

InformGloucestershire

Mortality Trends in Gloucestershire

An Overview

(2024 Data)

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Data Source:

NOMIS (Office for National Statistics), [Mortality Statistics - underlying cause, sex and age](#)

Office for National Statistics, [Avoidable mortality by local authorities in England and unitary authorities in Wales](#)

1.0 Gloucestershire deaths registered in 2024

In 2024 there were 6,764 deaths registered in Gloucestershire, equivalent to a crude death rate¹ (CDR) of 1,010.5 deaths per 100,000 population. This rate was higher than the England average, but lower than the South West average, which saw crude death rates of 907.5 and 1,040.6 per 100,000 population respectively, as shown in Table 1.

Table 1: Death registrations in Gloucestershire and its districts, 2024

	Number of deaths registered	Crude death rate (per 100,000 population)
Gloucestershire	6,764	1,010.5
Cheltenham	1,195	981.6
Cotswold	1,020	1,112.8
Forest of Dean	984	1,096.3
Gloucester	1,265	912.7
Stroud	1,325	1,054.3
Tewkesbury	975	956.4
South West	61,287	1,040.6
England	531,954	907.5
England & Wales	567,358	918.0

1.1 District focus

- The highest number of registered deaths in Gloucestershire's districts was in Stroud which registered 1,325 deaths in 2024. However, Cotswold had the highest crude death rate at 1,112.8 deaths per 100,000 population.
- The lowest number of district deaths in 2024 was in Tewkesbury where 975 deaths were registered. However, Gloucester had the lowest crude death rate at 912.7 deaths per 100,000 population.

¹ The crude death rate is the number of deaths occurring in a year divided by the total population at mid-year, of a given area. It is expressed per 100,000 population.

2.0 Registered deaths from 1991-2024

The number of deaths and crude mortality rate in 2024 remained high and above pre-covid levels, which is in line with the previous three years. However, in 2024 there was 219 fewer deaths compared to 2023, representing a lower crude death rate of 44.8 fewer deaths per 100,000 population.

2022 saw the highest number of deaths registered in Gloucestershire since 1991, with 7,038 deaths. The second highest level occurred in 2020, when deaths due to the coronavirus pandemic were at their peak, and 7,002 deaths were registered. However, the crude death rate in 2022 was 1,077.9 deaths per 100,000 population, which was lower than that seen in 2020 (1,093.1 CDR). This was probably due to a large increase in the general population of Gloucestershire during this period, which lowered the crude rate. Since 2022, there has been a decrease in the annual number of deaths and the crude death rate, as indicated in Figure 1.

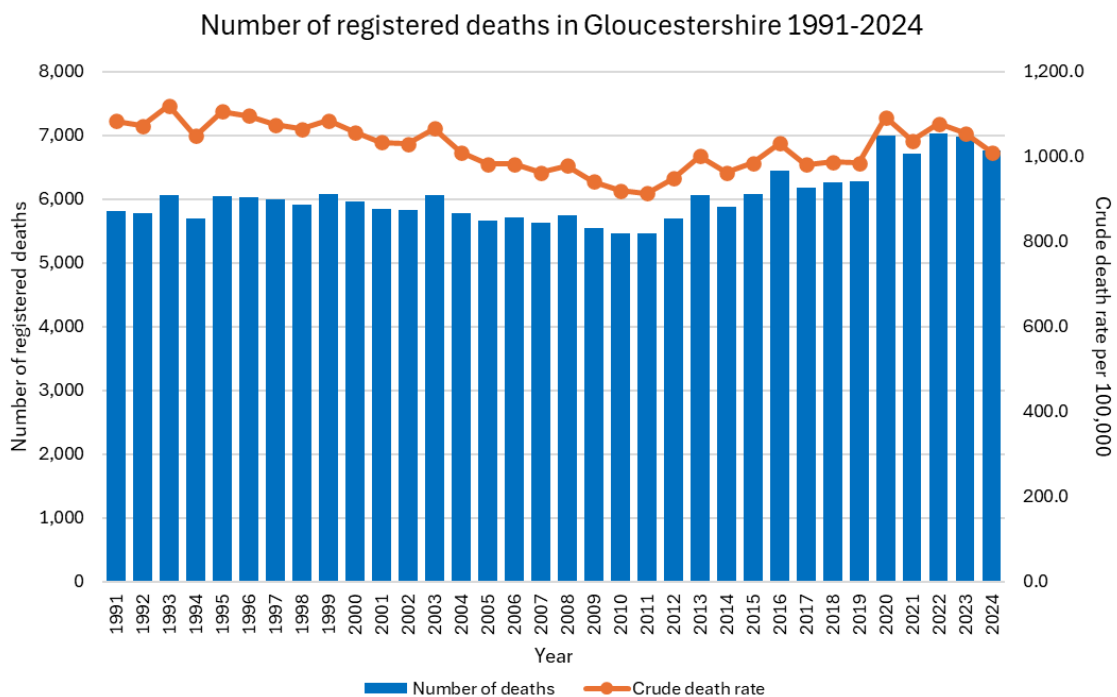


Figure 1: Registered deaths in Gloucestershire, 1991-2024

2.1 District focus

- Figure 2, placed below, indicates Stroud has registered the largest number of deaths every year since 2004, except for 2022 when Gloucester had the highest number of registered deaths.
- Tewkesbury has registered the lowest number of deaths for most years, except for 2005, 2009, 2016 and 2019.
- Only one district (Tewkesbury) saw a rise in the number of registered deaths between 2023 and 2024, and the other five districts (Cheltenham, Cotswold, Forest of Dean, Gloucester and Stroud) saw a decline in the number of registered deaths between 2023 and 2024. Tewkesbury saw an increase of

22 additional deaths (2.3% increase on 2023) while Cheltenham had the biggest decrease of 87 deaths (6.8% decrease on 2023).

- There is high fluctuation in the district crude death rates and order of highest to lowest for each year, as indicated in Figure 3. However, Gloucester does stand out as having a lower crude death rate in most of the years compared to the other districts, this is reflective of Gloucester having a more youthful population structure.

