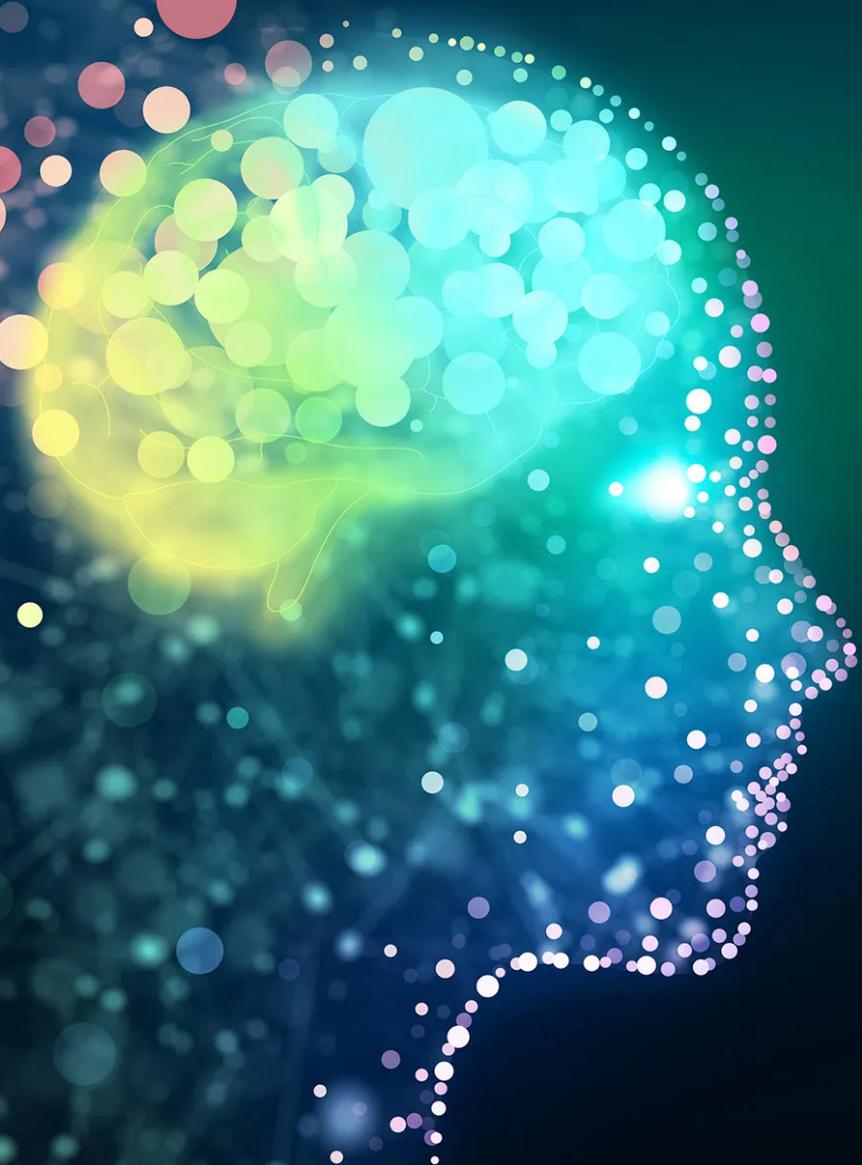EQUALLYWELL

2024
FULL REPORT

Mortality of people using Australian Government-funded mental health services and prescription medications: Analysis of 2016 Census, death registry, MBS and PBS data

The authors recognise people who have lived experience of mental health concerns and that living with a mental health concern does not define a person. We acknowledge that people are living productive, purposeful and meaningful lives with mental health concerns. We acknowledge their unique experiences and those of carers, families and supporters of people living with mental health concerns. We also note that many people living with mental health concerns have very good physical health, although this report indicates this is not the situation for all people with mental health concerns. The authors support the use of the Mindframe guidelines on responsible, accurate and safe reporting on mental health concerns and alcohol and other drugs. Some of the statistics in this report may cause distress. Services you can contact are detailed in Appendix 1.

HELPLINES

Lifeline:
13 11 14

Suicide Call Back Service:
1300 659 467

Beyond Blue:
1300 224 636

MensLine Australia:
1300 224 636

Kids Helpline:
1800 551 800

13YARN:
13 92 76

For further information see **Mental Health Resources.**

EQUALLYWELL
Quality of Life - Equality in Life

Table of Contents

Executive Summary

This report links the 2016 Australian Census with death registers, Medicare Benefits Schedule (MBS) and Pharmaceutical Benefits Scheme (PBS) data to analyse the mortality of people who accessed MBS and/or PBS mental health-related services between August 2016 and September 2017.

The death rates are age-standardised,[1] but not standardised for rurality, gender or disadvantage. The impact of these factors is presented in Section 4. Throughout this report, mental health treatment is defined as receiving an MBS service with a mental health-related item number and/or a PBS prescription for one or more medication types usually used to treat a mental health condition.[a] Not every person with a mental health condition is included in this measure, and not all people prescribed mental health-related PBS medicines necessarily have a mental health condition.[b]

- The total (all ages) database included over 23.72 million Australians, of whom 5.03 million people (21.2%) accessed mental health-related treatments during this period.

- There were 161,736 annual deaths in Australia during the data collection period. Of this total, 87,422 deaths were of people who had accessed mental health-related treatments.[c]

- People who accessed mental health-related treatments had a median age at the time of death **11 years younger** than the rest of the population (males 13 years, females 9 years).

People (ages 15–74) who accessed mental health-related treatments had higher rates of premature mortality
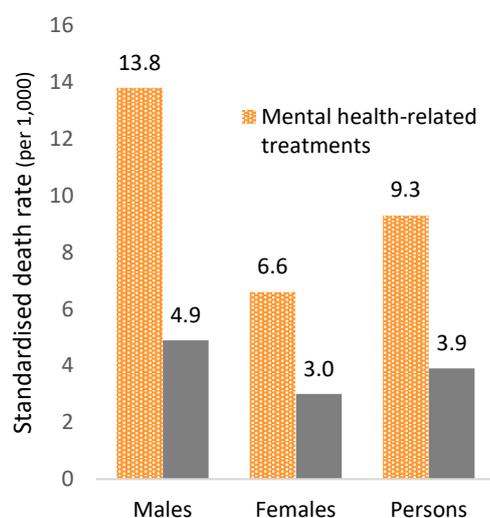
- The linked dataset included 15.63 million people aged 15–74 years, of whom 3.46 million (22.2%) accessed mental health-related treatments.

- There were 58,650 total annual deaths of people aged 15–74 in Australia during the data collection period. Of this total, 28,912 **(49.3%)** were people who had accessed mental health-related treatments.

- People who accessed mental health-related treatments had a standardised death rate **2.4 times** greater than the **total** population (males 2.8, females 2.2 times).

FIGURE 1 Standardised death rates of people aged 15–74.

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[a] The Australian Institute of Health and Welfare (AIHW) list of mental health-related MBS and PBS items has been used in this report (see Appendix 2).
[b] See Data Quality Considerations, in Section 1.
[c] The death registry data was collected over 414 days. This reference period was selected in this analysis to align with the ABS (2017) report: *The mortality of people using mental health services and prescription medications*. Unless otherwise stated, the mortality numbers in this report have been annualised.

- The standardised death rates of dementia, breast cancer, and diseases of the urinary system in people who accessed mental health-related treatments were, respectively, 3.6, 2.8 and 2.7 times that of the rest of the population.

- Among people who accessed mental health-related treatments, the standardised death rate was particularly increased for people living in more disadvantaged areas (4 times), born overseas (3.2 times), or living in rural communities (3.1 times).

- The standardised death rate ratio was highest among persons aged 25–34, where the death rates were almost three times higher than the total Australian population of that age (see Figure 23).

- The increased mortality ratio was evident across gender and age cohorts (Figure 2).
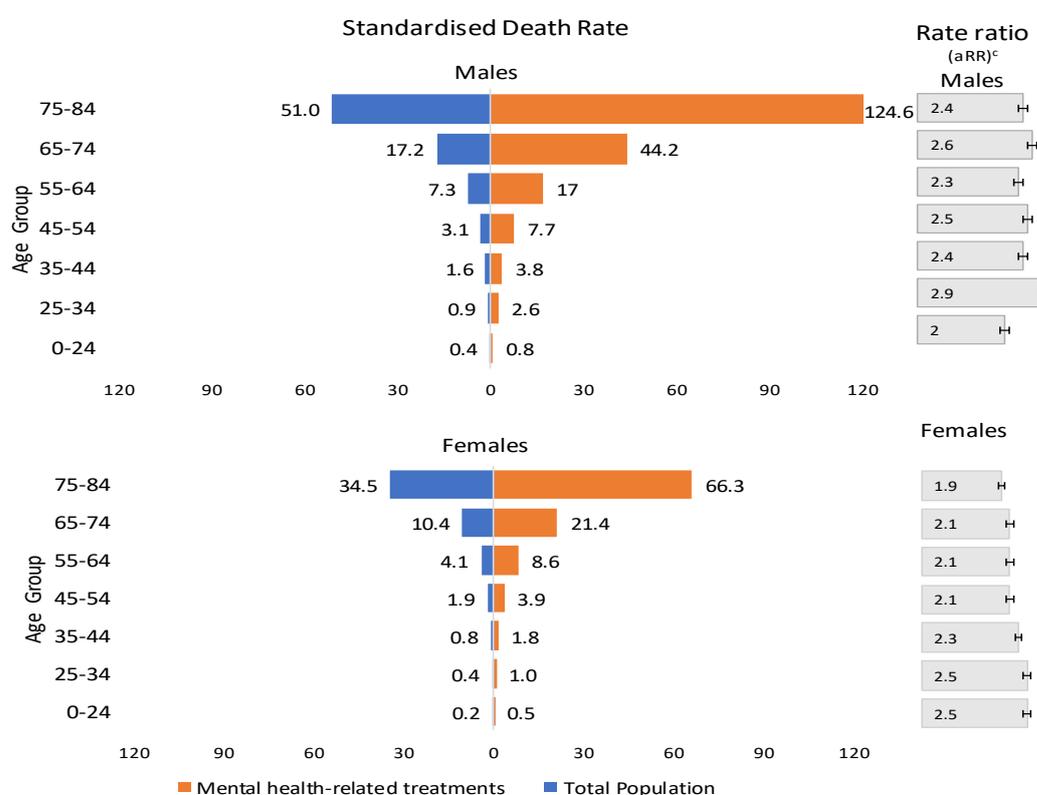
FIGURE 2 *Standardised death rates and relative risk ratios[d] by age and gender for the total population and people accessing MBS and/or PBS mental health-related services.*

While the standardised death rate for people who accessed mental health-related treatments was 2.4 times that of the <u>total population</u>, it was **4.8 times** that of <u>the rest of</u> the population (who did not access mental health-related treatments).

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[d] The risk ratio of the standardised death rate of people who accessed mental health-related treatments divided by the total population standardised death rate for the age group/condition. The age stratum specific rates are standardised.

Most deaths of people (15–74 years) with mental health conditions are excess deaths

Excess deaths are defined as the number of deaths in a particular section of the population above that expected, based on total population death rates. The OECD uses this measure to estimate potentially avoidable or excess deaths for population groups of interest.[3, 4]

The **excess** (potentially preventable) deaths of people (aged 15–74) who accessed mental health-related treatments comprised:

- a total of 16,658 <u>excess</u> annual deaths (46 per day)

- almost **three in five** (58%) of all deaths of people who accessed mental health-related treatments were **excess deaths**

- cancers were responsible for **24 excess deaths per day**[e]

- circulatory diseases were responsible for **4.4 excess deaths per day**.

Number of deaths

Cause	Deaths
Trachea, bronchus and lung cancer	1,319
Ischaemic heart diseases	698
Chronic lower respiratory diseases	930
Intentional self-harm	786
Breast cancer	614
Colon cancer	518
Blood and lymph cancer	443
Diabetes	388
Cirrhosis	337
Cerebrovascular diseases	210
Brain cancer	304
Prostate cancer	304
Skin cancer	244
Dementia	296
Diseases of the urinary system	190

■ Expected deaths - Pesons accessing mental health-related treatments

▦ Excess deaths - Persons accessing mental health-related treatments

FIGURE 3 *Excess annual deaths of people who accessed mental health-related treatments by cause of death (ages 15–74).*

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[e] This figure is derived from International Classification of Diseases, version 10 (ICD 10) disease category of neoplasms. Not all neoplasms are cancer. The term cancer has been used throughout for simplicity.

Conclusion

The analysis of the 2016 Census, death registry, MBS and PBS linked dataset revealed a significant life expectancy gap of 11 years for people who accessed mental health-related treatments. It also showed:

- that people (aged 15–74) who accessed mental health-related treatments comprised 22.2% of the total population but accounted for almost half (49.3%) of all premature deaths,

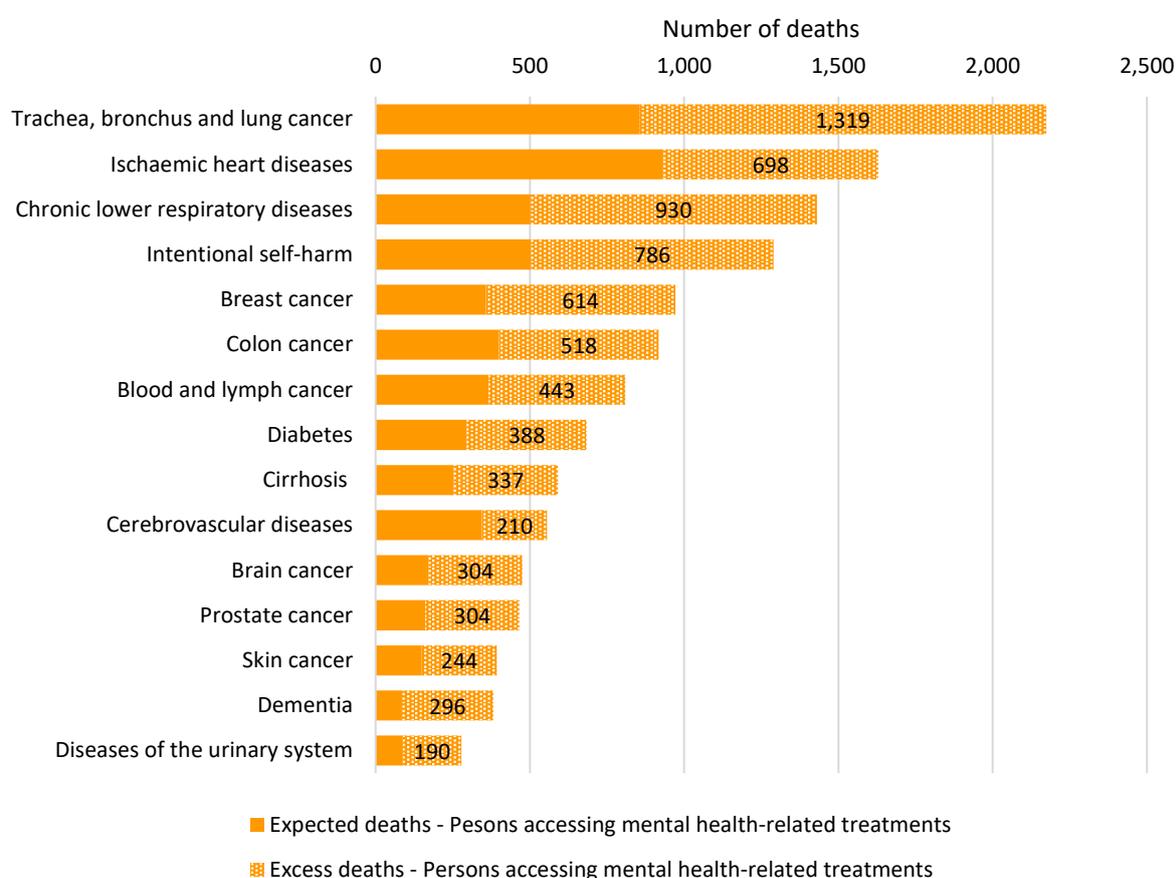- that for this group, the majority (58%) of deaths were excess deaths, and

- that these excess deaths comprised 28% of all premature deaths in Australia.
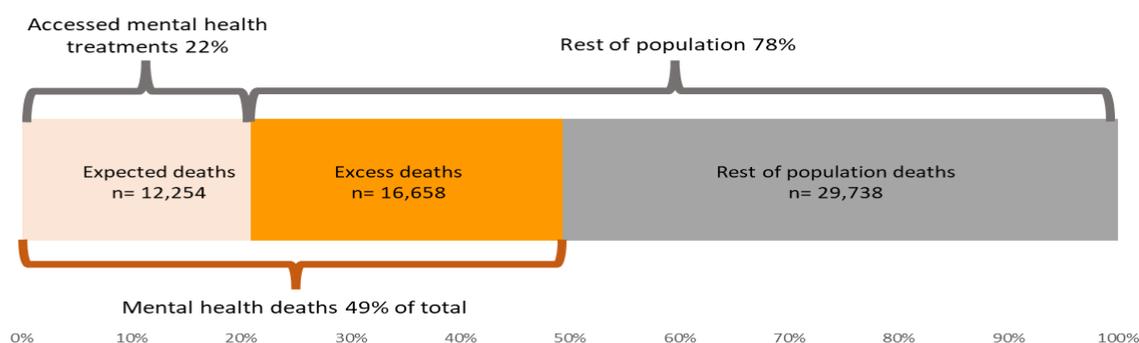
FIGURE 4 *Relative population proportions and percentage of deaths (people aged 15–74).*

For the all ages population of Australia, the numbers and proportions of deaths for people who accessed mental health-related treatments are significantly higher (see Section 3b, Table 4).

