

Dementia deaths during the COVID-19 pandemic in Australia

Web report | Last updated: 22 Apr 2021 | Topic: [Dementia](#) | [Media release](#)

About

The age-standardised death rate for Australians with dementia recorded on their death certificates fell during the first 10 months of 2020, probably as a result of measures designed to prevent COVID-19 infections also limiting the spread of other infectious respiratory diseases. However, fatal COVID-19 outbreaks involved many people with dementia - 257 (30%) of the 858 people who died due to COVID-19 during this period had dementia recorded on their death certificate.

Cat. no: DEM 1

Findings from this report:

- [The rate of deaths of Australians with dementia was lower during the first 10 months of 2020 than in recent years](#)
 - [20,875 Australians died with dementia during the first 10 months of 2020](#)
 - [Fewer people with dementia died due to influenza or pneumonia during the first 10 months of 2020 than in recent years](#)
 - [Measures designed to prevent COVID-19 infections probably also led to lower dementia death rates in 2020](#)
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Summary

In the first 10 months of 2020:



20,875 Australians died with dementia



the rate of dementia deaths was lower than recent years



there were fewer deaths due to influenza or pneumonia among people who died with dementia

Among the 858 Australians who died due to COVID-19:



257 people (or 30%) of them also had dementia



those with dementia were less likely to have respiratory conditions recorded as a result of COVID-19



those with dementia tended to be older and likely lived in aged care facilities where outbreaks occurred

Note: All statistics refer to people who died with dementia recorded on their death certificate; rates are age-standardised and compared with the average rate for 2015-2019.

Older people living with dementia are particularly vulnerable during infectious disease outbreaks. Although the impact of the COVID-19 pandemic in Australia on people with dementia is not yet fully understood, they are more likely to develop severe COVID-19 and die from the virus than people without dementia. Between January and October 2020, nearly one-third of the more than 850 COVID-19 deaths in Australia were of people with dementia.

Over the past year Australia has introduced a range of measures to limit the spread of COVID-19 and treat those affected. These have included setting up new treatment facilities, contact tracing and quarantine systems, implementing social-distancing measures and, at times, enforcing mask-wearing and locking-down areas where outbreaks occurred. As a result, the COVID-19 death toll in Australia has been well below that of other developed countries. Early evidence suggests that these measures have also helped to reduce deaths due to other conditions, such as influenza (Wang et al. 2020; Morgan et al. 2020; Department of Health 2020).

This report uses provisional mortality data from the Australian Bureau of Statistics (ABS) to examine deaths among people with dementia recorded on their death certificate during the COVID-19 pandemic in Australia. It looks at deaths that occurred in the first 10 months of 2020 (between 1 January and 27 October).

Age-standardised death rates among people with dementia recorded on their death certificate in 2020 were similar or lower than previous years

Age-standardised rates adjust for differences in the size and age structure of the population and help make more accurate comparisons over time. Overall during the first 10 months of 2020, the age-standardised death rate compared to the average rate for 2015-19 was:

- similar for people who died **due to** dementia—where dementia was the underlying cause of death
- lower for people who died **with** dementia—where dementia was an underlying and/or an associated cause of death

These results suggest that the measures in place to control the virus indirectly reduced dementia death rates in Australia during the first 10 months of 2020, and contrasts with the experience of other developed countries like the United Kingdom where deaths among people with dementia (even when not due to COVID-19) rose during the pandemic (Alzheimer's UK 2020).

Fewer deaths from influenza or pneumonia occurred among people with dementia in 2020 than in recent years

The number of deaths due to influenza or pneumonia fell during the first 10 months of the pandemic among people who died **with** dementia recorded as an associated cause of death (13 people in 2020 compared to an average of 187 people over 2015-2019).

Similarly, among people who died **due to** dementia, influenza and pneumonia were recorded less frequently as associated causes of death during the pandemic (1,390 people in 2020 compared to 2,053 people on average over 2015-19).

Due to the small number of deaths, these findings should be interpreted with caution but they do support findings from other studies suggesting that the infection control measures Australia introduced in response to the pandemic, the public's adherence to these measures, and the increased recorded uptake in influenza vaccinations, reduced transmission and deaths from other common transmissible infections (Beard et al. 2021).

3 in 10 people who died due to COVID-19 had dementia recorded on their death certificate

In the first 10 months of 2020, 858 people died due to COVID-19 in Australia. In comparison to the rest of Australia, the most significant direct impact of COVID-19 on people with dementia occurred during wave 2 of the pandemic in Greater Melbourne.

Among Australians who died due to COVID-19, 30% or 257 people had dementia recorded on their death certificate. People who died due to COVID-19 and with dementia recorded on their death certificate tended to be older and were less likely to have developed respiratory conditions as a result of COVID-19, compared to people who died due to COVID-19 without dementia on their death certificate.

More information is needed to assess the impact of the COVID-19 pandemic on people living with dementia

The report's findings are based on provisional mortality data and these are subject to change. It is also important to bear in mind that the COVID-19 pandemic is ongoing and mortality statistics are just one way to measure the impact of the virus. More data, over a longer period of time, are required to provide a more comprehensive picture of the impact of the pandemic on people living with dementia.





Introduction

Older people living with dementia are particularly vulnerable during infectious disease outbreaks and the COVID-19 pandemic is no exception. Those at most risk of dying due to COVID-19 are older adults with underlying health problems, and dementia is one of the most common co-existing conditions among people who die from COVID-19 (Wang et al. 2020; Morgan et al. 2020).

Less understood but equally important are the indirect effects of COVID-19 on people living with dementia. Provision and uptake of preventive and routine healthcare services has decreased during the pandemic, and services such as elective surgeries, respite and home care, allied health care, and memory clinic assessments where dementia is often diagnosed, have been disrupted (Pearce et al. 2020; Sutherland et al. 2020; Royal Commission 2020). This reduced level of care may lead to poorer population health outcomes due to delayed diagnoses, increases in preventable conditions and injuries (including falls) and poorer medication management. Further, the impact of enforced isolation to combat the virus, including lockdowns and/or strict social distancing measures in permanent residential aged care homes (where it is estimated more than half of people have dementia) appears to have resulted in spikes in depression, anxiety, confusion, loneliness and suicide risk among those in care (Royal Commission 2020).

On the other hand, overall death rates have fallen in some countries such as New Zealand and Australia due to higher rates of influenza immunisation, social distancing measures, and stricter infection control protocols (Kung et al. 2021; ABS 2020a). In Australia, enforced isolation in residential aged care homes has likely been the driving factor behind the drop in overall deaths among people living in residential aged care during the 2020 influenza season compared with the previous year (Department of Health 2020).



Introduction

Purpose of this report

This report improves our understanding of the impacts of the COVID-19 pandemic on dementia mortality, by:

- comparing age-standardised rates of people who had dementia mentioned on their death certificate in 2020 to previous years (rates averaged over 2015-19)
- exploring differences in deaths due to COVID-19 by whether or not the person also had dementia recorded on their death certificate, and
- exploring the patterns of deaths during the pandemic among people who died with dementia recorded on the death certificate by whether or not they died due to COVID-19.

This report also provides much needed insight on deaths among all people with dementia, not just people who died due to dementia, by incorporating associated cause of death information. People who have dementia often die due to conditions other than their dementia, so including associated cause of death information provides a more comprehensive picture.

For this report, dementia status is determined solely by whether or not dementia was recorded in the death certificate. For various reasons, this is likely to be an undercount of the true number of Australians with dementia who died during the pandemic.

Dying due to dementia versus dying with dementia

Mortality data contains information about a person's underlying cause of death - the main disease or condition causing death - as well as associated causes of death - which are conditions that contributed to the death but were not the underlying cause.

As people with dementia may die due to their dementia or from other conditions or injuries (such as influenza or a fall), dementia may be recorded as an underlying or an associated cause of death on their death certificate. In an unknown proportion of cases, dementia may not be recorded at all, either because it is incorrectly missed from the death certificate or because dementia legitimately did not contribute to their death.

In this report, people with dementia are looked at in 2 groups based on where dementia was recorded in the death certificate:

- **deaths due to dementia** refer to deaths where dementia was the underlying cause of death
- **deaths with dementia** refer to deaths where there was any record of dementia (as the underlying cause or an associated cause of death). About 3 in 5 of these deaths were deaths **due to** dementia.

Dementia is not always recorded consistently in death certificates as a result of various factors, such as: changes to coding rules over time; variations in certification practices; and challenges in diagnosing and reporting dementia among older individuals who have other comorbidities. In one recent study using linked data, it was shown that without linking to other datasets, mortality data only captured 31% of Australian women with dementia (Waller et al. 2017), while in another study, mortality data captured 67% of people with dementia who died in New South Wales and Victoria in 2013 (AIHW 2020b). So the number of people with dementia recorded on their death certificate as used in this report is unlikely to capture every person with dementia who died during the pandemic, even when dementia contributed to death (ABS 2015; Gao et al. 2018).

In addition, most of the information in this report relates only to deaths that were certified by a medical doctor. At the time of writing, coroner-certified deaths were only available when a person died due to COVID-19 (and these are included in this report). However, roughly 1-2% of deaths where dementia is recorded as an underlying cause of death are usually certified by a coroner (ABS 2020a). While the analyses in this report are unlikely to be significantly affected by missing coroner certified deaths, the data are considered preliminary and subject to change, and results should be interpreted with caution.

COVID-19 deaths in Australia

COVID-19 is a disease caused by a new type of coronavirus - a large group of viruses (mainly found in animals) with a small number of these viruses known to cause respiratory infections in humans. The World Health Organization (WHO) declared COVID-19 a pandemic on 11 March 2020 and issued new emergency codes to be used when coding causes of death due to COVID-19. About 99% of COVID-19 deaths in Australia were confirmed as COVID-19 by laboratory testing (ABS 2020a; Rao 2020). Due to the public health importance of COVID-19, the WHO have directed that the new coronavirus strain be recorded as the underlying cause of death, that is, the main disease or condition causing death, when it is recorded as having caused or contributed to death. In Australia, it is rare for COVID-19 to be coded as an associated cause of death (ABS 2020b). Deaths in Australia can be certified by a medical doctor or a coroner. Doctor certified deaths account for the majority of deaths, as deaths that need to be certified by a coroner are generally restricted to those where the person died: unexpectedly and by an unknown cause; in a violent or unnatural manner; as a result of anaesthesia; in custody; and where the individual's identity is unknown (ABS 2020a; ABS 2020c). The mortality data used in this report only includes doctor certified deaths; the only exception are deaths due to COVID-19, for which information on some coroner referred deaths has been published. Coverage is substantially improved by including both doctor and coroner certified deaths due to COVID-19.



