

Statistical bulletin

Socioeconomic inequalities in avoidable mortality in Wales: 2020

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



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Table of contents

1. [Other pages in this release](#)
2. [Main points](#)
3. [Socioeconomic inequalities in avoidable mortality](#)
4. [Socioeconomic inequalities in avoidable mortality by cause](#)
5. [The Slope Index of Inequality \(SII\) in avoidable mortality](#)
6. [Socioeconomic inequalities in avoidable mortality in Wales data](#)
7. [Glossary](#)
8. [Measuring the data](#)
9. [Strengths and limitations](#)
10. [Related links](#)

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 England: 2020](#)

2 . Main points

- Avoidable deaths accounted for 37.0% of all male deaths in the most deprived areas of Wales compared with 18.9% in the least deprived areas in 2020; for females it was 25.7% and 14.1% respectively.
- While avoidable mortality rates have decreased in 2020 compared with 2001, they have increased compared with 2019.
- Avoidable mortality rates with coronavirus (COVID-19) as an underlying cause of death 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 460.9 additional deaths per 100,000 males and 279.1 additional deaths per 100,000 females living in the most deprived areas compared with the least deprived areas in 2020.

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 the [Socioeconomic inequalities in avoidable mortality QMI](#).

Statistician's comment

"Today's data show there were increases in avoidable mortality rates in Wales in 2020. The figures point to an increased level of inequality, as the gap in avoidable mortality between the most and least deprived areas widened to the highest level since 2003 for males and since the data began in 2001 for females. Future analysis will show how this gap changes as we emerge from the pandemic."

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

3 . Socioeconomic inequalities in avoidable mortality

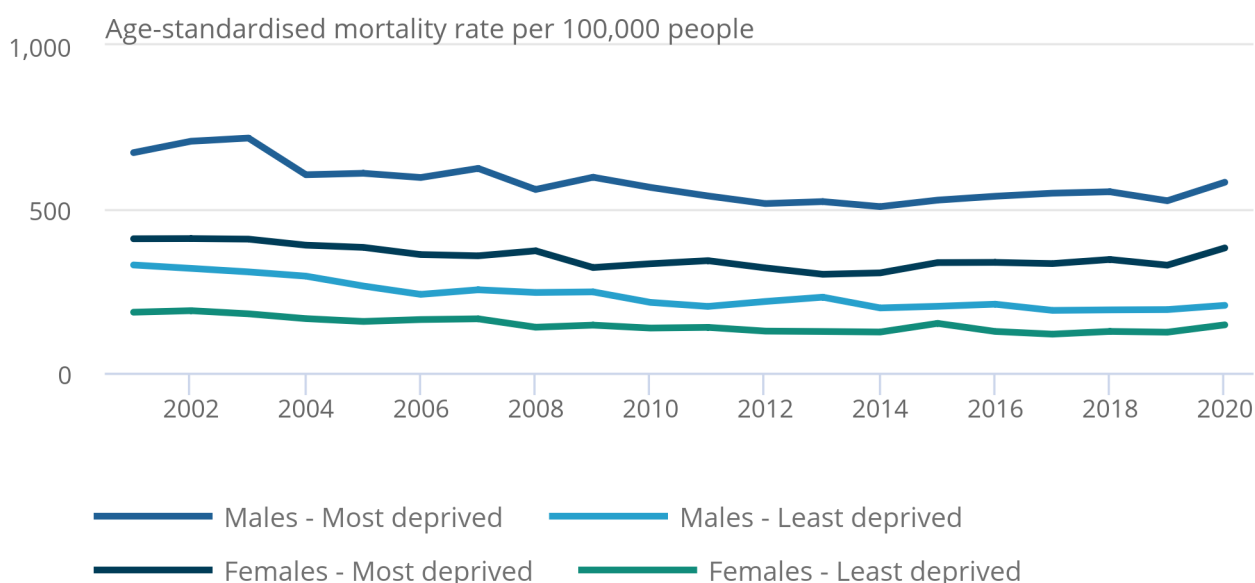
Following stakeholder feedback, this publication is presented based on quintiles of deprivation rather than deciles, as presented in previous years. Figures based on deciles can be found in the accompanying [Wales analysis dataset](#).