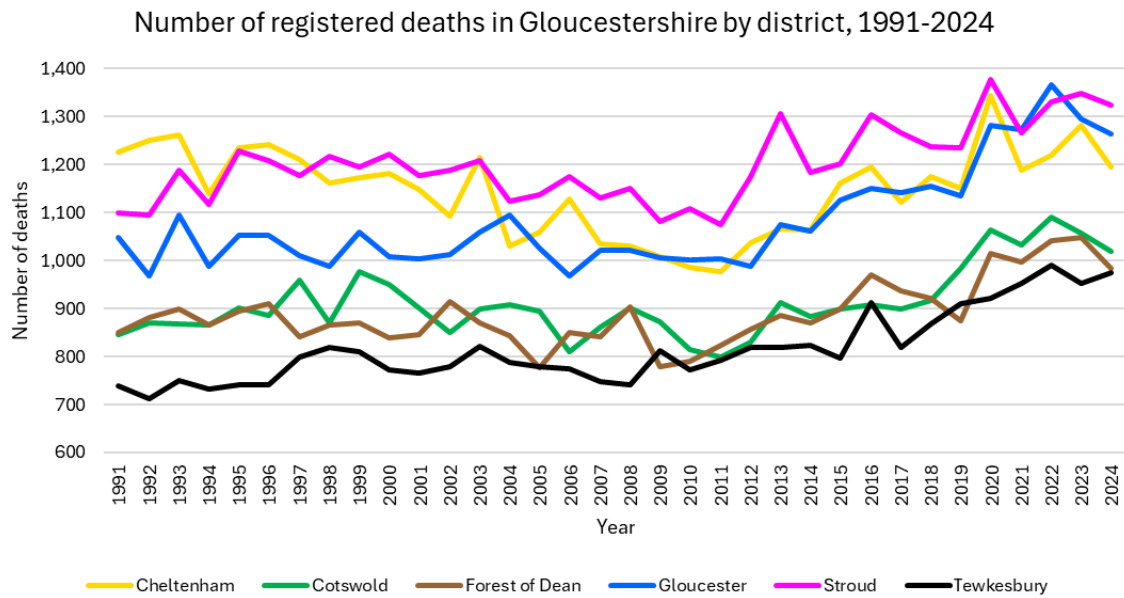


Figure 2: Registered deaths in Gloucestershire by district, 1991-2024

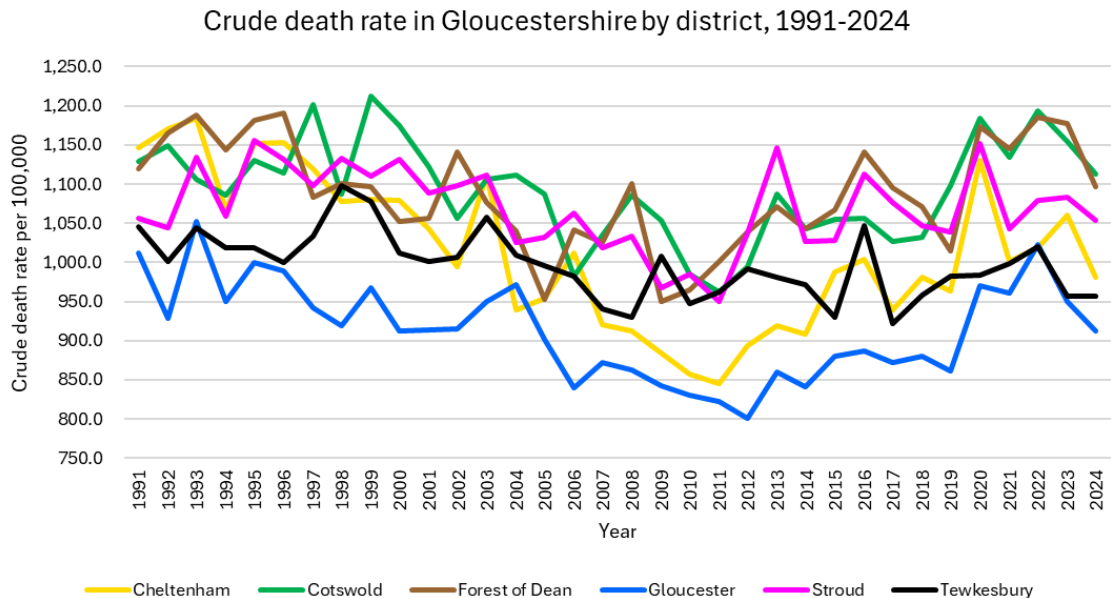


Figure 3: Crude death rate in Gloucestershire by district, 1991-2024

3.0 Age standardised mortality rates

Age standardisation is a process which accounts for the structural age differences between populations when calculating rates. The World Health Organization defines the age standardised mortality rate (ASMR) as a “weighted average of the age-specific mortality rates per 100,000 persons, where the weights are the proportions of persons in the corresponding age groups of the WHO standard population”.² This therefore allows more accurate comparisons to be made between sub-populations, for example between districts, sex, and years. Age standardisation produces a lower rate when the standard population is younger than the population being studied. This is because the risk of disease is highest in the older age groups.

Using the age standardised mortality rates, the data in Table 2 shows that in 2024 Gloucestershire had an ASMR of 870.3 deaths per 100,000 people. Gloucestershire had a slightly lower level of mortality than the South West (872.2 ASMR), and a lower level of mortality than England overall (923.2 ASMR). The differences between the crude rates and age standardised rates are explained by Gloucestershire and the South West having older populations than England overall.

Table 2: Age standardised mortality rates in Gloucestershire and districts, 2024

	ASMR per 100,000 population
Gloucestershire	870.3
Cheltenham	875.0
Cotswold	768.5
Forest of Dean	872.2
Gloucester	1,019.4
Stroud	858.7
Tewkesbury	847.9
South West	872.2
England	923.2
England & Wales	928.4

Comparing Gloucestershire’s age standardised mortality rate to the South West, Figure 4 indicates that 2016 and 2020 represent the only years when Gloucestershire has had a significantly higher age standardised mortality rate.³ In all other years shown on the graph, the differences are not statistically significant. In contrast, for all years except 2016, England has had a significantly higher age standardised mortality rate than Gloucestershire and the South West.

² World Health Organization. [Age-standardized mortality rate \(per 100 000 population\) \(who.int\)](https://www.who.int)

³ Confidence intervals, the black bars on each data point, have been used in Figure 4 to understand whether the differences in rates seen by Gloucestershire, the South West and England are statistically significantly different.

Age standardised mortality rates in Gloucestershire, South West and England, 2015-2024

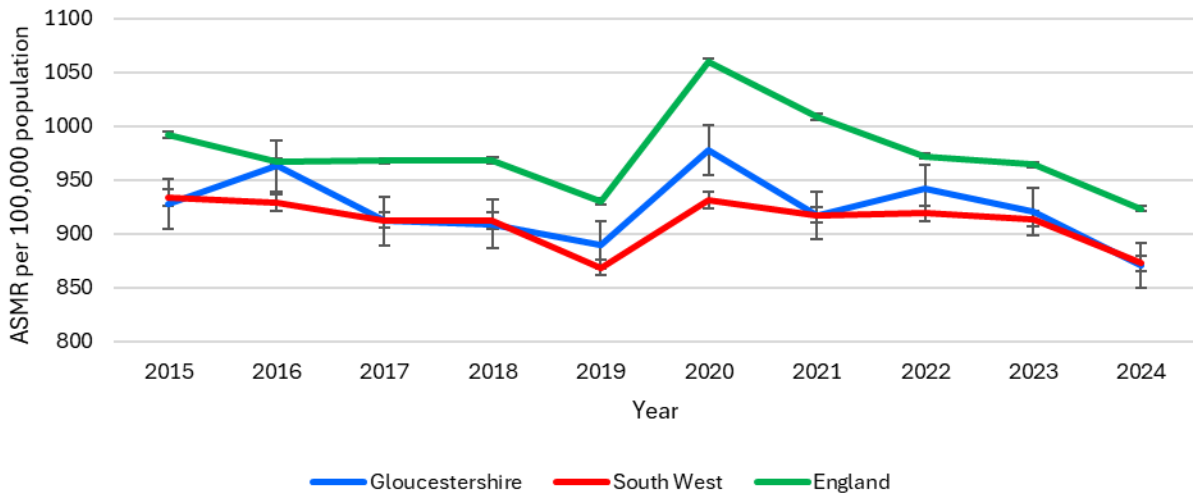


Figure 4: Age standardised mortality rates in Gloucestershire, South West and England, 2015-2024

3.1 District focus

- In 2024, Gloucester had the highest age standardised mortality rate at 1019.4, this is significantly higher than all other districts in the county.
- Each year between 2015-2024 Gloucester had the highest ASMR, which peaked in 2022, as shown in Figure 5. The confidence intervals indicate that Cotswold and Tewkesbury are the only districts to consistently have a statistically significantly lower ASMR than Gloucester between 2015 and 2024.
- The lowest ASMR of Gloucestershire’s districts was in Cotswold district, with an ASMR of 768.5. Cotswold’s ASMR was only significantly lower than the ASMR of Cheltenham and Gloucester.
- Cotswold has generally had the lowest ASMR in the county, however its ASMR rose above the Tewkesbury rate in 2020.
- Generally, the age standardised mortality rates have decreased in the districts since the peaks in 2020 and 2022 caused by the pandemic. However, these changes are not statistically significant.
- All districts saw a reduction in the ASMR between 2023 and 2024, with the exception of Tewkesbury. However, these changes in ASMR between 2023 and 2024 are not statistically significant.

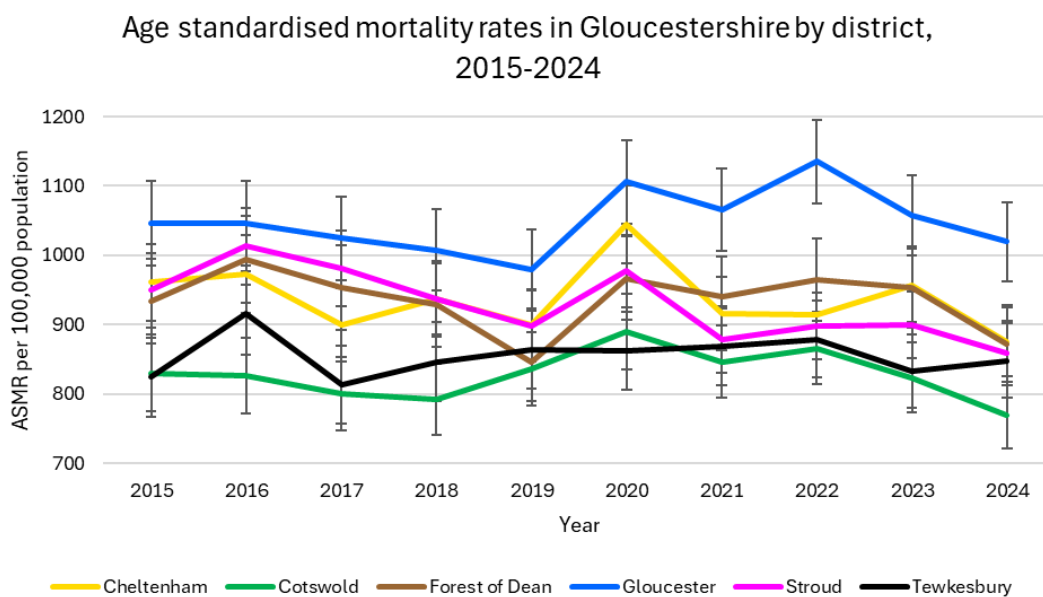


Figure 5: Age standardised mortality rates in Gloucestershire and its districts, 2015-2024

4.0 Deaths by age and sex⁴

Overall, Table 3 indicates the number of deaths increases the older the age group - the highest proportion of deaths occurring in 2024 was in the 80+ age group for all areas. In Gloucestershire 59.8% of deaths were in the 80+ year old age group, this is equivalent to the South West (59.8%), but higher than England (55.4%). A higher proportion of deaths occurring among people aged 80+ reflects an ageing population, and Gloucestershire's population is older on average than England as a whole.

In 2024, 49.9% of all deaths in Gloucestershire were male compared to 50.1% female. In comparison, 50.9% were male in England, and 50.5% in the South West, compared to 49.1% and 49.5% for females respectively.