Introduction

What period of the COVID-19 pandemic is covered?

The report uses provisional mortality data from the Australian Bureau of Statistics (ABS) and shows people who died in the first 10 months of 2020 (between 1 January and 27 October), which includes the majority of deaths from the beginning of the pandemic in Australia to the end of the second outbreak in Victoria. Data from November and December 2020 were not available at the time of writing, but there were no other COVID-19 outbreaks with a high number of deaths in Australia during those months.

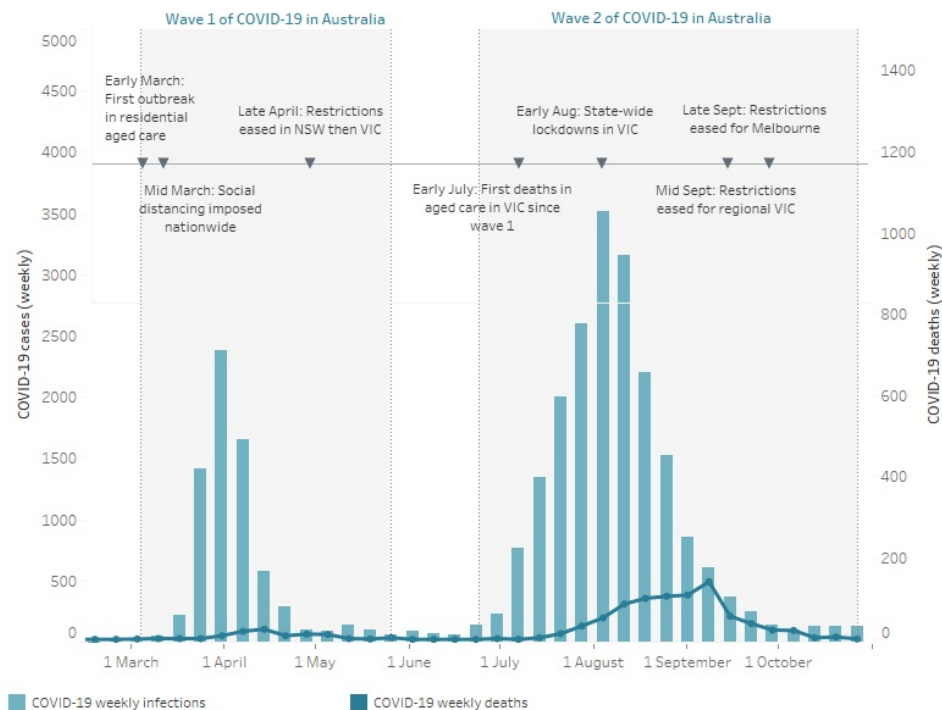
This report refers to 2 'waves' of the COVID-19 pandemic in Australia - by this we mean a steep increase in the number of infections or cases, a peak, and then a decline in the number of infections. Pandemic waves provide context for when Australia faced the most intensive period of COVID-19 infections and deaths in 2020, as well as related restrictions aimed at containing the spread of the virus:

- **wave 1** (from 4 March to 26 May) was predominantly in New South Wales, was shorter than wave 2, and resulted in fewer COVID-19 deaths than wave 2
- **wave 2** (from 24 June to 27 October) was predominantly in Victoria, saw extended lockdown measures enforced particularly in Greater Melbourne, and is when the majority of Australia's COVID-19 deaths occurred.

Figure 1 shows a summary of key events related to COVID-19 in Australia, the number of weekly COVID-19 cases during the first 10 months of 2020, as well as trends in COVID-19 deaths over this period.

This figure shows there were 2 waves of COVID-19 cases in Australia during the first 10 months of 2020, and that it was during wave 2 (which started in late June and lasted to late October) when most deaths due to COVID-19 occurred. It also shows key events related to the COVID-19 pandemic, including when the first COVID-19 outbreak happened in residential aged care (early March), as well as when public health measures in response to outbreaks took place.

Figure 1: Number of weekly COVID-19 cases and deaths, key events, and when public health measures were put in place in Australia, 2020



Note: Weekly totals are calculated by summing data for the 7 days before the stated week date (not including the stated week date).
Source: European Centre for Disease Prevention and Control - Weekly COVID-19 cases and deaths
<http://www.aihw.gov.au/>

Dementia death rates in 2020 versus 2015-19

How did dementia death rates during 2020 compare to recent years (2015-19)?

Key findings

The age-standardised death rate **with** dementia was lower overall during the first 10 months of 2020, compared to the average age-standardised death rate for 2015-19; this was true for both men and women and for both age-groups examined (75-84 and 85+ years)

The age-standardised death rate **due to** dementia:

- over the first 10 months of 2020 was similar to the average rate for 2015-19
- was slightly higher among people aged 85 and over during wave 1 of the pandemic compared with the average rate for 2015-19
- was much lower during wave 2 of the pandemic compared to the average rate for 2015-19, which may indicate that public health measures to contain the virus had a positive effect on reducing deaths among people with dementia.

Background and key definitions

COVID-19 is a disease caused by a new type of coronavirus - a large group of viruses known to cause respiratory infections. About 99% of COVID-19 deaths in Australia have been confirmed by laboratory testing (ABSa 2020). The data used in this report include both medical doctor and coroner certified deaths **due to COVID-19**.

Due to the public health importance of COVID-19, the WHO has directed that the new coronavirus strain be recorded as the underlying cause of death, that is, the main disease or condition causing death, when it is recorded as having caused or contributed to death. In Australia, it is rare for COVID-19 to be coded as an associated cause of death (ABS 2020b).

Data and period of analysis

This report uses ABS provisional mortality data, covering deaths that occurred in the first 10 months of 2020 (between 1 January and 27 October). This includes most deaths that occurred from the beginning of the pandemic in Australia to the end of the second Victorian outbreak in 2020.

This report refers to 2 'waves' of the COVID-19 pandemic in Australia - by this we mean a rapid increase in the number of infections, a peak, and then a decline in the number of infections:

- **wave 1** (from 4 March to 26 May) occurred mostly in New South Wales, was shorter than wave 2, and resulted in fewer COVID-19 deaths than wave 2
- **wave 2** (from 24 June to 27 October) occurred mostly in Victoria, led to extended lockdown measures particularly in Greater Melbourne, and was when most of Australia's COVID-19 deaths occurred.

People who died due to or with dementia

People with dementia may die due to their dementia or from other conditions or injuries (such as influenza or a fall), so dementia may be recorded as an underlying or an associated cause of death on death certificate. In this report, people with dementia are looked at in two groups based on where dementia was recorded in the death certificate:

- **deaths due to dementia** refer to deaths where dementia was the underlying cause of death
- **deaths with dementia** refer to deaths where there was any record of dementia (as the underlying cause or an associated cause of death). About 3 in 5 of these deaths were deaths **due to** dementia.

Most of the information in this report relates only to deaths that were certified by a medical doctor. At the time of writing, coroner-certified deaths were only available when a person died due to COVID-19 (and these are included in this report). However, roughly 1-2% of deaths where dementia is recorded as an underlying cause of death are usually certified by a coroner. While the analyses in this report are unlikely to be significantly affected by missing coroner certified deaths, the data are considered preliminary and subject to change, and results should be interpreted with caution. In an unknown proportion of cases, dementia may not be recorded at all, either because it is incorrectly missed from the death certificate or because the dementia legitimately did not contribute to death. As a result, the number of people with dementia recorded on their death certificate will not capture every person with dementia who died during the pandemic.

In this section, the short-term impacts of the COVID-19 pandemic on people who died during the first 10 months of 2020 and had dementia recorded on their death certificate, is assessed by comparing the age-standardised death rate in the first 10 months of 2020 with the average age-standardised rate over the same months in previous years (2015-19).

The average of 2015-19 was selected because in Australia, the age-standardised rate of deaths among people with dementia recorded on their death certificate has remained relatively stable over this period. Increases in the number of people who die from dementia over time is mainly a result of the ageing Australian population. The section below presents information on recent trends in deaths data on dementia and other common causes of deaths in Australia.

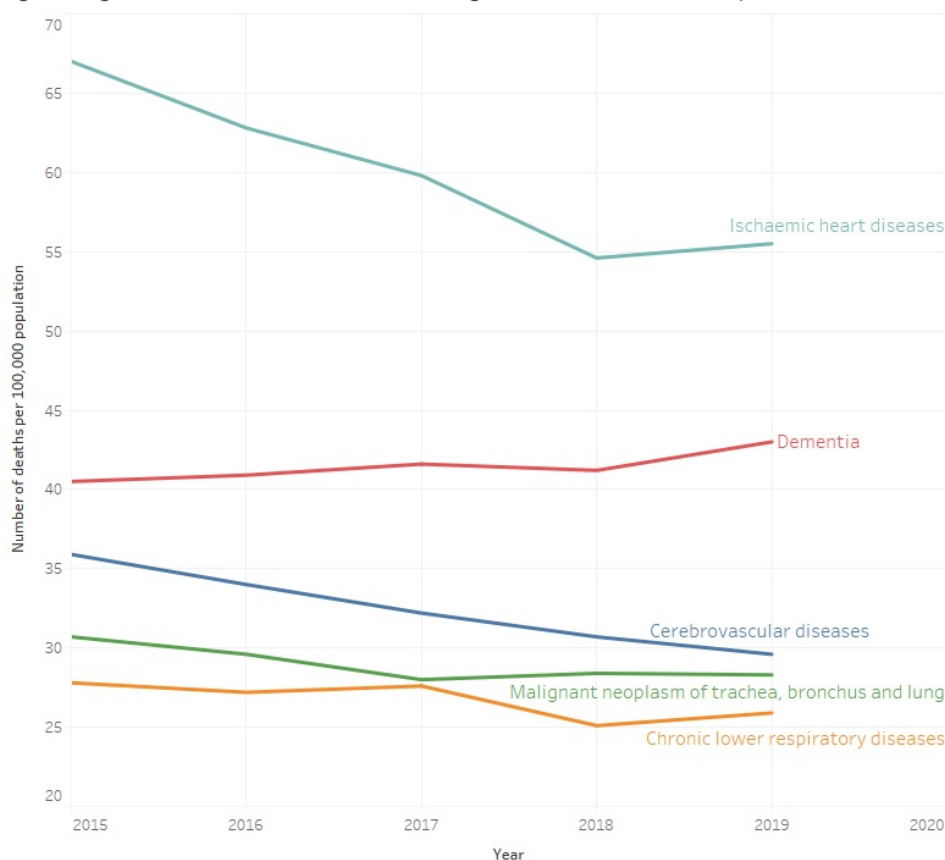
In Australia, death rates usually vary by demographic and socioeconomic characteristics of the population for most conditions, including dementia. For example, death rates tend to be slightly higher for people with dementia living in the lowest socioeconomic areas compared with the highest socioeconomic areas. As we aim to assess the impact of the COVID-19 pandemic on dementia mortality and not just to describe known patterns of dementia mortality, our key findings focus on describing mortality patterns among people who died with dementia recorded on their death certificate in 2020 relative to average trends in recent years (2015-19). For more information about demographic patterns in dementia mortality in Australia before the COVID-19 pandemic, refer to the AIHW report: [Mortality over regions and time \(MORT\) books](#).