Future work should:

- more fully investigate mortality patterns for particular causes of death, such as circulatory diseases, respiratory diseases and cancers

- examine premature mortality rates and causes of death and within certain age cohorts, such as people aged 25–44

- provide a detailed analysis of mortality patterns in groups of higher risk, such as those born overseas, those living in rural communities, and those from socially disadvantaged groups

- examine potential productivity gains and return on investment of interventions to improve the physical health and increase the life expectancy of people living with mental illness

- commit to five-yearly reporting on this dataset to provide an indicator of Australia's progress in reducing the life expectancy gap for people living with mental illness[f]

- consider the policy and service provision implications of this data to inform actions to reduce premature death and health inequalities for people living with mental health conditions.

These data should be considered cautiously, as known life expectancy covariates have not been controlled for statistically. This report presents the mortality outcome data for people who live and embody the dynamic co-existence of these determinants of health and wellbeing.

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[f] An upcoming report will compare these results to the ABS report on the 2011 dataset.

1.   Introduction

Context and purpose

This report links the 2016 Census with death register, Medicare Benefits Schedule (MBS) and Pharmaceutical Benefits Scheme (PBS) data to present an analysis of the deaths of people using mental health services and prescription medications from August 2016 to September 2017 (for brevity hereafter called the '2016 dataset') in Australia.

The purpose of this report is to examine mortality rates and patterns of people who accessed MBS and/or PBS mental health-related services (hereafter referred to as 'people accessing mental health-related treatments').[g] Specifically, it examines the mortality of people using mental health-related treatments compared to the total population across sociodemographic variables and underlying causes of death as defined by the International Classification of Diseases, version 10 (ICD 10).

This report replicates the Australian Bureau of Statistics (ABS) *Mortality of people using mental health services and prescription medications* report on the 2011 dataset.[2] A subsequent report will compare the 2016 to the 2011 dataset analyses and is planned for release later in 2024. Finally, this report calculates the Organisation for Economic Cooperation and Development's (OECD's) 'excess mortality' measure for the 2016 dataset and translates the excess mortality ratios to the number of excess deaths in Australia for people living with mental illness. It has used the ABS guidelines for calculating the standardised death rate (SDR), which uses the age distribution of total persons in the Australian population at 30 June 2001 as the reference population.[5] The SDR is expressed as deaths per 100,000 standard population unless specified otherwise.

This report provides an indicator of Australia's status with respect to reducing premature mortality and improving the physical health of people living with mental illness. It addresses actions 24.4 and 24.10 of the *Productivity Commission Inquiry into Mental Health,*[6] performance indicator (PI 5) of the *Fifth Mental Health and Suicide Prevention Plan* (p. 39),[7] the *National Mental Health and Suicide Prevention Agreement* Clauses 26d, 37h and 47j (pp. 9, 11 & 13),[8] and Essential Element 6.2 (Monitoring of progress towards improved physical health and wellbeing) of the *Equally Well National Consensus Statement* (p. 22).[9]

Five-yearly reporting to measure progress in reducing the life expectancy gap

Five-yearly reporting on this dataset will provide an important system-wide measure of Australia's progress in reducing the life expectancy gap for people living with mental illness. It will also enable a review of progress and trends in:

- addressing the overall life expectancy gap

- reducing standardised death rate ratios for the total Australian population and for people who accessed mental health-related treatments

- standardised death ratios and risk ratios for specific causes of death, such as heart disease, cancer, respiratory disease and diabetes

- excess mortality rates for people accessing mental health-related treatments

- access patterns for MBS and/or PBS mental health-related treatments

- other sociodemographic and service usage patterns associated with premature death from chronic physical health conditions.

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[g] This study used the AIHW list of mental health-related items in the Medicare Benefits Schedule (MBS) and Pharmaceutical Benefits Scheme (PBS). A full list of these items appears in Appendix 2.

Method

The project uses linked data from the 2016 Census of Population and Housing, MBS, PBS, and state/territory death registers. Death register data was collected for the 13 months following the 2016 Census (10/08/2016 to 27/09/2017). This reference period was selected to replicate the data collection period used in the ABS report of the 2011/2012 data set.[2] The annualised mortality rate is calculated as the total number of deaths divided by the total number of calendar days of the study period (414), multiplied by 365. MBS and PBS data were collected from 1 January 2016 to 31 December 2016 (inclusive). Census data were collected on the dates of the 2016 national census.

This data has been linked through the work of the national Person Level Integrated Data Asset (PLIDA). Census information included in the dataset provides insight into sociodemographic characteristics, including age, sex, remoteness, socioeconomic disadvantage and labour force participation.

This report seeks to present data to help inform research, policy and intervention implementation. It avoids interpretations, hypotheses or explanations. However, the analyses illustrate the complex and dynamic interplay between sociodemographic factors, physical health, mental health, social participation, service access and physical health outcomes. Future analyses will provide insights to help guide primary, mental and public health actions to reduce the health equity gap for people living with mental illness.

Ethics

Ethical conduct in human research for this project was approved by Charles Sturt University's Human Research Ethics Committee (protocol number H22289).

Funding

This project was supported by funding from the Australian Government Department of Health and Aged Care to support work toward Action 17 of the Fifth National Mental Health and Suicide Prevention Plan[7] and Essential Element Six: *Monitoring of progress towards improved physical health and wellbeing* of the Equally Well National Consensus Statement.[10] It was assisted by in-kind contributions from:

- the ABS
- the members of the Data Management Analytics Advisory Committee (see Appendix 6)
- the Equally Well Alliance, Equally Well national oversight committee (see Appendix 6)
- Charles Sturt University (CSU)
- the Equally Well Project Team based at CSU (see Appendix 6).

Defining the cohort of people accessing mental health-related treatments

The Australian Institute of Health and Welfare (AIHW) defines mental health treatment as receiving an MBS service with a specific mental health-related item number and/or a PBS prescription for one or more medication types usually used to treat a mental health condition. This report uses this list of mental health-related items (see Appendix 2). (Mental health treatments for those negatively impacted by bushfires have been excluded.) More details on the dataset and analysis appear in Appendices 3 and 4.

This report provides an analysis of mortality rates for people who accessed mental health-related treatments. It does not imply a causal relationship between the use of mental health-related treatments and premature mortality (indeed, research evidence indicates the converse).[11-13] Nor does it speculate on the factors that may account for differences between people who access mental health-related treatments and the total population. It also does not link or report information on

access to other physical healthcare, prevention, screening or treatment services, all of which are associated with better health outcomes.

Data quality considerations

The use of national Census, MBS, PBS and death register data provides a whole of population, reliable and repeatable measure of the mortality of people accessing mental health-related treatments. While certain MBS and PBS items have been categorised as mental health-related treatments by the AIHW, this can bring certain limitations which should be acknowledged when considering the results of the data analyses.

The use of MBS and/or PBS mental health-related treatments does not necessarily equate to a diagnosis of a mental health condition. This measure relies on MBS and/or PBS service provider documentation. Some people may be recorded as using these treatments without a diagnosis of a mental health condition or, indeed, may not categorise themselves as mentally ill.

The MBS data may underestimate the number of people with mental health conditions for the following reasons:

- MBS item numbers for GPs do not capture all of the mental health care and support that GPs provide[14]

- consultations with GPs may involve the consideration of mental health issues but not be recorded as a mental health-related consultation

- many people living with mental health conditions do not receive any MBS funded care.

Further, the MBS data does not include other mental health-related service contacts with (for example):

- state, Non-Government Organisation (NGO), or Primary Health Network (PHN) commissioned mental health services

- private mental health services

- mental health services provided by the Aboriginal Health Services Program

- mental health services provided by the Repatriation Pharmaceutical Benefits Scheme

- other community mental health services.

The PBS does not capture private prescriptions or mental health-related medications that public hospital inpatient services provide. Finally, not everyone in Australia (such as overseas students) can access the MBS, and many people with mental illness or prolonged psychological distress do not access any mental health services at all.[15]

On the other hand, the PBS data may overestimate mental health treatment as many medications used for treating mental health conditions are also used for other conditions. For example:

- sedatives such as benzodiazepines (e.g., diazepam) may also be used for sleep or as muscle relaxants

- some antidepressants may be used to treat chronic pain

- mental health medications may be prescribed for other purposes, such as smoking cessation or other reasons

- antipsychotic medications are often used for the treatment of confusion or agitation in people with dementia

- people receiving antipsychotics in the context of advanced dementia are likely to have much higher mortality rates than younger people receiving the same medications for mental health conditions.

This data does not differentiate between people with mild, moderate or severe mental illness, nor does it categorise mental health conditions by diagnosis or impairment. By including many people experiencing mild psychological distress and excluding many with severe mental illness (for the reasons listed above), the analysis may underestimate the true extent of health inequities for people living with mental illness. Sections of the population that are marginalised, disadvantaged or living in rural communities tend to have poorer access to MBS/PBS funded GPs or specialist psychological care; as such, the full impact of sociodemographic factors may not be reflected in the analyses.

The dataset does not identify individuals who accessed mental health-related treatments after being diagnosed with a chronic health condition or terminal illness. People accessing mental health-related treatments after diagnosis of a terminal illness would tend to increase the standardised death rate figures.

Standardisation of mortality rates

This analysis has used the ABS recommended method to calculate standardised death rates.[1, 5] (Further information on the methodology is provided in Appendices 3 and 4.) With the ageing of the Australian population, changes in the population profile influence standardised death rate calculations.[5] The standardised death rate is designed to enable comparison, but with the changing population structure, it can become less representative of the 'crude rate' or the 'actual rate'. It is not a significant concern when comparing sections of the population within the same period. Finally, this data has not been standardised for rurality, disadvantage or sex. The impact of these factors is examined and reported in Section 4.

Despite these limitations, using large national datasets brings great value in monitoring public health impact, trends, patterns and differences across population groups. It also provides a valuable indicator of progress in addressing the health equity and life expectancy gap for people living with mental illness.

2. MBS and PBS usage

In 2016, the total Australian national Census sample population was 23,717,418. Of this population, 5,028,044 people (21.2%) accessed MBS and/or PBS mental health-related treatments in the 2016 calendar year. The breakdown of the number of people who accessed MBS, PBS, or both MBS and PBS is presented in Figure 5.
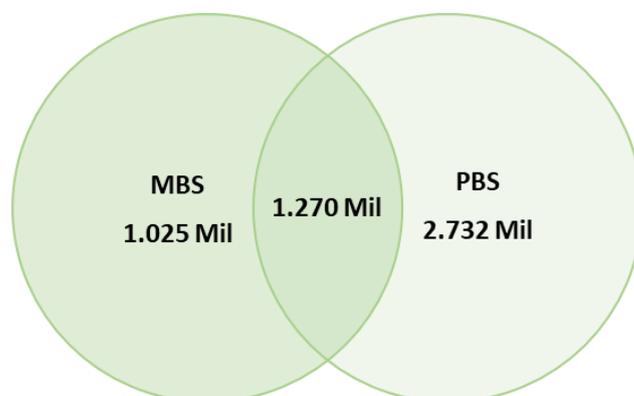
FIGURE 5 *Persons accessing MBS and/or PBS mental health-related services and medications in 2016.*

After age 24 years, the segment of the population who accessed mental health-related treatments in 2016 was significantly older than that of the total Australian population (see Figure 6). Due to the relationship between age and mortality, where death rates increase with increasing age, unless otherwise specified, the mortality rates presented in this report have been age-standardised[5] to allow for comparisons between people who accessed mental health-related treatments and the total population. Additional information on age-standardisation method appears in Appendix 3.
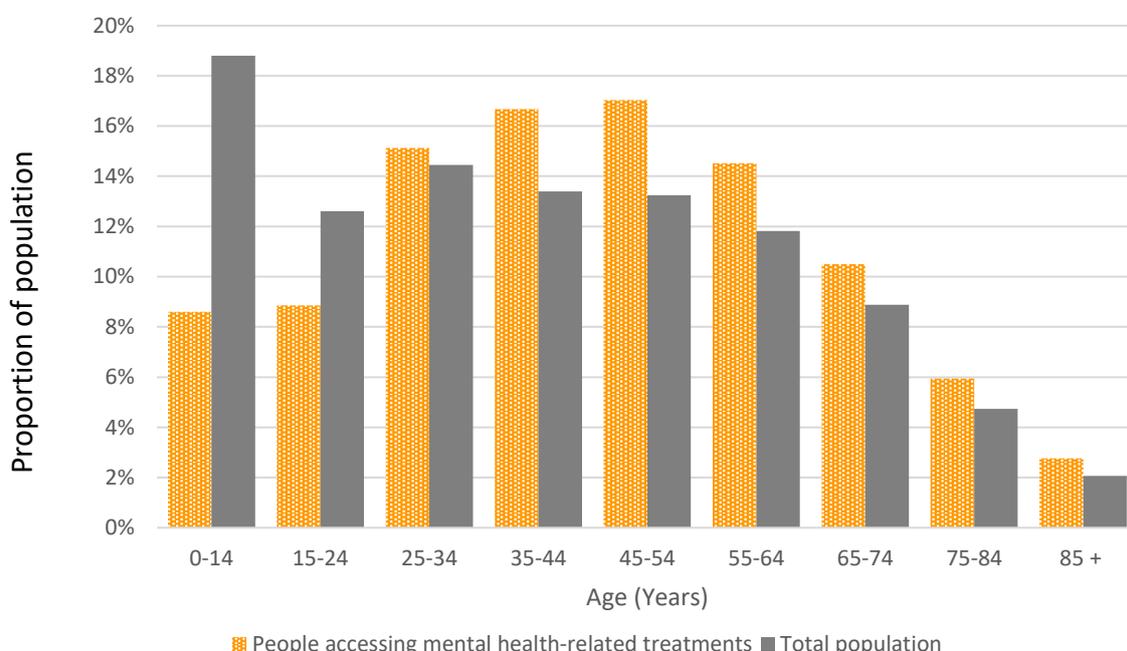
FIGURE 6 *The age structure for persons who accessed mental health-related treatments and total population.*

A more detailed description of the population characteristics of this dataset appears in Appendix 5.

3. Mortality of persons who accessed MBS and/or PBS subsidised mental health-related treatments in 2016

This section presents the mortality data by underlying cause of death and for the total population. Part A of this section presents the data for people aged between 15 and 74.

Part B presents data for people of all ages. Presenting the data for two different age ranges has been done to align with the ABS (2017) report on the mortality of people using mental health services and prescription medications.[2] A subsequent report will compare the mortality patterns across these two datasets.

3a. Mortality of people aged 15–74 years

People aged 15–74 are expected to be healthier. Children under 15 rarely die of mental health-related conditions or have not yet had time to develop chronic conditions. Limiting the analysis to the 15–74 years age group reduces the impact of early childhood accidents and infections and reduces the impact on the analyses of people with dementia (which increases markedly after the age of 74). Reporting mortality data for people aged 15–74 also aligns with the reporting conventions of the OECD.[3]

Standardised death rates by gender and overall – ages 15–74

The death rates reported in this section have been age-standardised. They have not been standardised for other factors, such as socioeconomic status. (These factors are considered in Section 4). Age-standardised death rates provide a means of comparing mortality risk between groups controlling for age-related variations.

