

LEGISLATIVE COUNCIL
Question Without Notice

Tuesday, 16 May 2023

584. Hon James Hayward to the Leader of the House representing the Minister for Health

I refer to the number of deaths recorded in Western Australia, and I ask;

- 1) Can the Minister confirm that the total number of deaths in 2022 was 14.45% higher than the total number of deaths in 2020?
- 2) Noting the Government is currently conducting analysis of the number of deaths recorded in WA, when will the Minister be able to table a report which identifies the possible reasons for the increase in the number of deaths?
- 3) Is the Minister able to advise what current information is available to better understand the reason for the statistically significant increase in the number of deaths in WA, prior to a formal report becoming available?
- 4) If "no" to 3), why is the Minister unable to comment on 2,215 more people dying in 2022 when compared to 2020?

Answer

- 1) Yes.
- 2) Reporting will be available when a nationally consistent reporting approach has been agreed.
- 3) Information is available from the Australian Bureau of Statistics. I table an example of this information.
- 4) Not applicable.

James Hayward

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Provisional Mortality Statistics

Provisional deaths data for measuring changes in patterns of mortality

Reference period Jan - Dec 2022

Released 31/03/2023

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Key statistics

- In 2022, there were 190,394 deaths that occurred by 31 December and were registered by 28 February 2023, which is 25,235 (15.3%) more than the historical average.
- The age-standardised death rate (SDR) for December 2022 was 43.3 deaths per 100,000 people, above the baseline average (40.9).
- There were 707 deaths due to COVID-19 in January 2023, down from 924 that occurred from the virus in December (see article).

2022: Deaths in review

Number of deaths

The following section provides a preliminary overview of mortality at the all-cause level for all deaths as well as by selected cause for doctor-certified deaths in 2022. There are some deaths that occurred in 2022 that have not yet been registered and received by the ABS. These deaths will be included in future reports. Causes of death are not presented for coroner-referred deaths (except for COVID-19) due to the time required to complete coronial investigations. More complete analysis on deaths and causes of death registered in 2022 will be published in Deaths, Australia and Causes of Death, Australia in late 2023.

There were 190,394 deaths that occurred in 2022 and were registered by 28 February 2023. All months had a higher number of deaths compared to the preceding 3 years.

Number of deaths by month of occurrence, 2019-22

	2019	2020	2021	2022
January	13,192	12,995	13,368	16,257
February	11,971	12,513	12,022	14,073
March	13,176	13,546	13,624	14,727
April	12,993	13,300	13,574	14,845
May	14,185	14,025	15,035	16,466
June	14,658	13,269	14,876	17,139
July	15,183	14,479	15,903	18,279
August	15,286	14,858	15,395	17,698
September	14,269	13,689	14,759	15,704
October	14,010	13,430	14,966	15,232
November	12,845	13,034	14,032	14,629
December	13,046	13,508	14,422	15,345

a. Doctor certified and coroner-referred deaths are included.

b. Data is by date of occurrence.

