

STATE OF WALES BRIEFING

October 2023

Health inequalities: life expectancy & mortality



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State of Wales Briefing: Health inequalities: life expectancy and mortality, October 2023

What this briefing is about

This briefing provides essential data on life expectancy in Wales. It considers data on overall life expectancy, and then looks at the mortality rate associated with the three main causes of death: cancer, circulatory diseases including heart attack and stroke), and dementia and Alzheimer's disease.

Where available, data are provided on age, sex, race or ethnicity, geography and deprivation.

Why it matters

Life expectancy is one of the most fundamental measures of equality or lack of it. It demonstrates how lives are shortened by deprivation, and by gender, age and ethnic differences. There are important messages for politicians and the providers of all public services, not just health care providers, about the urgent need to reduce deprivation as an integral part of improving the nation's health.

Sources of data

Some other sources have been used, details of which are given in the text. NB life expectancy varies depending on the date of the estimate.

Key points

- In 2018-2020, life expectancy for females was 82 years and for males 78 years.
- While there are inequalities associated with gender and ethnicity, the most striking inequalities in life expectancy are associated with deprivation.
 - In all parts of Wales, people in the most deprived areas have shorter life expectancy than people in the least deprived areas.
 - The shortest life expectancies are in deprived areas in deprived local authorities.
 - Cardiff stands out as the most unequal local authority.
- The main causes of death are circulatory disease (including ischaemic heart disease and cerebrovascular disease, dementia and Alzheimer's disease, and cancer (in particular lung cancer).
- There are marked inequalities in mortality from circulatory disease and cancer associated with deprivation. The link between deprivation and dementia and Alzheimer's disease is unclear.
- The outlook is uncertain. Life expectancy is likely to continue to increase but at a slower rate than in the past. However, inequalities associated with deprivation could widen.

Introduction

This briefing considers one of the most important measures of the nation's health: life expectancy. It is a good indicator of a population's living standards, lifestyle and education, as well as access to good quality health services. Life expectancy can be considered over a period of time, can be compared between areas of all sizes, and can be compared for different groups of people. Other related indicators include healthy life expectancy, but this is not considered here.

This briefing is intended to provide readers with an overview of the latest position. For more in depth analysis, Public Health Wales provides many excellent sources of data and accessible analysis.

Life expectancy

Life expectancy is a measure of the average expected years of life for a newborn, based on recent mortality rates. It is a widely used indicator of the health of the general population and of different groups of people.

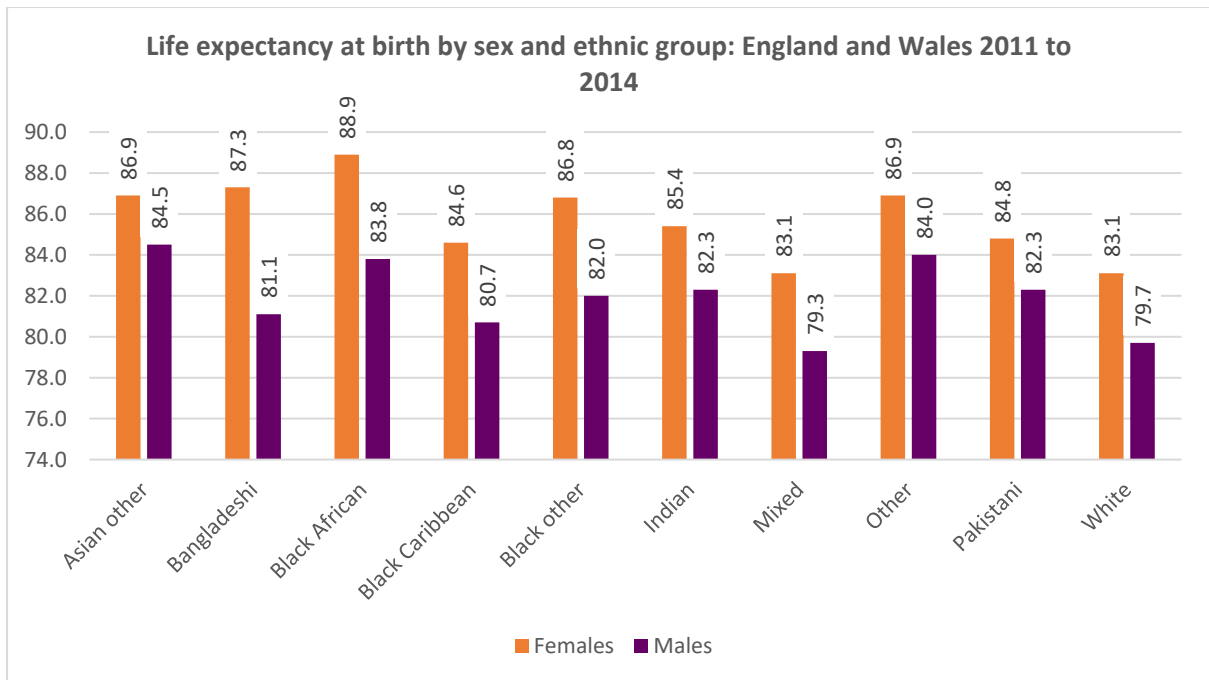
For the period 2018-2020 in Wales, life expectancy for females was 82 years and for males 78 years. After many years of increasing life expectancy, progress stalled from around 2011-2013 and has fallen slightly in the current period. Public Health Wales attributes this trend to higher mortality rates due to the COVID-19 pandemic, coupled with a fall in living standards and a period of austerity.¹

Gender

In 2018-20, females had a longer life expectancy than males. As noted above, life expectancy for females was 82 years and for males 78 years. Females also had a longer healthy life expectancy than males (62 years compared with 61 years).