⁴ Due to small numbers of deaths when the data is broken down by sex and age, rounding has been applied to protect the confidentiality of individuals. Counts of 0, 1 and 2 are rounded to 0 and counts of 3, 4 and 5 are rounded to 5. For further information see: <https://www.nomisweb.co.uk/datasets/mortsa>

Table 3: Proportion of registered deaths by sex and age in Gloucestershire and its districts, 2024

	Male	Female	0-14	15-34	35-64	65-79	80+
Gloucestershire	49.9%	50.1%	0.2%	0.9%	11.8%	27.2%	59.8%
Cheltenham	46.7%	53.3%	0.0%	1.3%	11.6%	26.4%	60.7%
Cotswold	47.9%	52.1%	0.6%	0.6%	9.1%	25.4%	64.3%
Forest of Dean	51.0%	49.0%	0.0%	0.5%	12.4%	27.7%	59.1%
Gloucester	50.8%	49.2%	0.0%	0.5%	16.0%	28.3%	54.5%
Stroud	50.8%	49.2%	0.4%	1.1%	10.5%	26.9%	61.7%
Tewkesbury	52.7%	47.3%	0.0%	1.5%	10.6%	28.7%	59.1%
South West	50.5%	49.5%	0.4%	0.9%	11.4%	27.5%	59.8%
England	50.9%	49.1%	0.6%	1.2%	13.8%	29.1%	55.4%
England & Wales	50.9%	49.1%	0.6%	1.2%	13.8%	29.2%	55.2%

Comparing the differences by sex in Figure 6, 65.5% of total female deaths occurred in the 80+ age group, compared to 54.1% of male deaths. However, the 65–79-year-old age group accounts for a higher proportion of total male deaths (30.6%) than female deaths (23.9%). This is also reflected in all the younger age groups, where males have a higher overall proportion of deaths than females. The data is reflective of trends in life expectancy. Females have been identified to have a higher life expectancy and therefore, we can expect to see a higher proportion of female deaths occurring in the older age categories compared to males.

Comparing 2024 with 2015 (ten years earlier), the pattern has shown minimal change. There has been an increase in the proportion of male deaths at age 80 and over, suggesting that a greater proportion of males are now living longer. However, the proportion of deaths of females in this age group has decreased; there is now a higher proportion of female deaths within the younger age group of 65-79. Overall, the proportion of deaths for females in the older age group of 80+ in 2024 is still much higher for females (65.5%) than males (54.1%), although the difference has slightly diminished. Consequently, there continues to be higher proportions of deaths in all age brackets up to the age of 79 for males compared to females.

Proportion of deaths in Gloucestershire by age and sex, 2015 and 2024

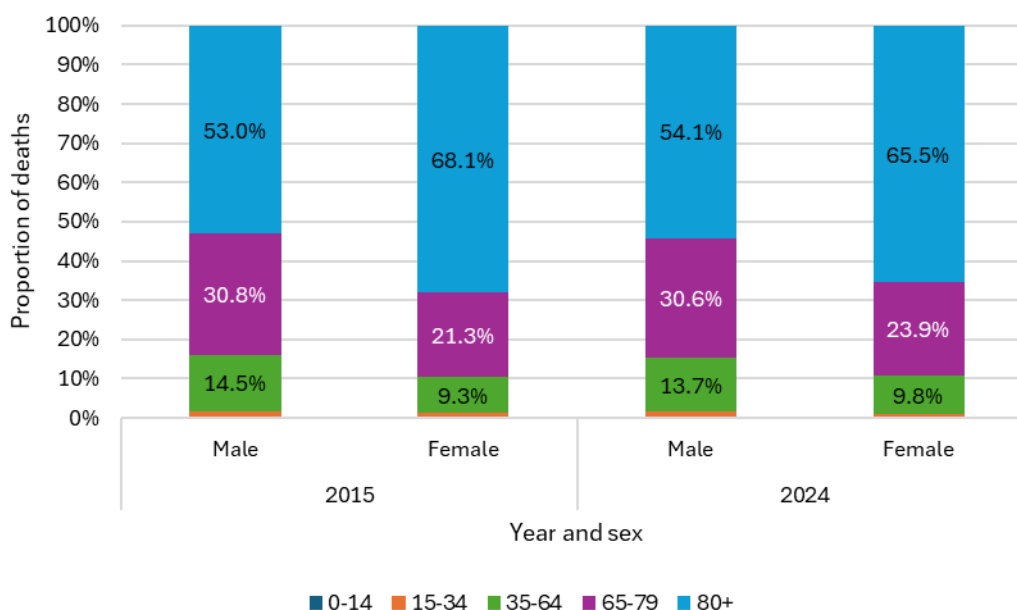


Figure 6: Proportion of registered deaths in Gloucestershire by sex and age in 2015 and 2024

4.1 District focus

- Forest of Dean, Gloucester, Stroud and Tewkesbury had a higher proportion of male deaths than female deaths in 2024, as shown in Table 3.
- The highest proportion of deaths over the age of 80 was in Cotswold at 64.3% whereas the lowest proportion was in Gloucester with 54.5% of deaths occurring in people over the age of 80, as indicated by Table 3. The data is reflective of the population structure in these districts; Cotswold’s population is at a more advanced stage of ageing which means that a higher proportion of its population is living to the age of 80+ and dying in that age category. Gloucester has a lower proportion of its population living to older ages therefore, a lower proportion of its population is dying in the 80+ age category.
- In Cheltenham, Forest of Dean, Gloucester, and Tewkesbury, no child deaths were reported in the 0-14 age group. However, Cotswold and Stroud recorded that 0.4-0.6% of deaths involved young children.
- Gloucester had the highest proportion of 15–64-year-old deaths (approximating the working age population), accounting for around 16.5% of deaths in the district. Conversely, Cotswold had the lowest proportion of deaths occurring in this age group, equivalent to 9.7% of all deaths in the district. This is reflective of the population age structure in these districts.

5.0 Leading causes of death in Gloucestershire

Out of 47 identified leading causes of death in Gloucestershire in 2024, Figure 7 shows the three main causes of death were Cancer (malignant neoplasms) accounting for 1,775 deaths (28.4% of deaths), Dementia and Alzheimer disease with 894 deaths (14.3% of deaths), and Ischaemic heart diseases with 628 deaths (10.0% of deaths). These were also the main three leading causes of death in both England and the South West.

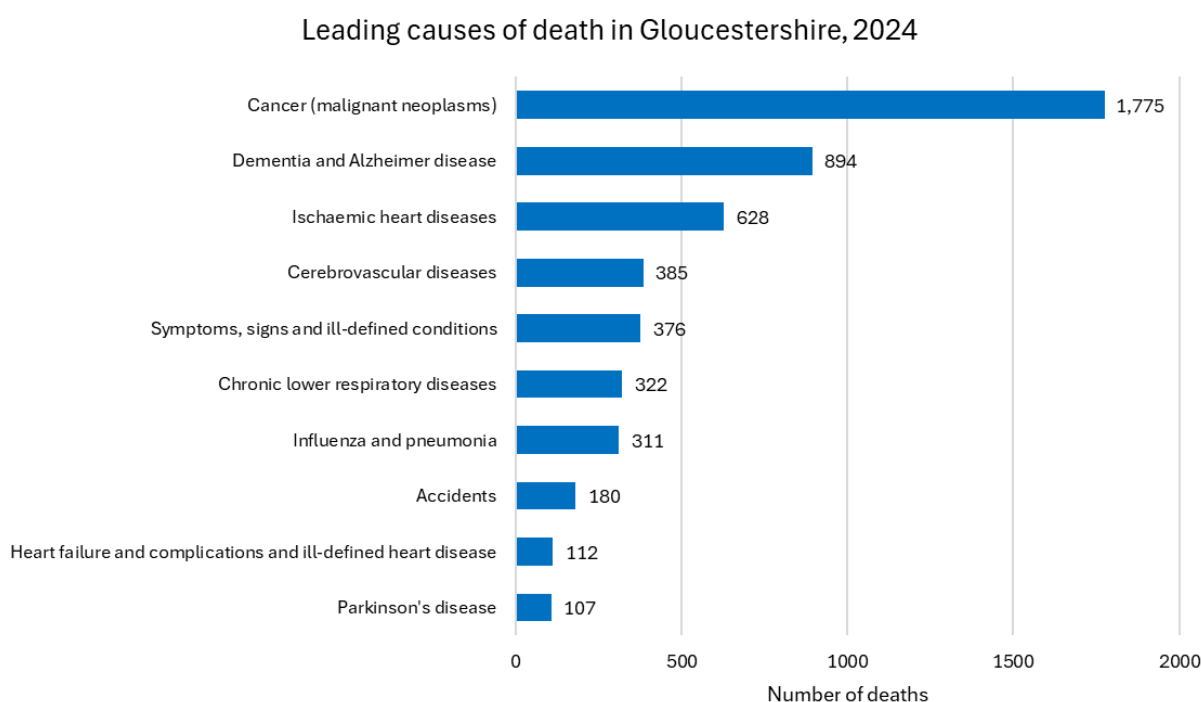


Figure 7: Top 10 leading causes of death in Gloucestershire, 2024⁵

5.1 Change in leading causes of death between 2023 and 2024

The change in the number of deaths occurring in the top 10 leading causes of deaths between 2023-2024 is given in Figure 8. Between 2023 and 2024 the largest increase in the number of deaths by leading cause was Dementia and Alzheimer disease (+77 deaths, 9.4% increase). The largest decrease was Accidents with 69 fewer deaths occurring in 2024 compared to 2023 (27.7% decrease).