How do we measure the short-term effects of the pandemic?

In Australia, the number of people who die due to dementia has been steadily increasing (AIHW 2020a). However, the age-standardised death rates due to dementia over time - which account for population growth and ageing - has remained relatively stable in recent years (between 2015 and 2019). This suggests that the increasing number of deaths due to dementia is mainly due to Australia's ageing population. In contrast, for other leading causes of death, such as ischaemic heart diseases and cerebrovascular diseases, the rate of deaths has been falling in recent years (see Figure 2).

This line graph shows annual age-standardised rates of leading causes of death in Australia over the period 2015 to 2019. While the rate for dementia remained relatively steady over this period, the rates for 'ischaemic heart diseases', 'cerebrovascular diseases', 'malignant neoplasm of trachea, bronchus and lung', and 'chronic lower respiratory diseases', all declined during this period.

Figure 2: Age-standardised rates of selected leading causes of death in Australia, 2015-2019



Source: Australian Bureau of Statistics 'Australia's leading causes of death, 2019'
<https://www.aihw.gov.au/>

Comparisons of the age-standardised rates of death among people with dementia recorded on their death certificate during the first 10 months of 2020 with the average age-standardised rates for the same months in previous years (2015-2019) are used to approximate the short-term effects of the pandemic on dementia mortality. This report does not however aim to estimate excess mortality during the pandemic.

Excess mortality refers to additional deaths that occurred during a given period of time (such as in a pandemic), relative to what would have been expected based on modelling historical deaths data (ABS 2020d). While the development of a model to quantify excess mortality is outside the scope of this report, we can still illustrate the short-term effects of the pandemic by making comparisons between age-standardised rates of deaths.

These comparisons have limitations, particularly for health conditions where rates have increased or decreased over time, and should be interpreted with caution.

More information on excess mortality during the COVID-19 pandemic can be found in the Australian Bureau of Statistics report: [Measuring excess mortality in Australia during the COVID-19 pandemic](#).

Dementia death rates in 2020 versus 2015-19

The age-standardised rate of dementia deaths in the first 10 months of 2020 was similar or lower than previous years

Figure 3 shows weekly trends in the age-standardised death rates among people with dementia recorded on their death certificates in 2020 compared to the average age-standardised death rates for 2015-2019.

Examination of the age-standardised death rate for the first 10 months of 2020 (by adding up weekly rates) suggests that the COVID-19 pandemic in Australia did not lead to an increase in dementia mortality compared with previous years:

- the overall death rate **due to** dementia, that is where dementia was the underlying cause of death, was similar in the first 10 months of 2020 to the average rate over the same months during 2015-19 (33 and 34 deaths per 100,000 population, respectively)
- the death rate **with** dementia, that is, where dementia was recorded as the underlying and/or associated cause of death, was slightly lower over the first 10 months of 2020 compared to the average rate over the same months during 2015-19 (58 and 63 deaths per 100,000 population, respectively).

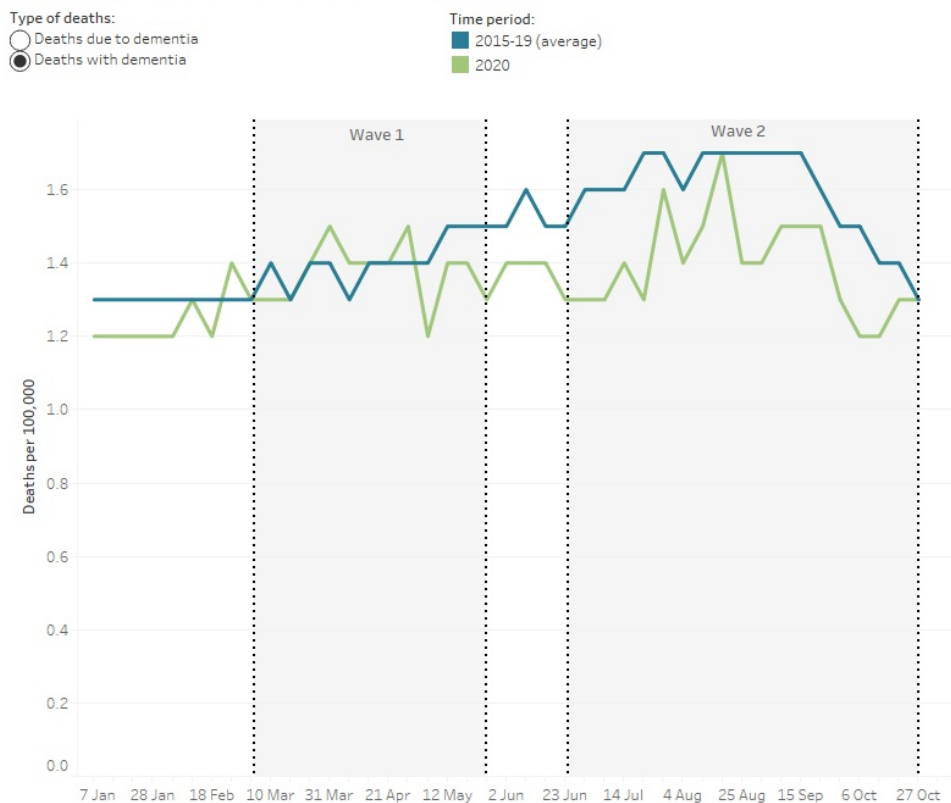
There was however a notable difference in the age-standardised death rates **due to** dementia by pandemic waves:

- during wave 1, the death rate **due to** dementia was similar to the average rate for 2015-19 in the same period (10 per 100,000 population)
- during wave 2, the death rate **due to** dementia was lower than the average rate seen over the same period in previous years (15 versus 17 deaths per 100,000 population). Wave 2 included the winter months and historically, dementia mortality shows a seasonal pattern with higher mortality rates during these months, likely due to an increased number of respiratory infections during winter (ABS 2020a)
- within each pandemic wave, there were weekly variations in the death rates **due to** and **with** dementia; these may be due to natural variations in deaths, be related to the impact of the pandemic, or to other factors, but we are unable to untangle what is driving these variations due to limitations in our data.

Figure 3: Weekly age-standardised death rates among people with a record of dementia in their death certificate (2020 versus average over 2015-2019).

This line graph shows weekly age-standardised dementia death rates between 1 January and 27 October. It shows the rates of deaths due to dementia and, separately, the rates of deaths with dementia. It compares the rates in 2020 to the corresponding average weekly rates for the period 2015 to 2019. Among people who died due to dementia, the 2020 rates were mostly higher than the 2015-19 rates until early May, and mostly lower than the 2015-19 rates from mid-May onwards. Among people who died with dementia, the 2020 rates were mostly similar or lower than the 2015-19 rates throughout the 10 months.

Figure 3: Weekly age-standardised death rates among people with a record of dementia in their death certificate (2020 versus average over 2015-2019)



Note: Data covers days between 1 January and 27 October.

Source: ABS Provisional Mortality Statistics.

<https://www.aihw.gov.au/>

The death rates **due to** dementia were higher in January and February of 2020 (before wave 1 of the pandemic started) than the average rates over the same period in previous years. This suggests other factors besides the pandemic may have contributed to the increased deaths **due to** dementia at the beginning of 2020. Knowing this, it is even more notable that during wave 2, both the death rates due to dementia and deaths with dementia were lower than rates during the same time in previous years (2015-19).

These lower death rates **due to** and **with** dementia during wave 2 of the pandemic may reflect the impact that stricter measures in place to combat the spread of the virus had on reducing the spread of other respiratory infectious diseases, which generally increase during the winter months. It may also reflect that the health and aged care system were more prepared by wave 2 of the pandemic.

Dementia death rates in 2020 versus 2015-19

For people aged 85 and over, rates of dementia deaths were lowest during wave 2 of the pandemic

This webpage presents age-specific death rates among people with dementia recorded on their death certificate for people aged 75-84 and those aged 85 and over. Age-specific rates for older age groups are much higher than the overall age-standardised rates presented above because the risk of developing dementia increases rapidly with age. Note that deaths among those aged under 75 could not be reported due to small numbers.

Examination of age-specific death rates for the first 10 months of 2020 (by adding up weekly rates presented in Figure 4), shows that:

- for both sexes and age groups (75-84 and 85 and over), the rates of deaths with dementia were similar to or lower than the average death rates in previous years (2015-19)
- among those who died **aged 75-84**, death rates **due to** dementia were either similar to or lower than previous years for both men and women.

