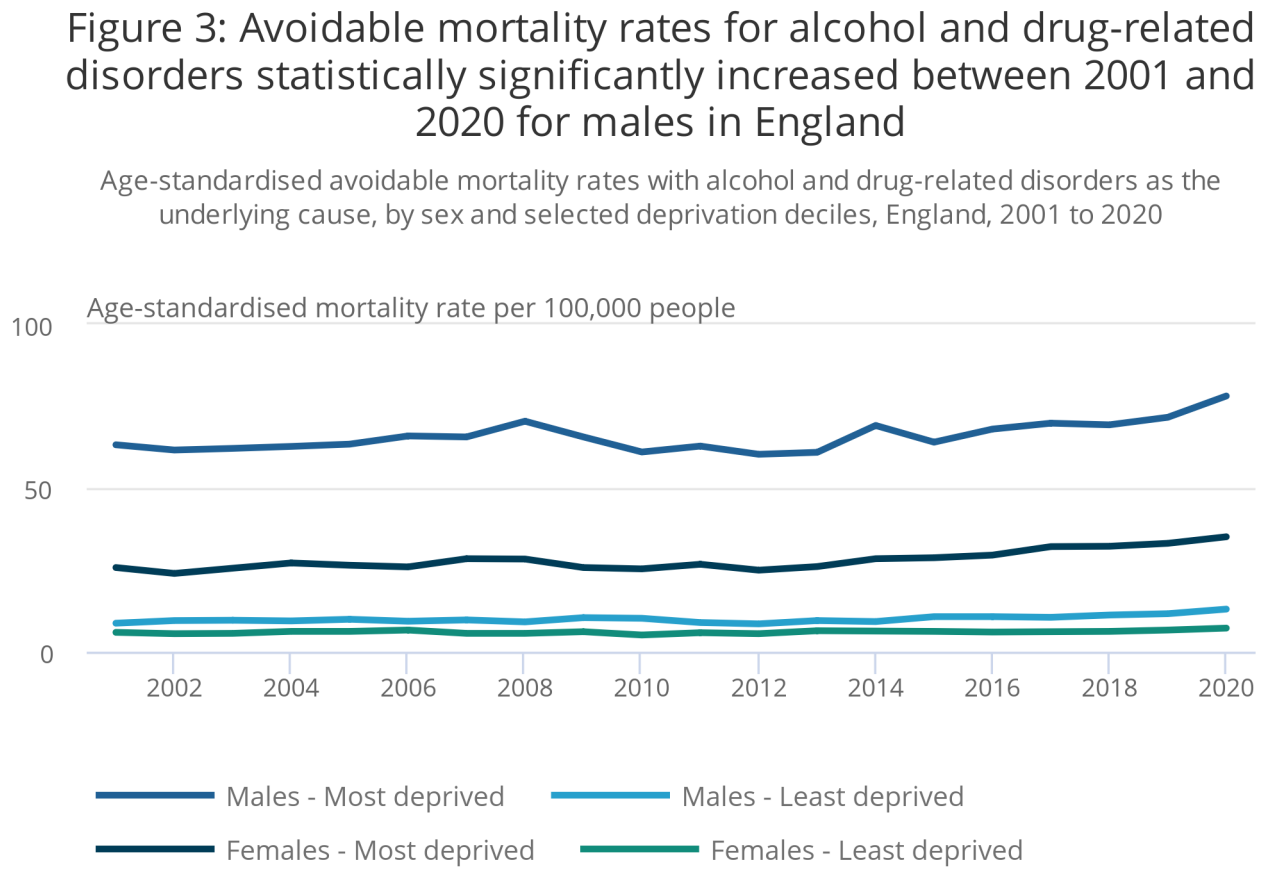
For males, the avoidable age-standardised mortality rate (ASMR) for deaths due to COVID-19 in the most deprived areas was 95.1 deaths per 100,000 males, compared with 21.9 deaths per 100,000 males in the least deprived areas. For females, the ASMR in the most deprived areas was 53.3 deaths per 100,000 females, compared with 9.4 deaths per 100,000 females in the least deprived areas. Rates in the most deprived areas were 4.3 and 5.7 times higher than in the least deprived areas for males and females, respectively.