Overall, the standardised death rate of people aged 15–74 accessing mental health-related treatments was **2.4 times** that of the total Australian population in that age group. The standardised death rate for males accessing mental health-related treatments (13.8 deaths per 1,000 population) was over twice that for females accessing mental health-related treatments (6.6 deaths per 1,000 population). For men accessing mental health-related treatments, the standardised death rate was almost 2.8 times that of the total population (see Figure 7).
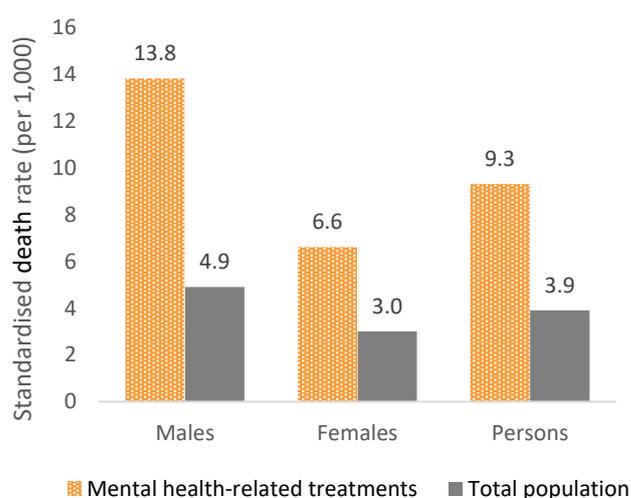

FIGURE 7 *Standardised death rates of persons who accessed mental health-related treatments and total population (ages 15–74).*

Standardised death rates by cause of death – ages 15–74

The comparative standardised death rates for the top 15 causes of death are presented in Figure 8. For every cause of death listed in Figure 8 (except transport accidents), the risk of death is over twice that of the total population. The standardised death rate ratios for breast cancer and lower respiratory disease were respectively 2.8 and 2.4 times higher than the total population. For some of the less common causes of death, such as dementia and diseases of the urinary system, the relative standardised death rate ratios were even higher.

Standardised death rate (per 100,000)

Cause of death	People accessing mental health-related treatments	Total Population
Trachea, bronchus and lung cancer	63.2	28.0
Ischaemic heart diseases	47.6	30.5
Chronic lower respiratory diseases	39.5	16.4
Intentional self-harm	35.8	16.5
Breast cancer	32.4	11.7
Colon, sigmoid, rectum and anus cancer	28.7	13.1
Blood and lymph cancer	24.4	12.0
Cirrhosis and other diseases of liver	21.0	8.3
Diabetes	19.9	9.7
Cerebrovascular diseases	16.4	11.3
Brain cancer	14.5	5.6
Prostate cancer	12.3	5.3
Transport accidents	11.1	6.5
Skin cancer	10.3	4.9
Dementia	10.1	2.8

FIGURE 8 *Standardised death rates by major causes of death (ages 15–74).*

It is noteworthy that 56% (n=16,174) of all deaths of people accessing mental health treatments fall in the 'all other causes'[h] category. For reasons of figure scale, these are not presented in Figure 8, but are listed in Table 1. While each of the other causes of death accounted for fewer deaths than the 15 most common causes, the standardised death rate ratio for the 'all other causes' category (2.4) is equal to or greater than all the underlying causes listed in Figure 8, except breast cancer and cirrhosis of the liver.

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[h] The 'all other causes' category comprised other International Classification of Diseases (ICD10) categories of disease other than the top 15 most common causes of death. A more complete list of these categories is available in the associated data tables.[16.]

A note on standardised death rate ratio calculations

The standardised death rate ratios for people accessing mental health-related treatments are conservative estimates. They compare the standardised death rate of people accessing mental health-related treatments with the total population. This method has been used to enable a direct comparison with the ABS report on the 2011 dataset (*Mortality of people using mental health services and prescription medicines*)[2] and to align with OECD reporting conventions.[3]

However, the total population rate includes the elevated risk of death for people using mental health-related treatments. People accessing mental health-related treatments aged 15–74 comprised 22.2% of the total population and, therefore, significantly impact the total population standardised death rate. Table 1 shows the standardised death rate ratios when comparing people who accessed mental health-related treatments to those who did not access such treatments. The data in Table 1 illustrate the impact of using these two benchmarks for comparison. For instance, the overall standardised death rate ratio increases from 2.4 to 4.8, with similar increases in rate ratios for breast cancer (2.8 to 6.1), chronic lower respiratory disease (2.4 to 5.4), prostate cancer (2.3 to 5.1), and intentional self-harm (2.2 to 3.9).

Number of deaths by cause of death – ages 15–74

In this dataset, 15,628,559 people were aged 15–74. Of these, 3,464,381 people (22.2%) accessed mental health-related treatments and they accounted for 49.3% (28,912) of all 58,650 annual deaths for this age cohort. Figure 9 presents the number of deaths ranked by the 15 most common causes of death for people who accessed mental health-related treatments and for the rest of the population. The underlying cause of death refers to the disease or injury that initiated the events leading directly to death (see ICD 10). The number and percentage of the main causes of death appear in Table 1.

Number of deaths
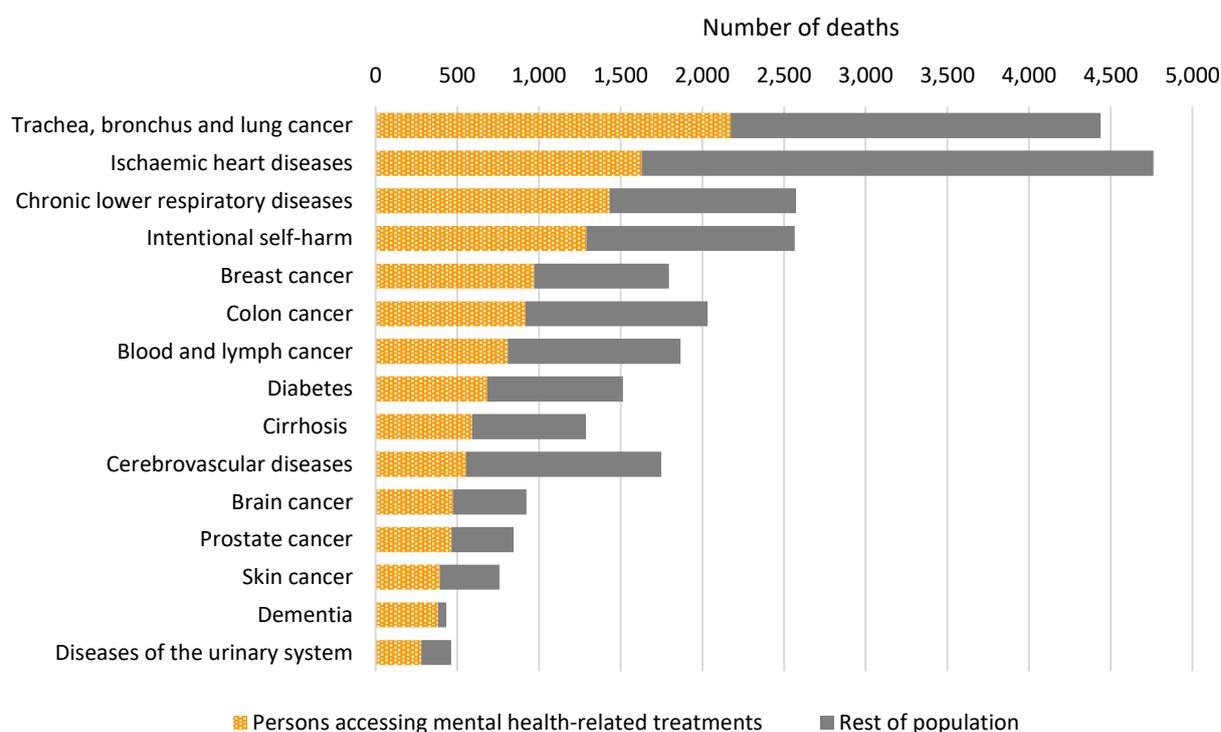
FIGURE 9 Causes of mortality: people who accessed mental health-related treatments and rest of population (ages 15–74).

The leading cause of death for people aged 15–74 accessing mental health-related treatments was trachea, bronchus and lung cancer (hereafter, for brevity referred to as 'lung cancer') accounting for 2,174 deaths and 7.4% of all deaths for people accessing mental health-related treatments. The second most frequent cause of death was ischaemic heart disease with 1,629 deaths, representing 5.6% of deaths for people accessing mental health-related treatments. Ischaemic heart disease is a condition that affects the supply of blood and oxygenation of the heart. Chronic lower respiratory disease was the third most frequent cause of death, responsible for 1,431 deaths and accounting for 4.9% of deaths for people accessing mental health-related treatments. Chronic lower respiratory diseases are a group of conditions affecting the lungs, including chronic obstructive pulmonary diseases, asthma, and emphysema. Intentional self-harm was the fourth most common cause of death for this age group, with 1,290 deaths accounting for 4.5% of deaths for people who access mental health-related treatments. Breast cancer was responsible for 972 deaths of people accessing mental health-related treatments. In females, this accounted for 7.4% of deaths of people accessing mental health-related treatments. Colon cancer was responsible for 918 deaths, or 3.2% of people accessing mental health-related treatments.

Excess deaths by cause of death – ages 15–74

The previous section presented the raw numbers of deaths for people who accessed mental health-related treatments. While this is important, it is also instructive to consider how many of these deaths are potentially avoidable. Excess mortality measures the extent to which the number of deaths exceeds that normally expected for a group over a given period.[4] The OECD uses this figure as an indicator of health equity and potentially preventable deaths.[3]

To calculate excess mortality, the numerator is the standardised death rate of people who accessed mental health-related treatments and the denominator is the overall mortality rate for the total population.[3] In this analysis, the rates were reverted to counts of death. Expected deaths are the number of deaths that would occur if the standardised death rate in a group were equal to the total population rate. Excess deaths were calculated by subtracting the number of expected deaths from the total number of deaths for people who accessed mental health-related treatments.[i]

There were 28,912 deaths of people who accessed mental health-related treatments over the data collection period. Of these, 16,658 (58%) were <u>excess</u> deaths. **This equates to 46 excess deaths per day**. Figure 10 presents the 15 most common causes of mortality for people who accessed mental health-related treatments. Each bar in Figure 10 has two segments. The first segment represents the number of expected deaths of people accessing mental health-related treatments. The second segment represents the number of excess deaths. Added together, the two segments represent all deaths of persons accessing mental health-related treatments by disease category.
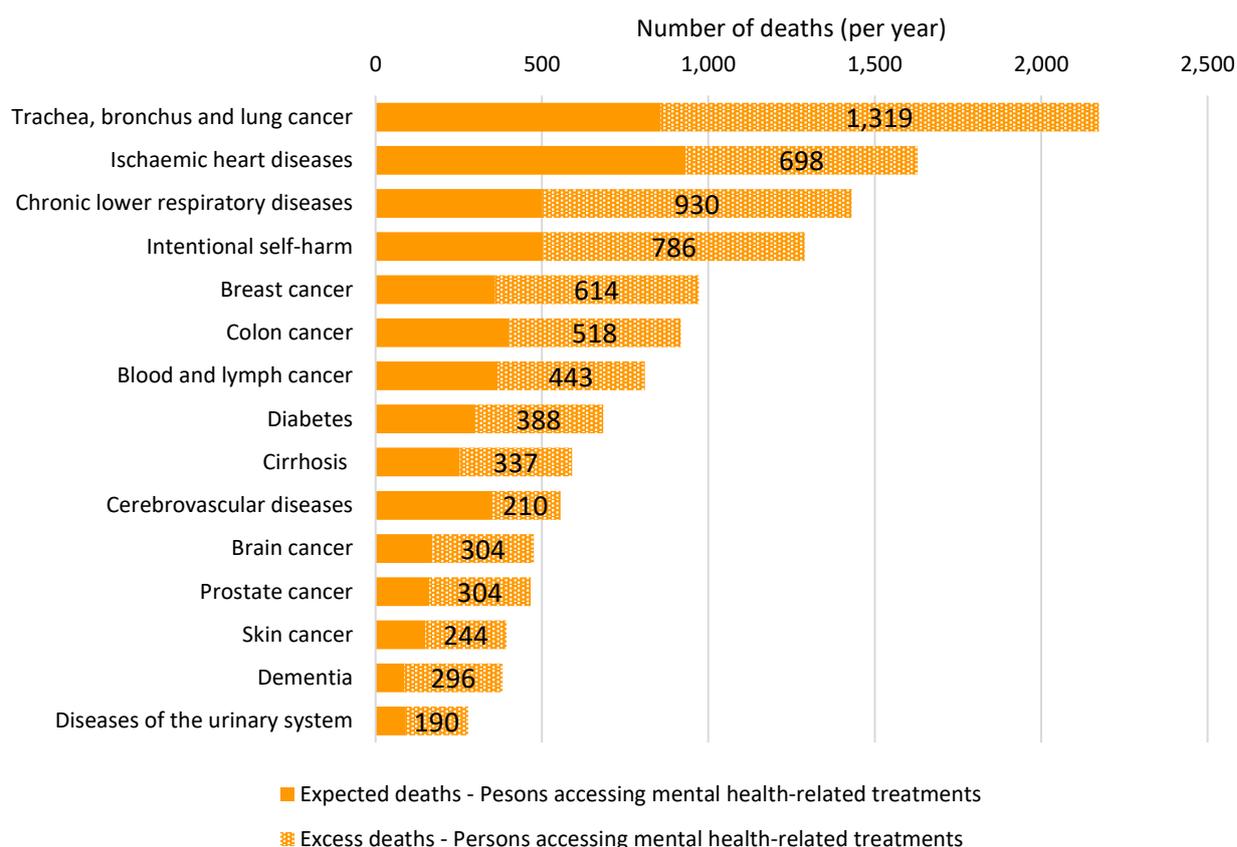

FIGURE 10 *Expected, excess and total (= expected + excess) annual deaths of people who accessed mental health-related treatments, by cause of death (ages 15–74).*

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[i] The AIHW and ABS use slightly different methodologies to estimate potentially avoidable mortality and excess mortality. The differences in these approaches are discussed in more detail in Appendix 3.

The 15 most common causes of death for people accessing mental health-related treatments listed in Figure 10 totalled 7,174 excess deaths (20 per day). Excess deaths from 'all other causes' not listed in Figure 10 amounted to 9,399 or 26 deaths per day.

The largest numbers of excess deaths were for lung cancer and chronic respiratory disease (1,319 and 930 deaths, respectively). The next most common causes of excess deaths were intentional self-harm (786), ischaemic heart disease (698) and breast cancer (614). The breast cancer rates are notable as this cancer is predominantly found in only half of the population (females).

Overall, excess deaths comprised almost **3 in every 5** of all deaths of people accessing mental health-related treatments. With respect to the total Australian population, the excess deaths of people who accessed mental health-related treatments **comprised 28.4% of all deaths** (ages 15–74).

Excess deaths caused by cancer, circulatory, and respiratory diseases

For the entire population (ages 15–74) cancer is the most common cause of death, responsible for 20,202 annual deaths (See Figure 11). For people who accessed mental health-related treatments, **cancer** was also the predominant cause of death, with 13,128 deaths in total, and of these, 8,608 were excess deaths (**24 excess deaths per day**).