⁵The leading causes of death classification is based on a list developed by the World Health Organization (WHO) and each entry is an aggregation of the very detailed ICD-10 list. The leading causes classification does not include all causes, consequently summing counts for all leading causes will not equal the figure for total mortality. For more information see: [Nomis - Official Census and Labour Market Statistics - Nomis - Official Census and Labour Market Statistics \(nomisweb.co.uk\)](https://www.nomisweb.co.uk)

Change in numbers of the 10 most common leading causes of death in Gloucestershire between 2023 and 2024

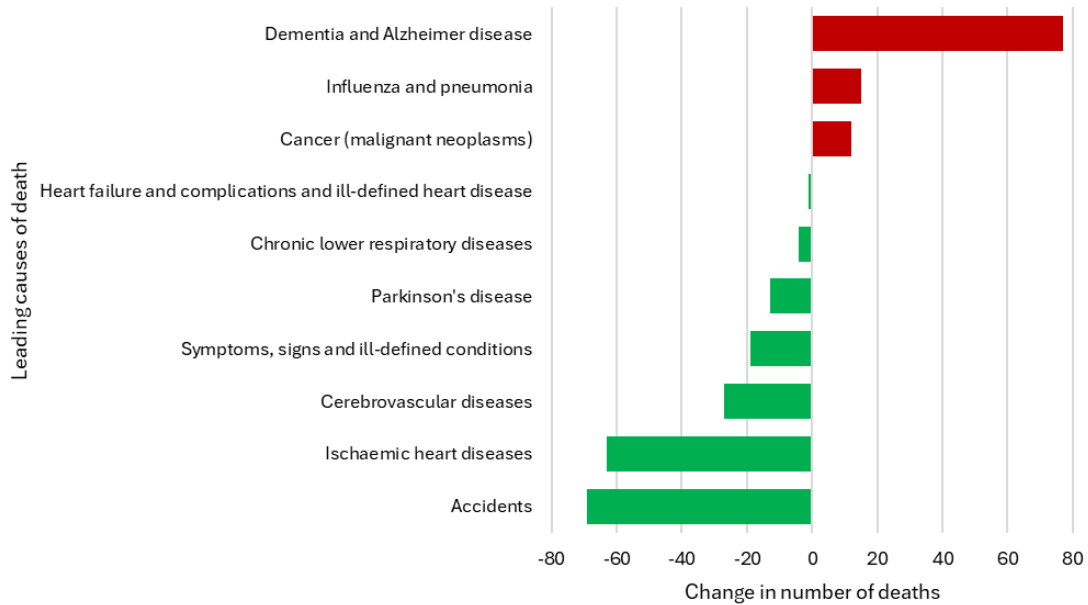


Figure 8: Change in numbers of the 10 most common leading causes of death in Gloucestershire between 2023 and 2024

5.2 Change in numbers of leading causes of death in Gloucestershire between 2015 and 2024

The chart in Figure 9 highlights the changes in the same leading causes of death, but between the period of 2015 and 2024. Over the last 10-year period, the largest total increase in deaths in Gloucestershire comparing 2024 to 2015 was for Cancer (malignant neoplasms); there were 1,775 deaths in 2024, which was 216 more during the year (13.9% increase) than in 2015. This is closely followed by Dementia and Alzheimer disease, which was 894 deaths in 2024 from 687 deaths in 2015, an increase of 207 deaths (30.1% increase). The largest decrease was Ischaemic heart diseases, which saw a fall from 795 deaths in 2015 down to 628 deaths in 2024, 167 fewer deaths (21.0% decrease).

Changes in numbers of the 10 most common leading causes of death in Gloucestershire between 2015 and 2024

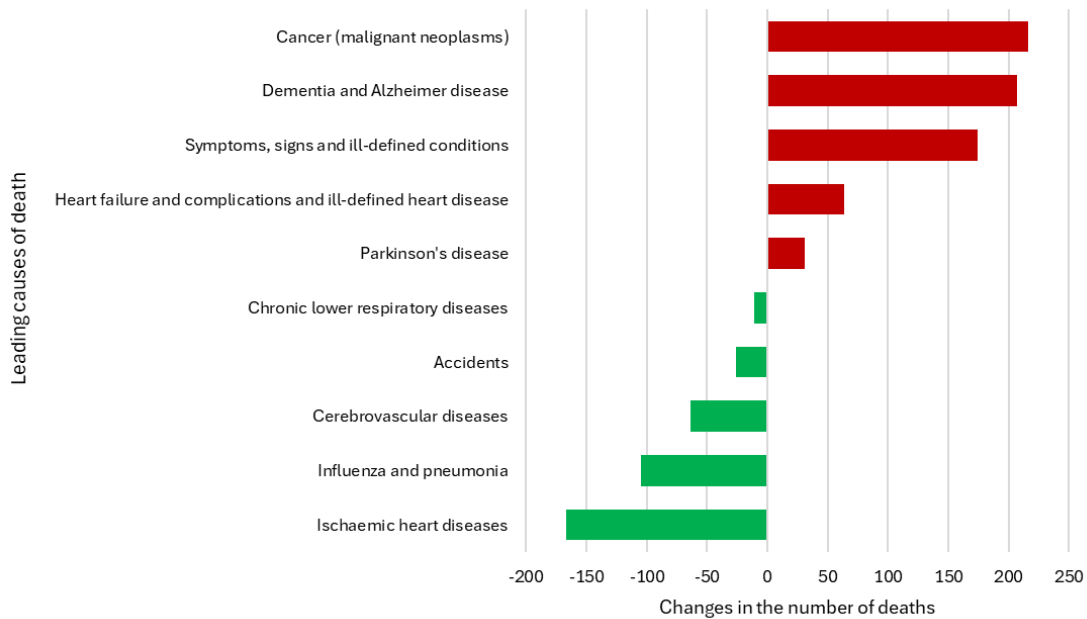


Figure 9: Change in numbers of the 10 most common leading causes of death in Gloucestershire between 2015 and 2024

6.0 Leading causes of death by sex

Looking at the leading causes of death by sex, shown in Table 4, Cancer (neoplasms) was the leading cause of death for both males (28.7% of total male deaths), and females (23.7% of total female deaths) in Gloucestershire. Dementia and Alzheimer disease was the second highest cause of death in females, leading to 16.8% of female deaths, whilst Ischaemic heart diseases were the second highest cause of deaths in men, accounting for 12.4% of male deaths. Comparing the greatest differences between the number of deaths by cause and sex, males had 208 more deaths occurring than females (49.8% higher) for Ischaemic heart disease whilst females had 246 more deaths than males occurring due to Dementia and Alzheimer disease (43.2% higher).

Table 4 : Leading Causes of Male and Female Deaths in Gloucestershire, 2024

Top 10 causes of male deaths			Top 10 causes of female deaths		
Cause of death	Number of male deaths	Percentage of male deaths	Cause of death	Number of female deaths	Percentage of female deaths
Cancer (malignant neoplasms)	971	28.7%	Cancer (malignant neoplasms)	804	23.7%
Ischaemic heart diseases	418	12.4%	Dementia and Alzheimer disease	570	16.8%
Dementia and Alzheimer disease	324	9.6%	Symptoms, signs and ill-defined conditions	252	7.4%
Chronic lower respiratory diseases	159	4.7%	Cerebrovascular diseases	228	6.7%
Cerebrovascular diseases	157	4.6%	Ischaemic heart diseases	210	6.2%
Influenza and pneumonia	152	4.5%	Chronic lower respiratory diseases	163	4.8%
Symptoms, signs and ill-defined conditions	124	3.7%	Influenza and pneumonia	159	4.7%
Accidents	101	3.0%	Accidents	79	2.3%
Cirrhosis and other diseases of liver	69	2.0%	Heart failure and complications and ill-defined heart disease	61	1.8%
Parkinson's disease	62	1.8%	Cardiac arrhythmias	59	1.7%
Total male deaths	3,378		Total female deaths	3,386	

6.1 District focus

- In 2024, Cancer (malignant neoplasms), Dementia and Alzheimer disease, and Ischaemic heart diseases were also the three main causes of death in all districts in Gloucestershire, as shown in Table 5.
- Cancer was the leading cause of death for all districts, with Tewkesbury having the largest proportion of deaths at 30.3%, as indicated in Table 6.
- Dementia and Alzheimer disease was the second largest cause of death for all districts, with Cheltenham having the largest proportion of deaths at 17.2%.