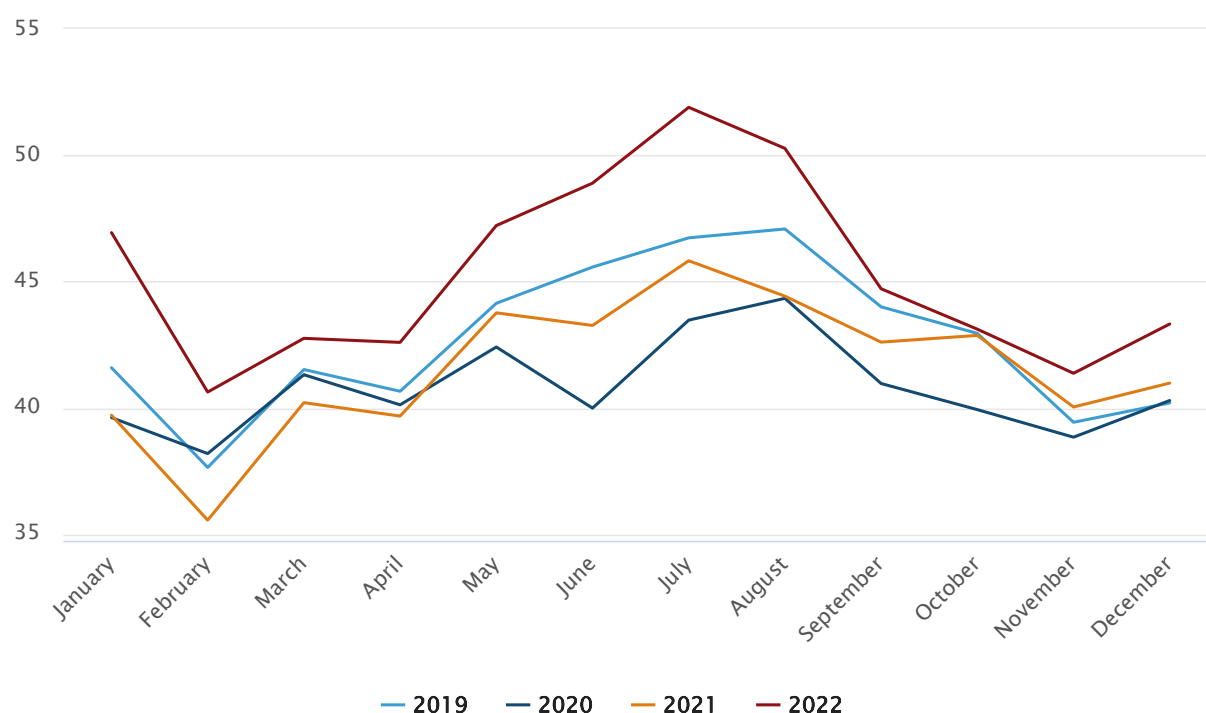
Age-standardised death rates

Age-standardised rates take into account population size and age structure of a population, enabling comparison of deaths over time. The following graph shows the monthly age standardised death rates per 100,000 people for the past 4 years.

- For every month, the rate was higher in 2022 than any of the preceding 3 years. This difference is particularly noticeable in January and July, which coincide with peaks in Omicron waves.
- The seasonality of mortality was different in 2022, with January having an age-standardised rate that was higher than both March and April (normally similar) and September and October (normally lower).
- Winter had the highest monthly mortality rates in 2022, similar to past years. In 2020 and 2021 the mortality rate during the winter months was lower than that recorded in

both 2019 and 2022.

Age standardised death rates by month of occurrence, 2019-22



Selected Causes of death

The following table shows the number of doctor certified deaths by selected cause, as well as the proportion of deaths by that cause for total doctor certified mortality.

- The proportion of doctor certified deaths that had an underlying cause of COVID-19 (i.e. were deaths "from COVID-19") increased from less than 1% in 2020 and 2021 to nearly 6% in 2022.
- Although the number of deaths due to cancer, dementia and diabetes in 2022 were higher than in the previous 3 years, the proportion of deaths attributable to these causes was lower.
- There were less deaths due to influenza and pneumonia recorded in 2022 than in 2019.

Doctor certified deaths by cause, number and share of doctor-certified deaths, 2019-22

	2019	2019(%)	2020	2020(%)	2021	2021(%)	2022	2022 (%)
Cancer	47,851	33.2	48,280	33.9	49,602	32.9	50,314	30.0
Dementia	14,824	10.3	14,732	10.3	15,774	10.5	16,909	10.1
Ischaemic heart disease	14,094	9.8	13,683	9.6	14,078	9.3	14,930	8.9
Respiratory diseases	14,810	10.3	11,880	8.3	12,956	8.6	14,377	8.6
Chronic lower respiratory diseases	7,866	5.5	6,812	4.8	7,387	4.9	8,013	4.8
Influenza and pneumonia	3,559	2.5	1,977	1.4	1,961	1.3	2,614	1.6
Pneumonia	2,550	1.8	1,934	1.4	1,959	1.3	2,327	1.4
COVID-19	0	0.0	855	0.6	1,224	0.8	9,732	5.8
Cerebrovascular diseases	9,202	6.4	9,098	6.4	9,283	6.2	9,296	5.6
Diabetes	4,590	3.2	5,000	3.5	5,077	3.4	5,598	3.3

a. Only doctor certified deaths are included.