The 7 most common types of cancer for people who accessed mental health-related treatments (lung, breast, colon, blood, brain, prostate and skin cancer) were responsible for **10 excess deaths per day.** For people who accessed mental health-related treatments, diseases of the circulatory system and the respiratory system, accounted for 1,593 and 1,326 excess deaths, or 4.4, and 3.6 excess deaths per day, respectively.
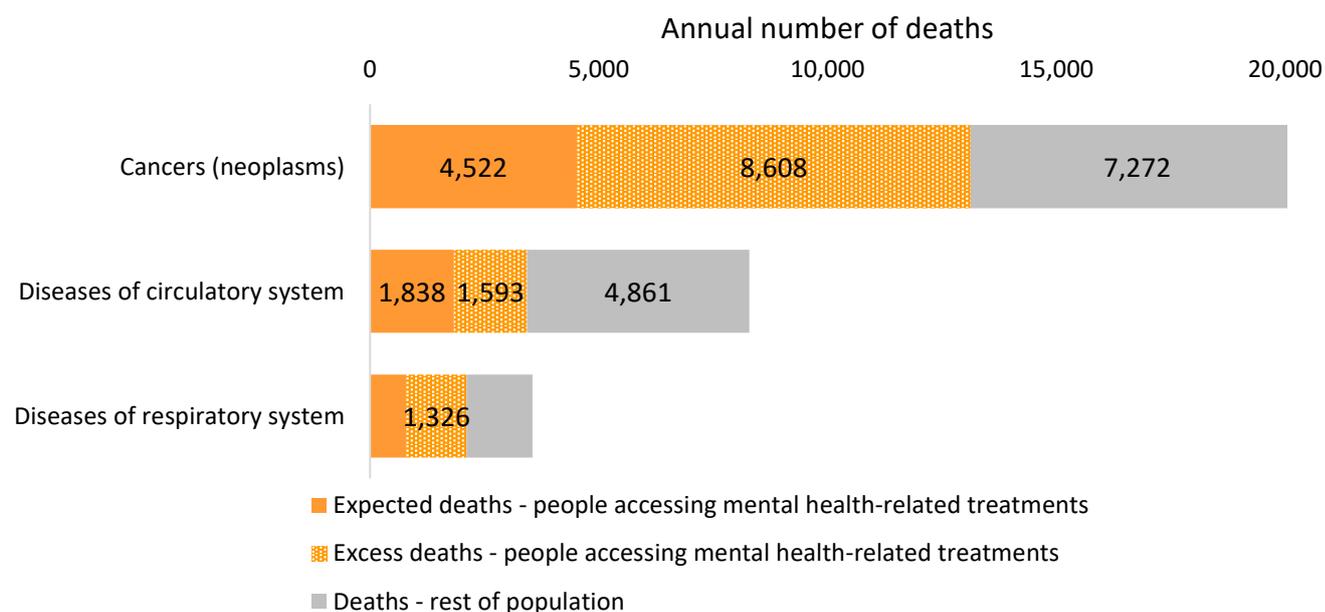

FIGURE 11 *Expected, excess and total (= expected + excess + rest) deaths by major disease category (ages 15–74).*

TABLE 1 *Annual number of deaths, proportions of deaths, standardised death rate and rate ratio for people who access mental health-related treatments, the rest of the population and the total population – ages 15–74.*

Underlying cause of death(a)	Persons who accessed MBS and/or PBS subsidised mental health-related treatments N = 3,464,381			Rest of Australian population N = 12,164,178			Mental health compared to rest of population		Total population N = 15,628,559			Mental health compared to total population	
	Deaths			Deaths			Rate		Deaths			Rate	
	n	%	rate(b)	n	%	rate(b)	ratio	diff	n	%	rate(b)	ratio	diff
Lung cancer	2,174	7.4	63.2	2,264.1	7.6	14.3	4.4	48.9	4,438	7.5	28.0	2.3	35.2
Ischaemic heart diseases	1,629	5.6	47.6	3,132.5	10.5	20.0	2.4	27.6	4,762	8.1	30.5	1.6	17.1
Chronic lower respiratory diseases	1,431	4.9	39.5	1,143.5	3.8	7.3	5.4	32.2	2,574	4.3	16.4	2.4	23.1
Intentional self-harm	1,290	4.5	35.8	1,276.8	4.3	9.1	3.9	26.7	2,567	4.4	16.5	2.2	19.3
Breast cancer	972	3.0	32	823.5	2.8	5.3	6.1	27.1	1,795	3.1	11.7	2.8	20.7
Colon cancer	918	3.2	28.7	1,115.3	3.8	7.2	4.0	21.5	2,033	3.5	13.1	2.2	15.6
Blood and lymph cancer	809	2.8	24.4	1,058.0	3.6	6.8	3.6	17.6	1,867	3.2	12.0	2.0	12.4
Diabetes	684	2.5	19.9	830.5	2.8	5.3	3.8	14.6	1,515	2.6	9.7	2.1	10.2
Cirrhosis	591	2.0	21.0	696.5	2.3	4.5	4.7	16.5	1,287	2.2	8.3	2.5	12.7
Cerebrovascular diseases	555	1.9	16.4	1,192.9	4.0	7.7	2.1	8.7	1,748	3.0	11.3	1.5	5.1
Prostate cancer	466	1.6	12.3	379.1	1.3	2.4	5.1	9.9	845	1.4	5.3	2.3	7.0
Dementia	382	1.3	10.1	51.1	0.2	0.3	33.7	9.8	433	0.7	2.8	3.6	7.3
Diseases of the urinary system	279	1.0	7.9	184.3	0.6	1.2	6.6	6.7	463	0.8	2.9	2.7	5.0
Transport accidents	236	0.9	11.1	683.3	2.3	4.8	2.3	6.3	920	1.6	6.5	1.7	4.6
Heart failure	180	0.6	5.6	217.8	0.7	1.4	4.0	4.2	398	0.7	2.5	2.2	3.1
Other behavioural disorders	143	0.5	5.5	138.4	0.5	0.9	6.1	4.6	281	0.5	1.9	2.9	3.6
All other causes	16,174	55.9	524	14,550.5	48.9	94.5	5.5	429	30,724	52.4	222	2.4	302
Total persons	**28,912**	**100**	**933**	**29,737.8**	**100**	**193**	**4.8**	**740**	**58,650**	**100**	**389**	**2.4**	**544**

a. *See ICD 10 for full description and definition.* B. *Age-standardised death rate (per 100,000).*

TABLE 2 Annual excess deaths, expected deaths and total deaths by cause of death – ages 15–74.

Underlying cause of death(a)	Persons who accessed MBS and/or PBS subsidised mental health-related treatments N = 3,464,381					Rest of population N = 12,164,178		Total Australian population N = 15,628,559	
	Deaths n	Death rate (b)	Expected deaths n	Excess deaths n	Excess deaths per day	Deaths n	Death rate (c)	Deaths n	Death rate (b)
Trachea, bronchus and lung cancer	2,174	63.2	855	1,319	3.6	2,264	18.6	4,438	28.0
Ischaemic heart diseases	1,629	47.6	932	698	1.9	3,132	25.8	4,762	30.5
Chronic lower respiratory diseases	1,431	39.5	501	930	2.5	1,143	9.4	2,574	16.4
Intentional self-harm	1,290	35.8	504	786	2.2	1,277	10.5	2,567	16.5
Breast cancer	972	32	357	614	1.7	823	6.8	1,795	11.7
Colon, anus cancer	918	28.7	400	518	1.4	1,115	9.2	2,033	13.1
Blood and lymph cancer	809	24.4	367	443	1.2	1,058	8.7	1,867	12.0
Diabetes	684	19.9	296	388	1.1	831	6.8	1,515	9.7
Cirrhosis	591	21.0	254	337	0.9	696	5.7	1,287	8.3
Cerebrovascular diseases	555	16.4	345	210	0.6	1,193	9.8	1,748	11.3
Prostate cancer	466	12.3	162	304	0.8	379	3.1	845	5.3
Dementia	382	10.1	86	296	0.8	51	0.4	433	2.8
Diseases of the urinary system	279	7.9	89	190	0.5	184	1.5	463	2.9
Transport accidents	236	11.1	199	38	0.1	683	5.6	920	6.5
Heart failure	180	5.6	76	103	0.3	218	1.8	398	2.5
Other behavioural disorders	143	5.5	58	85	0.2	138	1.1	281	1.9
All other causes(d)	16,174	524	6,775	9,399	25.8	14,550	120	30,724	222
Total persons	**28,912**	**933**	**12,254**	**16,658**	**45.6**	**29,738**	**244**	**58,650**	**389**

a. See ICD 10 for full description and definition.　　b. Age-standardised death rate (per 100,000).　　c. Unadjusted death rate (per 100,000).

3b. Mortality – all ages

This section presents the overall and underlying cause of death data for <u>all ages.</u> This has been done in recognition of the relatively greater life expectancy in Australia compared to many other countries, the value of the lives of those aged 75 and over, and the possible impact in later years of earlier health inequities. Further, this report is a replication of the 2017 ABS report[2] on the mortality of people using mental health-related treatments, which also reports all age data. While the reasons for presenting the analysis of people aged 15–74 were discussed in Section 3a, the health and life expectancy of older adults are also important.

People aged 75 years and above account for two-thirds (66.9%) of all deaths in Australia. The data in this section reflects this.

Standardised death rates – all ages

The overall standardised death rate for people using mental health-related treatments (12.5 deaths per 1,000 population) was 1.7 times that of the total Australian population (7.2 deaths per 1,000 population). For males using mental health-related treatments, the age-standardised rate (17.4 deaths per 1,000 population) was 2.4 times the total male population rate (7.4 deaths per 1,000 population). Females had one-and-a-half times the standardised death rate of the total female population (10.4 compared to 7.0 deaths per 1,000 population) (see Figure 12). The age-standardised death rate for males who accessed mental health-related treatments was 1.7 times that of females. However, the standardised death rate for males and females in the total population was similar (7.4 compared to 7.0).
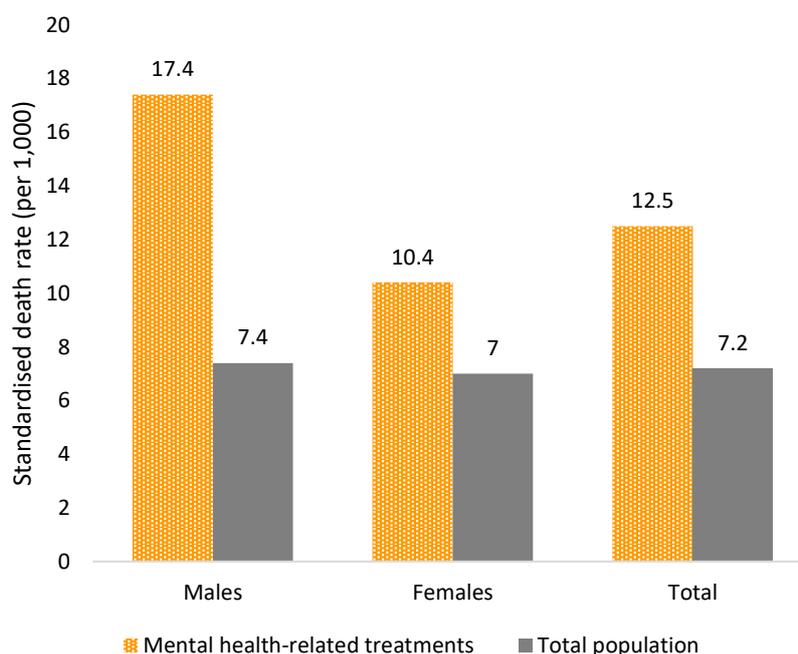

FIGURE 12 *Standardised death rate for people who accessed mental health-related treatments compared to total Australia (all ages).*

Standardised death rates by cause of death – all ages

When considering the cause of death, it is important to note that the likelihood of causes of death changes with age. For example, injuries and infections account for a greater proportion of deaths among children compared with causes of death such as heart disease, cancer, and dementia, which account for a greater proportion of deaths among older persons. As such, the death rates used in this report have been age-standardised. Unless otherwise stated, standardised death rates are presented as deaths per 100,000 population.[j]

The standardised death rates of people who accessed mental health-related treatments are presented in numerical order for the top 15 causes in Figure 13. The data revealed a significant difference in the standardised death rates (and number of deaths) between underlying causes ranked 1–5 and those ranked 6–12. While the top 5 causes of death all have standardised death rates above 70 per 100,000, for causes ranked 6–12, the standardised death rates drop to the low 40s and 30s.

While ischaemic heart disease clearly shows the highest standardised death rate, the highest rate ratios were evident for chronic lower respiratory disease, lung cancer and dementia (2.3, 2.1 and 2.4 times, respectively). The standardised death rate for ischaemic heart disease for people who accessed mental health-related treatments was 118.0 per 1,000 population, 1.4 times higher than for the total Australian population (84.7 deaths per 100,000 population). The standardised death rate for chronic lower respiratory diseases for persons who access mental health-related treatments was 76.6 per 100,000 population, 1.9 times higher than that of the total Australian population (40.2 deaths per 100,000 population).

The standardised death rate for cerebrovascular diseases for persons who accessed mental health-related treatments was 73.9 deaths per 100,000 population, 1.6 times higher than that of the total Australian population (45.7 deaths per 100,000 population). The standardised death rate for dementia for persons who access mental health-related treatments was 73.4 per 100,000 population, 1.8 times higher than that of the total Australian population (41.3 deaths per 100,000 population).

The standardised death rate for lung cancer for persons who accessed mental health-related treatments was 70.4 deaths per 100,000 population, 1.8 times higher than that of the total Australian population (39.5 deaths per 100,000 population). The standardised death rate for diabetes for persons who access mental health-related treatments was 37.0 deaths per 100,000 population, 1.6 times higher than that of the total Australian population (22.7 deaths per 100,000 population).

The standardised death rates for breast cancer, intentional self-harm and cirrhosis of the liver are all over twice that of the total population (2.2 times). Breast cancer and intentional self-harm warrant mention here as the standardised death rate for persons accessing mental health-related treatments was 2.2 times higher than that of the total Australian population. The standardised death rate for breast cancer deaths for people accessing mental health-related treatments was 32.4 deaths per 100,000 population compared with 14.6 deaths per 100,000 for the total Australian population. For suicide, the standardised death rate was 29.7 deaths per 100,000 population compared to 13.3 deaths per 100,000 for the total Australian population.

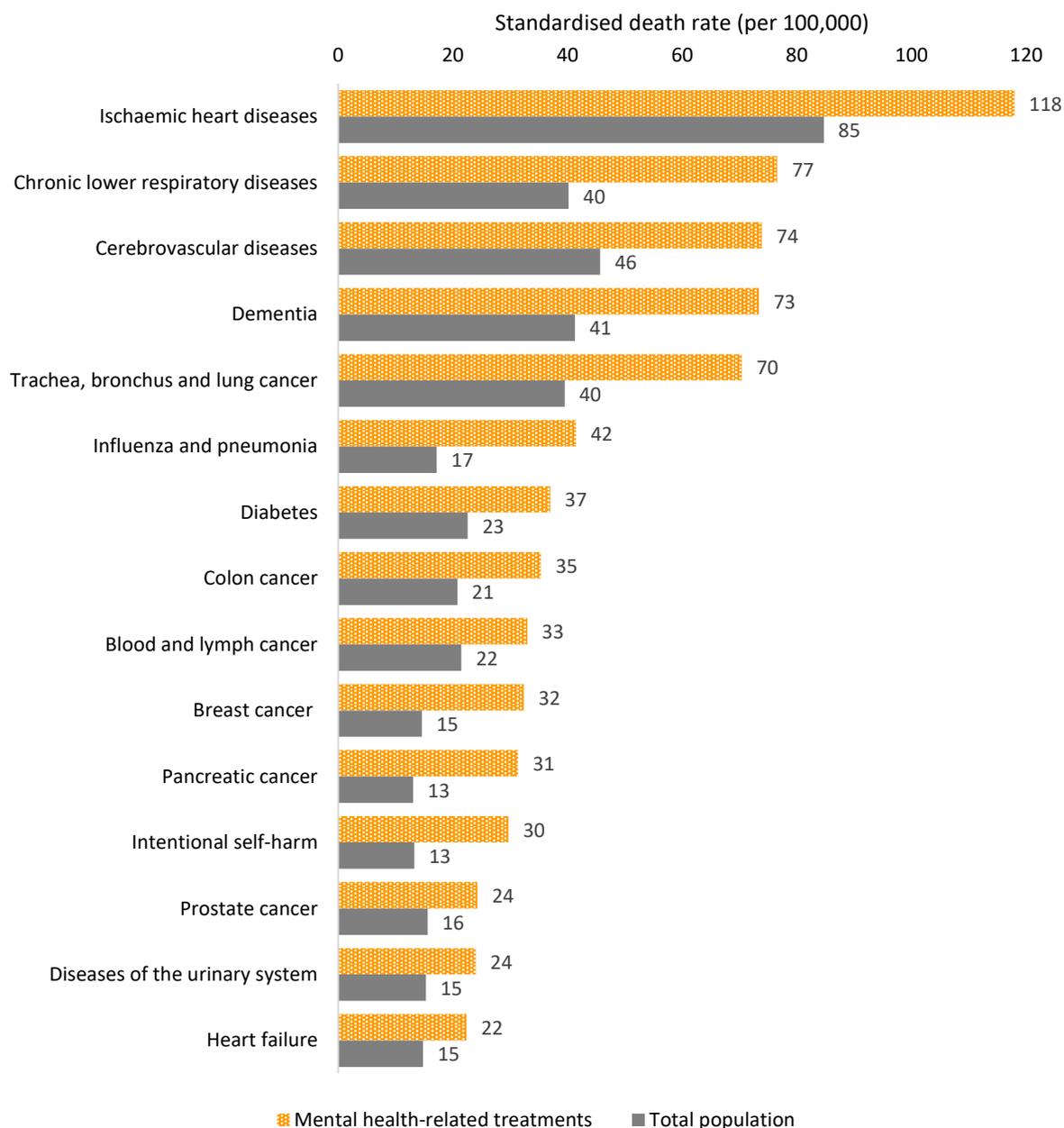[j] The age standardisation methodology can be viewed in Appendix 3.

FIGURE 13 *Standardised death rate for top 15 causes of death (all ages).*

The relative risk ratio for people accessing mental health-related treatments across all other causes of death was 2.2 times that of the total population. Although none of the individual diseases in the 'all other causes' category accounted for a large proportion of total deaths, the relative risk ratio (2.2) was as high or higher than any of the top 15 causes of death (see Figure 13).

