

# Avoidable Mortality

## 2021

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This report analyses deaths that were registered in Scotland in 2021 which are classified as avoidable by the Organisation for Economic Co-operation and Development (OECD).

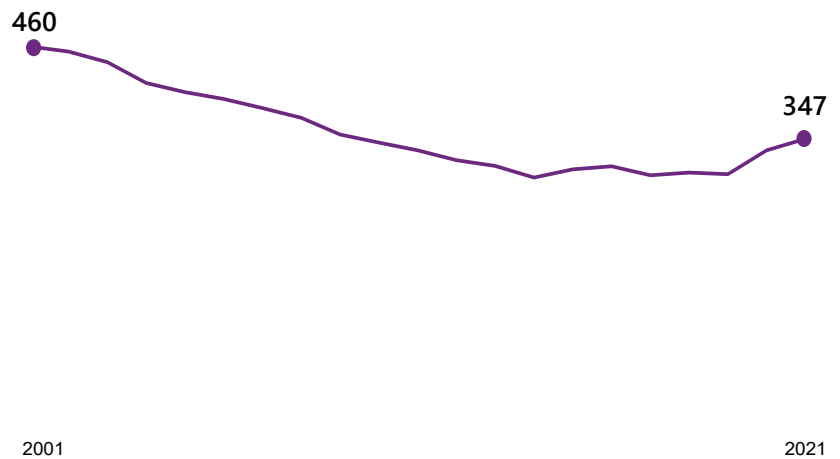
It also includes breakdowns by sex, age, cause of death and deprivation.

## The rate of avoidable mortality rose by 3% in 2021

In 2021 the age-standardised rate of avoidable mortality rose to 347 per 100,000 people (up by 3%).

Since 2001, rates generally fell before levelling off between 2014 and 2019, and has increased in the last two years.

Avoidable mortality rate (deaths per 100,000)

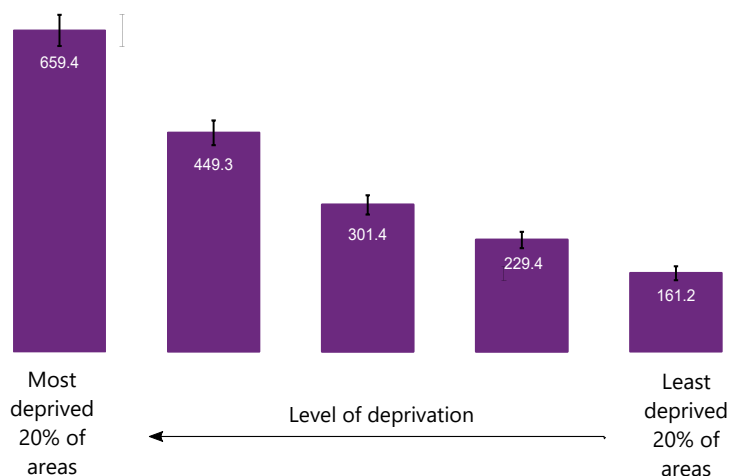


## Avoidable mortality is higher in more deprived areas

In the most deprived 20% of areas in Scotland, the rate of avoidable mortality was 4.1 times as large as in the 20% least deprived areas.

For all causes of death, the rate of mortality is 1.9 times as high in the most deprived areas.

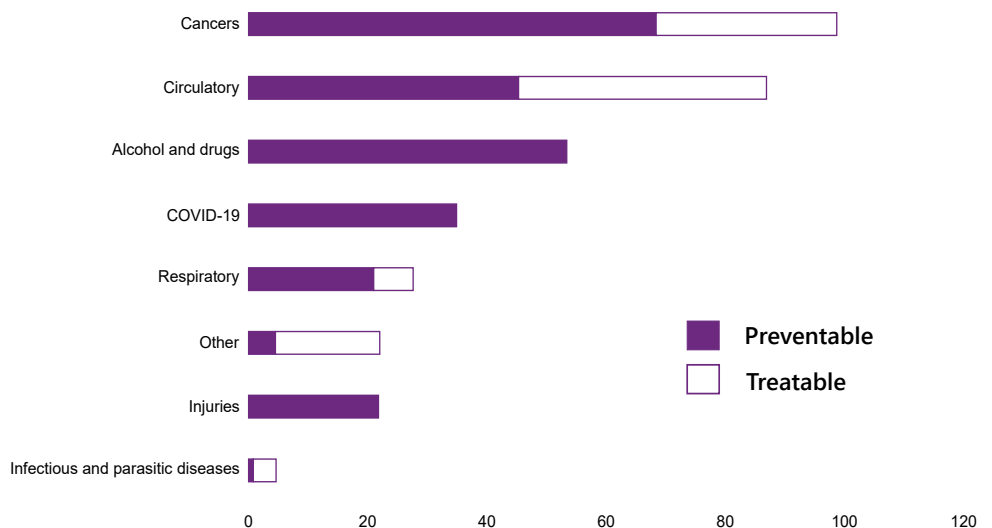
Avoidable mortality rate by SIMD quintile, 2021