Ethnicity

No data on mortality and ethnicity are available for Wales. For England and Wales combined, the Office for National Statistics has estimated that White and Mixed ethnic groups had lower life expectancy in the period 2011 - 2014 than all other ethnic groups.² White males and females lived at least five years less than people of Black African ethnicity, who had the longest life expectancy. However, concerns have been raised about the analysis used by ONS so the findings should be treated with caution.³



Source:

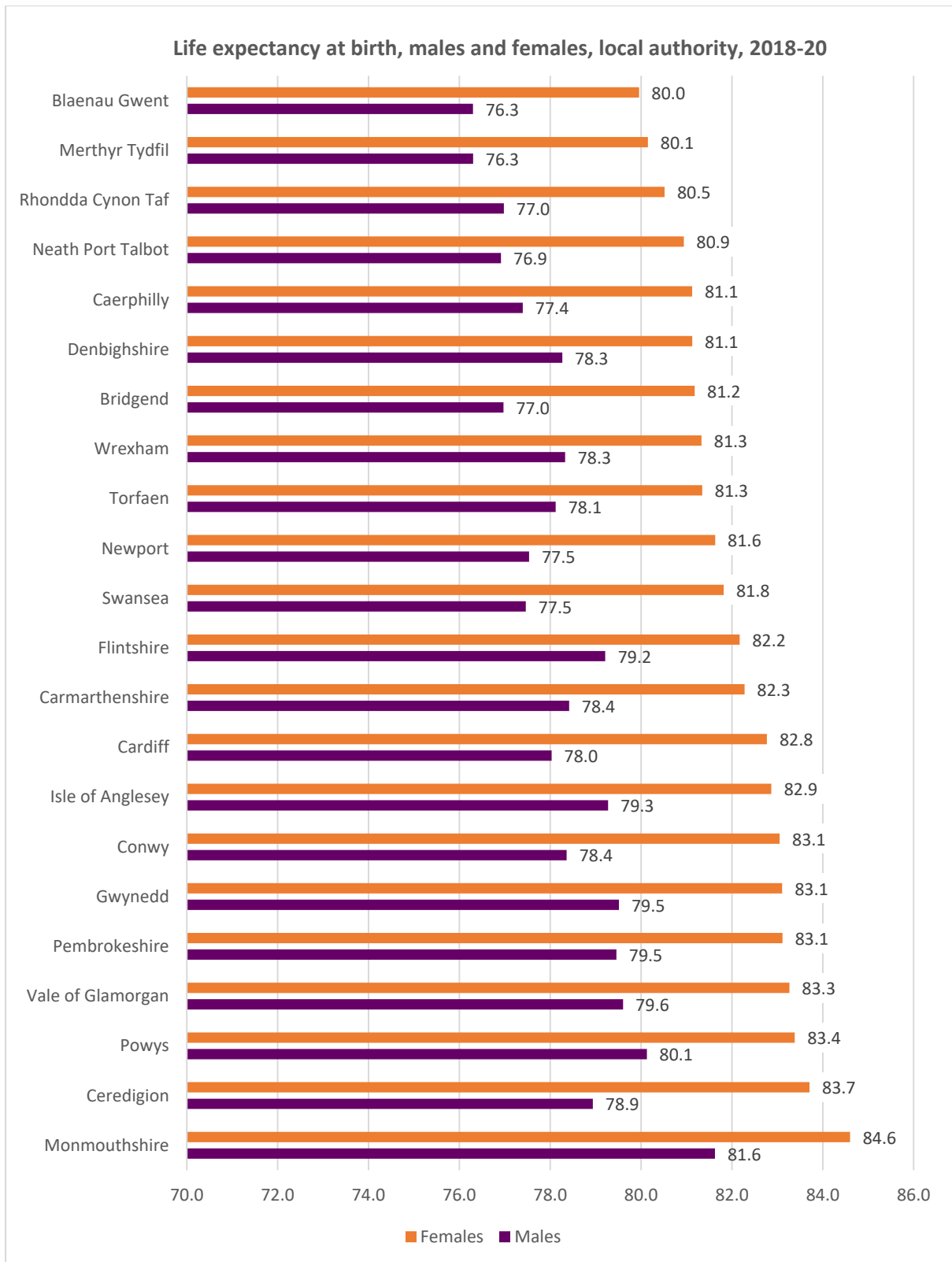
<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/lifeexpectancies/articles/ethnicdifferencesinlifeexpectancyandmortalityfromselectedcausesinenglandandwales/2011to2014#life-expectancy-at-birth-2011-to-2014>

Geography

There are considerable variations in the life expectancy of people living in different parts of Wales. Life expectancy for males and females is shortest in Blaenau Gwent and Merthyr Tydfil, and longest in Monmouthshire, Ceredigion and Powys.

The gap in life expectancy between males and females varies, with the largest gender inequalities being in Ceredigion with a 4.8 year gap, Conwy and Cardiff (each with a 4.7 year gap). The smallest gender gap is in Denbighshire (2.9 years), and Wrexham and Monmouthshire (each with a 3.0 year gap).

The differences between local authorities largely reflect levels of deprivation within their areas.



Source: Public Health Wales, Health Expectancy in Wales with inequality gap (Turn on the toggle to show technical information to access the data), https://publichealthwales.shinyapps.io/PHWO_HeathExpectanciesWalesProfile_v2a/

Deprivation

Life expectancy varies with deprivation, with large gaps between the most and least deprived areas. In Wales in 2018-20, males in the least deprived areas had a life expectancy 7.6 years longer than those in the most deprived areas, while females in the least deprived areas had a life expectancy 6.3 years longer than those in the most deprived areas. The gap in life expectancy between people in the least and most deprived areas has been generally increasing in recent years for both males and females.