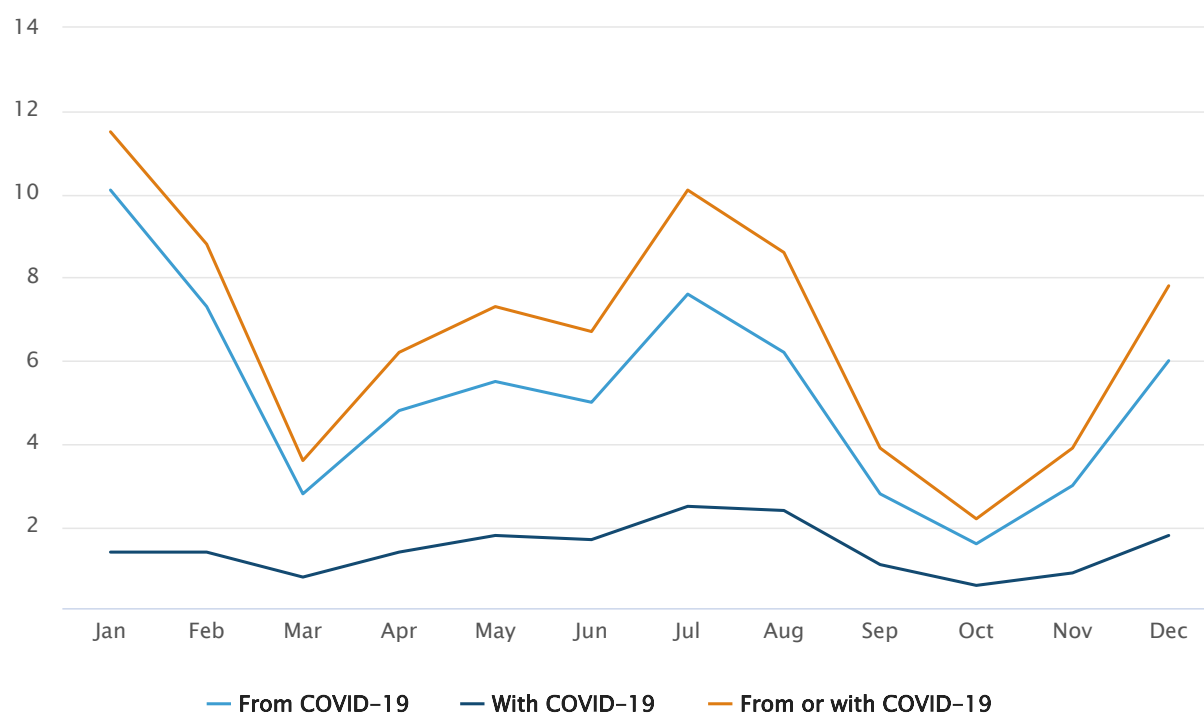
b. Data is by date of occurrence.

Deaths due to COVID-19

There were 10,095 deaths due to COVID-19 in 2022 (9,732 doctor certified and 363 coroner-referred). A further 2,901 deaths were due to other causes but had COVID-19 as a contributing factor (i.e. were deaths "with COVID-19"). The following graph shows the percentage of all deaths (doctor and coroner certified) that were either "from COVID-19" or "with COVID-19".

- In January 2022, 11.5% of deaths were either "from COVID-19" or "with COVID-19". This month had the highest proportion of deaths linked to the virus.
- In the January and July Omicron wave peaks, over 10% of all deaths were either "from COVID-19" or "with COVID-19".
- The proportion of deaths "with COVID-19" increased during the winter months of 2022.
- See the COVID-19 Mortality article linked to this publication for more information.

Percentage of deaths from or with COVID-19, 2022



a. Doctor certified and coroner-referred deaths are included.

b. Data is by date of occurrence.

c. Deaths "from COVID-19" have a UCOD of U07.1, U07.2 or U10.9. Deaths "with COVID-19" have an associate cause of death of U07.1, U07.2 or U09.

Deaths due to Ischaemic heart diseases

Ischaemic heart diseases (IHD) refers to insufficient blood (and therefore oxygen) getting to the heart muscles via the coronary arteries. Deaths from IHD are classified into sub types based on the duration, complications and consequences of the disease progression. Five major sub types of IHD are included in the International Classification of Diseases, Version 10 (ICD-10), with deaths specified using a single code from I20-I25. In general, these sub types help designate whether the IHD was acute or chronic in nature.

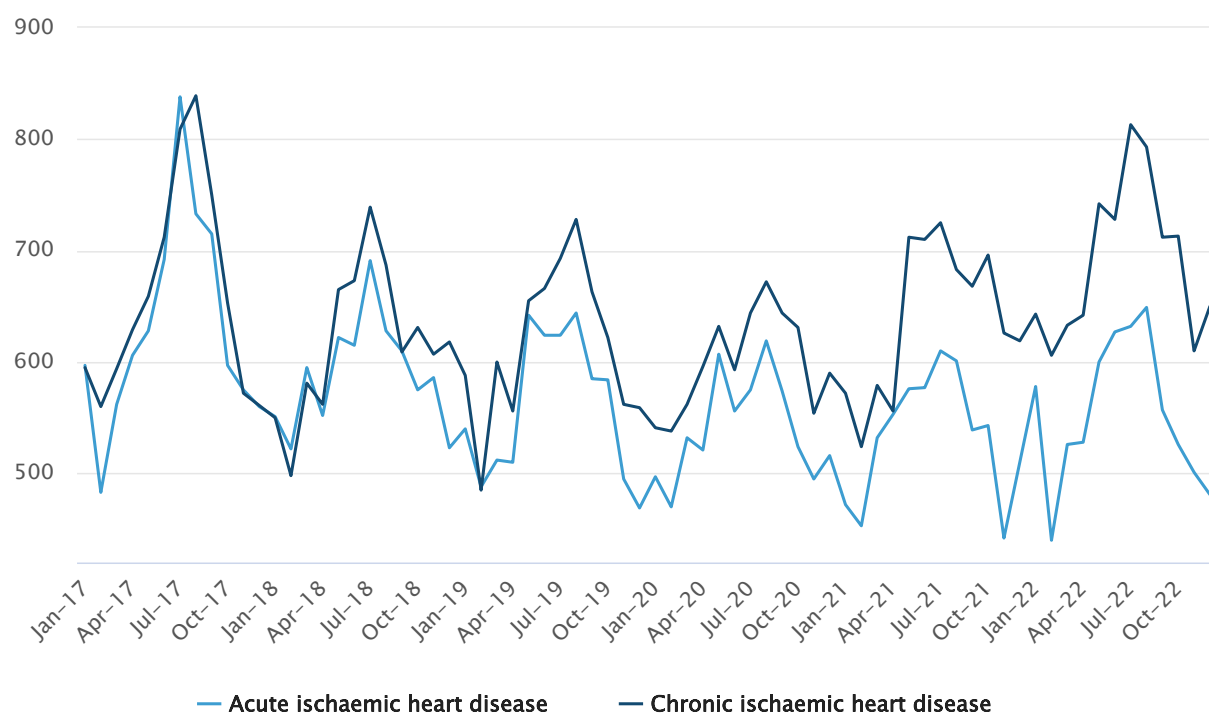
Acute manifestations of IHD are assigned to ICD-10 codes between I20-I24. When acute IHD occurs, there is sudden deterioration of blood flow in the coronary arteries which supply