As discussed in Section 3a, the standardised risk ratios for people accessing mental health-related treatments are conservative estimates. Table 3 shows the standardised death rate ratios when comparing the health outcomes of people who accessed mental health-related treatments to those who did not. For instance, the overall standardised death rate ratio increases significantly from 1.7 to 5.8 and similar increases in risk ratios are evident for chronic lower respiratory disease (1.9 to 6.8), intentional self-harm (2.2 to 7.1), breast cancer (2.2 to 6.0) and prostate cancer (1.6 to 4.9).

Number of deaths by cause of death – all ages

This section presents the underlying causes of death of persons who accessed mental health-related treatments in 2016. The underlying cause of death refers to the disease or injury that initiated the events leading directly to death (see ICD 10). Figure 14 presents the number of deaths in descending numerical order of the 15 most frequent causes of death of persons accessing mental health-related treatments. Readers whose main interest is causes of death without reference to mental health-related treatments should refer to the latest causes of death ABS release.[17]

The total population in the data set comprised 23,717,418 people. Of this total, 5,028,044 (21.2%) people accessed mental health-related treatments. There was a total of 161,736 annual deaths of people (all ages) during the reporting period, of which people accessing mental health-related treatments accounted for 87,422 (54%) of total deaths.
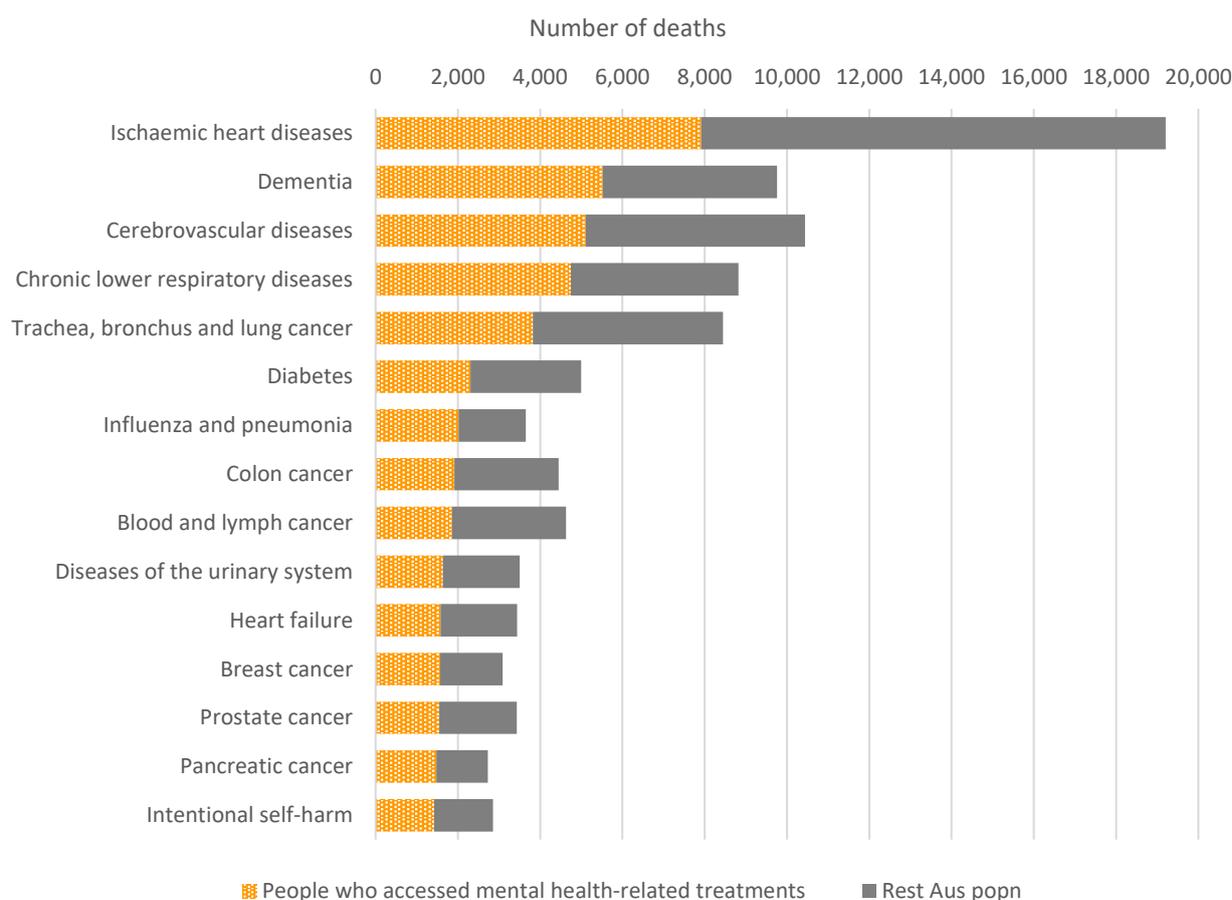

FIGURE 14 *Most common causes of mortality (all ages).*

The leading cause of death of people who accessed mental health-related treatments in 2016 was ischaemic heart disease, with 7,917 deaths (accounting for 9.1% of all deaths of people accessing mental health-related treatments). Ischaemic heart disease is a condition that affects the supply of blood and oxygenation of the heart. It was also the leading cause of death among the total Australian population (19,204 deaths).

Dementia, including Alzheimer's disease (5,523 deaths), was the second leading cause of death for people who accessed mental health-related treatments in 2016, accounting for 6.3% of all deaths among this population. (It accounts for 6.0% of all deaths in the total population.) Dementia is a chronic illness that affects the brain, leading to health complications and often death. It is one of the

most common diseases in the elderly and a major cause of disability. Dementia is the third most common cause of death in the total Australian population (9,756 deaths).

Cerebrovascular diseases were the third leading cause of death for people who accessed mental health-related treatments in 2016 (5,106 deaths or 5.8% of all deaths among this population). Cerebrovascular diseases comprise a range of brain dysfunctions related to the blood vessels that supply the brain, of which stroke is a common type. Most deaths from cerebrovascular diseases are due to stroke. It is the second most common cause of death in the Australian population (10,441, 6.4% of deaths).

Chronic lower respiratory diseases (4,744 deaths) were the fourth leading cause of death for persons who accessed mental health-related treatments in 2016, accounting for 5.4% of all deaths among this population and for the total Australian population (8,823 deaths, 5.5%). Chronic lower respiratory diseases are a group of conditions affecting the lungs, including chronic obstructive pulmonary disease, asthma, and emphysema.

Lung cancer was the fifth leading cause of death for persons who accessed mental health-related treatments in 2016, with 3,820 deaths (accounting for 4.4% of all deaths among this population). For the total Australian population, lung cancer was the fifth most common cause of death. Taken together, these top 5 causes of death for people accessing mental health-related treatments accounted for 27,111 deaths during the reporting period. This equates to 74 people per day.

Diabetes was the sixth most common cause of death for persons accessing mental health-related treatments, accounting for 2,305 (2.6%) of all deaths (5,000 deaths for the total population) and intentional self-harm was the fifteenth most frequent cause of death (1,421 deaths or 1.6% of deaths).

The top 15 causes of death accounted for 44,446 deaths, comprising 53.9% of all deaths of people who accessed mental health-related treatments. All other causes (after the most common 15 causes) accounted for 42,976 or 49.2% of deaths of people who accessed mental health-related treatments.

Taken together, deaths due to the ICD 10 categories of cancers and diseases of the circulatory system (44,985) account for over half (51.5%) of all deaths of people accessing mental health-related treatments; these two disease categories alone account for 123 deaths per day.

Excess deaths by cause of death – all ages

In examining the relative risk of premature death, the OECD uses 'excess mortality' as an indicator of health equity.[3] The numerator is the mortality rate for people accessing mental health-related treatments and the denominator is the overall mortality rate for the general population.[3] While the OECD calculates and reports excess mortality only for people aged 15–74 years (inclusive), this section presents the <u>all age</u> data for the reasons listed at the beginning of Section 3b.

The bars in Figure 15 have two segments. The first shows the number of expected deaths of people who accessed mental health-related treatments. The second indicates the number of excess deaths for people who accessed mental health-related treatments. Together, these first two segments show the total number of deaths of people accessing mental health-related treatments.
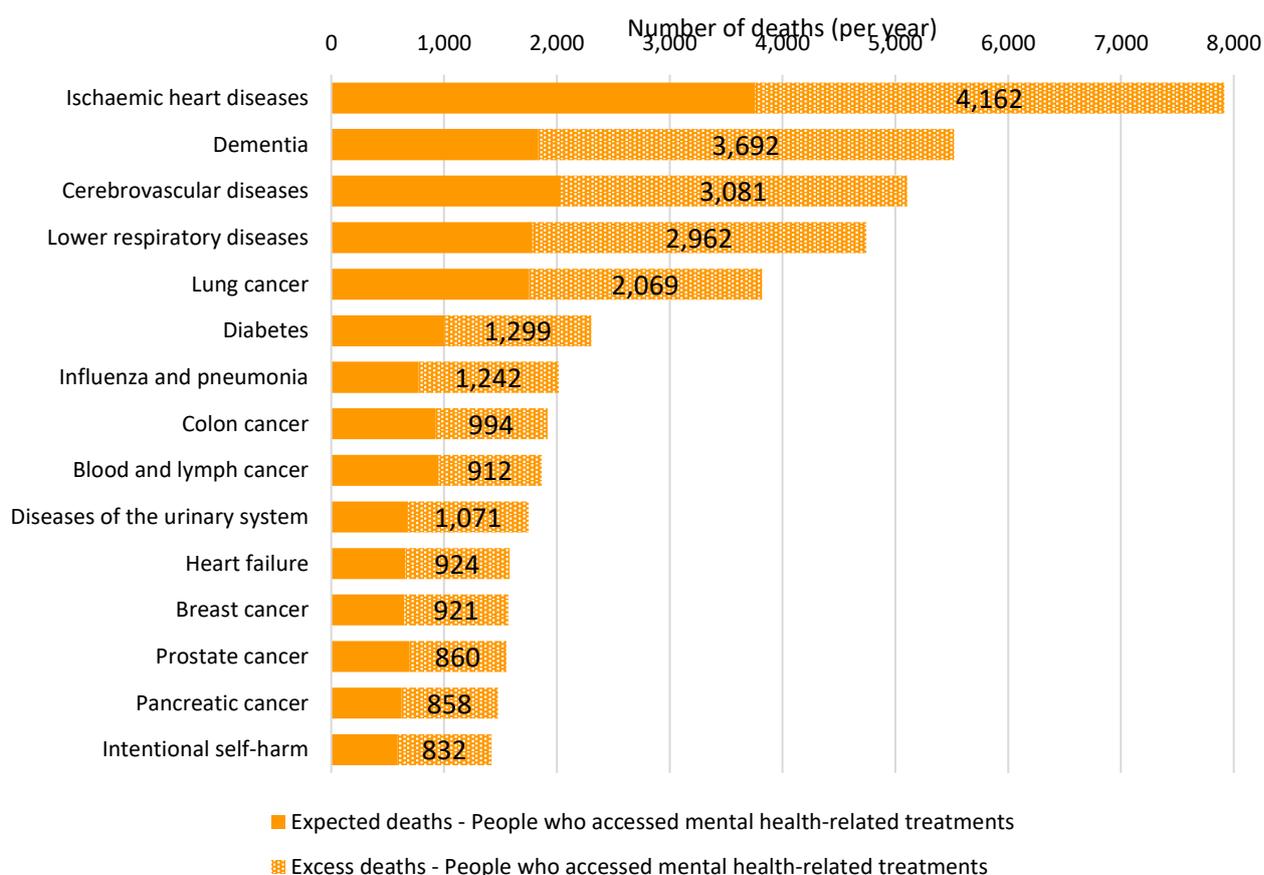

FIGURE 15 *Expected deaths, excess deaths and total (= excess + expected) annual deaths of people who accessed mental health-related treatments by cause of death (all ages).*

Three in five (61.4%) of all deaths for people who accessed mental health-related treatments were excess or potentially preventable deaths. The 5 most common causes of death were <u>each</u> responsible for over 2,000 <u>excess</u> deaths during the data collection period. Ischaemic heart diseases were responsible for over 4,000 excess deaths (11 per day). Dementia, and cerebrovascular diseases, were each responsible for over 3,000 deaths (10.1, 8.4 deaths per day, respectively). Although not specifically referenced in Table 4, influenza and pneumonia were responsible for over 1,242 excess annual deaths.

In total, there were 87,442 deaths of people who accessed mental health-related treatment. Of these, 55,682 were **excess** deaths. This equates to 153 excess deaths per day.

Excess deaths caused by cancer, circulatory, and respiratory diseases

For the entire population, cancer is the most common cause of death, responsible for 42,725 annual deaths (See Figure 16). For people who accessed mental health-related treatments it was also the predominant cause of death, with 23,907 deaths in total, and of these, 14,881 were excess deaths (41 per day**). Excess deaths caused by cancers are responsible for 28% of all excess deaths of people who accessed mental health-related treatments.** The 6 most common types of cancer (lung, colon, blood, breast, prostate and pancreatic) for people who accessed mental health-related treatments were responsible for 18 excess deaths per day.

Diseases of the circulatory system were responsible for 39.726 deaths for the entire population. For people who accessed mental health-related treatments, diseases of the circulatory system accounted for a total of 21,079 deaths and 12,657 of these were excess deaths (35 per day). Circulatory diseases accounted for almost a quarter (23.8%) of all excess deaths for people who accessed mental health-related treatments.

Diseases of the respiratory system were responsible for 14,759 deaths in the entire population. For people who accessed mental health-related treatment, diseases of the respiratory system accounted for 9,295 deaths, and 6,166 of these were excess deaths (17 excess deaths per day). (For comparison, suicide and motor vehicle accidents combined were responsible for 4,042 deaths in the entire population, and of these 1,729 were of people who accessed mental health-related treatments.)

While the raw number of deaths due to diseases of the respiratory system is not as high as the numbers due to cancers and diseases of the circulatory system, the proportion warrants comment. The 21.2% of the population who accessed mental health treatments comprised 62.9% of all deaths in Australia due to diseases of the respiratory system.
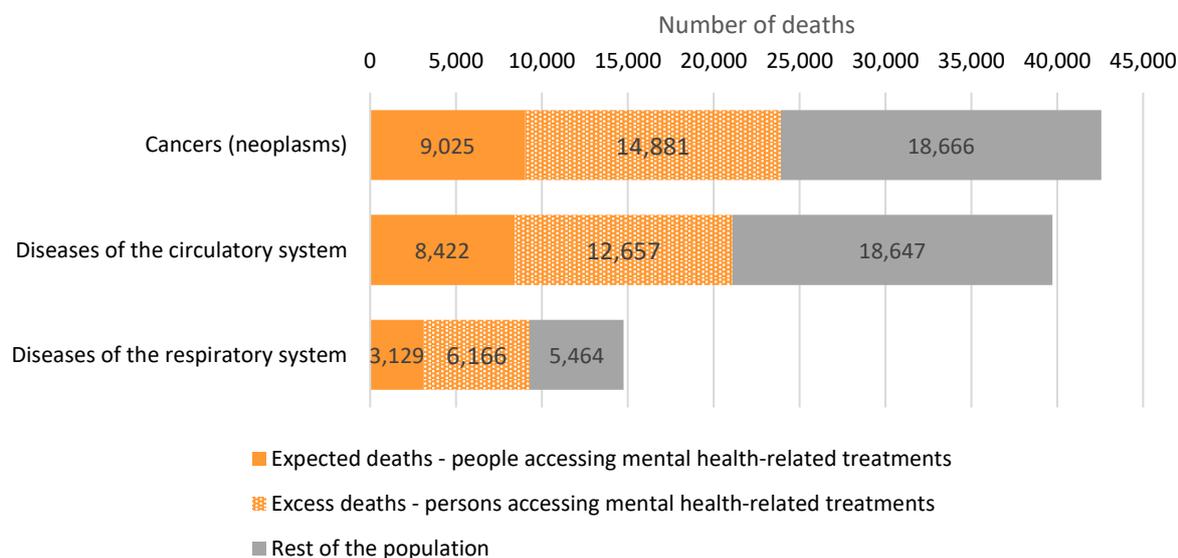

FIGURE 16 *Expected deaths, excess deaths by major disease category (all ages).*

One-third (33.2%) of all Australian deaths were the <u>excess deaths</u> of people who accessed mental health-related treatments.