There are complex factors to consider when trying to understand the reasons why COVID-19 deaths are higher in the most deprived areas compared with the least deprived areas. The Office for Health Improvement and Disparities' Wider Impacts of COVID-19 on Health monitoring tool explores the indirect effects of the coronavirus (COVID-19) pandemic.

Alcohol and drug-related disorders

Figure 3: Avoidable mortality rates for alcohol and drug-related disorders statistically significantly increased between 2001 and 2020 for males in England

Age-standardised avoidable mortality rates with alcohol and drug-related disorders as the underlying cause, by sex and selected deprivation deciles, England, 2001 to 2020



Source: Office for National Statistics – Deaths registered in England

Notes:

1. Figures are for deaths registered in each calendar year and exclude deaths of non-residents.
2. Age-standardised mortality rates are expressed per 100,000 people, stratified by sex and standardised to the 2013 European Standard Population.
3. Deprivation deciles are based on the Index of Multiple Deprivation. Most deprived areas refer to decile 1, and least deprived to decile 10.

Between 2001 and 2020, avoidable AMSRs for alcohol and drug-related disorders statistically significantly increased for males living in the most and least deprived areas, and for females living in the most deprived areas (Figure 3).

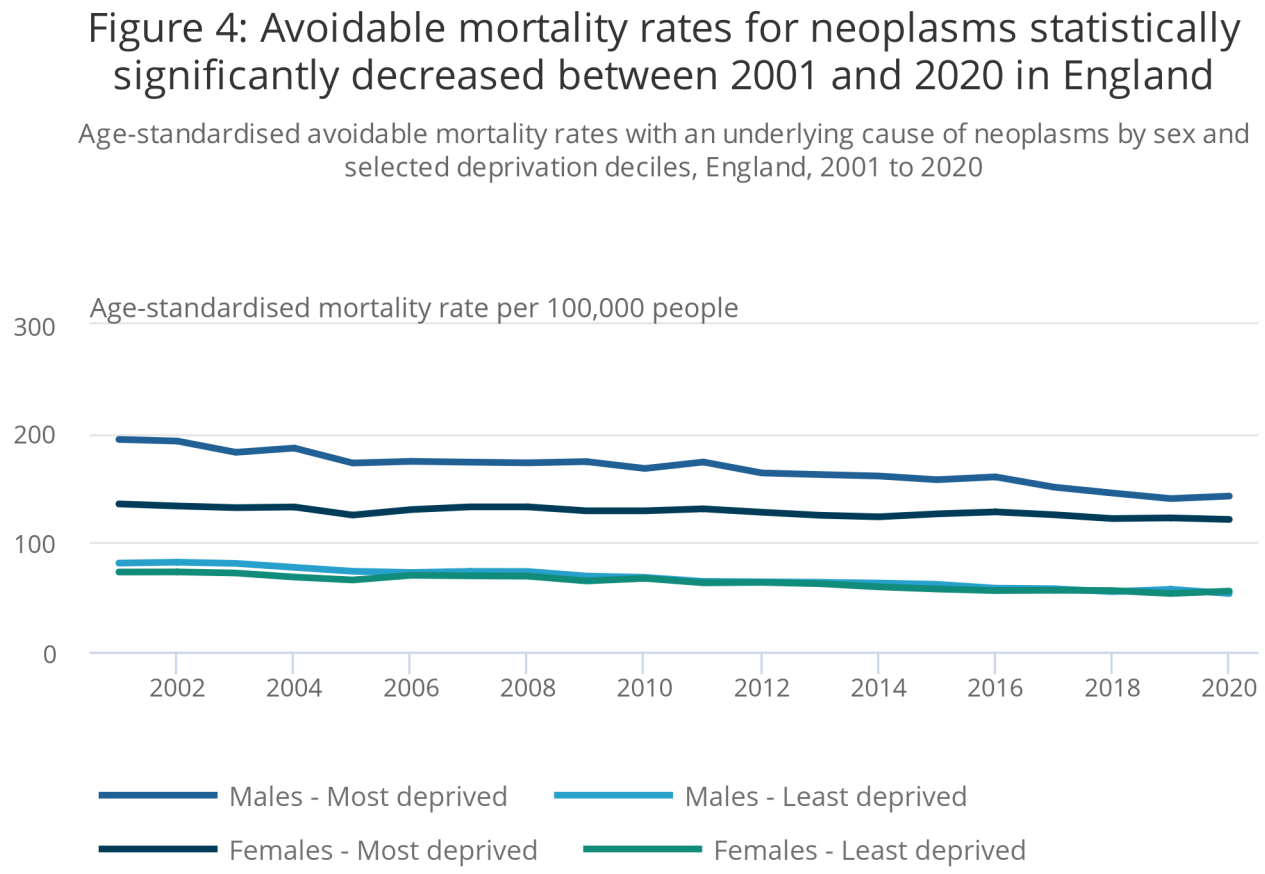
Over the last decade, avoidable mortality rates for alcohol and drug- related disorders have generally been increasing. Since 2012, which saw the lowest rates for those in the most and least deprived areas, rates have statistically significantly increased for males and females in the most deprived areas, and males in the least deprived areas. In the most deprived areas, the absolute gap between 2012 and 2020 was 17.8 deaths per 100,000 males, and 10.2 deaths per 100,000 females.