## Cancers and circulatory diseases had the highest rates of avoidable mortality

The rate of avoidable mortality for cancer deaths in 2021 was 98 per 100,000 people. The rate for preventable cancer deaths was more than twice that of treatable cancer deaths.

Avoidable mortality rate (deaths per 100,000), 2021



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## 1. Key Findings

- There were 63,587 registered deaths in Scotland in 2021, of which 17,862 (28%) were considered avoidable.
- The rate of avoidable deaths in 2021 was 3% higher (347 deaths per 100,000 people) than the previous year.
- After adjusting for age, avoidable mortality rates among males (430 per 100,000) were 1.6 times as high as among females (269 per 100,000).
- Cancers and circulatory diseases were the most common causes of avoidable mortality in 2021, accounting for 28% and 25% of all avoidable deaths respectively.
- Alcohol and drug related avoidable mortality rates increased for the ninth year in a row, with 53 deaths per 100,000 people in 2021.
- The COVID-19 related avoidable mortality rate also increased in 2021 to 35 deaths per 100,000 people.
- After adjusting for age, avoidable mortality rates in the most deprived areas were over 4.1 times the rates of those in the least deprived areas, which is a greater gap than last year.
- Scotland has historically had a higher avoidable mortality rate than England and Wales, although the gap narrowed slightly in 2020. No avoidable mortality data is available for 2021 for other GB countries at the time of publication.

## 2. Introduction

### What is Avoidable Mortality?

Deaths which are considered either preventable or treatable through public health interventions or timely and effective healthcare.

It is based on an [international definition by the OECD/Eurostat](#) and looks only at deaths under the age of 75.

When discussing avoidable deaths, the following terms are used:

**Preventable mortality** – deaths that can be mainly avoided through effective public health and primary prevention interventions

**Treatable mortality** – deaths that can be mainly avoided through timely and effective healthcare interventions, including secondary prevention and treatment

**Avoidable mortality** – deaths defined as either preventable or treatable

### Why use age-standardised mortality rates?

Age-standardised mortality rates are a better measure of mortality than numbers of deaths, as they account for the population size and age structure and provide more reliable comparisons between groups or over time.

More information on the calculation of age-standardised mortality rates is available on our [website](#).