Table 5: Number of deaths in Gloucestershire, SW, England, and Districts for top 10 leading causes of death in Gloucestershire, 2024

Cause of death	Cheltenham	Cotswold	Forest of Dean	Gloucester	Stroud	Tewkesbury	Gloucestershire	South West	England	England and Wales
All causes	1,195	1,020	984	1,265	1,325	975	6,764	61,287	531,954	567,358
Cancer (malignant neoplasms)	282	271	262	313	352	295	1,775	16,134	139,796	149,000
Dementia and Alzheimer disease	205	140	109	157	176	107	894	7,703	64,354	68,254
Ischaemic heart diseases	101	91	100	127	115	94	628	5,265	50,446	53,824
Cerebrovascular diseases	63	59	58	72	85	48	385	3,469	27,344	29,146
Symptoms, signs and ill-defined conditions	71	66	59	39	99	42	376	2,875	18,895	19,983
Chronic lower respiratory diseases	56	31	61	82	54	38	322	2,883	28,903	31,059
Influenza and pneumonia	54	49	34	68	55	51	311	2,452	21,508	23,011
Accidents	35	25	20	39	35	26	180	1,841	17,865	19,411
Heart failure and complications and ill-defined heart disease	19	11	19	18	24	21	112	1,432	10,494	11,170
Parkinson's disease	20	18	12	18	19	20	107	956	7,554	8,030

Table 6: Percentage of deaths in Gloucestershire, SW, England, and Districts for main 10 leading causes of death in Gloucestershire, 2024

Cause of death	Cheltenham	Cotswold	Forest of Dean	Gloucester	Stroud	Tewkesbury	Gloucestershire	South West	England	England and Wales
Cancer (malignant neoplasms)	23.6%	26.6%	26.6%	24.7%	26.6%	30.3%	26.2%	26.3%	26.3%	26.3%
Dementia and Alzheimer disease	17.2%	13.7%	11.1%	12.4%	13.3%	11.0%	13.2%	12.6%	12.1%	12.0%
Ischaemic heart diseases	8.5%	8.9%	10.2%	10.0%	8.7%	9.6%	9.3%	8.6%	9.5%	9.5%
Cerebrovascular diseases	5.3%	5.8%	5.9%	5.7%	6.4%	4.9%	5.7%	5.7%	5.1%	5.1%
Symptoms, signs and ill-defined conditions	5.9%	6.5%	6.0%	3.1%	7.5%	4.3%	5.6%	4.7%	3.6%	3.5%
Chronic lower respiratory diseases	4.7%	3.0%	6.2%	6.5%	4.1%	3.9%	4.8%	4.7%	5.4%	5.5%
Influenza and pneumonia	4.5%	4.8%	3.5%	5.4%	4.2%	5.2%	4.6%	4.0%	4.0%	4.1%
Accidents	2.9%	2.5%	2.0%	3.1%	2.6%	2.7%	2.7%	3.0%	3.4%	3.4%
Heart failure and complications and ill-defined heart disease	1.6%	1.1%	1.9%	1.4%	1.8%	2.2%	1.7%	2.3%	2.0%	2.0%
Parkinson's disease	1.7%	1.8%	1.2%	1.4%	1.4%	2.1%	1.6%	1.6%	1.4%	1.4%

7.0 Leading causes of death: Rates (ASMR)⁶

Age standardised mortality rates, represented in Figure 10 show that Gloucestershire had a lower mortality rate than the South West and England for the main cause of death Cancer (229.8 Gloucestershire ASMR per 100,000 vs. 232.1 South West and 242.3 England). The Cancer rate is lower in Gloucestershire than the South West, and England, with a rate of 2.3 fewer deaths per 100,000 population than the South West, and 12.5 fewer than England. However, the county had higher age standardised mortality rates than the South West for the other two main causes of death (Dementia and Alzheimer disease, and Ischaemic heart diseases).

Comparing to England, the Dementia and Alzheimer disease rate is similar to Gloucestershire, but the Ischaemic heart diseases rate was lower for the county.

The largest difference between Gloucestershire and the South West and England was for Symptoms, signs and ill-defined conditions as a cause of death, where Gloucestershire saw 15.0 more deaths per 100,000 population than England, and 8.0 per 100,000 more than the South West in 2024.

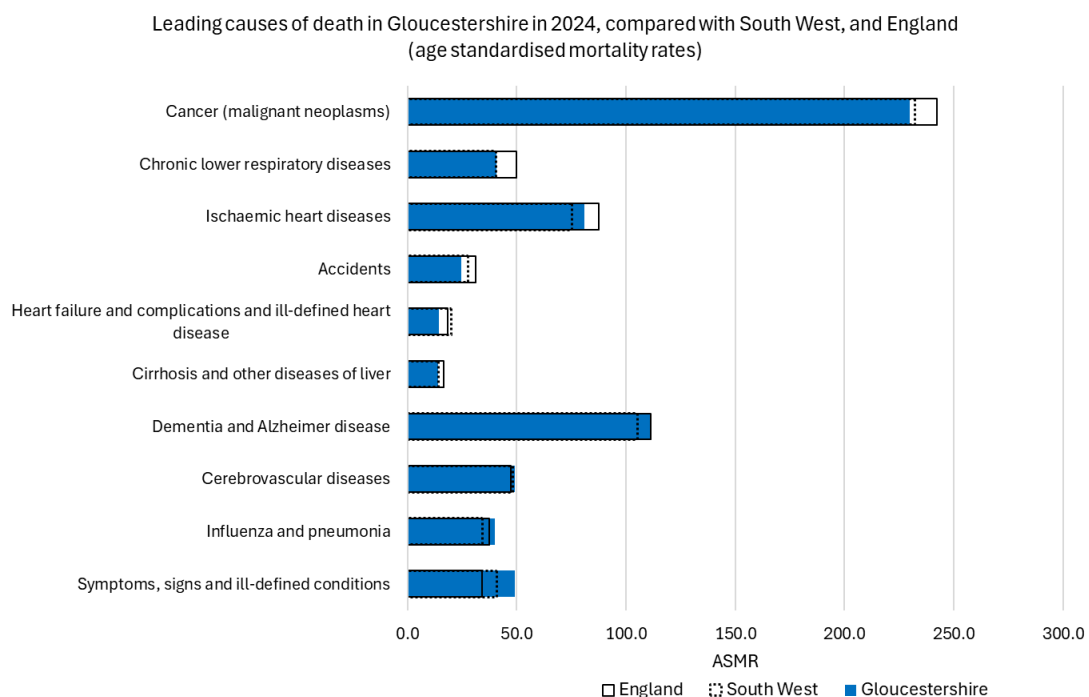


Figure 10: Leading causes of death in Gloucestershire, compared with South West and England (ASMR), 2024

⁶ Confidence interval analysis is not included due to lack of data availability.

8.0 Avoidable mortality in 2022-2024⁷

Avoidable mortality is defined by the Office for National Statistics as deaths that are preventable or treatable⁸. Preventable deaths are 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)”⁹ whereas, treatable mortality is defined as “causes of death that can mainly be avoided through timely and effective healthcare interventions, including secondary prevention and treatment (that is, after the onset of disease, to reduce case-fatality)”¹⁰. For more detail about the causes of death classed as avoidable, please see [Appendix A](#).

The number of avoidable deaths in 2022-2024 occurring in Gloucestershire, its districts, the South West and England is given in Table 1. Between 2022-2024¹¹, there was 3,841 avoidable deaths in Gloucestershire. Using age standardised rates this is equivalent to a rate of 205.7 avoidable deaths per 100,000 population. Comparing to the South West rate of 207.1 deaths per 100,000 (34,036 deaths), Gloucestershire had a lower rate of avoidable deaths however the difference was not statistically significant. However, Gloucestershire did have a significantly lower avoidable death rate than England where 234.4 deaths occurred per 100,000 as indicated in Figure 11.

Table 7: Number of avoidable deaths registered 2022-2024

	Number of avoidable deaths registered in 2022-2024	Avoidable Mortality Rate 2022-2024
Gloucestershire	3,841	205.7
Cheltenham	669	217.9
Cotswold	486	168.0
Forest of Dean	583	213.7
Gloucester	903	271.8
Stroud	703	185.9
Tewkesbury	497	178.8
South West	34,036	207.1
England	348,430	234.4

⁷ Data source: Avoidable mortality by local authorities in England and unitary authorities in Wales, Office for National Statistics. Available at: [Avoidable mortality by local authorities in England and unitary authorities in Wales - Office for National Statistics](#)

⁸ ONS, 2022. [Avoidable mortality in the UK QMI - Office for National Statistics](#)

⁹ *Ibid.*

¹⁰ *Ibid.*

¹¹ Three-year aggregates are used to increase the reliability of the estimates due to a small number of deaths occurring in some local authorities

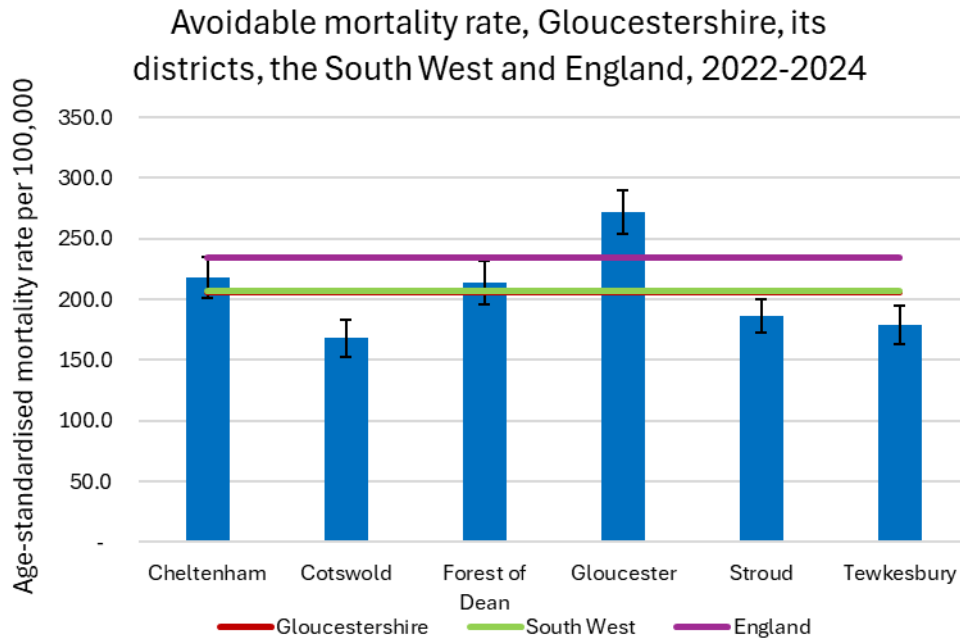


Figure 11: Avoidable mortality rate, Gloucestershire and its districts, 2022-2024

8.1 District focus

- Between 2022-2024, Gloucester had the highest number of avoidable deaths and highest avoidable mortality rate with 903 deaths and a rate of 271.8 avoidable deaths per 100,000 population. This rate is significantly higher than the Gloucestershire, South West and England rates.
- The lowest number of avoidable deaths and the lowest avoidable mortality rate between 2022-2024 was in Cotswold with 486 deaths and a rate of 168.0 deaths per 100,000 population. This rate is significantly lower than the Gloucestershire, South West and England rates.