TABLE 3 *Number of deaths, proportions of deaths, standardised death rate and rate ratios– all ages.*

Underlying cause of death (a)	Persons who access ed mental health-related treatments N = 5,028,044			Rest of Australian population N = 18,689,374			Mental health compared to rest of population		Total population N = 23,717,418			Mental health compared to total population	
	Deaths			Deaths			Rate		Deaths			Rate	
	n	%	rate(b)	n	%	rate(c)	ratio(c)	diff	n	%	rate(b)	ratio	diff
Ischaemic heart diseases	7,917	9.1	118.0	11,286.8	15.2	28.7	4.1	89.3	19,204	11.9	84.7	1.4	33.3
Dementia	5,523	6.3	73.4	4,233.6	5.7	9.6	7.6	63.8	9,756	6.0	41.3	1.8	32.1
Cerebrovascular diseases	5,106	5.8	73.9	5,334.8	7.2	13.2	5.6	60.7	10,441	6.4	45.7	1.6	28.2
Chronic lower resp diseases	4,744	5.4	76.6	4,079.4	5.5	11.3	6.8	65.3	8,823	5.5	40.2	1.9	36.4
Lung cancer	3,820	4.4	70.4	4,628.6	6.2	14.6	4.8	55.8	8,449	5.2	39.5	1.8	30.9
Diabetes	2,305	2.6	37.0	2,694.3	3.6	7.4	5.0	29.6	5,000	3.1	22.7	1.6	14.3
Colon cancer	1,916	2.2	35.4	2,535.6	3.4	8.0	4.4	27.4	4,451	2.8	20.8	1.7	14.6
Blood and lymph cancer	1,865	2.1	33.0	2,764.8	3.7	8.4	3.9	24.6	4,630	2.9	21.5	1.5	11.5
Diseases of the urinary system	1,634	1.9	24.0	1,872.6	2.5	4.7	5.1	19.3	3,506	2.2	15.3	1.6	8.7
Heart failure	1,580	1.8	22.4	1,863.8	2.5	4.5	5.0	17.9	3,444	2.1	14.8	1.5	7.6
Breast cancer	1,568	1.8	32.4	1,522.6	2.0	5.4	6.0	27.0	3,091	1.9	14.6	2.2	17.8
Prostate cancer	1,552	1.8	24.3	1,877.9	2.5	5.0	4.9	19.3	3,430	2.1	15.6	1.6	8.7
Intentional self-harm	1,421	1.6	29.7	1,434.4	1.9	4.2	7.1	25.5	2,856	1.8	13.3	2.2	16.4
Cirrhosis and other diseases of liver	789	0.9	18.8	967.2	1.3	3.9	4.8	14.9	1,756	1.1	8.4	2.2	10.4
Transport accidents	309	0.4	11.3	877.2	1.2	4.8	2.4	6.5	1,187	0.7	9.5	1.2	1.8
Other mental and behavioural disorders	364	0.4	7.6	337.7	0.5	1.2	6.3	6.4	702	0.4	3.3	2.3	4.3
All other causes	45,008	51.5	792.7	26,003	35.0	78.2	10.1	714.5	71,011	43.9	358.3	2.2	434.4
Total persons	**87,422**	**100**	**1,247**	**74,315**	**100**	**216**	**5.8**	**1,031**	**161,736**	**100**	**762**	**1.7**	**716**

a. See ICD 10 for full description and definition.   b. Age-standardised death rate (per 100,000).   c. Death rate – not age-standardised.

TABLE 4 *Standardised death rates, expected and excess deaths for people accessing mental health-related treatments (OECD excess mortality calculation).*

Cause of death (a)	People accessing mental health-related treatments N = 5,028,044					Rest of population N = 18,689,374		Total population N = 23,717,418	
	N	Death rate(b)	Expected deaths	Excess deaths	Excess deaths per day	N	Death rate(c)	N	Death rate(b)
Ischaemic heart diseases	7,917	118	3,755	4,162	11.4	11,287	60.4	19,204	84.7
Dementia	5,523	73	1,831	3,692	10.1	3,188	17.1	8,711	41.3
Cerebrovascular disease	5,106	74	2,026	3,081	8.4	5,335	28.5	10,441	45.7
Chronic lower respiratory disease	4,744	77	1,782	2,962	8.1	4,079	21.8	8,823	40.2
Trachea, bronchus and lung cancer	3,820	70	1,751	2,069	5.7	4,629	24.8	8,449	39.5
Diabetes	2,305	37	1,006	1,299	3.6	2,694	14.4	5,000	22.7
Colon cancer	1,916	35	922	994	2.7	2,535	13.6	4,451	20.8
Blood and lymph cancer	1,865	33	953	912	2.5	2,765	14.8	4,630	21.5
Diseases of the urinary system	1,749	24	678	1,071	2.9	1,382	7.4	3,131	15.3
Heart failure	1,580	22	656	924	2.5	1,864	10.0	3,444	14.8
Breast cancer	1,568	32	647	921	2.5	1,523	8.1	3,091	14.6
Prostate cancer	1,552	24	692	860	2.4	1,878	10.0	3,430	15.6
Intentional self-harm	1,421	30	590	832	2.3	1,434	7.7	2,856	13.3
Cirrhosis	789	0.9	510	279	0.8	1,941	10.4	2,730	11.5
Other behavioural disorders	364	8	146	218	0.6	338	1.8	702	3.3
Transport accidents (V01-V99)	309	11.3	421	-112	-0.3	877	4.7	1,187	9.5
All other causes(d)	45,008	792.1	15,883	29,125	79.8	26,003	139.1	71,011	358.3
Total Persons (d)	**87,422**	**1,247**	**31,740**	**55,682**	**152.6**	**74,315**	**398**	**161,736**	**716**

a. See ICD 10 for full description and definition.   b. Age-standardised death rate (per 100,000).   c. Unadjusted death rate (per 100,000).

4. Characteristics of deaths of persons who accessed MBS and/or PBS subsidised mental health-related treatments

This section presents mortality patterns based on various population characteristics. Part A presents the data for people aged 15–74, while Part B presents data for all ages.

4a. Mortality patterns by population characteristics – Ages 15–74

Rurality

For the total population, the risk of premature death increases with increasing remoteness. However, across all Remoteness Areas, people aged 15–74 who accessed mental health-related treatments showed higher standardised death rates than the total population of the same age. For people from Remote/Very Remote areas of Australia who accessed mental health-related treatments, the standardised death rate was 10.7 deaths per 1,000 population, 2.1 times higher than that of the total population in Remote/Very Remote areas of the same age (5.2 deaths per 1,000 population), and 3.1 times greater than that of the total population living in major cities.
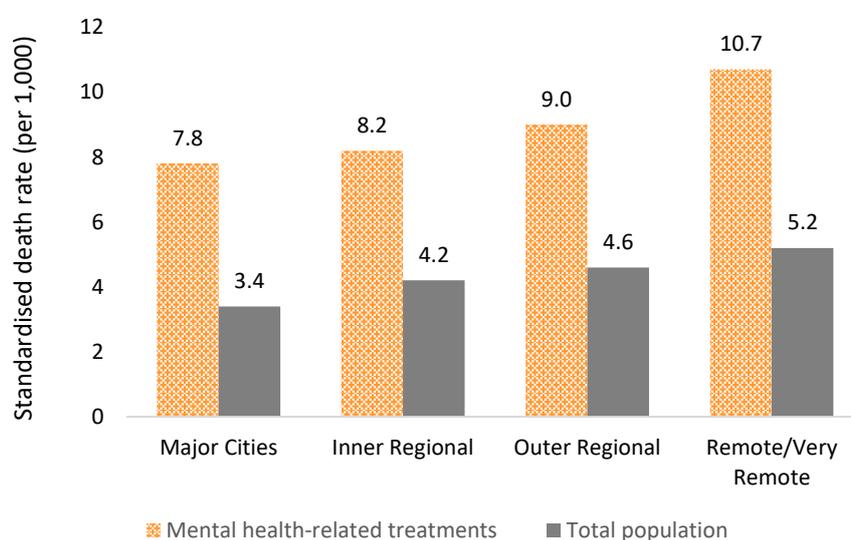

FIGURE 17 *Standardised death rate of people who accessed mental health-related treatments (ages 15–74).*

Socioeconomic disadvantage

For the total population and for people who accessed mental health-related treatments, socioeconomic disadvantage was associated with an increased risk of mortality (see Figure 18). People who accessed mental health-related treatments showed higher standardised death rates in every quintile compared with the total Australian population. People who accessed mental health-related treatments in the most disadvantaged category (quintile 1) had 2.2 times the risk of death than the total population in the same quintile. They had **4 times the risk** of the total population in the quintile 5 category (the highest socioeconomic status) and 3.1 times the risk of premature death than that of the overall total population.
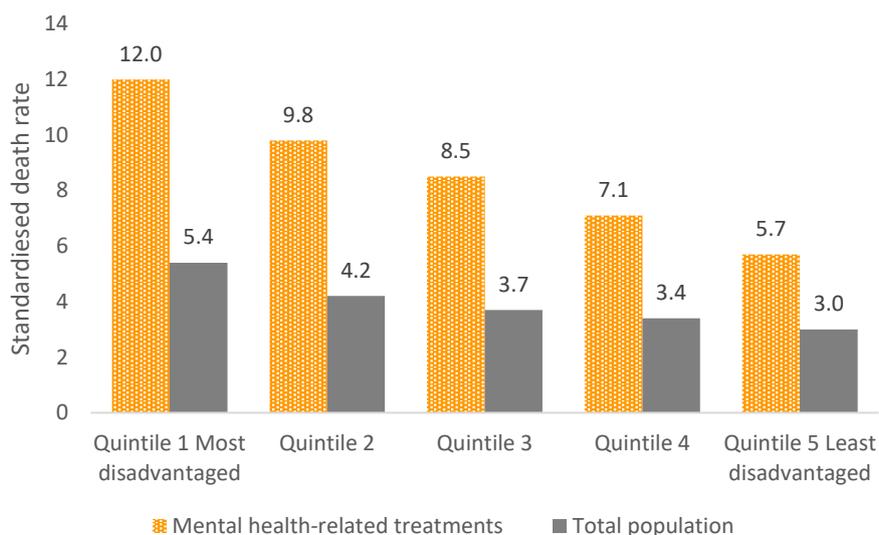
FIGURE 18 *Standardised death rate of people who accessed mental health-related treatments and total population by disadvantage (ages 15–74).*

Country of birth

People born overseas in the total population and in those who accessed mental health-related treatments had a higher standardised death rate than those born in Australia. Those born overseas who accessed mental health-related treatments had 3.2 times the risk of premature death of the total population (born in Australia).
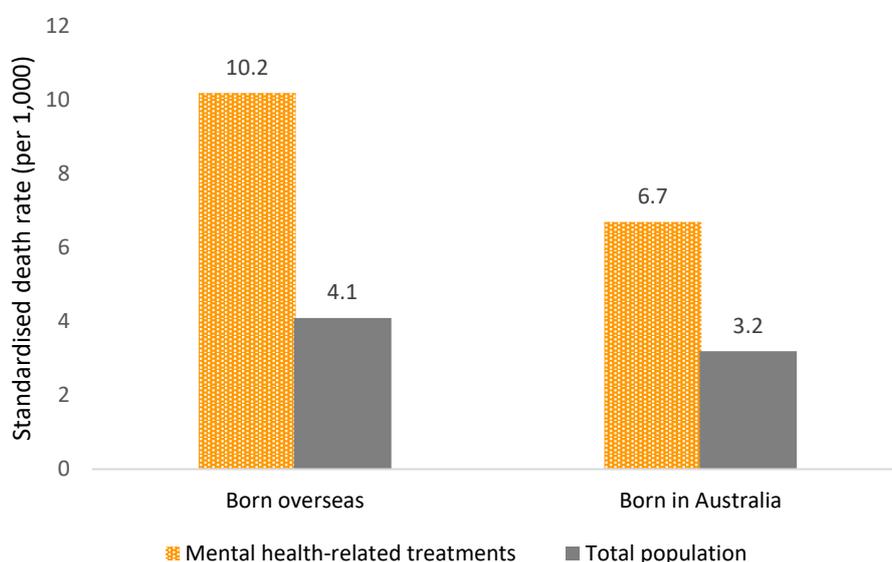

FIGURE 19 *Standardised death rate by country of birth – ages 15–74.*

Number of deaths by treatment type

Of the 28,912 deaths of people who accessed mental health-related treatments, about two-thirds (65.2%, 22,728) had accessed PBS subsidised mental health-related prescription medications. Over a fifth of deaths were of people who had accessed MBS subsidised mental health-related services only (6,184, 21.5%). This is almost twice the proportion (12.1%, see Section 4b) of persons of <u>all ages</u> who accessed MBS subsidised mental health-related services, indicating a higher use of MBS mental health-related services among younger persons than older persons.
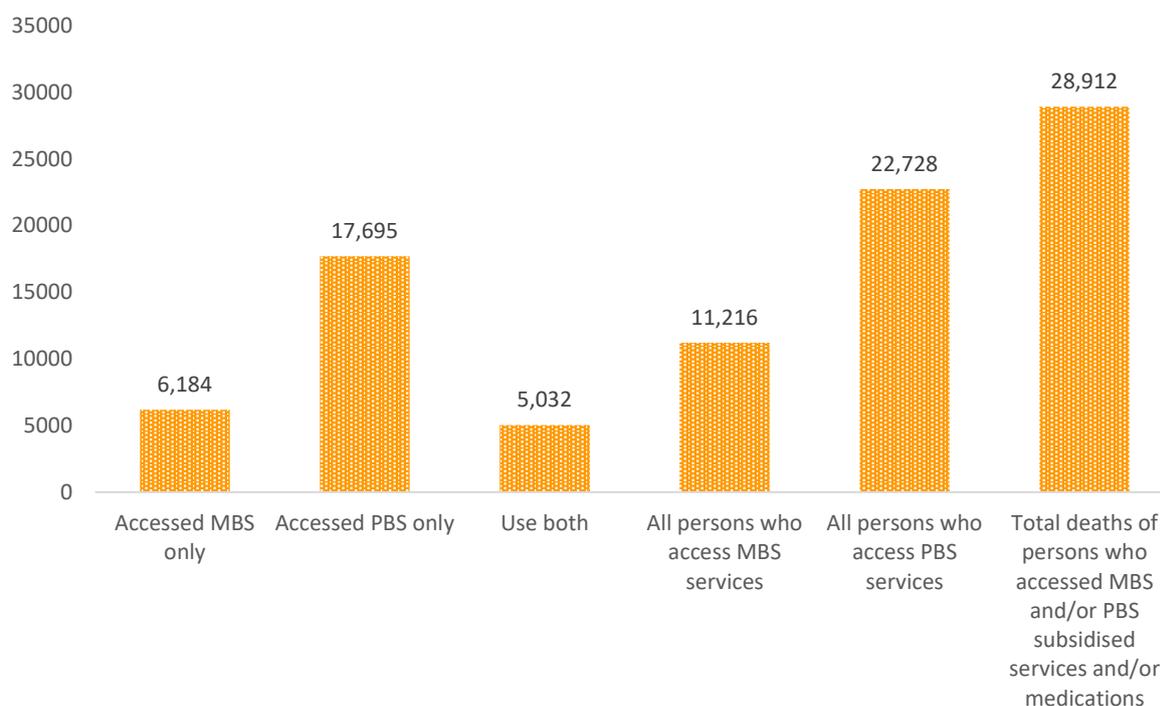

FIGURE 20 *Number of deaths of persons who accessed mental health-related treatments by type of treatment (ages 15-74).*

Figure 21 indicates the type of mental health-related treatments accessed as a percentage of total Australian deaths. Taken together, people accessing mental health-related treatments comprised 49.3% of the total deaths in Australia for people aged 15–74. Almost one in three (30.7%) of <u>all Australian deaths</u> are of persons who accessed antidepressant medications, compared to 9.1% of deaths for persons prescribed antipsychotic medications.
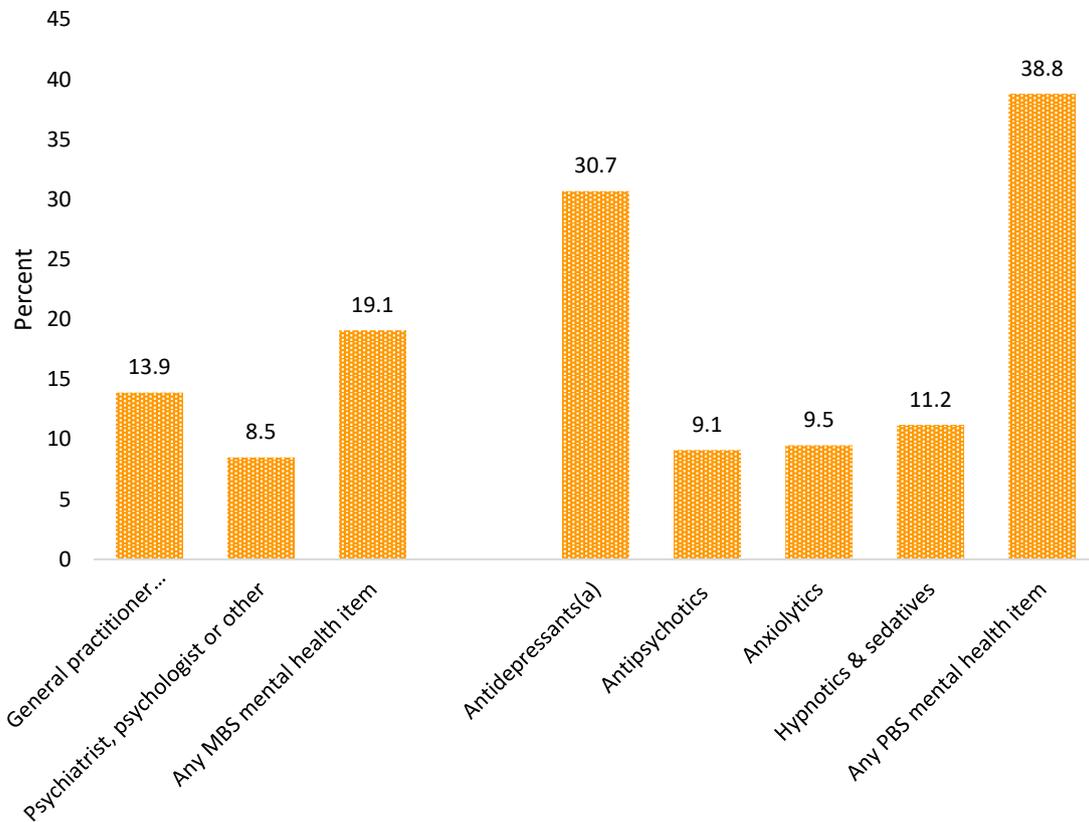

FIGURE 21 *Proportion of all deaths by treatment type (ages 15–74).*

a. *Includes deaths of persons who accessed psychostimulants, agents used for ADHD or nootropics.*

4b.   Mortality patterns by population characteristics – All ages

Age and sex

The number of deaths increases with age. For the total Australian population, persons aged 75 years and over accounted for 66.9% of all deaths. Likewise, people who accessed mental health-related treatments and who were 75 years and older accounted for 66.9% of all deaths for this segment of the population.