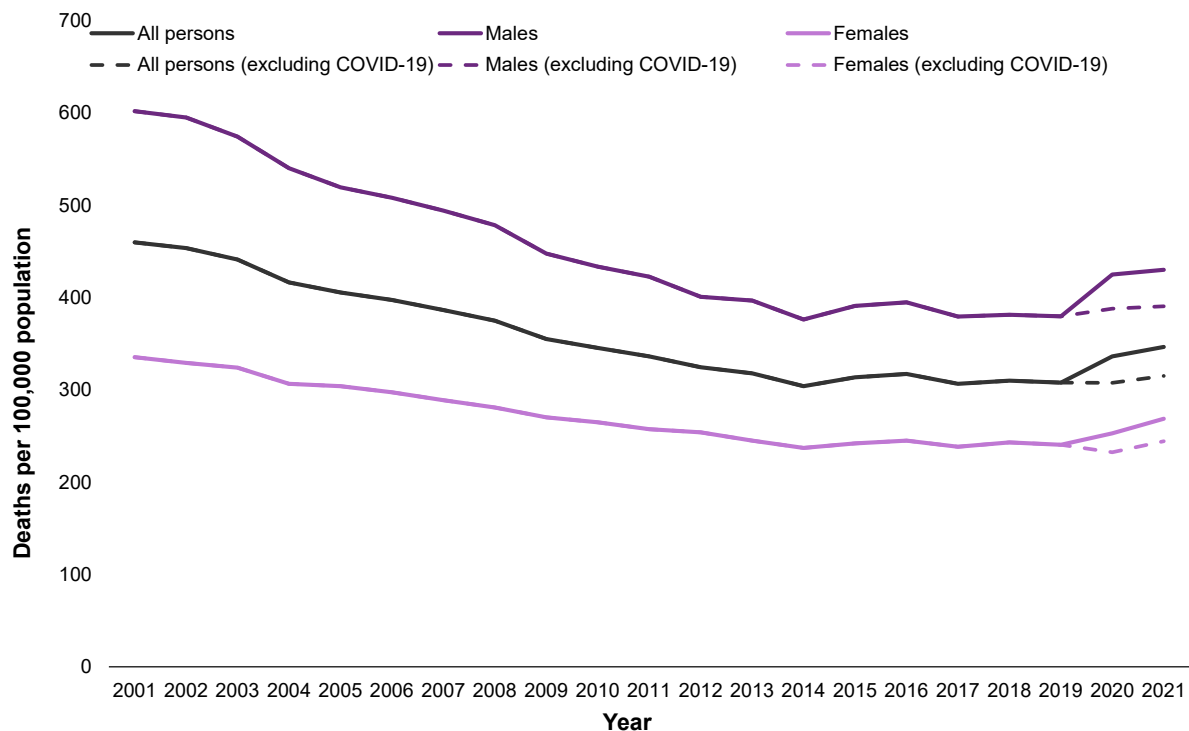
### 3. Avoidable mortality in Scotland

Of the 63,587 deaths registered in 2021:

17,862 (28% of all registered deaths) in total were considered avoidable<sup>1</sup>. Of this:

- 12,752 (20% of all registered deaths) were considered preventable.
- 5,110 (8% of all registered deaths) were as a result of a treatable cause.
- The rate of avoidable deaths in 2021 was 3% higher than the previous year.

Figure 1: Avoidable mortality rates in Scotland: 2001-2021



The rate of avoidable mortality increased by 3% in 2021 (to 347 deaths per 100,000 people). This is the second consecutive statistically significant increase, after 2020 when the rate increased by 9% (Figure 1).

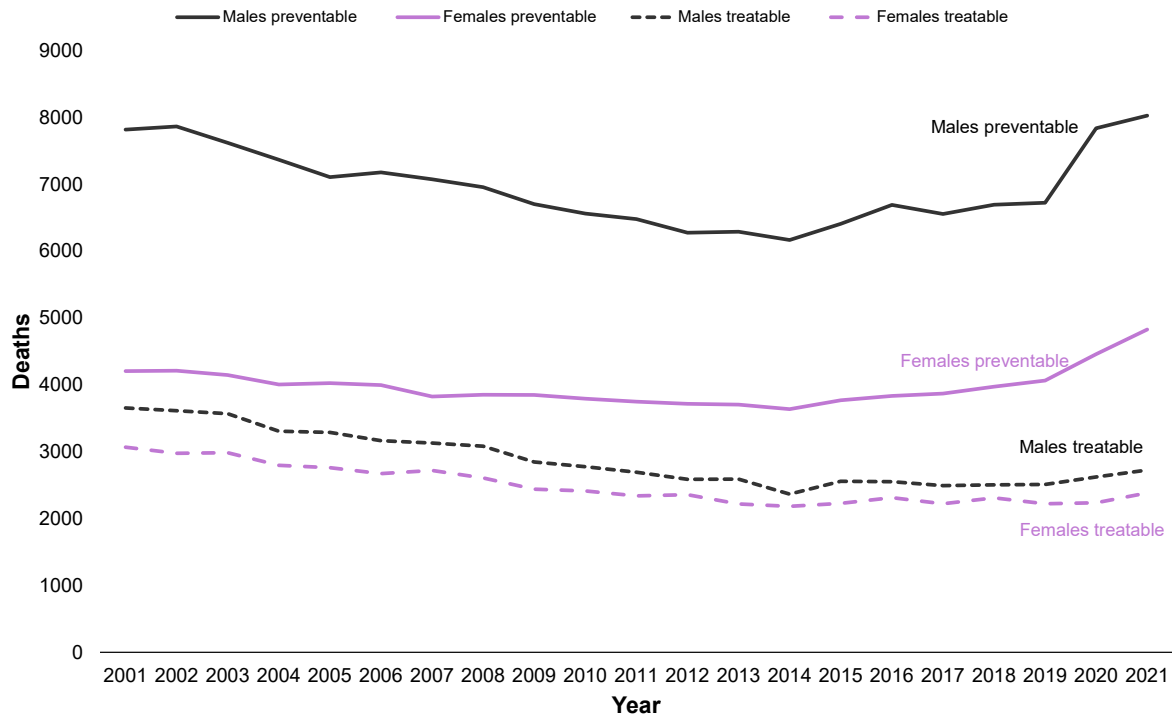
Figure 1 shows rates excluding COVID-19 deaths (dotted line). It illustrates that much of the increase in overall avoidable mortality since 2020 was largely due to COVID-19 deaths. When excluding COVID-19 avoidable deaths, the overall rate of avoidable mortality did not increase between 2019 and 2021.