The higher rates observed in the most deprived areas compared with the least deprived areas are in line with those reported in our Alcohol-specific deaths in the UK: liver diseases and the impact of deprivation dataset. Deaths from drug-related disorders also increased in 2020; more information can be found in our Deaths related to drug poisoning in England and Wales: 2020 registrations bulletin.

Neoplasms (Cancer)

Figure 4: Avoidable mortality rates for neoplasms statistically significantly decreased between 2001 and 2020 in England

Age-standardised avoidable mortality rates with an underlying cause of neoplasms by sex and selected deprivation deciles, England, 2001 to 2020



Source: Office for National Statistics – Deaths registered in England

Notes:

1. Figures are for deaths registered in each calendar year and exclude deaths of non-residents.
2. Age-standardised mortality rates are expressed per 100,000 people, stratified by sex and standardised to the 2013 European Standard Population.
3. Deprivation deciles are based on the Index of Multiple Deprivation. Most deprived areas refer to decile 1, and least deprived to decile 10.

Between 2001 and 2020, avoidable mortality rates for neoplasms statistically significantly decreased for males and females living in the most and least deprived areas of England (Figure 4).

For males, the absolute gap in avoidable mortality between the most and least deprived areas widened slightly in 2020 compared with 2019. There was a gap of 89.3 deaths per 100,000 males in 2020 compared with a gap of 83.1 deaths per 100,000 males in 2019. For females, the absolute gap in avoidable mortality for neoplasms narrowed in 2020, decreasing from 69.3 deaths per 100,000 females in 2019 to 65.7 deaths per 100,000 females.