There were more deaths of females (46,336) who accessed mental health-related treatments than males (41,078). However, until the age of 84, there were more deaths of males in each age group (see Figure 22). After 85 years, there were significantly more deaths for females who accessed mental health-related treatments than for males. This may be the result of a higher number of male deaths for the preceding 50-year period. This is consistent with the overall pattern of age at death observed for the entire Australian population.
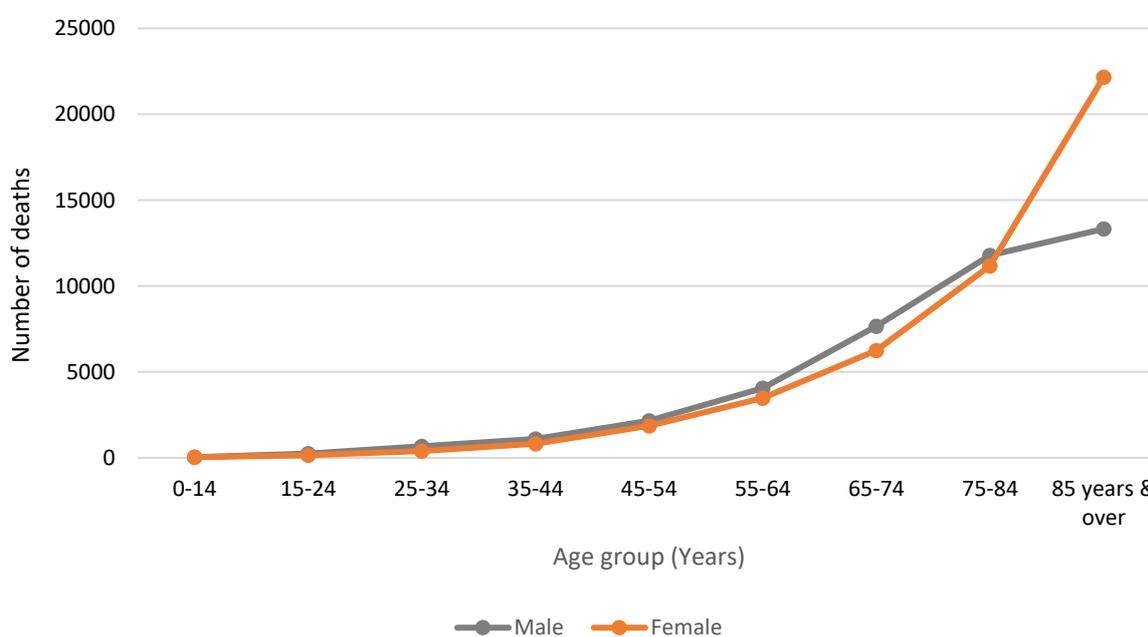

FIGURE 22 *Annual number of deaths of persons who accessed mental health-related treatments in 2016 by sex and age.*

Across all age groups, age-specific death rates were higher among persons who accessed mental health-related treatments. The gap was most evident among persons aged 25–44, where death rates were two to three times higher than the total Australian population aged 25–44 (see Figure 23).
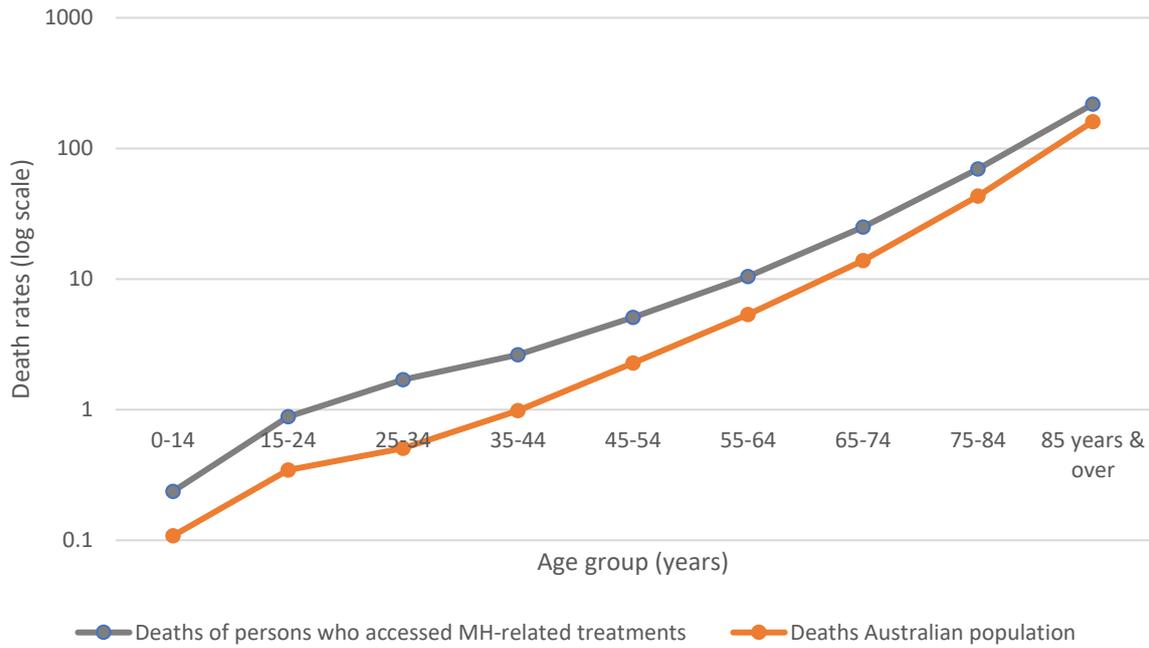
FIGURE 23 *Death rates of persons who accessed mental health-related treatments – total population.*

Rurality

The pattern of higher standardised death rates among persons who accessed mental health-related treatments compared to the total Australian population was repeated across other sociodemographic characteristics such as geography and socioeconomic disadvantage. For persons from Remote/Very Remote and Outer regional areas of Australia who accessed mental health-related treatments, the standardised death rate was 12.6 per 1,000 population, over twice (2.1 times) that of the total population in the same areas (6.0 deaths per 1,000).
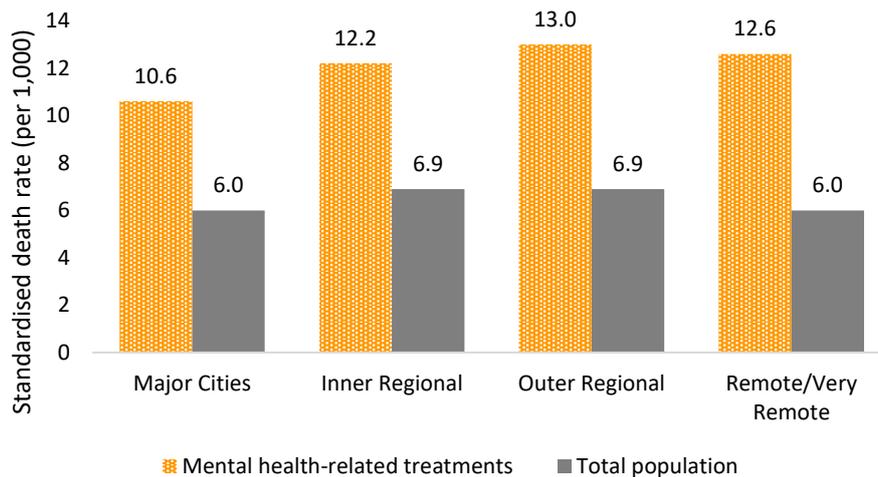

FIGURE 24 *Death rates of people who accessed mental health-related treatments and total Australian remoteness (all ages).*

Socioeconomic disadvantage

Socioeconomic disadvantage was classified using the Socio-Economic Indexes for Areas (SEIFA).[18] The standardised death rate of people who accessed mental health-related treatments and were in the most disadvantaged quintile (quintile 1) was 35% higher than for persons in the least disadvantaged category (quintile 5) (13.5 deaths per 1,000 population vs 10 deaths per 1,000 population, respectively). Figure 25 illustrates the pattern of higher standardised death rates associated with socioeconomic disadvantage across all levels of socioeconomic status. But, within each quintile, the standardised death rate is higher for people who accessed mental health-related treatments.
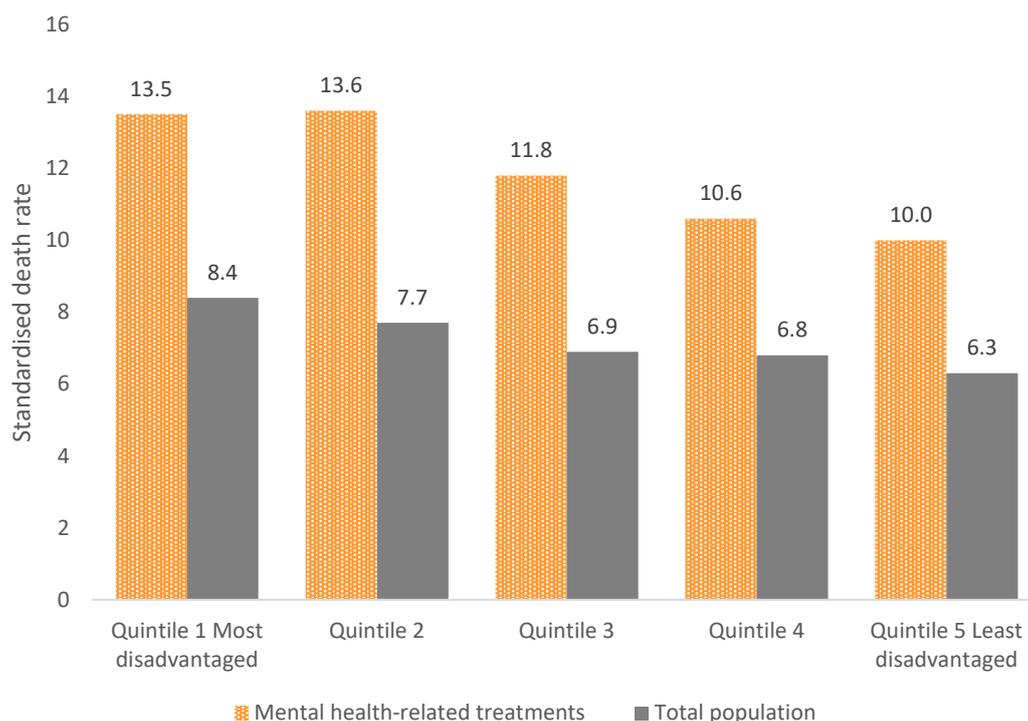

FIGURE 25 *Standardised death rate of persons who accessed mental health-related treatments and total Australian population by socioeconomic disadvantage (all ages).*

Labour force participation

In 2016, the Census provided labour status information for 15,611,044 people aged 15–64. Of this total, 2,204,626 accessed mental health-related treatments. For people who accessed mental health-related treatments, there were 14,995 deaths. In each category of labour force participation, people who accessed mental health-related treatments had a much higher risk of premature death (2–3 times higher risk). People not in the labour force who accessed mental health-related treatments had over **6 times the risk of mortality** than those who accessed mental health-related treatments and were in part-time or full-time employment (6.6 and 6.3 times, respectively). People not in the labour force had a standardised death rate 10 times higher than those employed.
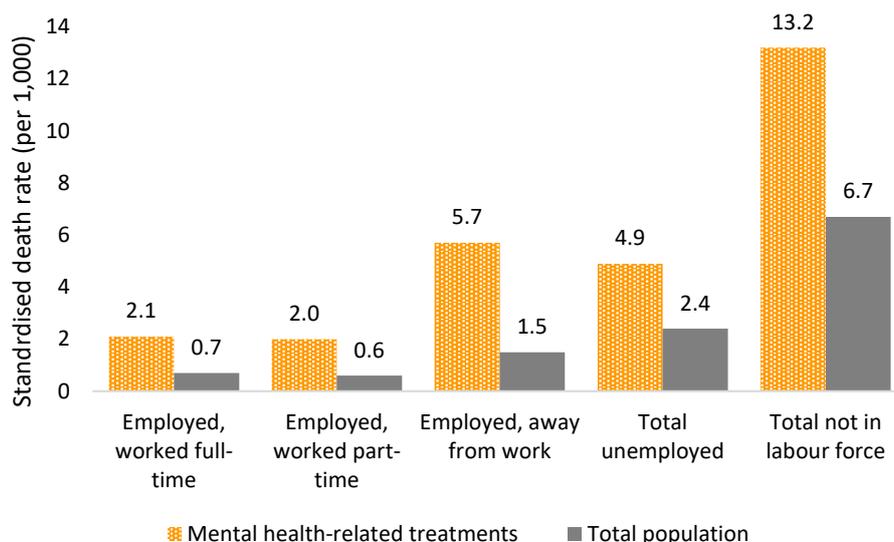
FIGURE 26 *Standardised death rate by labour force participation.*

Country of birth

Both for the total population and for people who accessed mental health-related treatments, people born overseas had a higher mortality rate than those born in Australia. Compared to the total Australian born population, people born overseas who accessed mental health-related treatments had 3.2 times the risk of death. It is interesting to note that people in the general population who were born overseas had a lower standardised death rate than Australian born people who accessed mental health-related treatments. The group of people who were born overseas and accessed mental health-related treatments had the highest standardised death rate (13.7 deaths per 1,000 population).
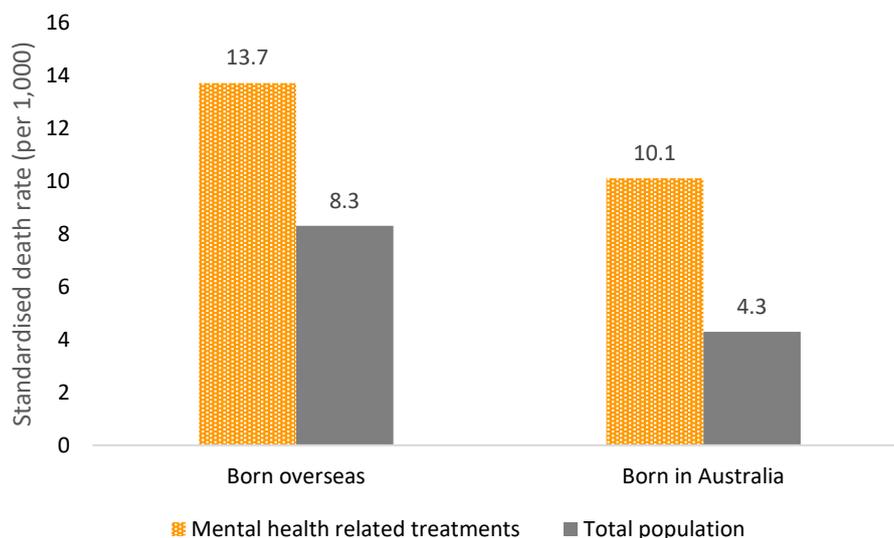

FIGURE 27 *Standardised death rate by country of birth (all ages).*

Number of deaths by treatment type

Of the 87,422 deaths of people who accessed mental health-related treatments, almost 9 in 10 (76,806) had accessed PBS subsidised mental health-related prescription medications. Less than 1 in 8 deaths were of people who had accessed MBS subsidised mental health-related services only (10,616, 12.1%). The proportion usage of MBS services only to PBS medications only is very different to the population aged 15–74.
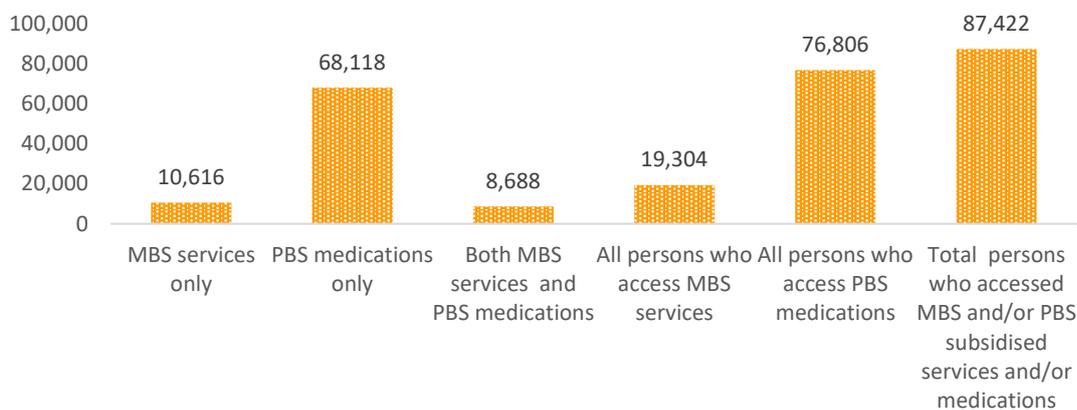
FIGURE 28 Number of deaths of persons who accessed mental health-related treatments by type of treatment.