Figure 1: The avoidable mortality rate statistically significantly increased for females living in the most deprived areas between 2019 and 2020 in Wales

Age-standardised avoidable mortality rates by sex and selected deprivation quintiles, Wales, 2001 to 2020

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Age-standardised avoidable mortality rates by sex and selected deprivation quintiles, Wales, 2001 to 2020



Source: Office for National Statistics – Deaths registered in Wales

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 quintiles are based on the Welsh Index of Multiple Deprivation. Most deprived areas refer to quintile 1, and least deprived to quintile 5.

In 2020, the male avoidable age-standardised mortality rate (ASMR) in the most deprived areas of Wales (quintile 1) was 581.6 deaths per 100,000 males; statistically significantly higher than the 205.6 deaths per 100,000 males observed in the least deprived areas (quintile 5).

The female avoidable ASMR also showed a statistically significant contrast with 381.0 deaths per 100,000 females in the most deprived areas compared with 146.1 deaths per 100,000 females in the least deprived areas (Figure 1). Mortality rates for males were statistically significantly higher than females across all deprivation quintiles.

Avoidable mortality rates between 2001 and 2020 have statistically significantly decreased for males living in the most deprived areas, and males and females in the least deprived areas. Most recently, between 2019 and 2020, avoidable ASMRs have increased for males and females living in both the most and least deprived areas of Wales. However, these increases were only statistically significant for females living in the most deprived areas. The absolute gap in avoidable mortality between the most and least deprived areas has widened to the highest level since 2003 for males and since the data time series began for females.

4 . Socioeconomic inequalities in avoidable mortality by cause

In this section we are focusing on:

- COVID-19 as a new cause in the avoidable mortality definition
- neoplasms (cancers) and diseases of the circulatory system because they are the largest causes of avoidable mortality for females and males respectively

Provisional assignment of new diseases

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

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

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



Source: Office for National Statistics – Deaths registered in Wales

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 quintiles are based on the Welsh Index of Multiple Deprivation. Most deprived areas refer to quintile 1, and least deprived to quintile 5.

Provisional assignment of new diseases is a new category in the Organisation for Economic Co-operation and Development's (OECD's) [international avoidable mortality definition](#) (PDF, 694KB) to accommodate coronavirus (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). The age-standardised mortality rates (ASMR) in the most deprived areas were 91.3 deaths per 100,000 males and 53.6 deaths per 100,000 females, compared with 32.7 deaths per 100,000 males and 14.9 deaths per 100,000 females in the least deprived areas.

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. For further information on COVID-19 data and their impact on society and the economy, please see the [COVID-19 interactive dashboard](#), produced by the Welsh Government.

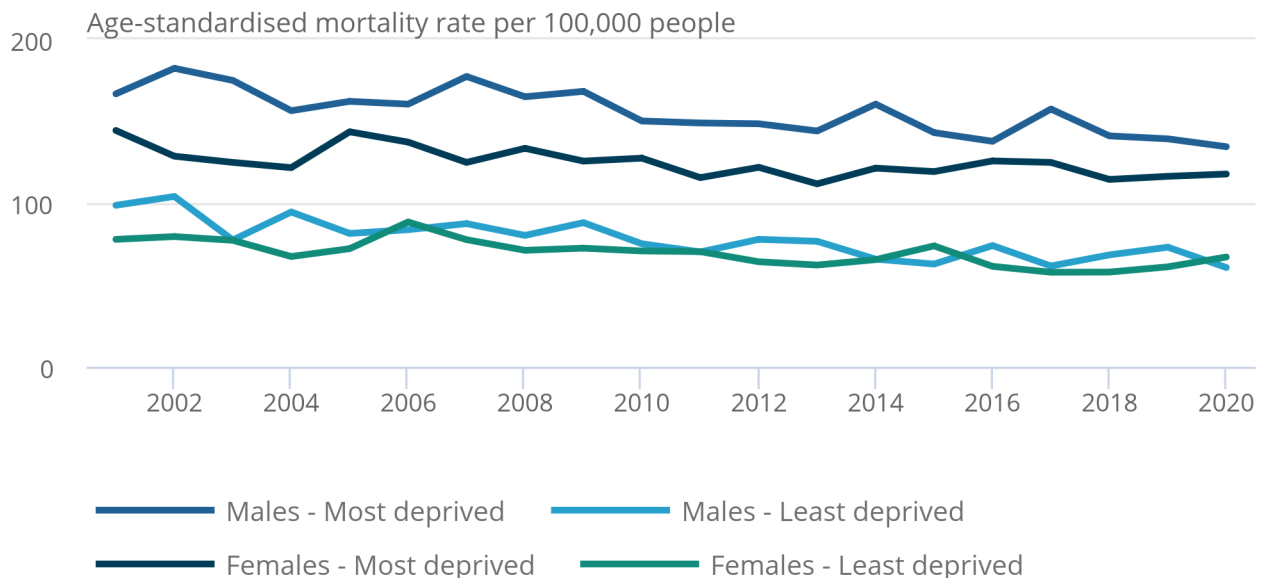
Neoplasms (cancers)