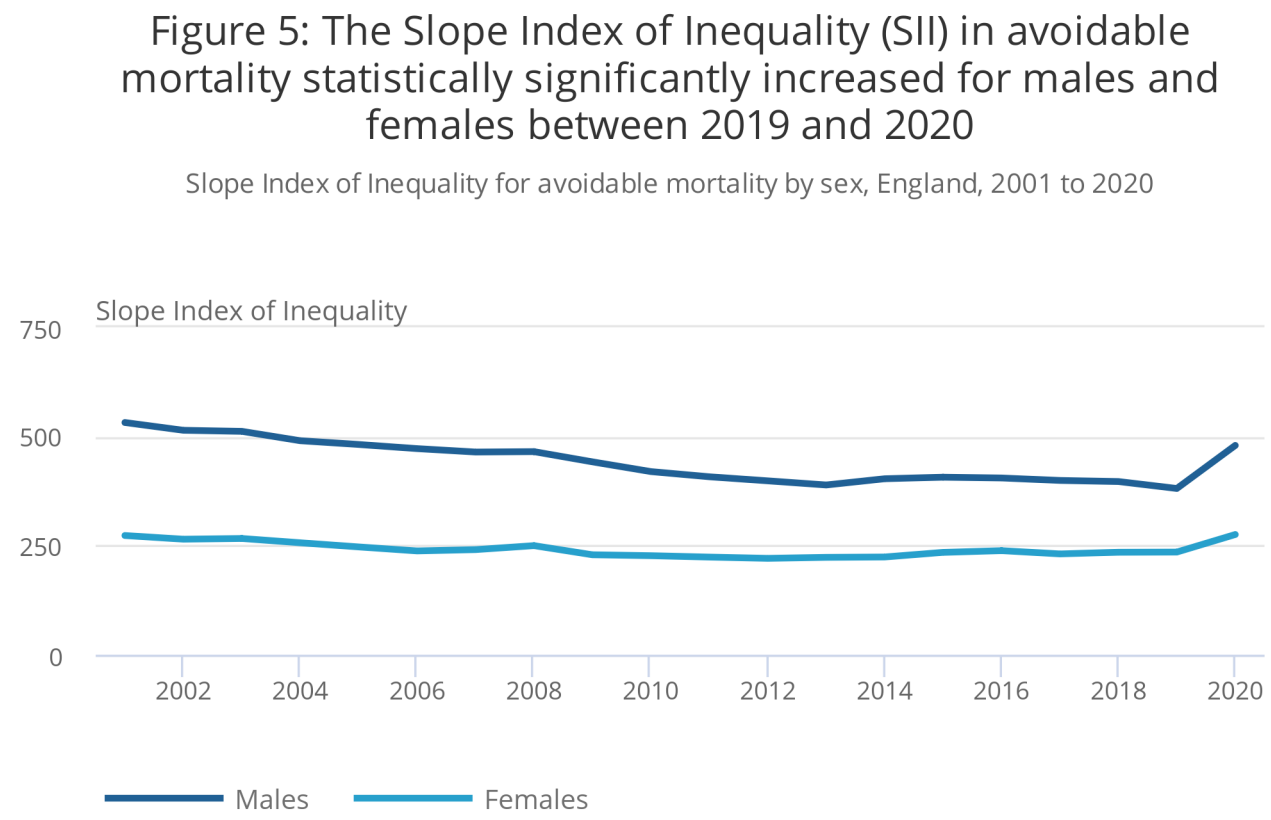
The statistically significant higher rates observed in the most deprived areas compared with the least deprived areas could be linked to lower screening uptake in the most deprived areas, as discussed in Cancer Research UK's Socio-economic deprivation analysis (PDF, 720KB).

5 . The Slope Index of Inequality (SII) in avoidable mortality

The SII measures the absolute inequality and represents the difference between the hypothetical “most” and “least” deprived areas on the deprivation scale. In this release, the SII figure represents the number of additional avoidable deaths per 100,000 people in the most deprived areas compared with the least.

Figure 5: The Slope Index of Inequality (SII) in avoidable mortality statistically significantly increased for males and females between 2019 and 2020

Slope Index of Inequality for avoidable mortality by sex, England, 2001 to 2020



Source: Office for National Statistics – Deaths registered in England

Notes:

1. Figures are for deaths registered in each calendar year and exclude deaths of non-residents

2. The Slope Index of Inequality is reported as a positive value to demonstrate increasing mortality rates with increasing deprivation.

Between 2001 and 2020, the inequality in the avoidable mortality rate for males statistically significantly decreased from 531.9 to 479.4 deaths per 100,000 males. However, for females there was an increase that was not statistically significant from 273.0 to 275.3 per 100,000 females (Figure 5).

For both males and females, there were large, statistically significant increases in the inequality in avoidable mortality between 2019 and 2020. There was a 25.9% increase for males and a 17.1% increase for females. In 2020, the SII was statistically significantly higher than all years since 2009 for males and 2004 for females.