There were however different trends in wave 1 versus wave 2 of the pandemic among people **aged 85 and over** who died **due to** dementia:

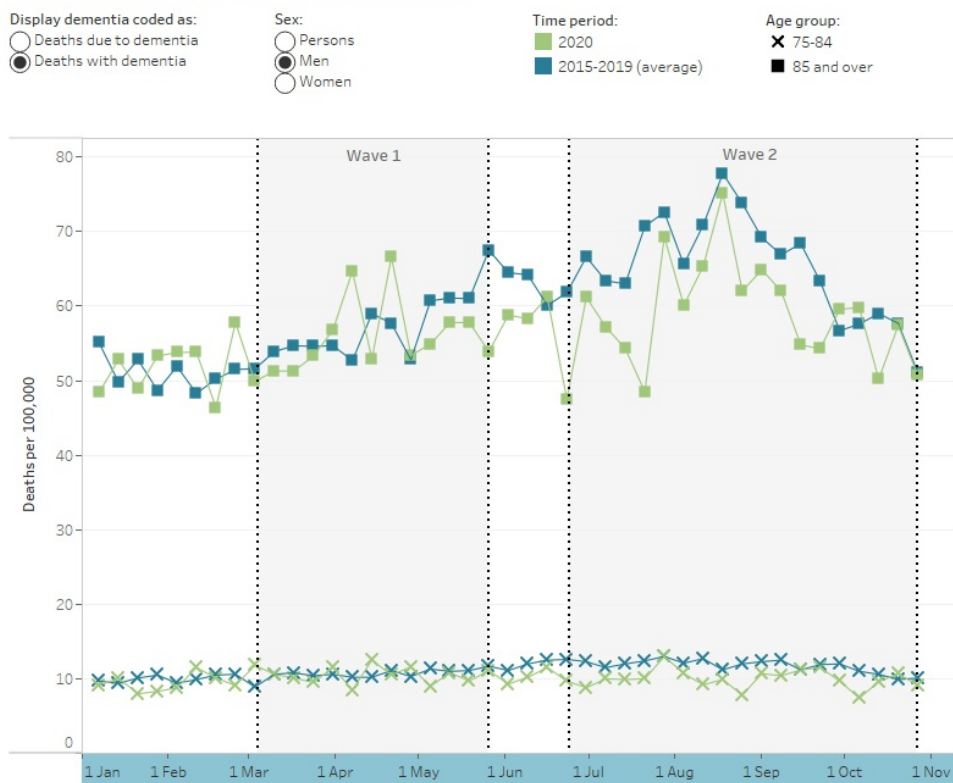
- during wave 1, the age-specific death rate was slightly higher than the average rate over the same period in previous years (2015-19); this was true for both men and women
- during wave 2 the rate was much lower than in previous years, for both men and women.

These trends suggest that stricter infection control measures in residential aged care facilities may have contributed to lower dementia mortality, particularly from the end of wave 1 and among those aged 85 and over, who are more likely to live in residential aged care facilities.

Figure 4: Weekly age-specific death rates among people with a record of dementia in their death certificate (2020 versus average over 2015-2019).

This line graph shows weekly age-specific dementia death rates between 1 January and 27 October, for 2020 and the corresponding weekly averages over the period 2015 to 2019, by age groups and sex. It shows the rates of deaths due to dementia and, separately, the rates of deaths with dementia. The age-specific dementia death rates were higher and more variable for the older age group (85 years and over), compared to the younger age group (75-84 years). Compared to 2015-19 rates, wave 2 (from late June to late October) saw the biggest reduction in 2020 death rates for those aged 85 and over.

Figure 4: Weekly age-specific death rates among people with a record of dementia in their death certificate (2020 versus average over 2015-2019)



Note: (1) Data covers days between 1 January and 27 October. (2) data shows age-specific death rates. (3) Data for those aged under 75 years could not be shown due to small numbers.

Source: ABS Provisional Mortality Statistics.

<http://www.aihw.gov.au/>

Dementia death rates in 2020 versus 2015-19

Did deaths among people with dementia differ by geographic and socioeconomic areas during the pandemic?

The lower rate of deaths with dementia recorded on death certificates in 2020 was widespread across Australia, including in regions that experienced COVID-19 outbreaks.

Figure 5 presents weekly age-standardised death rates among people who had dementia recorded on their death certificate in 2020 compared with the average age-standardised death rates over the same months in previous years (2015-19), showing differences by geographic and socioeconomic areas. Note that some age-standardised rates could not be presented due to low numbers of weekly deaths in some areas.

Examination of the age-standardised death rates **due to** dementia during the first 10 months of 2020 (by adding up weekly rates) shows that compared to the average death rates of the same months in previous years (2015-19), rates in 2020 were:

- lower in Victoria and New South Wales, and similar in Queensland
- lower in *Inner regional* areas, as well as in *Outer regional, Remote, and Very remote* areas
- similar in *Major cities* and across all socioeconomic areas.

Death rates among people **with** dementia showed similar patterns to deaths **due to** dementia, with lower overall rates in 2020 for most of the states and territories, as well as in each remoteness and socioeconomic area.

The greatest difference in age-standardised death rates **due to** and **with** dementia was during wave 2 of the pandemic, when they were lower than they had been in previous years. This reduction occurred across different geographic and socioeconomic areas, even in areas that didn't experience COVID-19 outbreaks. This again suggests that measures put in place in response to the pandemic led to reduced deaths among people with dementia.

Figure 5: Weekly age-standardised dementia death rates (ASRs) among people with a record of dementia on their death certificate (2020 versus average over 2015-19), by states/territories, remoteness and socioeconomic areas.

This line graph shows weekly age standardised dementia death rates between 1 January and 27 October, and the corresponding weekly averages over the period 2015 to 2019. It separately shows differences by state, remoteness, and socioeconomic areas. The data presented in this figure shows that the reduction in age-standardised death rates for dementia in 2020 occurred across all different geographic and socioeconomic areas.

Figure 5: Weekly age-standardised dementia death rates (ASRs) among people with a record of dementia on their death certificate (2020 versus average over 2015-19), by states/territories, remoteness and socioeconomic areas



Notes: (1) Data covers days between 1 January and 27 October. (2) ASRs refer to age-standardised rates (deaths per 100,000 population); see technical notes for more information on calculating ASRs. (3) The 'Socioeconomic area' category uses the Index of Relative Socioeconomic Disadvantage and population-based quintiles.
Source: ABS Provisional Mortality Statistics
<http://www.aihw.gov.au>



Dementia death rates in 2020 versus 2015-19

How did patterns of dementia deaths vary during the pandemic when other health conditions were recorded?

Measures in response to the pandemic likely led to reduced mortality among people with a wide range of other medical conditions. Figure 6 shows age-standardised death rates for 7 selected underlying causes of death recorded among people who had dementia recorded as an associated cause of death. The selected underlying causes include conditions frequently reported on death certificates among people who also have dementia recorded, as well as respiratory conditions, which COVID-19 may have caused or exacerbated. Respiratory conditions encompass acute conditions (like pneumonia and influenza) and chronic conditions (like asthma and emphysema).

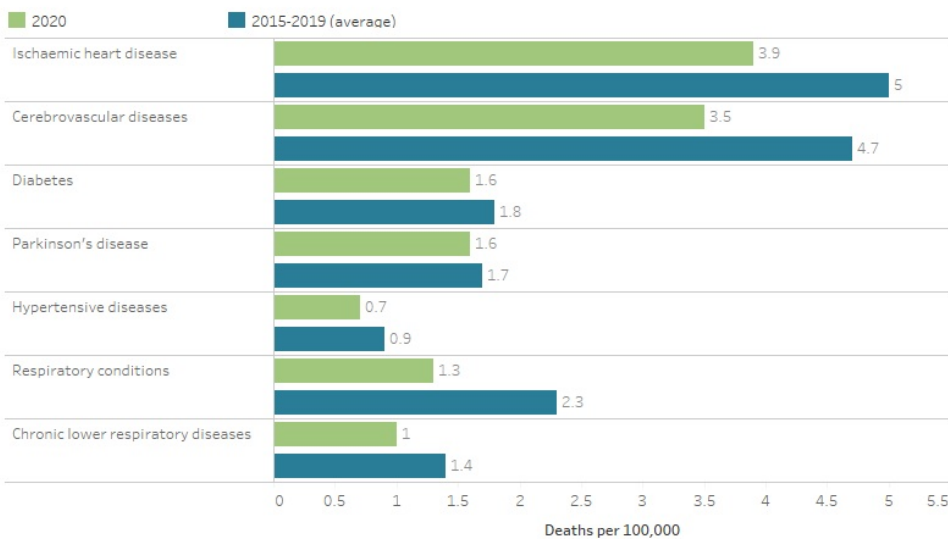
During the first 10 months of 2020, the age-standardised death rates for all the selected causes were lower than the average rate during the same months in previous years (2015-19); it is notable that even though COVID-19 often causes or exacerbates respiratory conditions among people who die due to the virus, the overall rate of respiratory conditions was still lower during the pandemic period (see Figure 6).

While lower rates of deaths from ischaemic heart disease and cerebrovascular diseases have links to the public health measures put in place during 2020 as a response to the pandemic, they largely reflect the steadily declining mortality from these conditions since the late 1960s (AIHW 2012; ABS 2020a). See Figure 2 for mortality trends by these conditions over the last 5 years.

Figure 6: Age-standardised death rates due to selected underlying causes of death among people with dementia recorded as an associated cause of death (2020 versus the average over 2015-19).

This bar graph shows age standardised death rates summed over 1 January to 27 October, for deaths due to selected underlying causes of death among people who died with dementia. It compares rates in 2020 to the average rates for the period 2015 to 2019, and shows that the 2020 rates for all the selected causes were lower than the average rates over 2015-19, including for respiratory conditions.

Figure 6: Age-standardised death rates due to selected underlying causes of death among people with dementia recorded as an associated cause of death (2020 versus the average over 2015-19)



Notes: (1) Data covers days between 1 January and 27 October; (2) Rates are age-standardised; see the Technical Notes for more details.
 Source: ABS Provisional Mortality Statistics.
<http://www.aihw.gov.au/>

Pneumonia and influenza were less common among people who died with dementia during the pandemic than in previous years

Older people, including those with dementia, are highly vulnerable to suffering complications and dying from transmissible respiratory infections. For example, in 2019, the median age of people who died due to influenza and pneumonia was 89 years (ABS 2020e). Intricate rules for certifying deaths can influence whether pneumonia and influenza are recorded as an underlying or an associated cause of death, so incorporating all causes of death provides a more complete picture of how these conditions influence deaths among people who die with dementia recorded on their death certificates. Together, they can also provide an indication of the effect that efforts to suppress the spread of COVID-19 have had on the spread of other transmissible infections among people with dementia.