The table on the next page provides the life expectancy of males and females in the most and least deprived areas of each local authority in Wales. There are some important findings here:

- People living in the most deprived areas have a shorter life expectancy than people in the least deprived areas in **all** parts of Wales: public bodies in every area should be concerned about health inequalities.
- For males, Cardiff and Swansea stand out as having large health inequalities associated with deprivation, with a gap between most and least deprived areas of 9.2 and 9.0 years respectively.
- For females, Cardiff and the Vale of Glamorgan are the most unequal areas, with a gap between the most and least deprived of 7.8 years.
- The smallest gaps in life expectancy are in Gwynedd and Ceredigion (males) and Gwynedd and Bridgend (females).
- The shortest male life expectancy was in the most deprived areas of Merthyr Tydfil, at just 71.7 years, followed by the most deprived areas of Denbighshire (72.2 years) and Swansea (72.3 years).
- The longest male life expectancy was in the least deprived areas Powys at 83.8 years, followed by the least deprived areas of Flintshire (82.3 years), and Cardiff and the Vale of Glamorgan (82.3 years each).
- The shortest female life expectancy was in the most deprived areas of Denbighshire (76.2 years), Newport (77.4 years) and Blaenau Gwent (77.6 years).
- The longest female life expectancy was in the least deprived areas of Cardiff at 86.5 years, followed by the least deprived areas of Monmouthshire (85.6 years), Vale of Glamorgan (85.5 years) and Swansea (85.4 years).

Public Health Wales' analysis⁴ shows that the largest contributors to the gap in life expectancy between deprived areas are circulatory diseases, cancer and respiratory diseases of those in middle age. For younger age groups, external causes and drug-related causes are important contributors to the gap.

Cause of death

The main causes of death in Wales over the last five years (adjusted to take account of the COVID-19 pandemic) are ischaemic heart disease and cerebrovascular disease (which we have grouped together into cardiovascular disease), dementia and Alzheimer's disease, and cancer (in particular lung cancer). The next sections explore inequalities in the mortality caused by each disease.

Life expectancy at birth for least and most deprived areas, local authorities, 2018-2020

Area	Males			Females		
	Area deprivation	Area Deprivation		Area deprivation	Area Deprivation	
	Least deprived	Most deprived	Gap	Least deprived	Most deprived	Gap
Isle of Anglesey	80.7	74.9	5.8	85.3	79.2	6.1
Gwynedd	80.8	77.5	3.3	84.3	81.4	2.9
Conwy	81.1	74.0	7.2	84.9	78.8	6.1
Denbighshire	80.7	72.2	8.5	83.4	76.2	7.2
Flintshire	82.4	75.1	7.4	83.8	78.1	5.7
Wrexham	80.8	74.1	6.7	85.0	77.7	7.3
Powys	83.8	76.3	7.5	85.1	79.8	5.3
Ceredigion	79.4	77.6	1.8	84.9	80.6	4.4
Pembrokeshire	80.5	76.0	4.5	84.3	80.1	4.2
Carmarthenshire	79.7	75.4	4.3	83.4	79.4	4.0
Swansea	81.3	72.3	9.0	85.4	78.3	7.1
Neath Port Talbot	80.9	73.5	7.4	83.7	78.1	5.6
Bridgend	80.3	73.9	6.4	82.7	79.1	3.6
Vale of Glamorgan	82.3	74.1	8.3	85.5	77.7	7.8
Cardiff	82.3	73.1	9.2	86.5	78.7	7.8
Rhondda Cynon Taf	80.8	73.1	7.7	82.9	78.0	4.9
Merthyr Tydfil	79.0	71.7	7.4	82.3	78.5	3.8
Caerphilly	79.8	74.5	5.4	83.4	78.6	4.8
Blaenau Gwent	79.1	75.5	3.6	82.1	77.6	4.6
Torfaen	81.9	74.2	7.7	84.4	78.0	6.4
Monmouthshire	82.1	79.7	2.5	85.6	81.4	4.1
Newport	81.4	73.2	8.2	84.4	77.4	7.0
Wales	81.6	74.1	7.6	84.7	78.4	6.3

Source: Public Health Wales, Health Expectancy in Wales with inequality gap (Turn on the toggle to show technical information to access the data),

https://publichealthwales.shinyapps.io/PHWO_HealthExpectanciesWalesProfile_v2a/

Circulatory Disease

Circulatory disease, or cardiovascular disease (CVD), includes a range of conditions including coronary heart disease, cerebrovascular disease (stroke), raised blood pressure (hypertension), and heart failure. It is one of the main causes of death in Wales: around 9,500 people die from the diseases each year – roughly one in four deaths.