<sup>1</sup> Figures for preventable and treatable causes of deaths may not sum to the total for avoidable deaths due to rounding.

The rates for both males and females increased in 2021, with the rate for males remaining higher (1.6 times as high in 2021) than for females.

An increase in preventable deaths occurred in 2021, and the number of male preventable deaths remains higher than female preventable deaths. The difference between male and female treatable deaths is smaller (Figure 2).

**Figure 2: Preventable and treatable deaths, by sex: 2001-2021**



#### 4. Avoidable mortality by deprivation

People living in the most deprived areas in Scotland are 4.1 times as likely to die an avoidable death compared to those in the least deprived areas. The increase in avoidable mortality rates in 2021 has disproportionately occurred in the most deprived areas.

**Figure 3** shows avoidable mortality rates in each SIMD (Scottish index of multiple deprivation) quintiles over the last two decades.

## SIMD

The Scottish index multiple deprivation is a measure of how deprived an area is. A score is given to all of Scotland's datazones based on multiple indicators of deprivation.

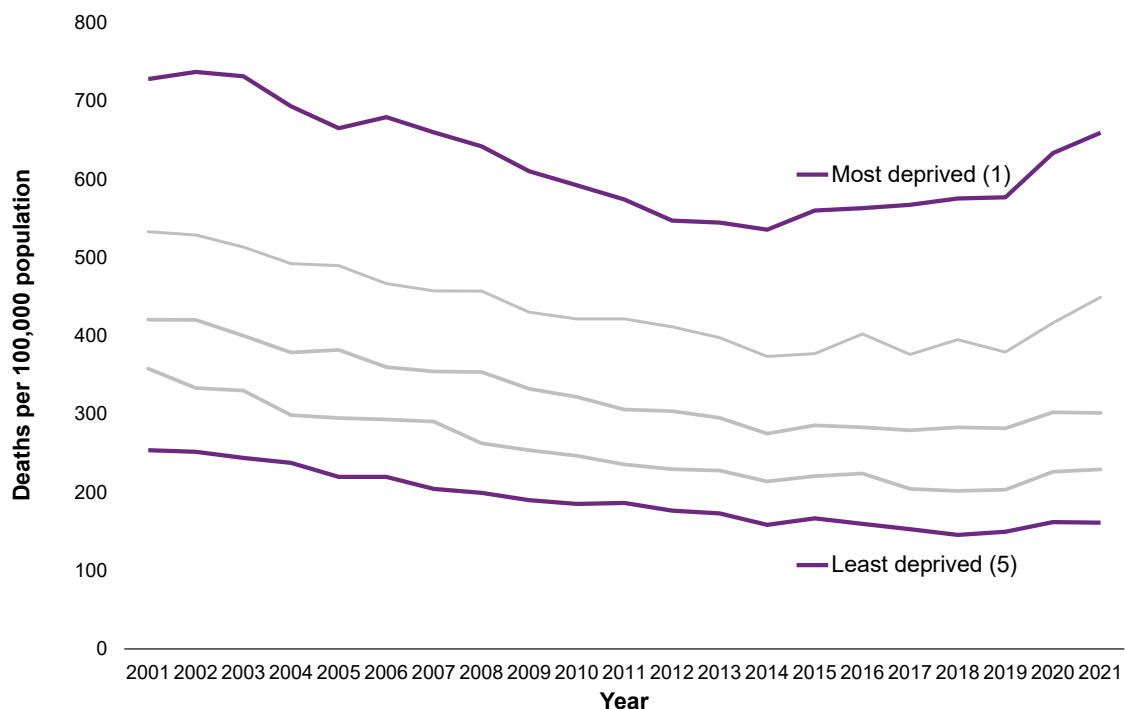
The datazones are then ranked 1 to 6,976 based on their score. Subsequently, the rankings are split into 5 equally sized groups forming SIMD quintiles.

The most deprived 40% (quintiles 1 and 2) of the Scottish population experienced an increase in avoidable mortality in 2021, whereas the other 60% (quintiles 3-5) saw only a marginal change in the death rate.

In 2021, the avoidable mortality rate of those in quintile 1 (the 20% most deprived areas) was 659 per 100,000 people compared with 161 per 100,000 for those in quintile 5 (the 20% least deprived areas).

People in the most deprived quintile were 4.1 times as likely to die from an avoidable death in 2021 compared to those in the least deprived quintile. The increase in avoidable mortality seen in 2021 disproportionately affected the most deprived.