the heart muscles. The most common conditions coded to these categories are acute myocardial infarction (heart attack) and unstable angina (which can lead to a heart attack). When chronic IHD is certified on a death certificate it is coded to I25 Chronic Ischaemic Heart Disease. Coronary atherosclerosis (where fatty deposits build up in the arteries) is the most common term mentioned on a death certificate coded to this category. Deaths where both an acute and chronic IHD are certified (e.g. acute myocardial infarction due to coronary atherosclerosis) are categorised as acute IHD for underlying cause of death outputs produced by the ABS.

The following graph shows the pattern of acute and chronic IHD from 2017 through the COVID-19 pandemic period.

- The split between acute and chronic ischaemic heart disease deaths was reasonably even in 2017 and 2018.
- From 2019 to 2022 the proportion of ischaemic heart disease deaths due to chronic conditions increased. In 2022 there were 24.7% more deaths due to chronic ischaemic heart disease than acute ischaemic heart disease. In 2019 there were 9.8% more deaths due to chronic ischaemic heart disease than acute heart disease.
- In mid-2017, increased numbers of both acute and chronic IHD deaths coincided with an influenza epidemic.
- Over the last 50 years, the rate of people dying from IHD has declined significantly. In 1968 the age standardised death rate of people dying from IHD was 428.3. By 2017 this had fallen to 59.3 (note that these figures include both doctor certified and coroner-referred deaths).
- Of the 14,930 deaths due to IHD in 2022, 234 had COVID-19 listed as a contributing cause.

Acute and chronic ischaemic heart disease deaths, 2017-2022



a. Only doctor certified deaths are included.

b. Data is by date of occurrence.

Deaths due to cancer

Over 50,000 people died from cancer in 2022, accounting for close to one third of all deaths certified by a doctor. The table below shows the 10 most common types of cancer leading to death.

- While deaths due to cancer increased overall, there were some types of cancers that recorded decreases in 2022 (e.g. bowel cancer and skin cancer).
- Lung cancer remained the leading cause of cancer mortality in 2022.
- The number of deaths due to blood and lymph cancers was similar to 2021.
- Cancer is the most common cause of death to have COVID-19 listed as a contributing cause of death (785 deaths in 2022).

Cancer deaths by type of cancer, 2019-22

	2019	2020	2021	2022
Total Cancer deaths	47,659	48,058	49,376	50,209
Malignant neoplasm of trachea, bronchus and lung	8,512	8,405	8,593	8,872
Malignant neoplasms of lymphoid, haematopoietic and related tissue	5,264	5,455	5,769	5,771
Malignant neoplasm of colon, sigmoid, rectum and anus	5,210	5,488	5,385	5,282
Malignant neoplasm of prostate	3,515	3,626	3,610	3,712
Malignant neoplasm of pancreas	3,114	3,250	3,417	3,626
Malignant neoplasms of breast	3,218	3,160	3,099	3,117
Malignant neoplasm of liver and intrahepatic bile ducts	2,140	2,163	2,268	2,308
Melanoma and other malignant neoplasms of skin	2,046	2,118	2,194	2,175
Malignant neoplasm of brain	1,437	1,470	1,520	1,567
Malignant neoplasm of oesophagus	1,346	1,319	1,365	1,366
Other	11,857	11,604	12,156	12,413

a. Only doctor certified deaths are included.

b. Data is by date of occurrence.

Dementia deaths

Deaths due to dementia have been increasing over time. During 2022 dementia was the cause of 16,909 deaths, with numbers increasing across all age groups. While the numbers of deaths increased in 2022, age-specific rates (per 100,000 people) have remained more stable and are comparable with those in 2019.