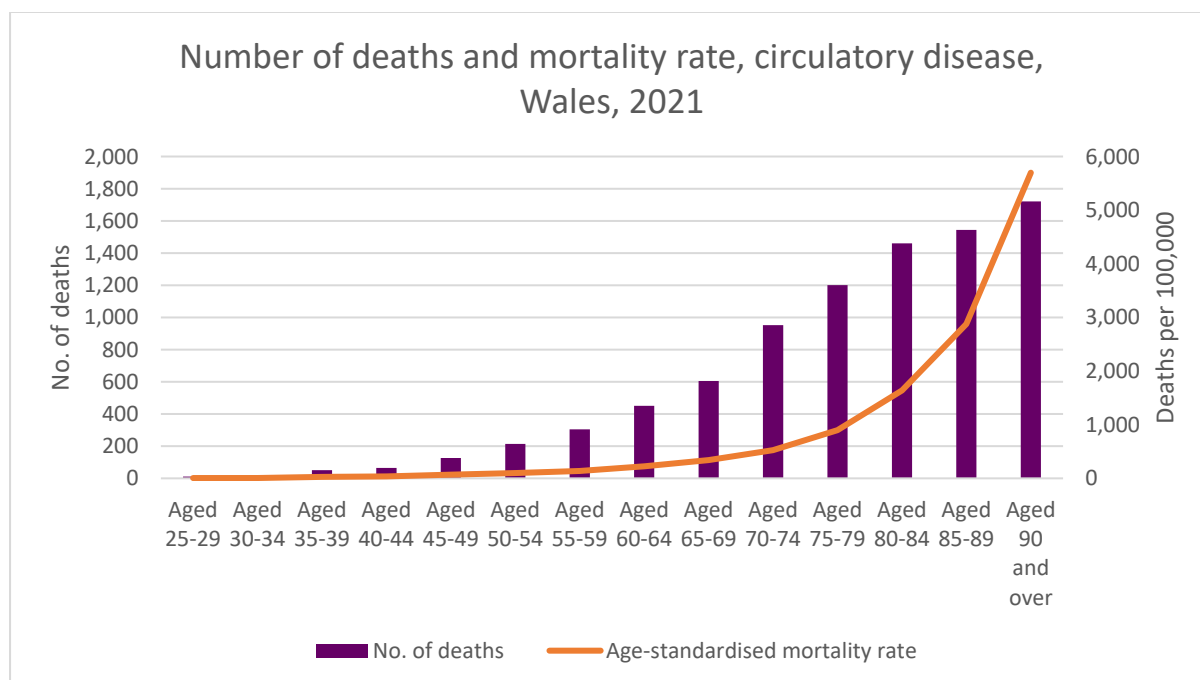
Sex

Men are more likely to die from circulatory diseases than women. In 2021, 4,754 males died from circulatory diseases compared with 3,973 females. The age-standardised mortality rate for men is substantially higher than that of females (327.99 per 100,000 compared with 206.14 per 100,000).

Age

Circulatory diseases are strongly related to age. The great majority of deaths from circulatory diseases occur amongst people aged 65 and over (85.7%) with more than two-thirds of deaths being amongst people aged 75 and over (67.9%).

The age-standardised mortality rate shows a similarly steep increase with age. Nevertheless, circulatory diseases caused the deaths of more than 1,000 people aged under 65 in 2021.



Source: Office for National Statistics Mortality Statistics by cause, via NOMIS.

Note: Data for 0-24 year olds excluded because of very low numbers. Data are for ICD-10 codes I00-I99.

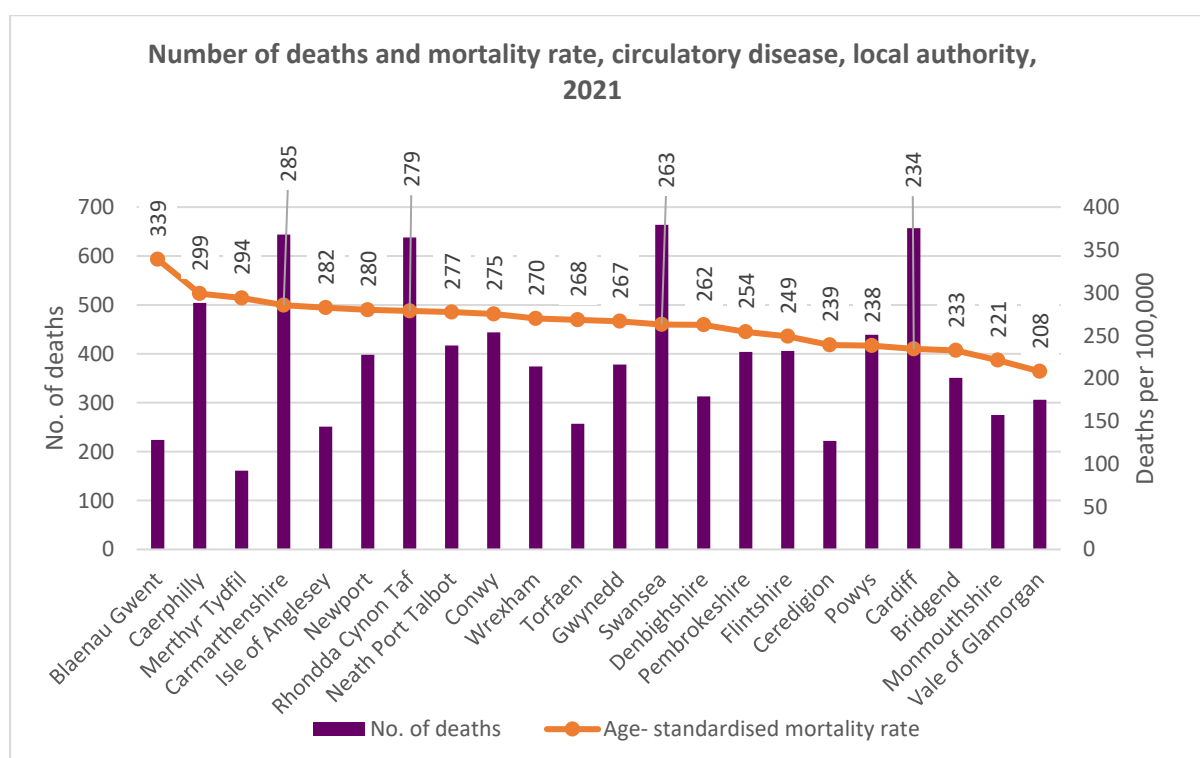
Ethnicity

There are no data on circulatory diseases and ethnicity in Wales. UK and global studies⁵ show that:

- People in South Asian groups have a higher incidence, prevalence and mortality from cardiovascular disease, including heart disease and stroke, than people in white groups.
- Black groups have a significantly lower risk of heart disease compared to the majority of the population, but a higher-than-average incidence of and mortality from hypertension and stroke.