Figure 3: The gap in avoidable mortality rates for neoplasms between the most and least deprived areas was wider in 2020 than 2019 for males but narrower for females in Wales

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

Figure 3: The gap in avoidable mortality rates for neoplasms between the most and least deprived areas was wider in 2020 than 2019 for males but narrower for females in Wales

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



Source: Office for National Statistics – Deaths registered in Wales

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 quintiles are based on the Welsh Index of Multiple Deprivation. Most deprived areas refer to quintile 1, and least deprived to quintile 5.

Between 2001 and 2020, ASMRs for neoplasms have fluctuated, with overall non-significant decreases for males and females living in the most deprived areas and females in the least deprived areas (Figure 3). For males in the least deprived areas of Wales, there has been a statistically significant decrease in the avoidable ASMR for neoplasms between 2001 and 2020, falling from 98.6 to 60.6 deaths per 100,000 males.

For males, the absolute gap in avoidable mortality between the most and least deprived areas of Wales widened between 2019 and 2020, with a gap of 66.2 deaths per 100,000 males in 2019 compared with a gap of 73.8 deaths per 100,000 males in 2020. Conversely, the female absolute gap narrowed from 55.3 deaths per 100,000 females in 2019 to 50.7 deaths per 100,000 females in 2020.

In 2020, ASMRs for neoplasms in the most deprived areas were statistically significantly higher than those in the least deprived areas of Wales, for both males and females. This supports findings from Public Health Wales who report [increased death rates from all cancers as area deprivation increases](#).

Diseases of the circulatory system

Figure 4: The avoidable mortality rates for diseases of the circulatory system statistically significantly decreased between 2001 and 2020 in Wales

Age-standardised avoidable mortality rates with an underlying cause of diseases of the circulatory system by sex and selected deprivation quintiles, Wales, 2001 to 2020

Figure 4: The avoidable mortality rates for diseases of the circulatory system statistically significantly decreased between 2001 and 2020 in Wales

Age-standardised avoidable mortality rates with an underlying cause of diseases of the circulatory system by sex and selected deprivation quintiles, Wales, 2001 to 2020



Source: Office for National Statistics – Deaths registered in Wales

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 quintiles are based on the Welsh Index of Multiple Deprivation. Most deprived areas refer to quintile 1, and least deprived to quintile 5.

Between 2001 and 2020, the ASMRs for diseases of the circulatory system have statistically significantly decreased for males and females living in the most and least deprived areas of Wales (Figure 4). However, the largest improvements were mainly seen in the first decade, with statistically significant decreases between 2001 and 2010. In the second decade, improvements have slowed, with non-significant decreases between 2011 and 2020.

For males, the absolute gap in avoidable mortality between the most and least deprived areas widened to 113.2 deaths per 100,000 males in 2020, compared with 108.8 deaths per 100,000 males in 2019. Similarly, the absolute gap also widened for females, with a gap of 57.3 deaths per 100,000 females in 2020 compared with 48.2 deaths per 100,000 females in 2019.