Although some years experience significantly worse outbreaks of respiratory infections than others, there has been a clear seasonal peak in the number of infections due to influenza and pneumonia in recent years (FluTracking Australia 2020). The number of deaths from these conditions among people with dementia recorded on their death certificate also shows a clear seasonal trend in recent years. Although it is

not possible to present age-standardised rates due to low numbers, Figure 7 shows the number of deaths over 4-week periods among people who had dementia as well as influenza or pneumonia, recorded on their death certificate:

- the number of deaths **due to influenza or pneumonia** among people with dementia in 2020 remained very low across the entire 10-month period, peaking at 4 deaths in late February/March (13 deaths in total). In contrast, over 2015-19, the average number of deaths increased from 4 deaths in late March/April to 49 deaths in August/early September (an average of 187 deaths in total)
- the number of deaths among people who died **due to dementia** and with influenza or pneumonia in 2020 did not show the usual seasonal increase during the winter months—168 people died in late March/April and 123 people died in August/early September (1,390 deaths in total). In contrast over 2015-19, the average number of deaths increased from 167 in late March/April, to 243 in August/early September (an average of 2,053 deaths in total).

These data support the findings of other studies that infection control measures introduced in Australia in response to the pandemic, Australians' adherence to these measures, and the increased uptake in influenza vaccinations has reduced the spread of other transmissible infections and their subsequent mortality, including among people living with dementia (Department of Health 2020; ABS 2020a; ABS 2021).
Figure 7: Influenza or pneumonia among people with dementia recorded on their death certificates (2020 versus average of 2015-19).

This figure includes two line graphs that show the number of influenza and pneumonia deaths among people with dementia, over 4-week periods from 1 January to 27 October 2020, and the corresponding 4 week averages over the period 2015 to 2019. The first graph shows the number of deaths due to influenza or pneumonia when dementia was an associated cause of death. The second graph shows the number of deaths due to dementia when influenza or pneumonia were associated causes of deaths. Both graphs show that there were fewer influenza or pneumonia deaths in 2020 compared to 2015-19.

Visualisation not available for printing

COVID-19 deaths in 2020 by dementia status

How many people who died due to COVID-19 also had dementia?

Key findings

- Of the 858 people who died due to COVID-19 in the first 10 months of 2020, 30% also had dementia (140 women and 117 men).
- Among people who died due to COVID-19, those with dementia tended to be older.
- Among people who died due to COVID-19, those with dementia were less likely to have had acute respiratory conditions (caused by COVID-19) recorded on their death certificate.
- Most people aged 75 years and over who died due to COVID-19 with dementia lived in Greater Melbourne, and many likely lived in one of the 61 residential aged care homes that experienced fatal COVID-19 outbreaks.

Background and key definitions

COVID-19 is a disease caused by a new type of coronavirus - a large group of viruses known to cause respiratory infections. About 99% of COVID-19 deaths in Australia have been confirmed by laboratory testing (ABSa 2020). The data used in this report include both medical doctor and coroner certified deaths **due to COVID-19**.

Due to the public health importance of COVID-19, the WHO has directed that the new coronavirus strain be recorded as the underlying cause of death, that is, the main disease or condition causing death, when it is recorded as having caused or contributed to death. In Australia, it is rare for COVID-19 to be coded as an associated cause of death (ABS 2020b).

Data and period of analysis

This report uses ABS provisional mortality data, covering deaths that occurred in the first 10 months of 2020 (between 1 January and 27 October). This includes most deaths that occurred from the beginning of the pandemic in Australia to the end of the second Victorian outbreak in 2020.

This report refers to 2 'waves' of the COVID-19 pandemic in Australia—by this we mean a rapid increase in the number of infections, a peak, and then a decline in the number of infections:

- **wave 1** (from 4 March to 26 May) occurred mostly in New South Wales, was shorter than wave 2, and resulted in fewer COVID-19 deaths than wave 2
- **wave 2** (from 24 June to 27 October) occurred mostly in Victoria, led to extended lockdown measures particularly in Greater Melbourne, and was when most of Australia's COVID-19 deaths occurred.

People who died due to or with dementia

People with dementia may die due to their dementia or from other conditions or injuries (such as influenza or a fall), so dementia may be recorded as an underlying or an associated cause of death on death certificate. In this report, people with dementia are looked at in two groups based on where dementia was recorded in the death certificate:

- **deaths due to dementia** refer to deaths where dementia was the underlying cause of death
- **deaths with dementia** refer to deaths where there was any record of dementia (as the underlying cause or an associated cause of death). About 3 in 5 of these deaths were deaths due to dementia.

Most of the information in this report relates only to deaths that were certified by a medical doctor. At the time of writing, coroner-certified deaths were only available when a person died due to COVID-19 (and these are included in this report). However, roughly 1-2% of deaths where dementia is recorded as an underlying cause of death are usually certified by a coroner. While the analyses in this report are unlikely to be significantly affected by missing coroner certified deaths, the data are considered preliminary and subject to change, and results should be interpreted with caution. In an unknown proportion of cases, dementia may not be recorded at all, either because it is incorrectly missed from the death certificate or because the dementia legitimately did not contribute to death. As a result, the number of people with dementia recorded on their death certificate will not capture every person with dementia who died during the pandemic.

State and territory governments and the federal Department of Health publish daily updates on the number of COVID-19 cases and deaths in Australia, and fortnightly reports on outbreaks in residential aged care homes, and these resources have provided the public with timely data on the impact of the pandemic on older people in Australia (Department of Health 2020; Department of Health 2021). There is, however, less information on how COVID-19 has specifically affected people with dementia (Parliament of Australia 2020). People with dementia are more likely to contract COVID-19 as well as to develop severe COVID-19 than people without dementia due to various reasons, including that:

- there has been a high prevalence and spread of the virus in some aged care homes

- people with dementia tend to have other comorbidities, and these may increase their risk of developing severe COVID-19 symptoms (AIHW 2020a)
- people with dementia may find it more difficult to understand and follow public health recommendations related to reducing the chances of contracting COVID-19
- a gene common in people with dementia (the APOE e4 genotype), is also linked to an increased probability of developing severe COVID-19 (Kuo et al. 2020a; Kuo et al. 2020b; Numbers and Brodaty 2021; Yang et al. 2021).

In Australia, people with dementia are estimated to account for over half of people living in permanent residential aged care (AIHW 2020a). While less than 1 in 10 cases of COVID-19 across Australia have been of people living in residential aged care, they accounted for over 7 in 10 COVID-19 deaths during 2020 (Department of Health 2021). Outbreaks in aged care homes have placed residential aged care homes under strict public scrutiny and pressure, particularly in light of the Royal Commission into Aged Care Quality and Safety's interim report 'Neglect', which found that Australia's aged care system has failed to consistently provide safe and quality care to Australians, and has called for a fundamental overhaul of Australia's aged care system (Royal Commission 2020). While most people with dementia are thought to live in the community and not in residential aged care homes, those with more advanced dementia and more frail health tend to live in residential aged care homes due to their higher care needs.

This section presents deaths **due to** COVID-19 in Australia (that is, where COVID-19 was the underlying cause of death recorded on a person's death certificate) and compares these deaths by whether or not dementia was also recorded as an associated cause of death.

COVID-19 deaths in 2020 by dementia status

30% of people who died due to COVID-19 also had dementia

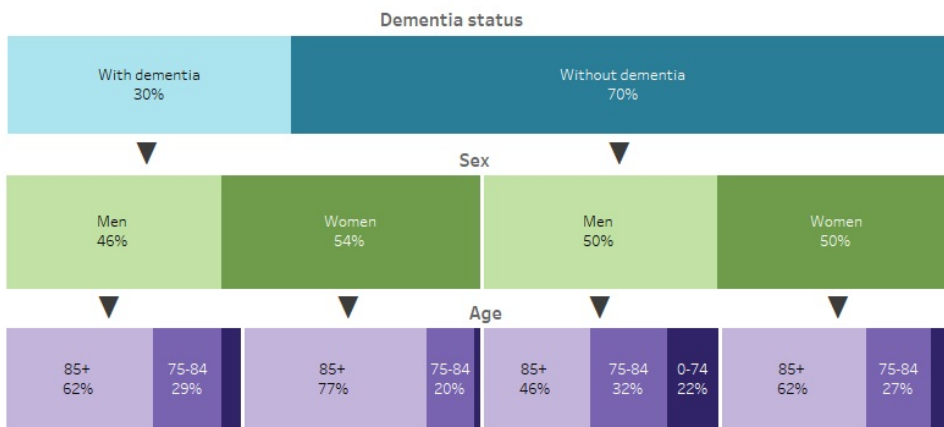
A total of 858 people died due to COVID-19 over the first 10 months of 2020 (443 women and 415 men). Of these, 30% also had dementia recorded on their death certificate (140 women and 117 men). There are substantial variations in how mortality data are collected across countries, but government sources compiled in August 2020 suggest that people with dementia made up 26% of all COVID-19 deaths in the United Kingdom (based on death certificate data) and 19% in Italy (based on clinical data for people who died in hospitals) (Suarez-Gonzalez et al. 2020).

Figure 8 shows the age and sex distribution of people who died due to COVID-19 by whether dementia was also recorded on their death certificate:

- more than half (54%) of people with dementia who died due to COVID-19 were women; by comparison, among people without dementia, deaths due to COVID-19 were evenly split by sex. This likely reflects dementia being more common in women than in men.
- with the exception of men without dementia, most deaths due to COVID-19 occurred among those aged 85 and over. This pattern was more apparent for those who died with dementia - 62% of men and 77% of women with dementia who died due to COVID-19 were aged 85 or over, compared with 46% of men and 62% of women without dementia who died due to COVID-19
- people with dementia who died due to COVID-19 tended to be older - the median age of people with dementia who died due to COVID-19 was 87.3 for men and 89.2 for women compared to 83.9 for men and 87.7 for women who died due to COVID-19 but without dementia.