9.0 Number of avoidable deaths in Gloucestershire between 2001-2003 and 2022-2024

The period 2020-2022 saw the highest number of avoidable deaths occurring in Gloucestershire since 2001-2003, as shown in Figure 12. In the most recent period, there were 145 fewer avoidable deaths, equivalent to a decrease of 3.6%, in 2022-2024 compared to the previous period 2021-2023. In general, since 2013-2015 there had been an increasing trend in the number of avoidable deaths taking place in Gloucestershire however, the latest data indicates that the trend has reversed.

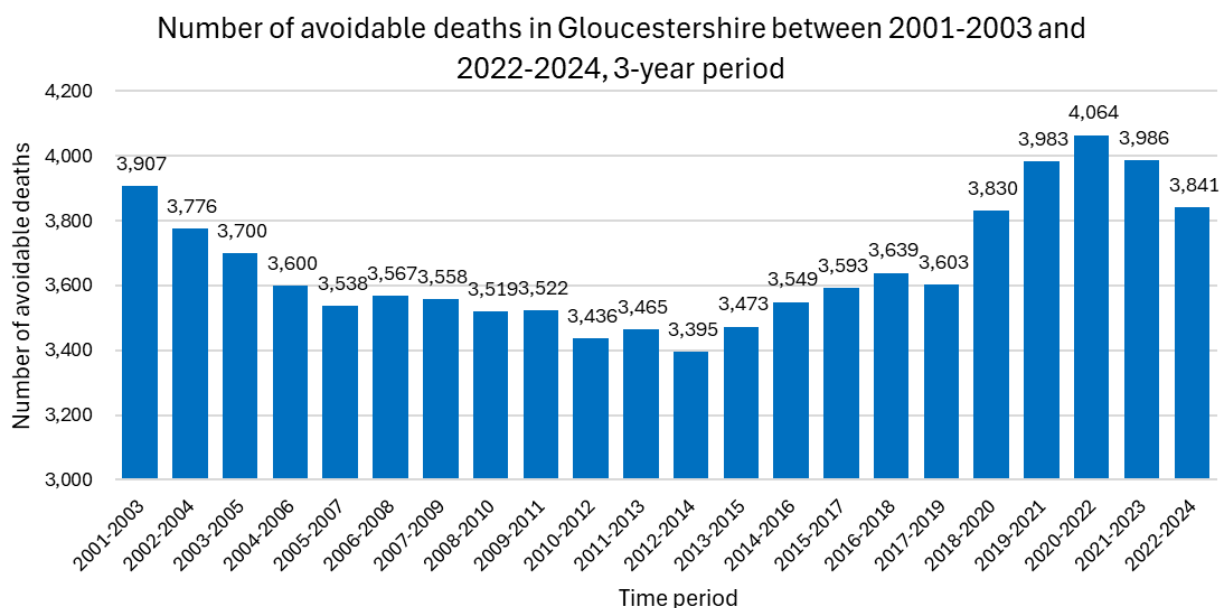


Figure 12: Number of avoidable deaths in Gloucestershire between 2001-2003 and 2022-2024, 3-year period

10.0 Avoidable mortality rate change in Gloucestershire between 2001-2003 and 2022-24

Generally, there was a decreasing trend in Gloucestershire's age standardised avoidable mortality rate between 2001-2003 and 2017-2019 as shown by Figure 13. However, between 2017-2019 to 2020-2022, there was an increase in the avoidable deaths rate, peaking at 218.5 avoidable deaths per 100,000. This increase can be attributed to the COVID-19 pandemic and is statistically significantly higher than the previous periods. Since 2020-2022, the avoidable mortality rate is indicated to have begun to reduce back to pre-pandemic levels, driven by a reduction in preventable deaths- however, this trend is not yet statistically significant.

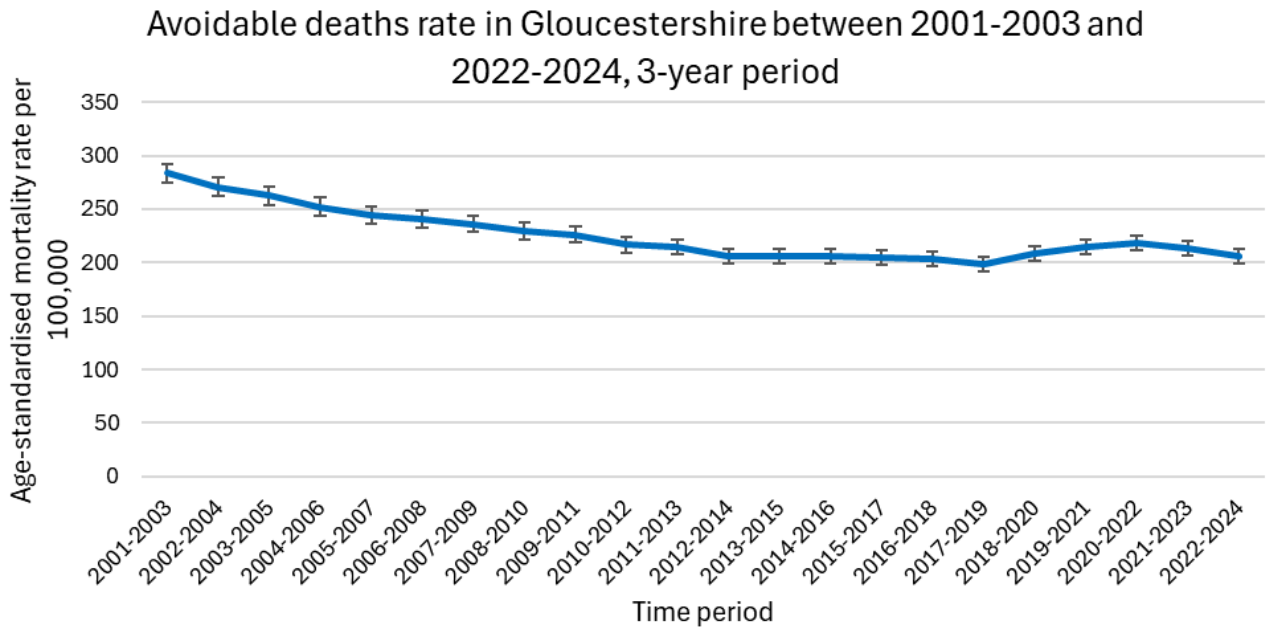


Figure 13: Avoidable deaths rate in Gloucestershire between 2001-2003 and 2022-2024, 3-year period

11.0 Treatable and preventable deaths

Avoidable mortality can be broken down into treatable and preventable deaths. Preventable deaths are 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)”¹² whereas, treatable mortality is defined as “causes of death that can mainly be avoided through timely and effective healthcare interventions, including secondary prevention and treatment (that is, after the onset of disease, to reduce case-fatality)”.¹³

In Gloucestershire, for every period shown in Figure 14, the number of preventable deaths outnumbered the number of treatable deaths. In 2022-2024, 1,473 treatable deaths (38.3% of avoidable deaths) and 2,368 preventable deaths (61.7% of avoidable deaths) took place in Gloucestershire.

Between 2001–2003 and 2010–2012, the number of treatable deaths decreased steadily across each three-year period, falling from 1,633 to 1,264 deaths. From 2013–2015 onwards, treatable deaths generally increased, with the exception of a small dip in 2012–2014, rising overall to 1,473 deaths in 2022–2024.

In contrast, the number of preventable deaths remained relatively stable, with some fluctuation, between 2001–2003 and 2017–2019. A marked increase was observed between 2018–2020 and 2020–2022, peaking at 2,668 deaths, followed by a recent decline to 2,368 deaths in 2022–2024.