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

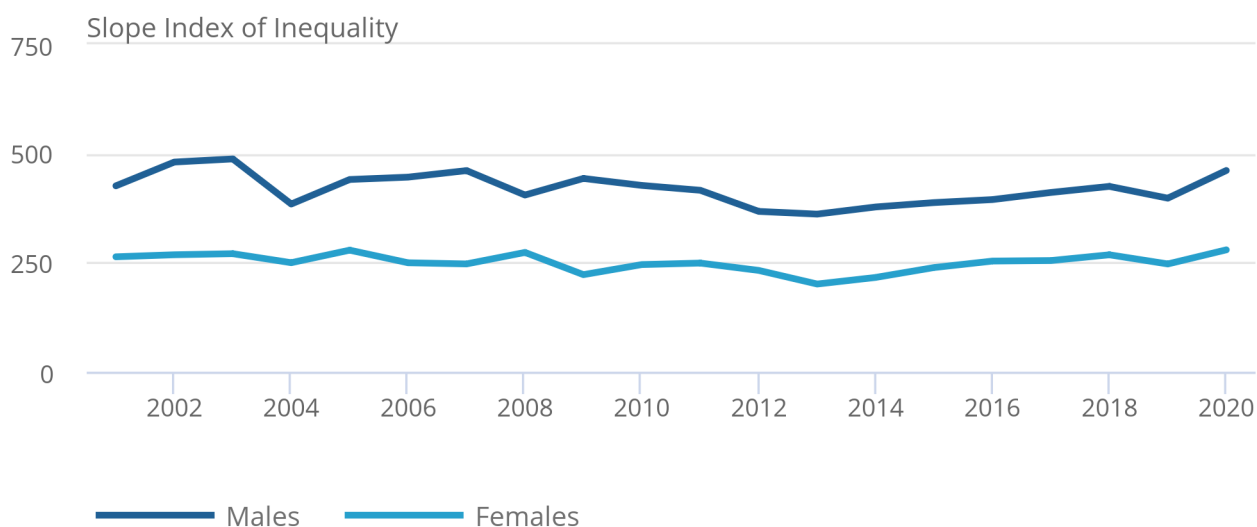
The SII measures the absolute inequality and represents the difference between the hypothetical "most" and "least" deprived areas on the deprivation scale. In this release, the SII figure represents the number of additional avoidable deaths per 100,000 people in the most deprived areas compared with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

Figure 5: The Slope Index of Inequality in avoidable mortality was higher in 2020 compared with 2001

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

Figure 5: The Slope Index of Inequality in avoidable mortality was higher in 2020 compared with 2001

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



Source: Office for National Statistics – Deaths registered in Wales

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 and is based on deprivation quintiles.

Between 2001 and 2020, the inequality in the avoidable mortality rate non-statistically significantly increased from 425.8 to 460.9 deaths per 100,000 males and 263.2 to 279.1 deaths per 100,000 females (Figure 5).

Across the data time series, the SII has fluctuated. Since 2013, which saw the lowest inequality between those in the most and least deprived areas, the SII has statistically significantly increased for both males and females. Inequality in avoidable mortality remained statistically significantly higher for males compared with females across the data time series.

6 . Socioeconomic inequalities in avoidable mortality in Wales data

[Socioeconomic inequalities in avoidable mortality: Wales analysis](#)

Dataset | Released 28 March 2022

Annual age-standardised mortality rates by deprivation decile, quintile, sex and cause as well as absolute (Slope Index of Inequality) measures of inequality in Wales.

7 . Glossary

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.

Further explanation can be found on our [uncertainty page](#).

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 quintiles 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 Wales 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.

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 available in our [Socioeconomic inequalities in avoidable mortality: Wales datasets](#).

Socioeconomic deprivation

Socioeconomic deprivation is measured using the [Welsh Index of Multiple Deprivation \(WIMD\)](#), which provides an overall relative measure of deprivation for each Lower-layer Super Output Area (LSOA). More information can be found in the [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, including determining the content and interpretation of these measures presented in bulletins.

9 . Strengths and limitations

The main strength of the socioeconomic inequalities in avoidable mortality bulletin is that the [implementation of the new avoidable mortality definition](#) (PDF, 695KB) means our statistics are internationally comparable.

The main limitation of the 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 health care 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, Wales: 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 Wales.