Geography

Circulatory disease varies across Wales. The highest age-standardised mortality rates are in Blaenau Gwent, Merthyr Tydfil and Caerphilly while the lowest are in the Vale of Glamorgan and Monmouthshire.

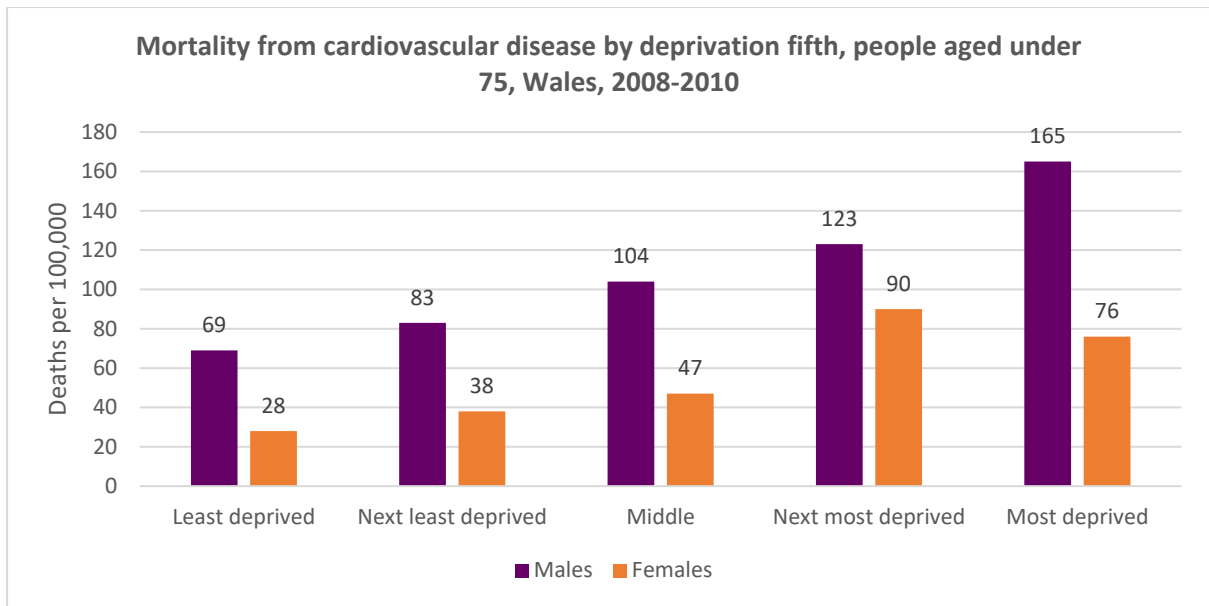


Source: Office for National Statistics Mortality Statistics by cause, via NOMIS.

Note: Data are for ICD-10 codes I00-I99. Mortality rate is age-standardised.

Deprivation

Circulatory diseases are related to deprivation. The mortality rates from CVD of people aged under 75 in the most deprived areas in Wales are more than twice the rates in the least deprived. The graph below uses data from 2008-2010 and the 2011 Welsh Index of Multiple Deprivation: while mortality rates have decreased since then, the relationship with deprivation persists.



Source: Public Health Wales, Cardiovascular disease. Available at: <https://phw.nhs.wales/services-and-teams/observatory/data-and-analysis/cardiovascular-disease/#:~:text=CVD%20is%20related%20to%20deprivation,to%20be%20steeper%20for%20Wales>

Cancer

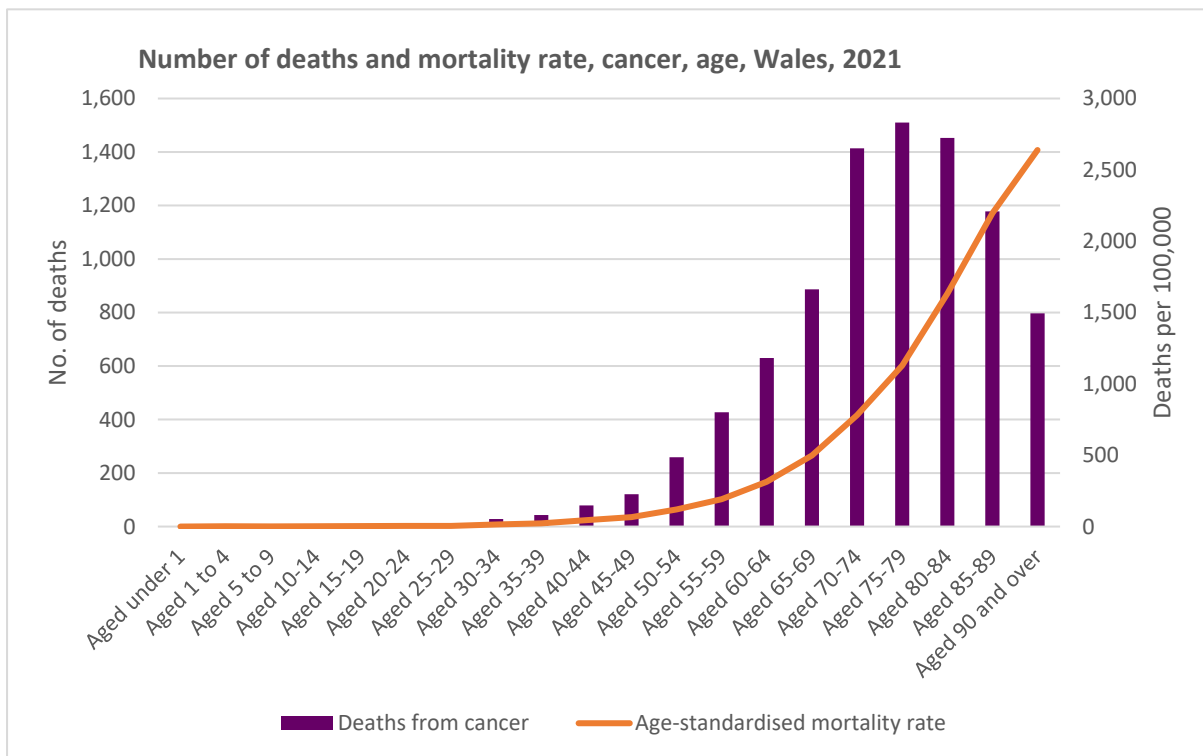
Cancer is a major cause of death in Wales, with an age-standardised mortality rate of 828.2 per 100,000. The rate has declined over the last decade, although the trend has varied depending on the type of cancer. Lung, prostate and female breast cancer mortality rates have fallen, but that of colorectal cancer has increased in recent years.