¹² ONS, 2022. [Avoidable mortality in the UK QMI - Office for National Statistics](#)

¹³ *Ibid.*

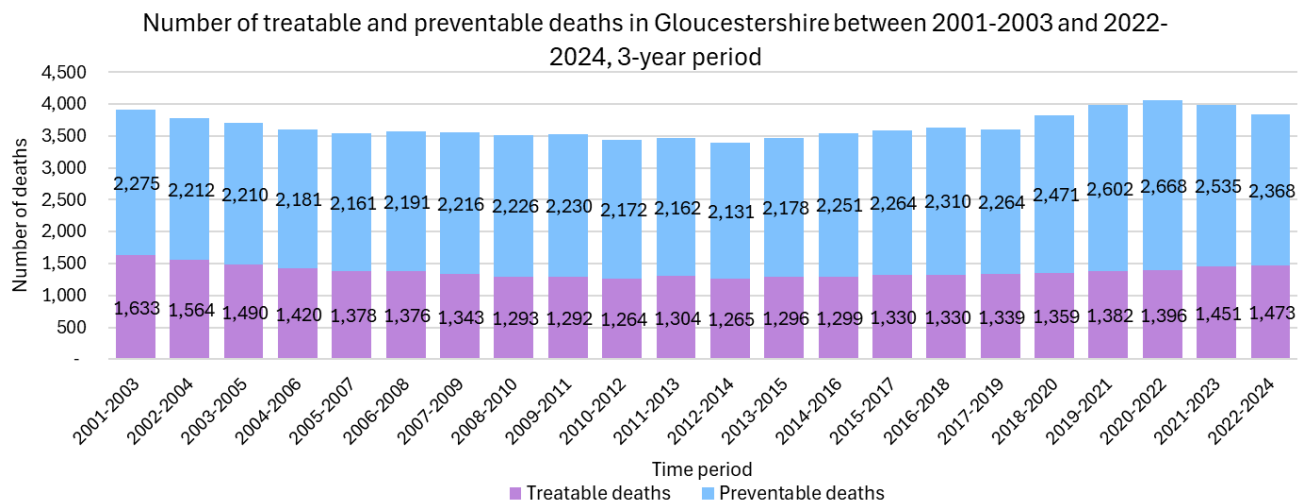


Figure 14: Number of treatable and preventable deaths in Gloucestershire between 2001-2003 and 2022-2024, 3-year period

12.0 Treatable and preventable mortality rate

Using a comparison of the treatable and preventable standardised mortality rates in Figure 15, throughout the period shown there has been a significantly higher preventable mortality rate than treatable. The latest rates provide further evidence for the increase in avoidable mortality between 2018-2020 and 2020-2022 being driven by an increase in preventable mortality and the COVID-19 pandemic. Between 2018-2020 (the start of the pandemic) and 2020-2022 (the middle of the pandemic), the treatable mortality rate increased by 1.2 percentage points however, the preventable mortality rate increased by 8.6 percentage points in Gloucestershire. This difference is reflective of the rates of increase seen at a national level. Since 2022-2024, the preventable mortality rate has decreased which is also seen in the overall avoidable mortality rate.

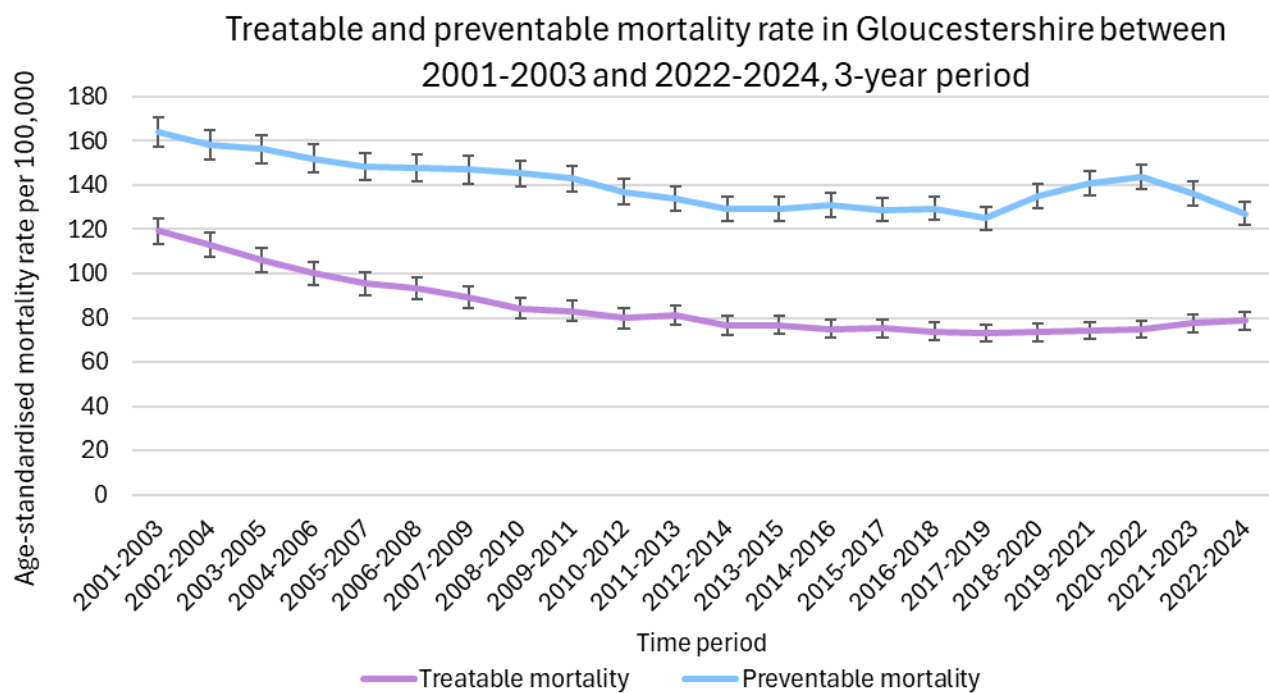


Figure 15: Treatable and preventable mortality rate in Gloucestershire between 2001-2003 and 2022-2024, 3-year period

13.0 Avoidable mortality by sex, with treatable and preventable mortality comparison

In Gloucestershire, there is a marked difference in the number of avoidable deaths occurring in males and females. Throughout the period shown in Figure 16 males have had a significantly higher avoidable mortality rate than females. Between 2001-2003 and 2017-2019 there was a narrowing of the mortality gap by sex however, between 2018-2020 and 2020-2022 there was a significant increase in the male avoidable mortality rate which widened the mortality gap with females. The latest data suggests the gap may be narrowing again. Differences in avoidable causes of death have been identified as contributors to the life expectancy gap between sexes. Differences in Ischaemic heart disease and injuries as a cause of death were identified to have the greatest contribution to the gap¹⁴.

¹⁴ Allel et al., 2021. [The contributions of public health policies and healthcare quality to gender gap and country differences in life expectancy in the UK | Population Health Metrics | Full Text](#)

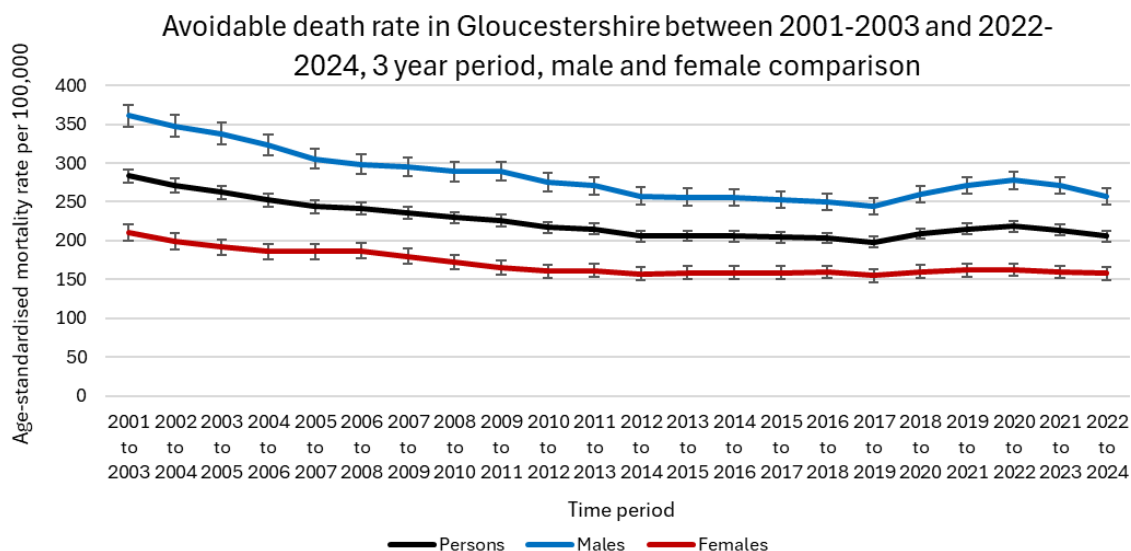


Figure 16: Avoidable death rate in Gloucestershire between 2001-2003 and 2022-2024, 3 year period, male and female comparison

By splitting avoidable mortality into treatable and preventable mortality, it can be inferred that the sex difference in avoidable mortality has been driven by the sex difference in preventable mortality. Figure 17 indicates that there are no significant differences between the male and female treatable mortality rate. One reason why there might have been a significant increase in the male preventable mortality rate between 2018-20 to 2020 to 2022 is due to more COVID-19 deaths, classed as preventable, occurring in males than females.¹⁵ This is supported by the reduction in male preventable mortality in the latest two periods (2021-2023 to 2022-2024).