**Figure 3: Avoidable mortality rates by deprivation, all persons: 2001-2021**





## 5. Avoidable mortality by cause

Cancers and circulatory system diseases were the leading causes of avoidable mortality in 2021, while we also saw increases in COVID-19, and alcohol and drug related deaths.

The [OECD/Eurostat definition](#) includes COVID-19 (see new category “Provisional assignment of new diseases”) as a preventable cause of mortality.

The leading causes of avoidable deaths in 2021 for all persons (see Figure 4) were:

- Cancers (5,085 avoidable deaths (a rate of 98 per 100,000 people).
- Circulatory system diseases (4,478 avoidable deaths, a rate of 86 per 100,000 people).
- Alcohol and drug related disorders (2,641 avoidable deaths, a rate of 53 per 100,000 people).

### Not all causes of death are avoidable

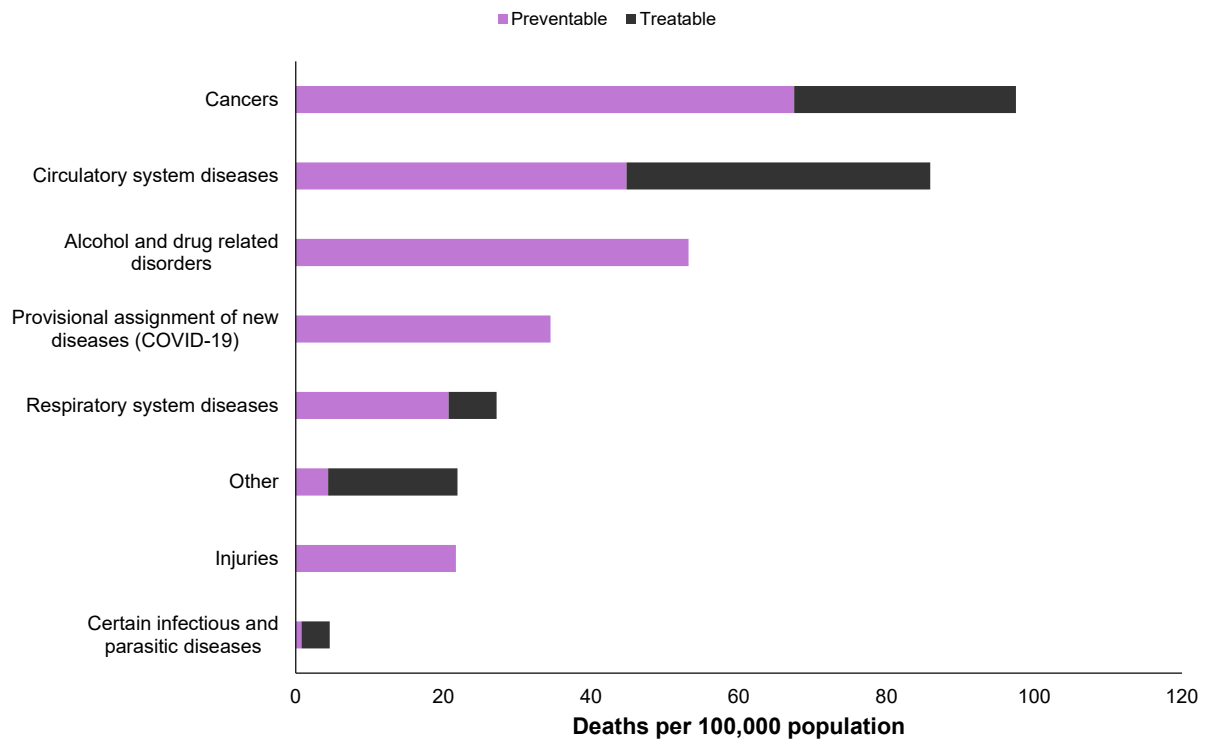
The proportion of deaths that are classified as avoidable varies greatly between ICD-10 chapters. For example, almost all deaths due to external causes are counted as avoidable, whereas under one tenth of deaths due to mental disorders hold this classification. See **Table A** for details.

For males the leading cause of treatable deaths were circulatory system diseases, whilst the leading cause of preventable deaths were cancers.