Sex

In 2021, the number of deaths from cancer was higher amongst males than females, with 4,765 male deaths compared with 4,093 females. The age-standardised mortality rate is very much higher, at 317.49 per 100,000 males compared with 222.22 per 100,000 females.

Age

The number of deaths from cancer and the age-standardised mortality rate increases sharply with age. In 2021, 81% of deaths from cancer were amongst people aged 65 and over. Death from cancer in childhood is very rare, with 15 deaths from cancer of people aged 19 and under.



Source: Office for National Statistics Mortality Statistics by cause, via NOMIS.

Note: Excludes non-melanoma skin cancers. Mortality rate is age-standardised.

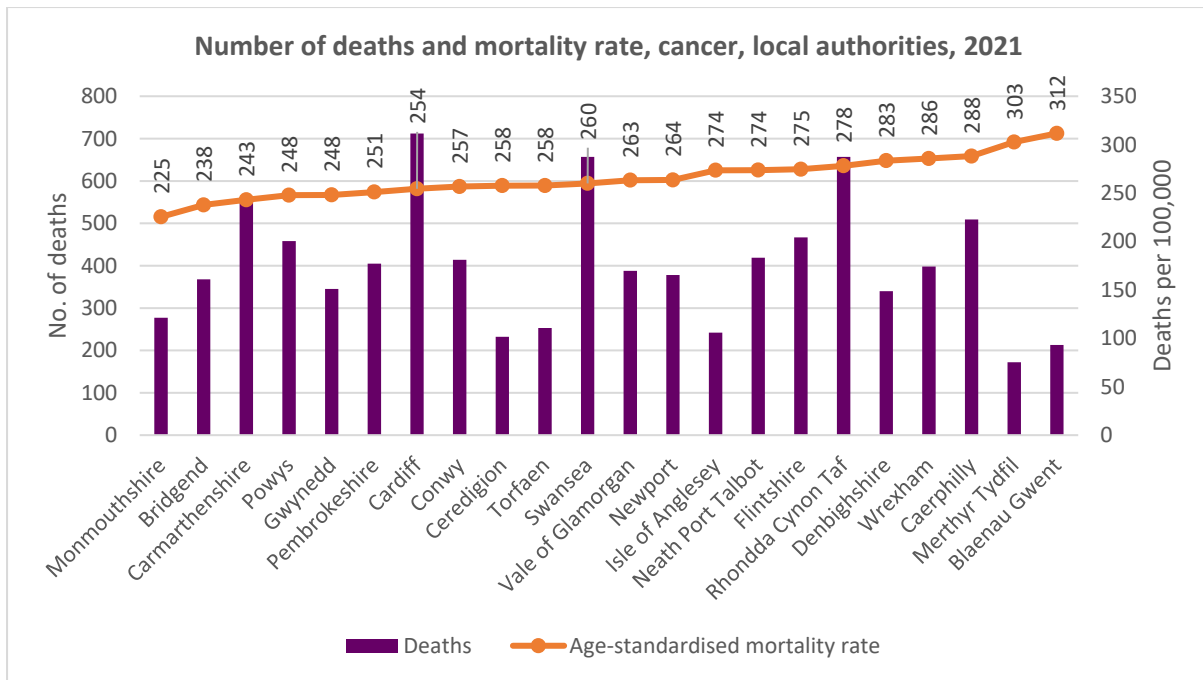
Ethnicity

There is no data on cancer mortality and ethnicity in Wales. Research by ONS on England and Wales for 2012-2019 shows that White groups have higher mortality from most types of cancer than other ethnic groups. The exception was lung cancer, for which the age-standardised mortality rate was highest among male Bangladeshi, Mixed, and White ethnic groups, and in female White and Mixed ethnic groups.

While there have been concerns about the methodology used,⁶ the findings are consistent with the incidence of cancer in England.⁷

Geography

There are relatively large differences in the cancer mortality rate between local authorities. The highest mortality rate is in Merthyr Tydfil, followed by Blaenau Gwent, while the lowest rate is in Monmouthshire.



Source: Office for National Statistics Mortality Statistics by cause, via NOMIS.

Note: Data are for all malignant cancers. Mortality rate is age-standardised.

Public Health Wales⁸ points out that inequalities in health-harming behaviours, occupations and past industries can explain some of the variation in cancer mortality rates between different geographies. Factors such as income, wealth, and education can influence cancer survival, along with differences in rurality, culture and language, and ethnicity, can also contribute to variation in cancer mortality rates in different parts of Wales.