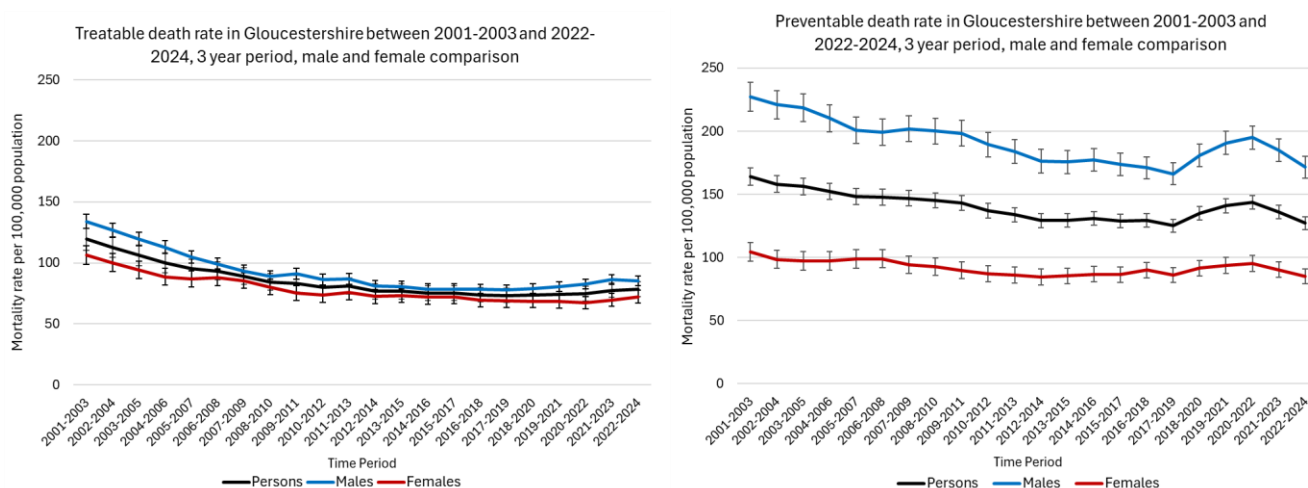


Figure 17: Sex differences for treatable and preventable mortality in Gloucestershire between 2001-2003 and 2022-2024, 3 year period, male and female comparison

¹⁵ Office for National Statistics, 2021.

<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/articles/coronaviruscovid19andthedifferenteffectsonmenandwomenintheukmarch2020tofebruary2021/2021-03-10>

14.0 Appendices

Appendix A: Classifications used to obtain avoidable mortality from mortality data, broken down by treatable and preventable mortality.¹⁶¹⁷

Condition group and cause	ICD-10 codes	Age	Treatable	Preventable
Infectious diseases				
Intestinal diseases	A00-A09	0-74		•
Diphtheria, Tetanus, Poliomyelitis	A35, A36, A80	0-74		•
Whooping cough	A37	0-74		•
Meningococcal infection	A39	0-74		•
Sepsis due to streptococcus pneumonia and sepsis due to haemophilus influenzae	A40.3, A41.3	0-74		•
Haemophilus influenza infections	A49.2	0-74		•
Sexually transmitted infections (except HIV/AIDS)	A50-A60, A63, A64	0-74		•
Varicella	B01	0-74		•
Measles	B05	0-74		•
Rubella	B06	0-74		•
Viral Hepatitis	B15-B19	0-74		•
HIV/AIDS	B20-B24	0-74		•
Malaria	B50-B54	0-74		•
Haemophilus and pneumococcal meningitis	G00.0, G00.1	0-74		•
Tuberculosis	A15-A19, B90, J65	0-74	• (50%)	• (50%)
Scarlet fever	A38	0-74	•	
Sepsis	A40 (excl. A40.3), A41 (excl. A41.3)	0-74	•	
Cellulitis	A46, L03	0-74	•	
Legionnaires disease	A48.1	0-74	•	
Streptococcal and enterococci infection	A49.1	0-74	•	
Other meningitis	G00.2, G00.3, G00.8, G00.9	0-74	•	
Meningitis due to other and unspecified causes	G03	0-74	•	
Neoplasms				
Lip, oral cavity and pharynx cancer	C00-C14	0-74		•
Oesophageal cancer	C15	0-74		•
Stomach cancer	C16	0-74		•

¹⁶ Office for National Statistics, 2025. [Avoidable mortality in the UK QMI - Office for National Statistics](#)

¹⁷ Where there is a (50%), the number of deaths occurring in this category is split with half of the number of deaths being attributed to treatable mortality and the other half attributed to preventable mortality.

Liver cancer	C22	0-74		•
Lung cancer	C33-C34	0-74		•
Mesothelioma	C45	0-74		•
Skin (melanoma) cancer	C43	0-74		•
Bladder cancer	C67	0-74		•
Cervical cancer	C53	0-74	• (50%)	• (50%)
Colorectal cancer	C18-C21	0-74	•	
Breast cancer (female only)	C50	0-74	•	
Uterus cancer	C54, C55	0-74	•	
Testicular cancer	C62	0-74	•	
Thyroid cancer	C73	0-74	•	
Hodgkin's disease	C81	0-74	•	
Lymphoid leukaemia	C91.0, C91.1	0-74	•	
Benign neoplasm	D10-D36	0-74	•	
Endocrine and metabolic diseases				
Nutritional deficiency anaemia	D50-D53	0-74		•
Diabetes mellitus	E10-E14	0-74	• (50%)	• (50%)
Thyroid disorders	E00-E07	0-74	•	
Adrenal disorders	E24-E25 (excl. E24.4), E27	0-74	•	
Diseases of the nervous system				
Epilepsy	G40, G41	0-74	•	
Diseases of the circulatory system				
Aortic aneurysm	I71	0-74	• (50%)	• (50%)
Hypertensive diseases	I10-I13, I15	0-74	• (50%)	• (50%)
Ischaemic heart diseases	I20-I25	0-74	• (50%)	• (50%)
Cerebrovascular diseases	I60-I69	0-74	• (50%)	• (50%)
Other atherosclerosis	I70, I73.9	0-74	• (50%)	• (50%)
Rheumatic and other heart diseases	I00-I09	0-74	•	
Venous thromboembolism	I26, I80, I82.9	0-74	•	
Diseases of the respiratory system				
Influenza	J09-J11	0-74		•
Pneumonia due to streptococcus pneumonia or haemophilus influenza	J13-J14	0-74		•
Chronic lower respiratory diseases	J40-J44	0-74		•
Lung diseases due to external agents	J60-J64, J66-J70, J82, J92	0-74		•
Upper respiratory infections	J00-J06, J30-J39	0-74	•	

Pneumonia, not elsewhere classified or organism unspecified	J12, J15, J16-J18	0-74	•	
Acute lower respiratory infections	J20-J22	0-74	•	
Asthma and bronchiectasis	J45-J47	0-74	•	
Adult respiratory distress syndrome	J80	0-74	•	
Pulmonary oedema	J81	0-74	•	
Abscess of lung and mediastinum pyothorax	J85, J86	0-74	•	
Other pleural disorders	J90, J93, J94	0-74	•	
Diseases of the digestive system				
Gastric and duodenal ulcer	K25-K28	0-74	•	
Appendicitis	K35-K38	0-74	•	
Abdominal hernia	K40-K46	0-74	•	
Cholelithiasis and cholecystitis	K80-K81	0-74	•	
Other diseases of gallbladder or biliary tract	K82-K83	0-74	•	
Acute pancreatitis	K85.0, K85.1, K85.3, K85.8, K85.9	0-74	•	
Other diseases of pancreas	K86.1, K86.2, K86.3, K86.8, K86.9	0-74	•	
Diseases of the genitourinary system				
Nephritis and nephrosis	N00-N07	0-74	•	
Obstructive uropathy	N13, N20-N21, N35	0-74	•	
Renal failure	N17-N19	0-74	•	
Renal colic	N23	0-74	•	
Disorders resulting from renal tubular dysfunction	N25	0-74	•	
Unspecified contracted kidney, small kidney of unknown cause	N26-N27	0-74	•	
Inflammatory diseases of genitourinary system	N34.1, N70-N73, N75.0, N75.1, N76.4, N76.6	0-74	•	
Prostatic hyperplasia	N40	0-74	•	
Pregnancy, childbirth and the perinatal period				
Tetanus neonatorum	A33	0-74		•
Obstetrical tetanus	A34	0-74		•
Pregnancy, childbirth and the puerperium	O00-O99	0-74	•	

Certain conditions originating in the perinatal period	P00-P96	0-74	•	
Congenital malformations				
Certain congenital malformations (neural tube defects)	Q00, Q01, Q05	0-74		•
Congenital malformations of the circulatory system (heart defects)	Q20-Q28	0-74	•	
Adverse effects of medical and surgical care				
Drugs, medicaments and biological substances causing adverse effects in therapeutic use	Y40-Y59	0-74	•	
Misadventures to patients during surgical and medical care	Y60-Y69, Y83-Y84	0-74	•	
Medical devices associated with adverse incidents in diagnostic and therapeutic use	Y70-Y82	0-74	•	
Injuries				
Transport Accidents	V01-V99	0-74		•
Accidental Injuries	W00-X39, X46-X59	0-74		•
Intentional self-harm	X66-X84	0-74		•
Event of undetermined intent	Y16-Y34	0-74		•
Assault	X86-Y09, U50.9	0-74		•
Alcohol-related and drug-related deaths				
Alcohol-specific disorders and poisonings	E24.4, F10, G31.2, G62.1, G72.1, I42.6, K29.2, K70, K85.2, K86.0, Q86.0, R78.0, X45, X65, Y15	0-74		•
Other alcohol-related disorders	K73, K74.0-K74.2, K74.6	0-74		•
Drug disorders and poisonings	F11-F16, F18-F19, X40-X44, X85, Y10-Y14	0-74		•
Intentional self-poisoning by drugs	X60-X64	0-74		•
Provisional assignment of new diseases				
COVID-19	U07.1-U07.2	0-74		•