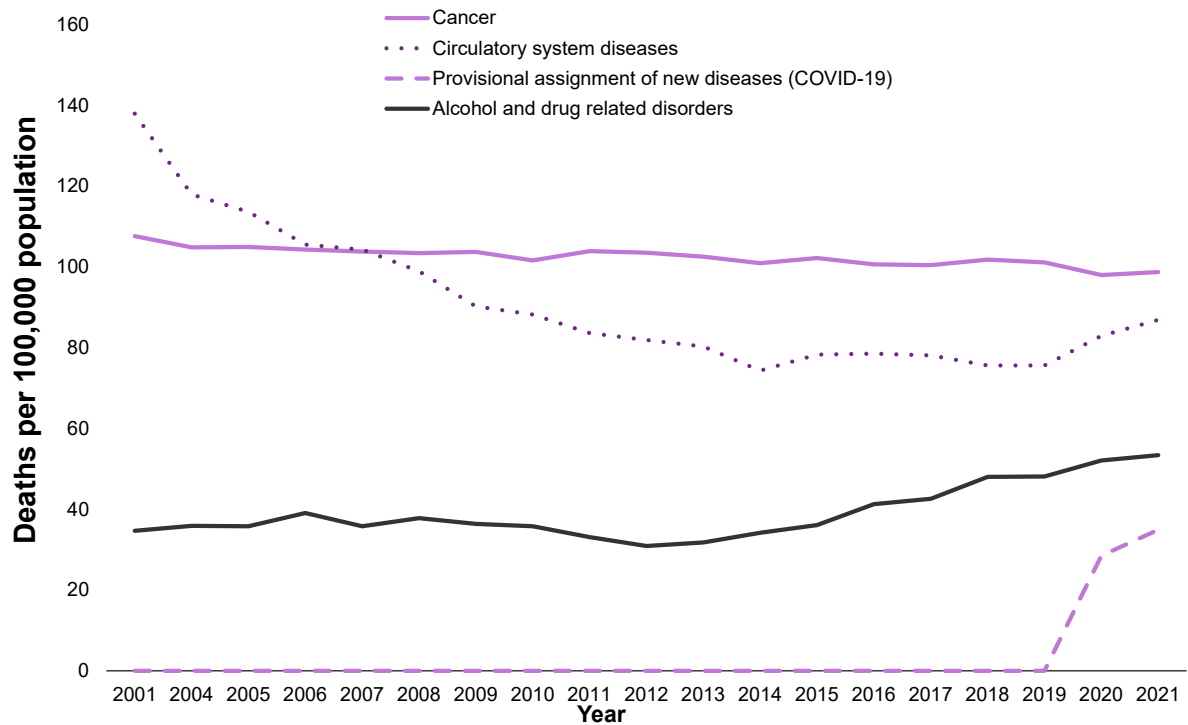
In comparison, for females the leading cause of both preventable and treatable deaths were cancers.

COVID-19 was a significant contributor to avoidable mortality in 2021, with an avoidable mortality rate of 35 per 100,000 people (an increase from the rate of 29 per 100,000 seen in 2020). Males had a higher rate of avoidable COVID-19 deaths, with 43 deaths per 100,000 versus females with 27 deaths per 100,000.

**Figure 4: Avoidable mortality rates in Scotland, by cause: 2021**



**Figure 5: Avoidable mortality rates: select causes 2001-2021**



Avoidable mortality rates from cancers (the largest contributor) have remained relatively stable over the last 20 years (see figure 5). The next largest contributor, Circulatory system diseases, saw a second consecutive increase in 2021 after a six-year plateau.

Alcohol and drug related disorders saw another slight increase in 2021, furthering a trend since 2012 of increasing avoidable mortality from these causes.

For a full summary of all causes of death in Scotland (not only avoidable mortality) please see [Section 6: Deaths - Causes in the NRS Vital Events Reference Tables 2021](#).