Deprivation

Deprivation is closely associated with cancer mortality. Analysis by Public Health Wales⁹ shows that mortality is highest in the most deprived areas of Wales for almost all types of cancer, with the overall cancer mortality rate in the most deprived fifth of areas being almost 55% higher than in the least deprived fifth in 2021. The gap between most and least deprived areas is increasing.

Public Health Wales note that the difference between most and least deprived areas varies by cancer type. It is greatest for lung and colorectal cancers, and is also large for bladder, liver, kidney and rectum cancers. The reasons for differences between areas are similar to those for differences between local authorities.

Cancer mortality, all malignancies excluding nmsc, European age-standardised rate per 100,000, persons, all ages, Wales by deprivation fifths, 2021*

Produced by Public Health Wales Observatory and Cancer Analysis Team, using PHM & MYE (ONS) and WIMD (WG)

— 95% confidence interval

Rate ratio: 1.5



*Data extracted March 2022: data for 2021 is susceptible to lags and 2020 mid-year population estimates were used as a proxy, please interpret with caution.

Source: Public Health Wales, Cancer Mortality in Wales, 2002-2021 <https://phw.nhs.wales/services-and-teams/welsh-cancer-intelligence-and-surveillance-unit-wcisu/cancer-mortality-in-wales-2002-2021/>

Note: nmsc is non-melanoma skin cancer

Dementia and Alzheimer's Disease

Dementia and Alzheimer's disease are increasing as a cause of death. In 2021, 3,500 people died with the diseases, an age-standardised mortality rate of 106.73.

Sex

Females are more likely to die from dementia and Alzheimer's disease than males. In 2021, the diseases were the cause of death of 2,321 females and 1,209 males, age-standardised rates of death of 114.80 and 92.64 respectively.

Age

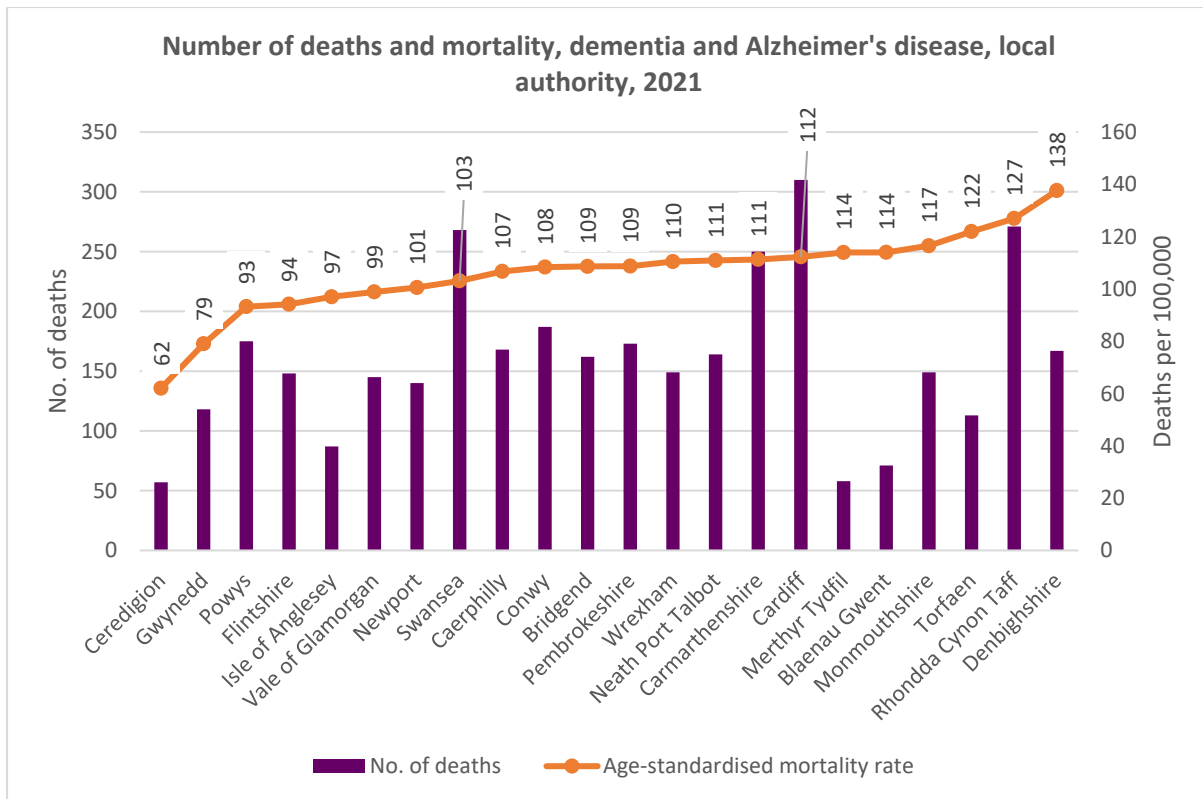
Dementia and Alzheimer's disease mainly causes death of older people: 94.8% of deaths from these causes were amongst people aged 75 and over in 2021. It is estimated that in 2013 there were 2,204 people with dementia or Alzheimer's who were aged under 65 years,¹⁰ with the diseases causing 22 deaths of under-65-year-olds in 2021.

Ethnicity

There is no data on mortality from dementia and Alzheimer's disease by ethnicity. For England and Wales combined, data for 2017 to 2019¹¹ show that White groups have a higher age-standardised mortality rate than most other ethnic groups with only Mixed and Black Caribbean ethnic groups having similar rates to White groups.