This figure shows the age and sex breakdowns of people who died due to COVID-19 during the first 10 months of 2020, by whether or not they died with dementia. More than half of people with dementia who died due to COVID-19 were women; by comparison, among people without dementia, deaths due to COVID-19 were evenly split by sex. Most people who died due to COVID-19 were aged 85 years and over, but people with dementia tended to be older than those without dementia.

Figure 8: Profile of people who died due to COVID-19



Note: Data covers days between 1 January and 27 October, 2020.

Source: ABS Provisional Mortality Statistics.

<http://www.aihw.gov.au>

COVID-19 deaths in 2020 by dementia status

Patterns in deaths due to COVID-19 by geographic and socioeconomic areas

Figure 9 shows the proportion of people who died due to COVID-19 in the first 10 months of 2020 by whether or not they also had dementia recorded on their death certificate, as well as by geographic and socioeconomic areas. Similar patterns were observed regardless of whether they died with or without dementia.

Of the 257 people who died due to COVID-19 with dementia:

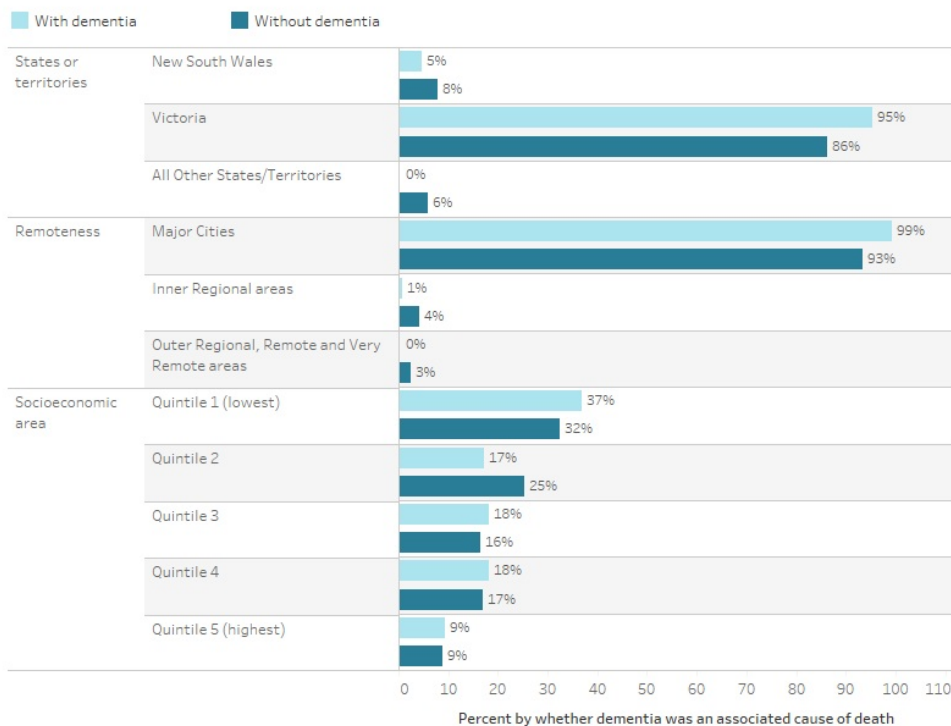
- 95% lived in Victoria and 5% lived in NSW
- 99% lived in *Major cities*
- 37% lived in the lowest socioeconomic area (Quintile 1).

As most deaths due to COVID-19 occurred during wave 2 in Victoria over a small number of areas, differences by socioeconomic status likely reflect the localised nature of the outbreaks in Victoria and should be interpreted with this in mind.

Figure 9: Percent of COVID-19 deaths by states/territories, remoteness and socioeconomic areas, for deaths with and without dementia as an associated cause of death.

This bar graph shows breakdowns for states, remoteness and socioeconomic areas, for people who died due to COVID-19, by whether or not they died with dementia. The large majority of people who died due to COVID-19 lived in Victoria and Major cities, but people with dementia were slightly more likely than those without dementia to live in Victoria in Major Cities.

Figure 9: Percent of COVID-19 deaths by states/territories, remoteness and socioeconomic areas, for deaths with and without dementia as an associated cause of death



Note: (1) Data covers days between 1 January and 27 October, 2020. (2) The 'Socioeconomic area' category uses the Index of Relative Socioeconomic Disadvantage and population-based quintiles.

Source: ABS Provisional Mortality Statistics.

<http://www.aihw.gov.au/>

People who died due to COVID-19 in Greater Melbourne by whether or not they also had dementia

In Australia, most deaths due to COVID-19 occurred in Greater Melbourne during wave 2 of the pandemic and most of these were due to outbreaks in residential aged care homes (see the ABS report [Measuring excess mortality in Victoria during the COVID-19 pandemic](#) for more information on the impact of COVID-19 on mortality in Victoria).

The Victorian Department of Health & Human Services has reported 648 deaths across 61 residential aged care homes in data from Victoria's Public Health Event Surveillance System for this period (Department of Health 2020). Although in Australia there is uncertainty around the number of people with dementia living in the community, residential aged care data indicate that over half of people living in permanent residential aged care homes have dementia recorded as a condition that affects their care needs (AIHW 2020a).

It isn't currently possible to use provisional mortality data to determine whether people with dementia who died due to COVID-19 lived in residential aged care homes, but there is a relationship between the geographic areas where fatal residential aged care outbreaks occurred (based on data published by the Department of Health), and the geographic areas of the usual place of residency of older people with dementia who **died due to COVID-19** (based on provisional mortality data). For example, 'West Melbourne', where 205 or 32% of all COVID-19 deaths in Victorian residential aged care homes occurred (based on Department of Health published figures), was also the usual place of residence of the highest proportion of deaths among people aged 75 and over who died due to COVID-19 (26% among people with a record of dementia on their death certificate, and 32% among those without a record of dementia on their death certificate; based on provisional mortality data) (Figure 10).

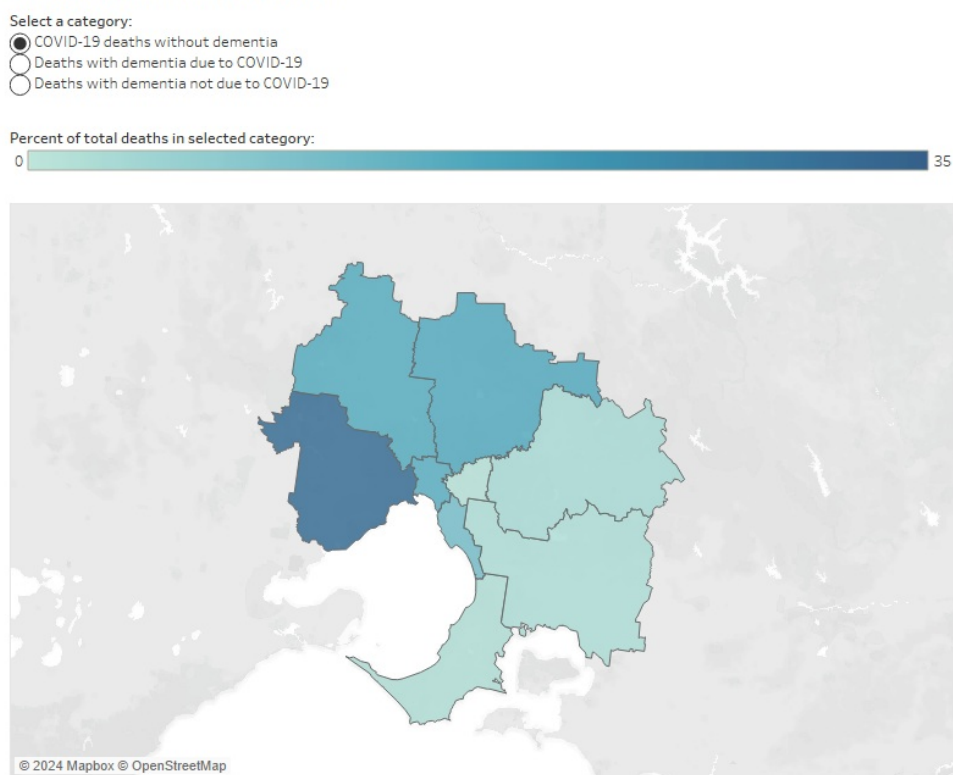
It is also worth noting that during this period, among people who **did not die due to COVID-19 but who had a record of dementia** on their death certificate, the location of their usual place of residence was evenly distributed across the areas covering Greater Melbourne (Figure 10; based on provisional mortality data).

Together, these preliminary results suggest that COVID-19 deaths from outbreaks in residential aged care homes involved many people with dementia.

Figure 10: Dementia and COVID-19 deaths in Greater Melbourne among people aged 75 and over, during the first 10 months of 2020.

This map shows dementia and COVID-19 deaths across the nine different SA4 areas that make up the Greater Melbourne region. It shows that COVID-19 deaths (with and without dementia) were more common in some SA4 areas than others, while dementia deaths not due to COVID-19 were more evenly spread out across all SA4 areas.

Figure 10: Dementia and COVID-19 deaths in Greater Melbourne among people aged 75 and over, during the first 10 months of 2020



Notes: (1) Data covers days from 1 January to 27 October, 2020; (2) the nine shaded areas in the map that make up the Greater Melbourne region correspond to the Greater Capital City Statistical (GCCSA) structure — for further information refer to the Australian Bureau of Statistics catalogue 1270.0.55.001.

Source: ABS Provisional Mortality Statistics
<https://www.aihw.gov.au/>

COVID-19 deaths in 2020 by dementia status

What other health conditions were recorded among people who died due to COVID-19?

Among people who died due to COVID-19, those who also had dementia recorded on their death certificate had different patterns of health conditions recorded compared to those who did not have a record of dementia.

Figure 11 shows a selected number of health conditions that are common among people who die with dementia, as well as respiratory conditions, which COVID-19 may have caused or exacerbated. Note that respiratory conditions encompass acute conditions (like pneumonia and influenza) and chronic conditions (like asthma and emphysema).