## 6. Avoidable Mortality in Great Britain

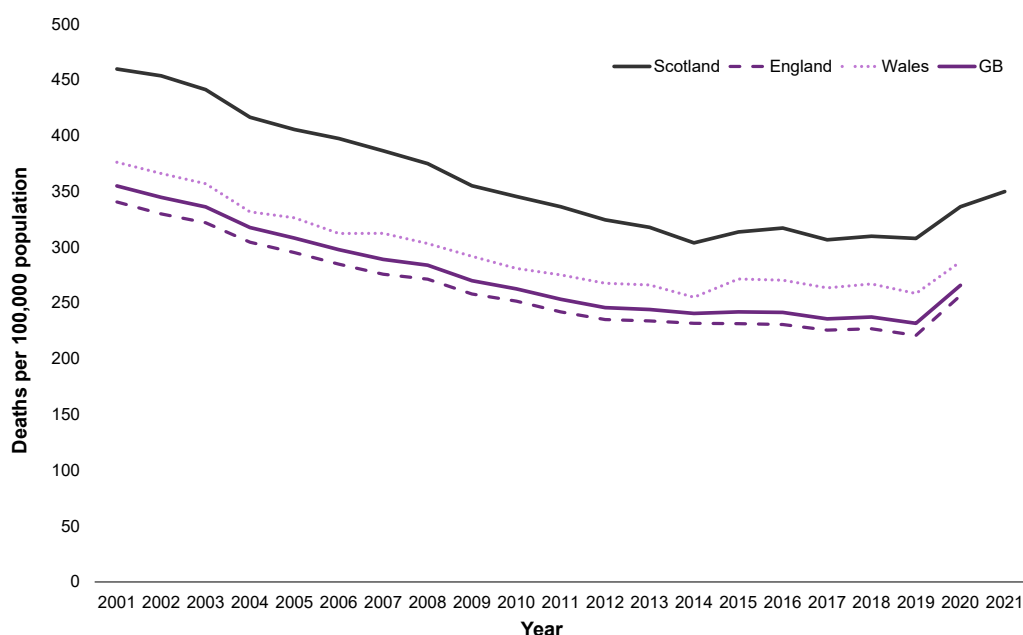
While Scotland's data for avoidable mortality is now available for 2021, this is not the case for other GB nations, therefore no comparison can be made for the latest year.

Using the latest comparable data (up to 2020), Scotland continues to have higher avoidable mortality than both England and Wales.

**Figure 6** compares the avoidable mortality rates between Scotland, England, Wales, and the average for Great Britain (GB)<sup>1</sup>. Scotland (336 deaths per 100,000 people) has a higher avoidable mortality rate than both England (257 deaths per 100,000 people) and Wales (287 deaths per 100,000 people), as well as the GB average (266 deaths per 100,000 people). This continues the historic trend of Scotland having higher avoidable mortality rates, although the gap between Scotland and the GB average narrowed slightly in 2020. All GB nations experienced statistically significant increases in 2020.

While Scotland's data for avoidable mortality is now available for 2021, this is not the case for other GB nations, therefore no comparison can be made for the latest year.