Geography

There is a wide range of age-standardised mortality rates from dementia and Alzheimer's across Wales, with the highest rates, in Denbighshire, Rhondda Cynon Taf and Torfaen, being around twice those in the areas with the lowest rates, namely Ceredigion, Gwynedd and Powys. The reasons for the variations are not clear as the rates take account of the age of local populations.



Source: Office for National Statistics Mortality Statistics by cause, via NOMIS.

Note: Mortality rate is age-standardised.

Deprivation

There are no data for Wales on deprivation and dementia, and the link between them is unclear. Several researchers have reported finding a relationship between the two,^{12 13} although others report no link.^{14 15}

Outlook

Future trends in life expectancy are uncertain. Forecasts before the pandemic¹⁶ anticipated that in Wales life expectancy at birth for males would increase to 89.8 years in 2043 and 92.3 years in 2068. For females, life expectancy was forecast increase to 92.3 years in 2043 and 94.3 years in 2068. Since then, the global slowing down of increases in life expectancy as well as the long-term impact of coronavirus on mortality mean that the outlook is uncertain.

These forecasts are of life expectancy of the whole population. However, inequalities in mortality may also increase if recent trends continue. Public Health Wales notes that 'the recent rise in the cost of living is an additional pressure which may further increase inequalities in health expectancies'.¹⁷ This is because lower income households may not be able to afford to maintain a decent standard of living.

References

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- ¹ Public Health Wales, **Health Expectancy in Wales with inequality gap**
https://publichealthwales.shinyapps.io/PHWO_HealthExpectanciesWales_2022/
- ² Office for National Statistics (2021) **Ethnic differences in life expectancy and mortality from selected causes in England and Wales: 2011 to 2014**
<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/lifeexpectancies/articles/ethnicdifferencesinlifeexpectancyandmortalityfromselectedcausesinenglandandwales/2011to2014>
- ³ Nazroo, James (2021) **Ethnic inequalities in mortality rates and life expectancy in England and Wales: Why we should treat experimental statistics with caution**. NHS Race and Health Observatory
<https://www.nhs.uk/blog/ethnic-inequalities-in-mortality-rates-and-life-expectancy-in-england-and-wales-why-we-should-treat-experimental-statistics-with-caution/>
- ⁴ Public Health Wales (undated) **Life Expectancy and Mortality in Wales 2020** (Powerpoint slides)
<https://phw.nhs.wales/services-and-teams/observatory/data-and-analysis/life-expectancy-and-mortality-in-wales-2020/>
- ⁵ Office for National Statistics (2021) op. cit. (FN 2)
- ⁶ Office for National Statistics (2021) **Mortality from leading causes of death by ethnic group, England and Wales: 2012 to 2019**
<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/mortalityfromleadingcausesofdeathbyethnicgroupenglandandwales/2012to2019>
- ⁷ Christine Delon, Katrina F. Brown, Nick W. S. Payne, Yannis Kotrotsios, Sally Vernon & Jon Shelton (2022) **Differences in cancer incidence by broad ethnic group in England, 2013–2017**. British Journal of Cancer.
<https://www.nature.com/articles/s41416-022-01718-5>
- ⁸ Public Health Wales (2022) **Cancer Mortality in Wales, 2002-2021** <https://phw.nhs.wales/services-and-teams/welsh-cancer-intelligence-and-surveillance-unit-wcisu/cancer-mortality-in-wales-2002-2021/>
- ⁹ Ibid.
- ¹⁰ Alzheimer’s Society (2022) **The hidden cost of dementia in Wales**,
https://www.alzheimers.org.uk/sites/default/files/migrate/downloads/the_hidden_cost_of_dementia_in_wales.pdf
- ¹¹ Office for National Statistics (2021) **Mortality from leading causes of death by ethnic group, England and Wales: 2012 to 2019**
<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/mortalityfromleadingcausesofdeathbyethnicgroupenglandandwales/2012to2019>
- ¹² Mark Jitlal, Guru NK Amirthalingam, Tasvee Karania, Eve Parry, Aidan Neligan, Ruth Dobson, Alastair J Noyce, Charles R Marshall (undated) **The influence of socioeconomic deprivation on dementia mortality, age at death and quality of diagnosis: a nationwide death records study in England and Wales 2001-2017**.
<https://www.medrxiv.org/content/10.1101/2020.09.28.20203000v1.full.pdf>
- ¹³ Office for National Statistics (2023) **Dementia and all-cause mortality and deaths involving coronavirus (COVID-19), England: 24 January 2020 to 31 December 2022**
<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/dementiaandallcausemortalityanddeathsinvolvingcoronaviruscovid19england/24january2020to31december2022#dementia-and-mortality-during-the-coronavirus-covid-19-pandemic-data>
- ¹⁴ Anne Høy Seemann Vestergaard, Elizabeth L. Sampson, Søren Paaske Johnsen, Irene Petersen, (undated) **Social inequalities in life expectancy and mortality in people with dementia in the United Kingdom**.
https://discovery.ucl.ac.uk/id/eprint/10102762/3/Sampson_Vestergaard%20et%20al%202020.pdf
- ¹⁵ Public Health England National Dementia Intelligence Network and National End of Life Care Intelligence Network (2016) **Dying with dementia: Data Analysis Report**.

https://assets.publishing.service.gov.uk/media/5b6c4b34e5274a2970ab5e72/Dying_with_dementia_data_analysis_report.pdf

¹⁶ Welsh Government (2021) **Future Trends report: evidence pack**

<https://www.gov.wales/sites/default/files/publications/2021-12/future-trends-report-wales-2021-evidence-pack.pdf>

¹⁷ Public Health Wales, **Health Expectancy in Wales with inequality gap**

https://publichealthwales.shinyapps.io/PHWO_HealthExpectanciesWales_2022/