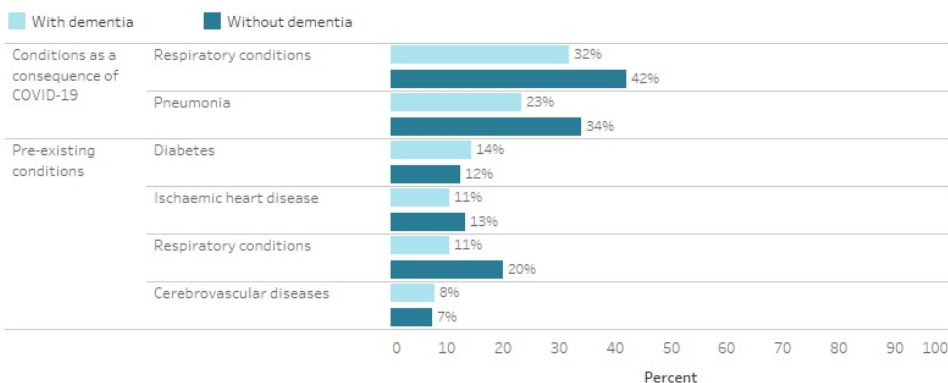
During the first 10 months of 2020, people who died due to COVID-19 with dementia were:

- less likely than those without dementia to have had pre-existing respiratory conditions recorded on the death certificate
- less likely to have acute respiratory conditions recorded on the death certificate (including pneumonia), as a consequence of contracting COVID-19
- about as likely as those without dementia to have had pre-existing ischemic heart disease, diabetes, and cerebrovascular conditions recorded on the death certificate.

Figure 11: Percent of COVID-19 deaths by whether dementia was an associated cause of death and whether other selected conditions were also associated causes of death.

This figure shows the percentage of people who died due to COVID-19 who also had other specific health conditions, by whether or not they also died with dementia. During the first 10 months of 2020, people who died with dementia were less likely than those who died without dementia to have had pre-existing respiratory conditions and acute respiratory conditions (as a consequence of contracting COVID-19); both groups were as likely to have had pre-existing ischemic heart disease, diabetes, and cerebrovascular conditions.

Figure 11: Percent of COVID-19 deaths by whether dementia was an associated cause of death and whether other selected conditions were also associated causes of death



Note: Data covers days between 1 January and 27 October, 2020.

Source: ABS Provisional Mortality Statistics.

<http://www.aihw.gov.au/>

We are unable to determine the reasons for the observed patterns in health conditions recorded among people who died due to COVID-19 with a record of dementia, but one or more of the following factors could be influential:

- **incomplete certification:** 232 of the 858 people who died due to COVID-19 had no other pre-existing conditions recorded and 87 had no other conditions recorded as resulting from COVID-19 (such as pneumonia). While this may truly reflect their health profile, it may also reflect incomplete certification of COVID-19 deaths, particularly for deaths that occurred at the beginning of the pandemic (ABS 2020a). During this time, doctors may have had to certify COVID-19 deaths quickly and only added conditions where medical histories were readily available
- **differences in COVID-19 progression among people with dementia:** older people with COVID-19 are more likely to develop delirium (characterised by disturbances of consciousness, attention, perception, thought, memory, psychomotor behaviour emotions, sleep-awake cycles, and hallucinations), and are less likely to show other typical signs of COVID-19 like cough and fever (Kennedy et al. 2020). International evidence shows that COVID-19 patients with dementia admitted to hospital often lack the usual symptoms associated with COVID-19, and this can delay their COVID-19 diagnosis and treatment. Delirium (especially hypoactive delirium denoted by lethargy, worsening motor and cognitive activity) is a common symptom of COVID-19 among older patients with dementia and may be related to higher mortality from COVID-19 (Bianchetti et al. 2020; Poloni et al. 2020)

- **other pre-existing conditions were present but not included in this report:** people who died due to COVID-19 with dementia recorded on their death certificate were older than those without a record of dementia (median age of 88.3 and 83.5, respectively), and may have had a wider range of debilitating conditions recorded on their death certificates, the inclusion of which was beyond the scope of this report.
-



Dementia deaths in 2020 by COVID-19 status

Patterns in deaths among people with dementia by whether they died due to COVID-19

Key findings

- 20,875 Australians (8,246 men and 12,629 women) died with dementia during the first 10 months of 2020. Of these, 257 (1.2%) died due to COVID-19 (117 men and 140 women).
- 54% of people who died due to COVID-19 and with dementia were women, and this was slightly lower than among people with dementia who died from another cause (61% were women).
- Age profiles by sex were similar, regardless of whether people with dementia died due to COVID-19 or from another cause.
- A greater proportion of people with dementia who died due to COVID-19 lived in Victoria and in *Major cities*, compared to people with dementia who died from another cause, reflecting the location of major outbreaks of COVID-19 in Australia during 2020.
- Among people who died with dementia, those who died due to COVID-19 were 1.4 times more likely to also have respiratory conditions recorded on their death certificate, than those who did not die due to COVID-19.

Background and key definitions

COVID-19 is a disease caused by a new type of coronavirus - a large group of viruses known to cause respiratory infections. About 99% of COVID-19 deaths in Australia have been confirmed by laboratory testing (ABSa 2020). The data used in this report include both medical doctor and coroner certified deaths **due to COVID-19**.

Due to the public health importance of COVID-19, the WHO has directed that the new coronavirus strain be recorded as the underlying cause of death, that is, the main disease or condition causing death, when it is recorded as having caused or contributed to death. In Australia, it is rare for COVID-19 to be coded as an associated cause of death (ABS 2020b).

Data and period of analysis

This report uses ABS provisional mortality data, covering deaths that occurred in the first 10 months of 2020 (between 1 January and 27 October). This includes most deaths that occurred from the beginning of the pandemic in Australia to the end of the second Victorian outbreak in 2020.

This report refers to 2 'waves' of the COVID-19 pandemic in Australia - by this we mean a rapid increase in the number of infections, a peak, and then a decline in the number of infections:

- **wave 1** (from 4 March to 26 May) occurred mostly in New South Wales, was shorter than wave 2, and resulted in fewer COVID-19 deaths than wave 2
- **wave 2** (from 24 June to 27 October) occurred mostly in Victoria, led to extended lockdown measures particularly in Greater Melbourne, and was when most of Australia's COVID-19 deaths occurred.

People who died due to or with dementia

People with dementia may die due to their dementia or from other conditions or injuries (such as influenza or a fall), so dementia may be recorded as an underlying or an associated cause of death on death certificate. In this report, people with dementia are looked at in two groups based on where dementia was recorded in the death certificate:

- **deaths due to dementia** refer to deaths where dementia was the underlying cause of death
- **deaths with dementia** refer to deaths where there was any record of dementia (as the underlying cause or an associated cause of death). About 3 in 5 of these deaths were deaths due to dementia.

Most of the information in this report relates only to deaths that were certified by a medical doctor. At the time of writing, coroner-certified deaths were only available when a person died due to COVID-19 (and these are included in this report). However, roughly 1-2% of deaths where dementia is recorded as an underlying cause of death are usually certified by a coroner. While the analyses in this report are unlikely to be significantly affected by missing coroner certified deaths, the data are considered preliminary and subject to change, and results should be interpreted with caution. In an unknown proportion of cases, dementia may not be recorded at all, either because it is incorrectly missed from the death certificate or because the dementia legitimately did not contribute to death. As a result, the number of people with dementia recorded on their death certificate will not capture every person with dementia who died during the pandemic.

This section presents all deaths where dementia was recorded on a person's death certificate during the first 10 months of the COVID-19 pandemic (referred to as 'people with dementia'). It also presents key demographic characteristics and highlights distinct patterns among people and areas affected by COVID-19 outbreaks.

Dementia deaths in 2020 by COVID-19 status

Women who died with dementia were older than men, regardless of whether or not they died due to COVID-19

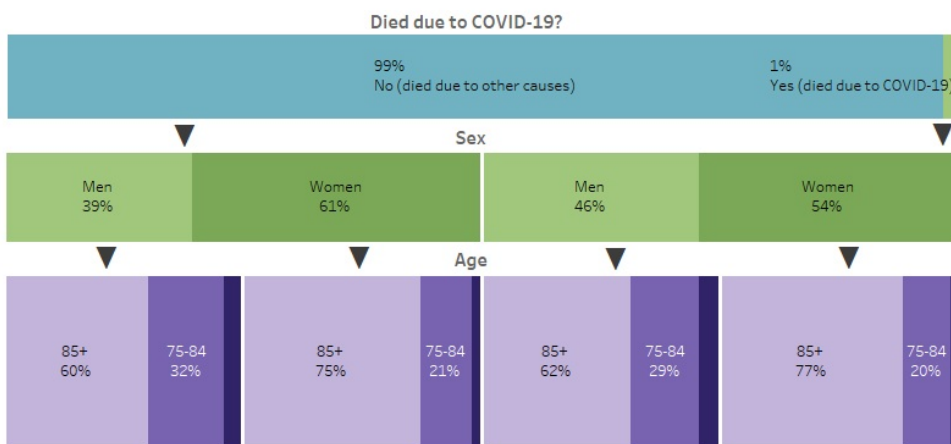
Figure 12 shows the age and sex distribution of people who died with dementia recorded on their death certificate during the first 10 months of 2020, by whether or not COVID-19 was the underlying cause of death. Just over half (54%) of people who died due to COVID-19 and with dementia were women. This was a slightly lower than seen among people who died due to causes other than COVID-19 and with dementia (61% were women). Age patterns by sex were very similar, irrespective of whether they died due to COVID-19 or another cause.

In both groups, women with dementia were generally older than men with dementia, which is consistent with dementia mortality trends before the pandemic period - women are more likely to die with dementia than men, and women with dementia die at older ages than men with dementia (AIHW 2020a; Buckley et al. 2019).

Figure 12: Sex and age breakdowns of people who died with dementia during the first 10 months of 2020, for deaths due to COVID-19 and deaths due to other causes.

This figure shows the age and sex breakdowns of people who died with dementia in the first 10 months of 2020, by whether or not they died due to COVID-19. COVID-19 deaths involved a relatively smaller proportion of women than the remainder of dementia deaths. Age patterns were similar regardless of whether people with dementia died due to COVID-19 or other conditions.