**Figure 6: Avoidable mortality rates in Great Britain (GB): 2001-2021**

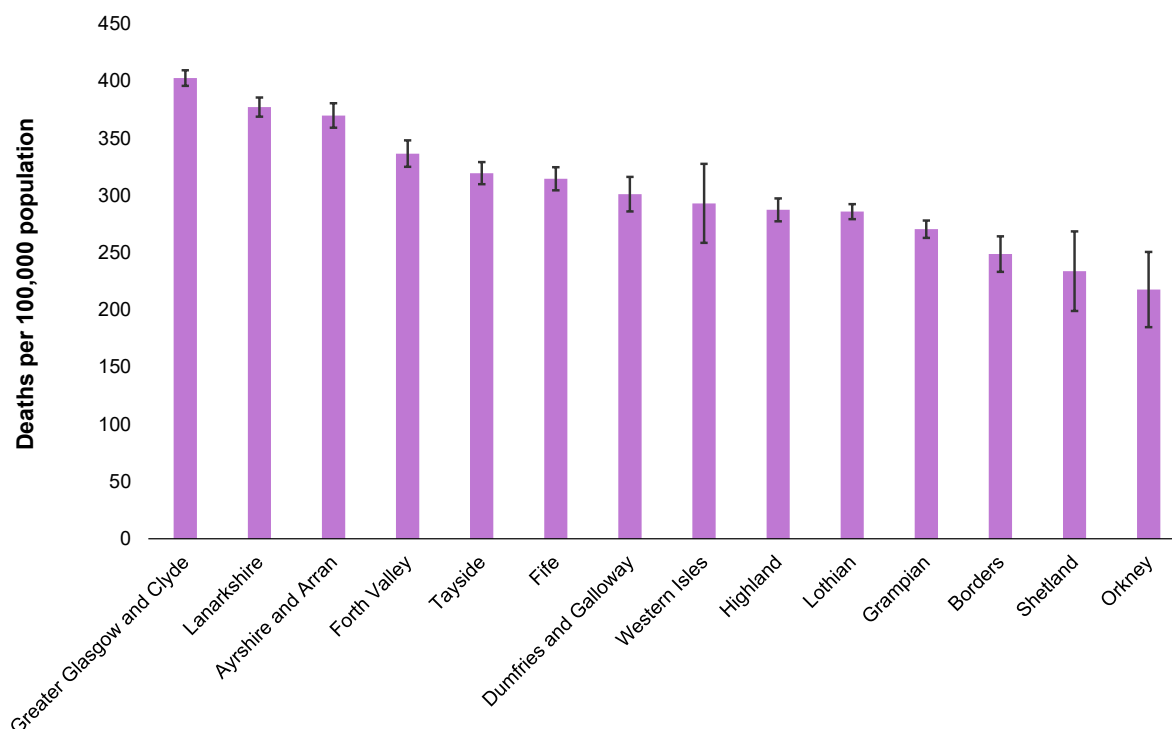


<sup>1</sup> GB data from the ONS. Deaths of non-residents are excluded for England and Wales and included for GB and Scotland. These statistics are also based on the OECD definition of avoidable mortality. See the [Avoidable mortality in Great Britain - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk) for further detail. UK and Northern Ireland (NI) data will be released at a later date pending the outcome of the current review of suicide statistics in NI, as these deaths form part of the definition of avoidable mortality (see ONS bulletin for further detail).

## 7. Avoidable mortality by Health Board

Health boards in the west of Scotland experienced the highest rates of avoidable mortality.

**Figure 7: Avoidable mortality rates by health board, all persons: 2019-2021 average**



The highest avoidable mortality rates were recorded in Greater Glasgow and Clyde (403 deaths per 100,000), Lanarkshire (377 deaths per 100,000), and in Ayrshire and Arran (370 deaths per 100,000).

Orkney (218 deaths per 100,000), Shetland (234 deaths per 100,000) and Borders (249 deaths per 100,000) saw the lowest avoidable mortality rates.

## 8. Methodology

NRS has updated its definition of avoidable mortality to use the [new OECD international definition of avoidable mortality](#) to ensure our statistics are comparable internationally and with other parts of the UK. The new definition has been applied to the full time series back to 2001.

Deaths are classified as preventable or treatable according to their cause of death and the age at death.

## 9. Strengths and Limitations

### Strengths

1. Information is supplied when a death is registered, giving complete coverage of the population and ensures highly accurate estimates that are representative of the population.
2. Coding for cause of death is carried out according to the World Health Organization (WHO) ICD-10 framework.
3. The use of age-standardised mortality rates means our statistics are comparable between local health boards, councils and at national level.
4. The use of the OECD definition also makes the statistics in this report comparable internationally.

### Limitations

1. Data are insufficiently robust to provide local authority estimates for smaller areas for single years (hence why they are aggregated over a 3-year period). This limits the timeliness of the data.
2. In a small number of cause of death categories, the number of deaths was too small to report a reliable rate. For this reason, the categories were combined in and thus limits the precision accuracy of our cause of death reporting.

## 10. Future developments

The next scheduled publication for further avoidable mortality statistics in Scotland is due late 2023.

## 11. Related Statistics

- Prior to 2019, avoidable mortality statistics (using a previous definition) were published in a summary format on the [NRS website](#).
- The [ONS](#) publish avoidable mortality statistics on the UK and its constituent countries (including data included in this report in section 6). These are also based on the OECD definition of avoidable mortality. See the [ONS Avoidable Mortality bulletin](#) and [dataset](#) for further detail.

## 12. Notes on statistical publications

### National Statistics

The United Kingdom Statistics Authority (UKSA) has designated these statistics as National Statistics, in line with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics (available on the [UKSA](#) website).

National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value.

All official statistics should comply with all aspects of the Code of Practice for Official Statistics. They are awarded National Statistics status following an assessment by the Authority's regulatory arm. The Authority considers whether the statistics meet the highest standards of Code compliance, including the value they add to public decisions and debate.

It is National Records of Scotland's responsibility to maintain compliance with the standards expected of National Statistics. If we become concerned about whether these statistics are still meeting the appropriate standards, we will discuss any concerns with the Authority promptly. National Statistics status can be removed at any point when the highest standards are not maintained, and reinstated when standards are restored.

### Information on background and source data

Further details on data source(s), timeframe of data and timeliness, continuity of data, accuracy, etc. can be found in the metadata that is published alongside this publication on the NRS website.

### National Records of Scotland

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Recording the present – At our network of local offices, we register births, marriages, civil partnerships, deaths, divorces and adoptions in Scotland.

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You can get other detailed statistics that we have produced from the [Statistics](#) section of our website. Scottish Census statistics are available on the [Scotland's Census](#) website.

We also provide information about [future publications](#) on our website. If you would like us to tell you about future statistical publications, you can register your interest on the Scottish Government [ScotStat website](#).

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### **Enquiries and suggestions**

Please get in touch if you need any further information, or have any suggestions for improvement.

E-mail: [statisticscustomerservices@nrscotland.gov.uk](mailto:statisticscustomerservices@nrscotland.gov.uk)

Lead Statistician: Julie Ramsay