Dementia deaths, numbers and age specific rates, 2019-22

	2019	2020	2021	2022
Number of deaths				
Under 75	829	782	832	875
75-84	3,518	3,548	3,851	4,189
85-89	3,928	3,770	3,917	4,176
90-94	4,142	4,189	4,433	4,665
95+	2,407	2,443	2,741	2,913
All ages	14,824	14,732	15,774	16,818
Age specific death rate				
Under 75	3.5	3.3	3.5	3.6
75-84	285.4	274.3	284.7	290.9
85-89	1,260.1	1,193.1	1,211.6	1,249.2
90-94	2,739.3	2,678.8	2,753.7	2,884.2
95+	5,442.4	5,279	5,484.7	5,499
All ages	58.5	57.4	61.4	64.7

a. Only doctor certified deaths are included.

b. Data is by date of occurrence.

Baseline comparisons

Throughout this report, counts of deaths are compared to an average number of deaths for previous years. In this report, data for 2021 is compared to an average number of deaths recorded over the 5 years from 2015-2019 as was the case in previous publications. Data for 2022 is compared to a baseline comprising the years 2017-2019 and 2021. 2020 is not

included in the baseline for 2022 data because it included periods where numbers of deaths were significantly lower than expected. Counts of deaths for 2015-2021 are included in the baseline datacubes of the data downloads section of this report.

These average or baseline counts serve as a proxy for the expected number of deaths, so comparisons against baseline counts can provide an indication of whether mortality is higher or lower than expected in a given year. The minimum and maximum counts are also included to provide an indication of the range of previous counts. Minimums and maximums for any given week can be from any of the years included in the baseline.

While this publication can provide an indication of where counts of deaths are above or below expectations, it does not provide official estimates of excess mortality. Using the number of deaths from the previous years as the predictor for the expected number of deaths does not take into account changes in population size and age-structures of that population, as well as expected improvements in mortality rates over time. Age-standardised death rates can be accessed via the data downloads tab in this publication.

COVID-19 mortality

The ABS publishes two regular reports that provide preliminary information on mortality during the COVID-19 pandemic, Provisional Mortality Statistics and COVID-19 Deaths in Australia articles. These reports provide information on different time periods and serve different purposes.

Provisional Mortality Statistics focus on monitoring patterns of mortality (by all-causes and specified leading causes of death) and highlight any changes potentially associated with the COVID-19 pandemic. Data must be sufficiently complete to detect such changes, and as such these reports are only released once the majority of deaths that occurred in a particular period have been registered and reported.

COVID-19 Mortality in Australia articles focus on all COVID-19 deaths registered and reported up until a specified time. These articles include important information about COVID-19 deaths, including demographic details, comorbidities and consequences of the disease. While it is recognised data will be incomplete, it can still indicate emerging trends or changes among these deaths. The most recent article on COVID-19 mortality covering deaths that occurred and were registered up until 28 February 2023 can be accessed through the articles link on this page.

Australian deaths by week

All-cause deaths

Tracking the number of deaths against historical averages for similar time periods provides an initial indication of when a change in the pattern of mortality may occur. This is of particular relevance because of the many potential public health impacts of the COVID-19 pandemic.

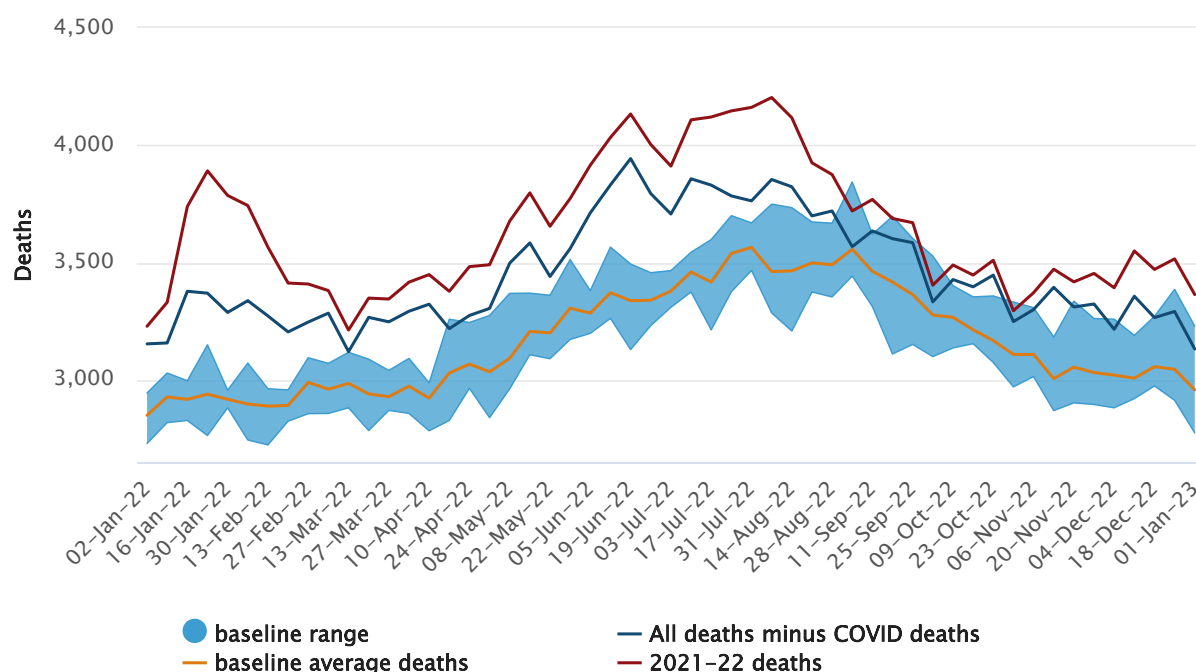
Note: There is a change in the way this graph is presented. Previously, the number of COVID-19 infections were reported alongside deaths. With changes in the way infections are detected (i.e. the use of both Rapid Antigen Tests (RAT) and Polymerase Chain Reaction (PCR) tests) and reported the graph was no longer considered robust for measuring the pattern of mortality against infection rates. Instead, the number of overall deaths and the number of overall deaths without COVID-19 as an underlying cause of death are presented. This provides an indication of how COVID-19 has contributed to the pattern of mortality over time.