Figure 12: Sex and age breakdowns of people who died with dementia during the first 10 months of 2020, for deaths due to COVID-19 and deaths due to other causes



Note: Data covers days between 1 January and 27 October, 2020.
 Source: ABS Provisional Mortality Statistics.
<http://www.aihw.gov.au>

Dementia deaths in 2020 by COVID-19 status

Among people who died with dementia, those who died due to COVID-19 were more likely to live in Victoria and *Major cities*

As most COVID-19 deaths in Australia occurred in Greater Melbourne, it is not surprising that the majority of people who died due to COVID-19 and also had dementia recorded on their death certificate, lived in Victoria or in *Major cities* (Figure 13).

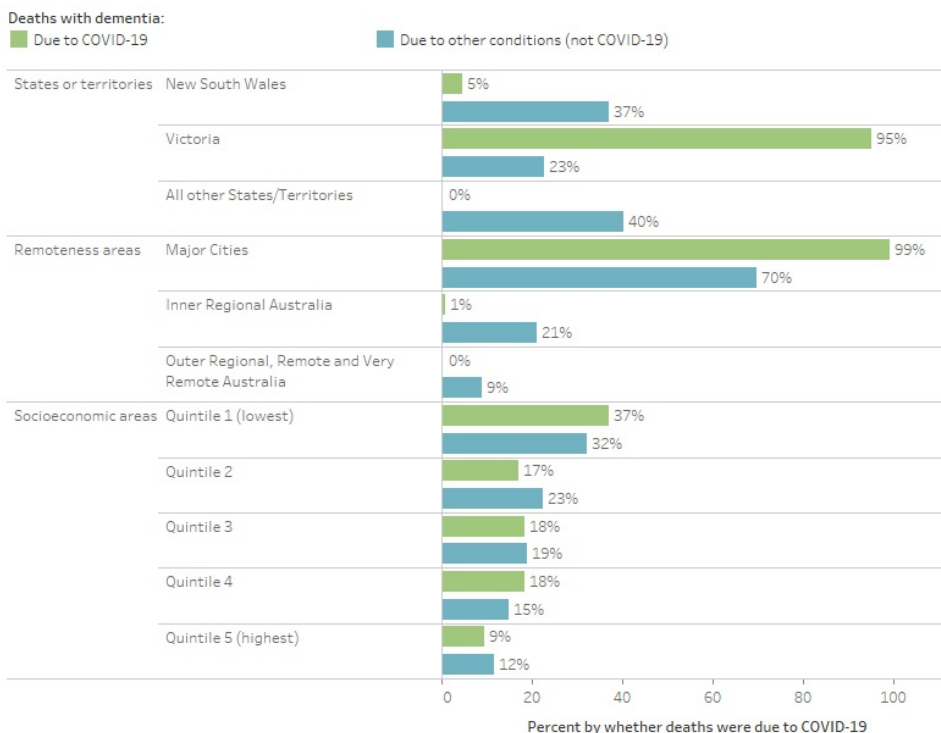
People with dementia were also more likely to have lived in the lowest two socioeconomic areas than the highest two socioeconomic areas, and this was true whether or not they died due to COVID-19:

- 55% of people with dementia who died due to COVID-19 lived in the two lowest socioeconomic areas; an equal proportion of people with dementia (55%) who died due to causes other than COVID-19 lived in the lowest two socioeconomic areas
- 27% of people with dementia who died due to COVID-19 lived in the highest two socioeconomic areas; 26% of people with dementia who died due to causes other than COVID-19 lived in the highest two socioeconomic areas (Figure 13).

Figure 13: Percent of dementia deaths during the pandemic by states/territories, socioeconomic and remoteness areas, for deaths due to COVID-19 and deaths due to other causes.

This bar graph shows that during the first 10 months of 2020, people with dementia who died due to COVID-19 were much more likely to have lived in Victoria and in Major Cities than people with dementia who died due to other causes. People with dementia were more likely to have lived in the lowest two socioeconomic areas than the highest two socioeconomic areas, and this was true whether or not they died due to COVID-19.

Figure 13: Percent of dementia deaths during the pandemic by states/territories, socioeconomic and remoteness areas, for deaths due to COVID-19 and deaths due to other causes



Note: (1) Data covers days from 1 January to 27 October. (2) The 'Socioeconomic area' category uses the Index of Relative Socioeconomic Disadvantage and population-based quintiles.

Source: ABS Provisional Mortality Statistics.

<https://www.aihw.gov.au/>

Dementia deaths in 2020 by COVID-19 status

Respiratory conditions were more common among people with dementia who died due to COVID-19

Other health conditions showed that among people who died due to COVID-19, those who also died with a record of dementia were less likely to have had respiratory conditions recorded on their death certificate than people without a record of dementia.

Looking more broadly at all people who died with dementia recorded on their death certificate during the first 10 months of 2020, those who died due to COVID-19 were more likely to have respiratory conditions recorded on their death certificate compared to those who did not die due to COVID-19. Respiratory conditions include acute conditions like pneumonia that could have developed as a result of COVID-19, as well as chronic lower respiratory conditions like chronic emphysema and asthma (Figure 14).

Although the presentation of COVID-19 among people with dementia can lack common symptoms associated with the virus (such as fever and cough), COVID-19 is still linked to a higher chance of developing pneumonia (Bianchetti et al. 2020; Poloni et al. 2020). People with pre-existing respiratory conditions are also at greater risk of developing severe COVID-19 and dying. Therefore, it is not surprising to see respiratory conditions recorded more commonly among people with dementia when they died due to COVID-19 than among people with dementia who died due to other causes.

Figure 14: Deaths during the pandemic among people with dementia recorded on their death certificate, by whether COVID-19 was the underlying cause and whether respiratory conditions were also recorded .

This bar graph shows that during the first 10 months of 2020, people with dementia who died due to COVID-19 were much more likely to have had respiratory conditions including pneumonia and chronic lower respiratory diseases than people with dementia who died due to other causes.

Visualisation not available for printing



Technical notes

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Technical notes

Age-specific rate: A rate for a specific age group. The numerator and denominator relate to the same age group.

Age-standardisation: A way to remove the influence of age when comparing populations with different age structures. This is usually necessary because the rates of many diseases vary strongly (usually increasing) with age. The age structures of the different populations are converted to the same 'standard' structure, and then the disease rates that would have occurred with that structure are calculated and compared.

Associated cause(s) of death: Any condition(s), diseases and injuries - other than the underlying cause of death - considered to contribute to a death.

COVID-19: A disease of the respiratory system, particularly in the early stages of the illness, caused by the coronavirus SARS-CoV-2. Common early symptoms are similar to other respiratory illnesses, but the infection can have a wide variety of manifestations. In some people the infection can progress to become a more severe disease, with the immune system overreacting, resulting in inflammation and lack of oxygen to many parts of the body. This can lead to multiple organ failure and death. Severe symptoms tend to develop in the second week of the disease.

Dementia: A term used to describe a group of similar conditions characterised by the gradual impairment of brain function. It is commonly associated with memory loss, but can affect speech, cognition (thought), behaviour and mobility. An individual's personality may also change, and health and functional ability decline as the condition progresses. Common types of dementia are Alzheimer's disease, vascular dementia and mixed types of dementia.

Excess mortality: A term used to describe additional mortality during a given period of time, relative to what would have been expected based on modelling historical deaths data. Further information on excess mortality during the COVID-19 pandemic can be found in the Australian Bureau of Statistics report: [Measuring excess mortality in Australia during the COVID-19 pandemic](#).

Mortality: Number or rate of deaths in a population during a given time period

Pandemic: A new infectious disease that is rapidly spreading across a large region, or worldwide, and affecting large numbers of people.

Remoteness classification: Each state and territory is divided into several regions based on their relative accessibility to goods and services (such as to general practitioners, hospitals and specialist care) as measured by road distance. These regions are based on the Accessibility/Remoteness Index of Australia and defined as Remoteness Areas by either the Australian Standard Geographical Classification (ASGC) (before 2011) or the Australian Statistical Geographical Standard (ASGS) (from 2011 onwards) in each Census year. The five Remoteness Areas are *Major cities*, *Inner regional*, *Outer regional*, *Remote* and *Very remote*.

Respiratory condition: A condition affecting the airways and characterised by symptoms such as wheezing, shortness of breath, chest tightness and cough. Conditions include asthma and chronic obstructive pulmonary disease (COPD) - which includes emphysema and chronic bronchitis.

Socio-Economic Indexes for Areas (SEIFA): A set of indexes, created from Census data, which aim to represent the **socioeconomic position** of Australian communities and identify areas of advantage and disadvantage. The index value reflects the overall or average level of disadvantage of the population of an area; it does not show how individuals living in the same area differ from each other in their socioeconomic group. This report uses the Index of Relative Socio-Economic Disadvantage.

Underlying cause of death: The primary or main cause of death: the condition, disease or injury that initiated the sequence of events leading directly to death, or the circumstances of the accident or violence that produced the fatal injury.

Virus: An infective agent that typically consists of a nucleic acid molecule in a protein coat, is too small to be seen by light microscopy, and is able to multiply only within the living cells of a host

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Technical notes

Data presented in this report are based on an AIHW customised request of [ABS Provisional Mortality Statistics](#). These data are not comparable to numbers of deaths published in 3302.0 Deaths, Australia and 3303.0 Causes of Death, Australia.

These data are considered to be provisional and subject to change as additional data are received. The data include doctor-certified deaths only, with the exception of deaths with a UCOD of COVID-19, for which available coroner-certified deaths are also included.

Data are based on the date on which the death occurred, and are compiled based on the state/territory of usual residence. The data excludes deaths for which the date of death was not recorded. A proportion of deaths occur in a given calendar year but are not registered until subsequent years. Care should be taken in interpreting the year of occurrence data presented, particularly for 2020, as it is expected to increase with further processing.

For more information relevant to interpretation of the ABS's Provisional Mortality Statistics as well as how it differs in scope from other ABS mortality statistics, visit the [ABS website](#).

Figures on COVID-19 related deaths in residential aged care published by the Department of Health are sourced from the Victorian Public Health Events Surveillance System (PHESS) and from Commonwealth sources.

The International Classification of Diseases (ICD) 10th revision was used to record all health conditions, including dementia and COVID-19. For further information about the ICD refer to the [WHO International Classification of Diseases \(ICD\)](#).





Notes

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Data





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