6 . Socioeconomic inequalities in avoidable mortality in England data

Socioeconomic inequalities in avoidable mortality: England analysis
Dataset | Released 28 March 2022
Annual age-standardised mortality rates by deprivation decile, sex and cause as well as absolute (Slope Index of Inequality) measures of inequality in England.

7 . Glossary

Preventable mortality

Preventable mortality refers to causes of death that can be mainly avoided through effective public health and primary prevention interventions (that is, before the onset of diseases or injuries, to reduce incidence).

Treatable mortality

Refers to causes of death that can be mainly avoided through timely and effective health care interventions, including secondary prevention and treatment (that is, after the onset of disease, to reduce case fatality).

Avoidable mortality

Refers to deaths that are preventable or treatable.

Age-standardised mortality rates

Used to allow comparisons between populations that may contain different proportions of people of different ages.

Statistical significance

Refers to statistically significant changes or differences. Statistical significance has been determined using the 95% confidence intervals, where instances of non-overlapping confidence intervals between figures indicate the difference is unlikely to have arisen from random fluctuation.

Slope Index of Inequality (SII)

Models the absolute inequality (the difference between the hypothetical most and least deprived populations) in avoidable mortality using weighted linear regression. This takes account of the inequality across all adjacent deciles of relative deprivation, rather than focusing only on the differencing of the two extremes.

8 . Measuring the data

Figures are calculated using death registration data for England held by the Office for National Statistics (ONS).

Defining avoidable mortality

The Organisation for Economic Co-operation and Development's (OECD's) international avoidable mortality definition (PDF, 694KB) has been implemented from 2001 onwards.

This definition of avoidable mortality is different to the NHS' measure of avoidable deaths in hospital, which NHS trusts in England are required to publish figures on. More information on this is available in our Socioeconomic inequalities in avoidable mortality QMI.

More quality and methodology information on strengths, limitations, appropriate uses, and how the data were created is available in the Socioeconomic inequalities in avoidable mortality QMI. Further breakdowns of data are included in our Socioeconomic inequalities in avoidable mortality: England analysis datasets.

Socioeconomic deprivation

Socioeconomic deprivation is measured using England's Index of Multiple Deprivation (IMD) on gov.uk, which provides an overall relative measure of deprivation for each Lower layer Super Output Area (LSOA). More information can be found in our Socioeconomic inequalities in avoidable mortality QMI.

Early access for quality assurance purposes

We provide early access for quality assurance to a small number of people working in other government bodies. This is for general comment on the plausibility of our findings. However, the Office for National Statistics (ONS) independently produces these statistics, and determines the content and interpretation of the measures presented in bulletins.

9 . Strengths and limitations

The main strength of our Socioeconomic inequalities in avoidable mortality bulletin is that the implementation of the Organisation for Economic Co-operation and Development's (OECD's) international avoidable mortality definition (PDF, 694KB) means our statistics are internationally comparable.

The main limitation of our Socioeconomic inequalities in avoidable mortality bulletin is that cause of death data do not account for coding changes that occurred in 2011 and 2014.

10 . Related links

Avoidable mortality in Great Britain: 2020
Bulletin | Released 7 March 2022
Deaths from causes considered avoidable given timely and effective healthcare or public health interventions.

Changing trends in mortality by national indices of deprivation, England and Wales: 2001 to 2018
Article | Released 10 March 2020
Analysis of the recent changes in the trends of mortality rates in England and Wales by deprivation (Experimental Statistics).

Deaths registered in England and Wales: 2020
Bulletin | Released 6 July 2021
Registered deaths by age, sex, selected underlying causes of death and the leading causes of death. Contains death rates and death registrations by area of residence and single year of age.

Health state life expectancies by national deprivation deciles, England: 2017 to 2019
Bulletin | Released 22 March 2021
Life expectancy and years expected to live in “Good” health and disability-free using national indices of deprivation to measure socioeconomic inequalities in England.