For all deaths:

- In 2022, there were 190,394 deaths that occurred by 31 December and were registered by 28 February 2023. This is 25,235 deaths (15.3%) more than the baseline average.
- In December there were 15,345 deaths, 2,017 (15.1%) above the historical average.
- 13,446 of the deaths occurring in December 2022 were doctor certified and 1,899 were coroner referred.
- The age-standardised death rate (SDR) for December 2022 was 43.3 deaths per 100,000 people, above the baseline average of 40.9.

Deaths are presented by counts only. Counts of death do not account for changes in population. See data downloads for weekly and monthly age-standardised death rate calculations.

All deaths, with and without COVID-19, Australia, 27 December 2021 - 1 January 2023 vs baseline benchmarks



- a. Data is by occurrence.
- b. Data is provisional and subject to change.
- c. Weeks are defined as seven-day periods which start on a Monday as per the ISO week date system. Refer to 'Weekly comparisons' on the [methodology/\(methodologies/provisional-mortality-statistics-methodology/jan-sep-2022#data-release\)](https://www.abs.gov.au/methodology/methodologies/provisional-mortality-statistics-methodology/jan-sep-2022#data-release) page of this publication for more information regarding the data in this graph.
- d. The baseline includes deaths from 2015-19 (for 2021) and from 2017-19 and 2021 (for 2022).

Mortality by selected causes of death

Cause-specific mortality

The following analysis is based only on doctor certified deaths (i.e. coroner referred deaths are not included). Any changes in patterns of coroner referral could affect counts of doctor certified deaths. Some conditions have higher coroner referral rates (ischaemic heart disease, cerebrovascular diseases and to a lesser extent, respiratory diseases and diabetes) so counts for those conditions would be more likely to be affected by such changes.

COVID-19

- Between January and December 2022 there have been 9,732 deaths due to COVID-19 that were certified by a doctor. 898 of these deaths occurred in December.
- As the pandemic has progressed the number of people dying 'with' COVID-19 has increased. In December 279 people died with COVID-19 as a contributing factor to their death. (ie. COVID-19 was certified on the death certificate but it was not the underlying cause of death).

Other causes of death

- Deaths due to dementia including Alzheimer's disease were 15.9% above the baseline average in December, and 15.2% above the baseline average for the year to December.
- The age-standardised death rate for deaths due to dementia was 3.5 per 100,000 people in December. This compares to a baseline average rate of 3.2.
- Deaths due to diabetes were 17.3% above the baseline average in December, and were 19.2% higher than the average for the year to December.
- The age-standardised death rate for deaths due to diabetes was 1.2 per 100,000 people in December. This compares to a baseline average rate of 1.1.
- The number of deaths due to cancer was 2.4% above the baseline average in December.
- Deaths due to cerebrovascular disease were 2.9% lower than the baseline average in December.
- Deaths due to respiratory diseases were 14.1% higher than the baseline average in December, with deaths due to chronic lower respiratory diseases being 9.9% higher than average and deaths due to influenza and pneumonia being 6.6% above average.

Doctor certified deaths by cause, December 2022

	December	December baseline average	Jan -Dec 2022	Jan - Dec baseline average
Cancer	4,083	3,989	50,314	47,614
Dementia	1,349	1,164	16,909	14,680
Respiratory diseases	1,160	1,017	14,377	14,146
Chronic lower respiratory diseases	635	578	8,013	7,719
Influenza and pneumonia	193	181	2,614	3,024
Pneumonia	188	171	2,327	2,437
Ischaemic heart disease	1,131	1,105	14,930	14,545
COVID-19	898	na	9,732	na
Cerebrovascular diseases	726	748	9,296	9,515
Diabetes	433	369	5,598	4,698

- Only doctor certified deaths are included.
- Data is by date of occurrence.
- Weeks are defined as seven-day periods which start on a Monday as per the ISO week date system. Refer to the section 'Weekly comparisons' in the methodology for more information.
- The baseline includes deaths from 2017-19 and 2021 (for 2022) and from 2015-19 (for 2021).

Timeliness and completeness of data

Each death registration in the national mortality dataset has 3 dates:

- The date on which the death occurred.
- The date on which the death was registered with the jurisdictional Registry of Births Deaths and Marriages (RBDM).
- The date on which the death was lodged with the ABS.

When looking to measure change over time, the completeness of data for the most recent period is important. When data is received each month by the ABS, the lag between the date of death and the date of registration means that approximately 40-50% of reported registrations are of deaths that occurred in the month being reported. The remainder are deaths that occurred in earlier months.

For deaths which are doctor certified, approximately 95% of registrations are received after a second month of reporting, while for coroner certified deaths, the proportion of registrations reported after a second month is lower (approximately 78%). This is because it takes longer for coroners to certify deaths due to the complexity of investigations.

As coroner referred deaths make up a smaller proportion of all deaths (approximately 11-14%) their inclusion in all-cause data only reduces the overall completeness by around 2%.

This should be considered when making comparisons with historical counts, noting also that the level of completeness will be higher for the start of any given month than the end of that month.

This pattern of registration and reporting is highlighted in the table below, which also shows the slight variation in reporting timelines by cause of death.

Estimated completeness of death registrations received by the ABS (a)(b)(c)

Cause of death	Total proportion reported at the end of the month the death occurred (%)	Total proportion reported at the end of the month after the death occurred (%)	Total proportion reported at the end of two months after the death occurred (%)
All cause - doctor and coroner certified	43.1	92.8	97.2
All cause - doctor certified only	45.7	94.9	98.4
All cause - coroner certified only	24.7	77.8	88.4
Ischaemic heart disease (I20 – I25)	45.2	94.9	98.4
Cerebrovascular diseases (I60 – I69)	45.1	95.2	98.6
Respiratory diseases (J00 – J99)	45.8	95.5	98.7
Chronic lower respiratory diseases (J40 – J47)	45.4	94.3	98.2
Influenza and pneumonia (J09 – J18)	45.7	95.5	98.9
Cancer (C00 – C97, D45, D46, D47.1, D47.3 – D47.5)	46.9	95.4	98.6
Diabetes (E10 – E14)	43.9	93.0	97.3
Dementia, including Alzheimer's disease (F01, F03, G30)	46.2	95.4	98.8

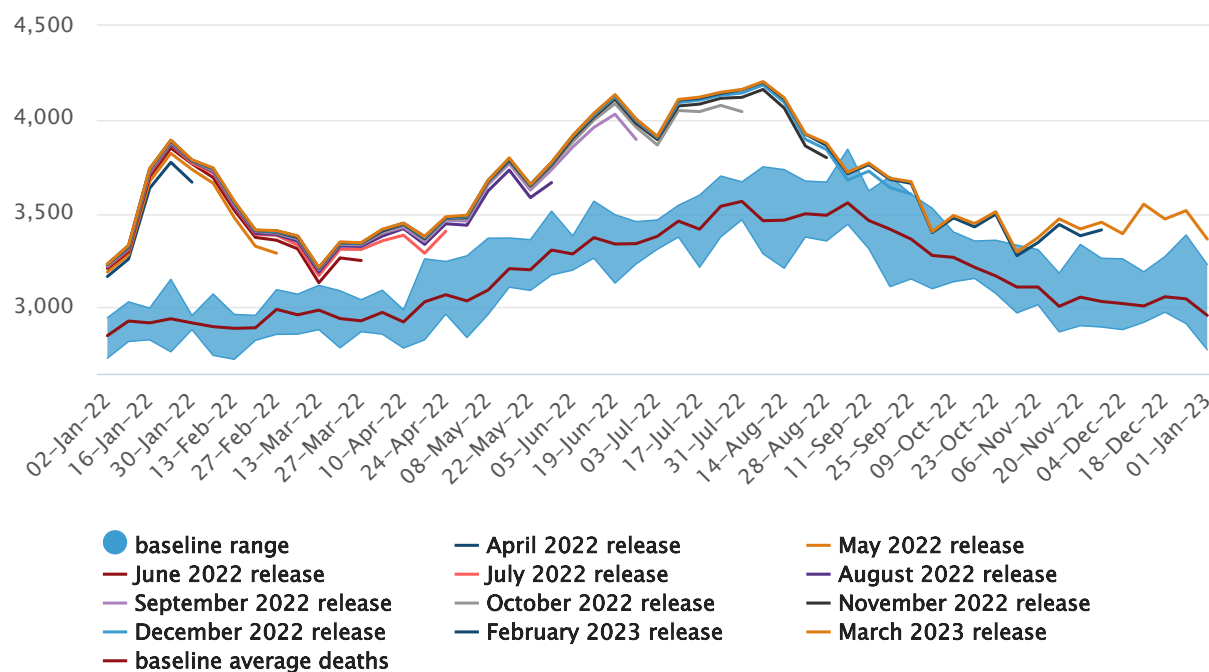
a. Percentages are based on the date registrations were received by the ABS for deaths that occurred in 2017-2019 and 2021.

b. Only doctor certified deaths are included for cause-specific data.

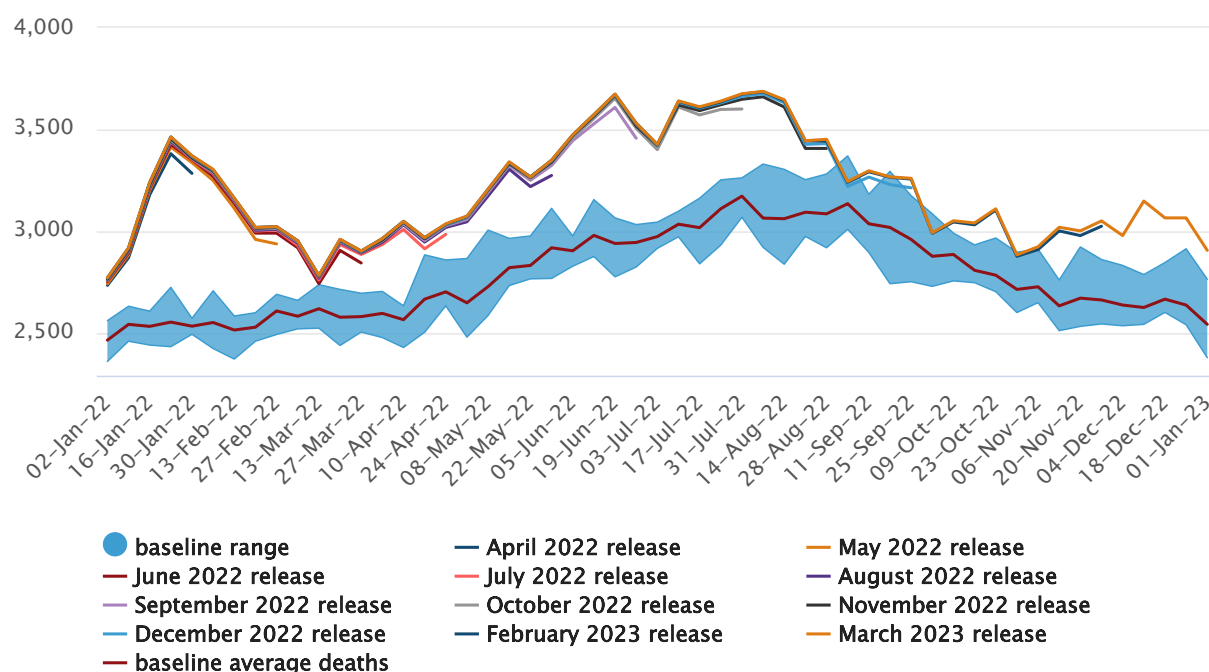
c. Data is provisional and subject to change.

The graphs below show how numbers of deaths for each period have increased over time as additional registrations that occurred in previous months are reported to the ABS. Due to these increases, data for the most recently reported periods should be treated with caution.

All deaths by week of occurrence, by publication release cycle, 27 December 2021 - 1 January 2023



Doctor certified deaths by week of occurrence, by publication release cycle, 27 December 2021 - 1 January 2023



Data downloads

Provisional Mortality Statistics, Jan - Dec 2022

⬇ Download all (713.51 KB)

Provisional Mortality Statistics, Weekly Dashboard, Jan - Dec 2022.xlsx

⬇ [Download XLSX](#)
[304.73 KB]

Provisional Mortality Statistics, Monthly Dashboard, Jan - Dec 2022.xlsx

⬇ [Download XLSX](#)
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Deaths by week of occurrence, 2015-21.xlsx

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[274.05 KB]

Deaths by month of occurrence, 2015-21.xlsx

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Provisional Mortality Statistics Jan - Dec 2022.zip

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Previous catalogue number

This release previously used catalogue number 3303.0.55.004

Methodology

[Provisional Mortality Statistics methodology, Jan - Dec 2022](#)