Figure 29 indicates the type of mental health-related treatments accessed as a percentage of total Australian deaths. Taken together, people accessing mental health-related treatments comprised 54.1% of the total deaths in Australia (all ages). Almost two in five (37.7%) of all Australian deaths are of persons who accessed antidepressant medications, compared to 11.7% of deaths for persons prescribed antipsychotic medications.

FIGURE 29 Percentage of mental health-related treatments accessed by type of treatment (all ages).

a. *Includes deaths of persons who accessed psychostimulants, agents used for ADHD or nootropics.*

5. Summary
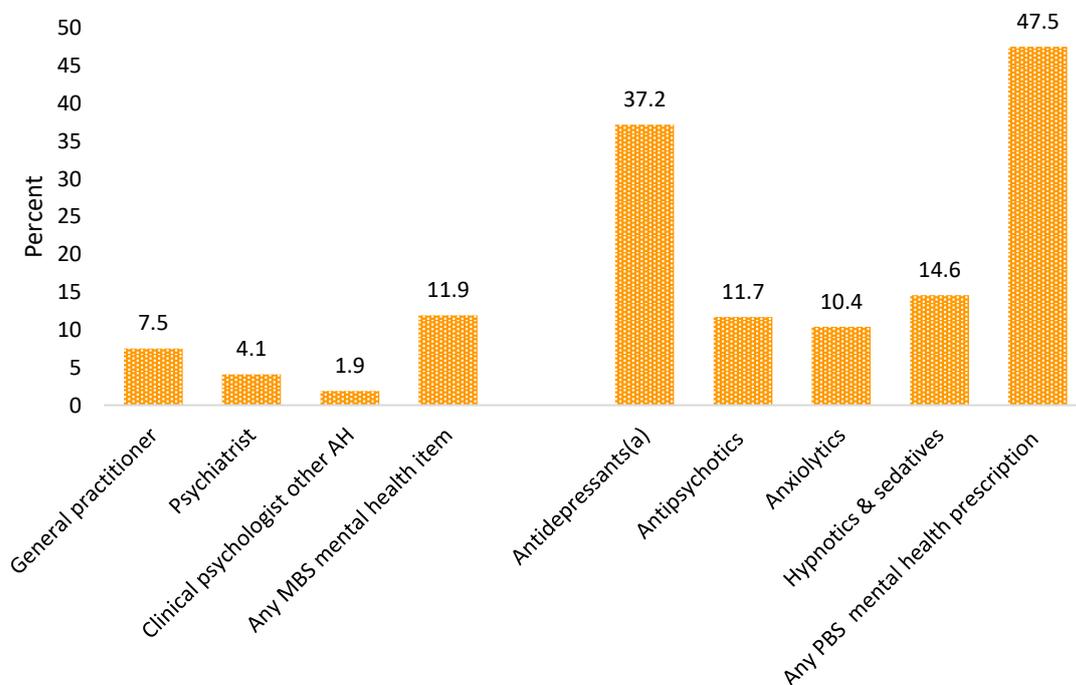
This analysis of linked data from the 2016 Census, MBS, PBS and death register provides insights into the mortality patterns in the total population and among people who accessed mental health-related treatments.

It should first be noted that this report is not related to a small minority group. People who accessed mental health-related treatments comprise a significant proportion (21.2%) of the total population. Compared to the total population, people who accessed mental health-related treatments were found to have:

- **eleven years lower** median age at the time of death

- **2.4 times the premature death rate (**ages 15–74)

- higher rates of mortality for all underlying causes of death.

Excess mortality

Excess mortality is the number of deaths <u>above</u> what would normally be expected in a group based on the total population death rate.[3, 4] Applying this indicator to the Australian population aged 15–74 years showed the **excess deaths** of people who accessed mental health-related treatments:

- accounted for **three in five** (58%) of all deaths in this group

- comprised **28% of all Australian deaths**

- were responsible for **46 deaths per day**

- were responsible for **24 cancer-caused deaths per day.**
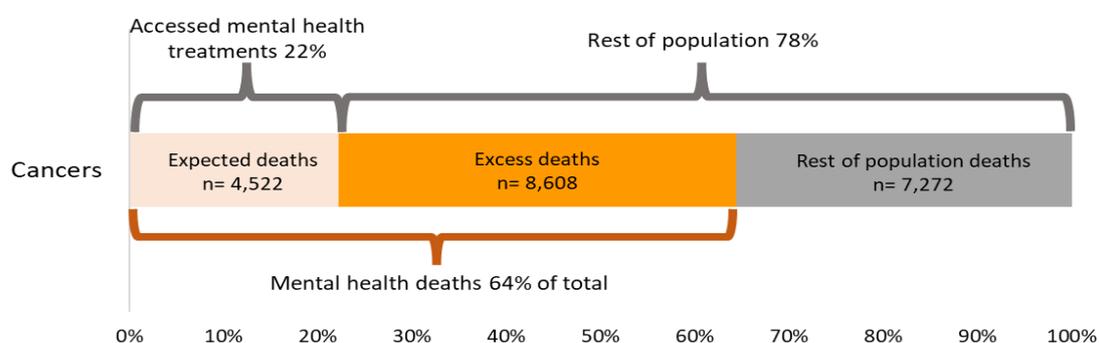
FIGURE 30. *Number and proportions of cancer-caused deaths (ages 15–74).*

The impact of covariates

This data should be considered with caution, as known covariates of life expectancy such as socioeconomic status, workforce participation, rurality and ethnicity have not been controlled for statistically. The relationships between mental health, physical health and sociodemographic factors are complex and multidirectional. This report presents the mortality outcome data for a group of people who live and embody the dynamic co-existence of these determinants of health and wellbeing.

Rurality, place of birth, age and socioeconomic status were all found to have a significant impact on mortality outcomes for people who accessed mental health-related treatments and the total population. While these factors (combined with issues of service access, medication use, stigma and systemic discrimination) all interact to affect health and the risk of premature death, this data underscores the need for additional research into the causes of the significant health disparity for people living with a mental health condition.

Future directions

Many factors such as stigma, discrimination, diagnostic overshadowing, the impact of the (mental) illness itself, medication side-effects and access to services have been postulated as contributing to the life expectancy gap for people living with mental illness.[19, 20] Further research is needed to help inform public health, primary health and clinical interventions to improve the physical health and increase the life expectancy of people living with mental illness.[21]

Further work in the following areas is suggested:

- Analysis of mortality patterns by state/territory and/or PHN to examine variations related to differences in geography, demography and service systems.

- Investigation into the interactions of socioeconomic and demographic factors with mental health, service access and premature mortality.

- Detailed exploration of mortality patterns by the more common causes of death, such as circulatory diseases, respiratory diseases and specific cancers.

- Calculation of the potential productivity gains and return on investment of public health interventions such as targeted cancer screening, CVD screening, smoking cessation support, and funded vaccination for people living with mental illness.

- Focused analysis of mortality patterns in groups at higher risk, such as those with low socioeconomic status, those born overseas, and those living in rural communities.

- Commit to five-yearly reporting on this dataset to provide a system-wide measure of Australia's progress in reducing the life expectancy gap for people living with mental illness.

- Consider the policy and service provision implications of this data to inform actions to reduce the premature death of people with mental health conditions and to address the health inequalities for people living with mental health conditions.

Conclusion

The premature mortality of people living with mental illness has been known for over 25 years.[22, 23] Research findings on the poor physical health and reduced life expectancy of people with mental health conditions have been replicated thousands of times in every continent,[24] and summarised in over 100 meta-analyses and systematic literature reviews.

This analysis of the mortality of people using mental health services and prescription medications for the Australian population provides insight into the extent of this public health problem. It highlights the number of preventable deaths from common chronic diseases such as cancer, circulatory disease, and respiratory disease that warrant further attention and investigation.

The data presented in this report provides a statistical glimpse of the embodied experience of many living with mental illness, their families, carers and supporters as they interact with the physical health and mental health systems in our country. Finally, it quantifies the opportunities to address the substantial health inequities experienced by significant proportion of the population: the twenty two percent of Australians living with a mental health condition.

6.   Appendices

Appendix 1. Crisis support services

24 hours, 7 days

Lifeline: 13 11 14

Suicide Call Back Service: 1300 659 467

Beyond Blue: 1300 224 636

MensLine Australia: 1300 789 978

Kids Helpline: 1800 551 800

13YARN: 13 92 76

For further information, see Mental health resources.

Appendix 2. Mental health-related services: MBS and PBS mental health-related items

MBS SUBSIDISED MENTAL HEALTH-RELATED SERVICES

Provider	Item group	MBS Group & Subgroup	MBS item numbers
Psychiatrists	Initial consultation new patient(a)	Group A8	296, 297, 299
	Patient attendances—consulting room	Group A8	291(a), 293(a), 300, 302, 304, 306, 308, 310, 312, 314, 316, 318, 319
	Patient attendances—hospital	Group A8	320, 322, 324, 326, 328
	Patient attendances—other locations	Group A8	330, 332, 334, 336, 338
	Group psychotherapy	Group A8	342, 344, 346
	Interview with non-patient	Group A8	348, 350, 352
	Telepsychiatry	Group A8	353, 355, 356, 357, 358, 359(b), 361(b), 364, 366, 367, 369, 370
	Case conferencing		855, 857, 858, 861, 864, 866
	Electroconvulsive therapy(c)	Group T1, Subgroup 13	14224
	Referred consultation for assessment, diagnosis and development of a treatment and management plan for autism or any other pervasive developmental disorder (PDD)(d)	Group A8	289
General Practitioners	GP Mental Health Treatment Plan—accredited	Group A20, Subgroup 1	2710(a)(f), 2715(g), 2717(g)
	GP Mental Health Treatment Plan—non-accredited(a)	Group A20, Subgroup 1	2700(g), 2701(g), 2702(g)
	GP Mental Health Treatment Plan—other	Group A20, Subgroup 1	2712(a), 2713(a), 2719(g)(h)
	Focused Psychological Strategies	Group A20, Subgroup 2	2721, 2723, 2725, 2727
	Family Group Therapy	Group A6	170, 171, 172
	Electroconvulsive therapy(i)	Group T10	20104
	3 Step Mental Health Process—GP(j)	Group A18, Subgroup 4	2574, 2575, 2577, 2578
	3 Step Mental Health Process—other medical professional(j)	Group A19, Subgroup 4	2704, 2705, 2707, 2708

Clinical Psychologists	Psychological Therapy Services(a)	Group M6	80000, 80005, 80010, 80015, 80020
Other Psychologists	Enhanced Primary Care	Group M3	10968
	Focused Psychological Strategies (Allied Mental Health)(a)	Group M7	80100, 80105, 80110, 80115, 80120
	Assessment and treatment of PDD(c)	Group A10	82000, 82015
	Follow-up allied health service for Indigenous Australians(k)	Group M11	81355
Other Allied Health Providers	Enhanced Primary Care—mental health worker	Group M3	10956
	Focused Psychological Strategies (Allied Mental Health)—occupational therapist(a)	Group M7	80125, 80130, 80135, 80140, 80145
	Focused Psychological Strategies (Allied Mental Health)—social worker(a)	Group M	80150, 80155, 80160, 80165, 80170
	Follow-up allied health services for Indigenous Australians—mental health worker(k)	Group M11	81325

(a) Item introduced 1 November 2006.
(b) Item introduced 1 November 2007.
(c) Item may include services provided by medical practitioners other than psychiatrists.
(d) Item introduced 1 July 2008.
(e) Item introduced 1 January 2010.
(f) Item discontinued after 31 October 2011.
(g) Item introduced 1 November 2011.
(h) Item discontinued after 30 April 2012.
(i) Item is for the initiation of anaesthesia for electroconvulsive therapy and includes services provided by medical practitioners other than GPs.
(j) Item discontinued after 30 April 2007.
(k) Item introduced 1 November 2008.
Source: Australian Institute of Health and Welfare, 2014, 'Data Source' , *Medicare-subsidised mental health-related services,* viewed 13 August 2014,
< https://mhsa.aihw.gov.au/services/medicare/data-source/>

PBS SUBSIDISED MENTAL HEALTH-RELATED PRESCRIPTION MEDICATIONS

Code	Medication groups	Code	Medication subgroup
N05	**Psycholeptics – A group of drugs that tranquillises (central nervous system depressants)**		
N05A	Antipsychotics – drugs used to treat symptoms of psychosis (a severe mental disorder characterised by loss of contact with reality, delusions and hallucinations), common in conditions such as schizophrenia, mania and delusional disorder	N05AA	Phenothiazines with aliphatic side-chain
		N05AB	Phenothiazines with piperazine structure
		N05AC	Phenothiazines with piperidine structure
		N05AD	Butyrophenone derivatives
		N05AE	Indole derivatives
		N05AF	Thioxanthene derivatives
		N05AH	Diazepines, oxazepines, thiazepines and oxepines
		N05AL	Benzamides
		N05AX	Other antipsychotics
N05B	Anxiolytics – drugs prescribed to treat symptoms of anxiety	N05BA	Benzodiazepine derivatives
N05C	Hypnotics and sedatives – hypnotic drugs are used to induce sleep and treat severe insomnia. Sedative drugs are prescribed to reduce excitability or anxiety	N05CD	Benzodiazepine derivatives
N06	**Psychoanaleptics – A group of drugs that stimulates the mood (central nervous system stimulants)**		
N06A	Antidepressants – drugs used to treat the symptoms of clinical depression	N06AA	Non-selective monoamine reuptake inhibitors
		N06AB	Selective serotonin reuptake inhibitors
		N06AF	Monoamine oxidase inhibitors, non-selective

		N06AG	Monoamine oxidase A inhibitors
		N06AX	Other antidepressants
N06B	Psychostimulants, agents used for ADHD and nootropics – agents used for attention-deficit hyperactivity disorder and to improve impaired cognitive abilities (nootropics)	N06BA	Centrally acting sympathomimetics

Source: Australian Institute of Health and Welfare, 2014, 'Medicare-subsidised mental health-related prescriptions', viewed 13 August 2014, < https://mhsa.aihw.gov.au/services/medicare/>

Appendix 3. Explanatory notes

Mortality of people using mental health services and prescription medications: Analysis of 2016 data

This section describes the population included in the current report as well as the linkage rates and the calculation of weights. The dataset includes 4,959,128 records, as shown in Figure 31. The dataset consisted of:

- 4,881,596 records for persons who accessed mental health-related treatments in 2016. The records were linked to the 2016 Census, representing 5,028,044 persons who accessed subsidised mental health-related treatments in 2016, with a linkage rate of 96.7%.

- 163,546 death registration records for deaths between 10 August 2016 and 27 September 2017 (inclusive), which were linked to the 2016 Census. This represents 183,449 death registrations in the population for the study period, with a linkage rate of 89.2%.

The mental health and death populations discussed above include a subset of 86,014 deaths for persons who accessed mental health-related treatments between 10 August 2016 and 27 September 2017.
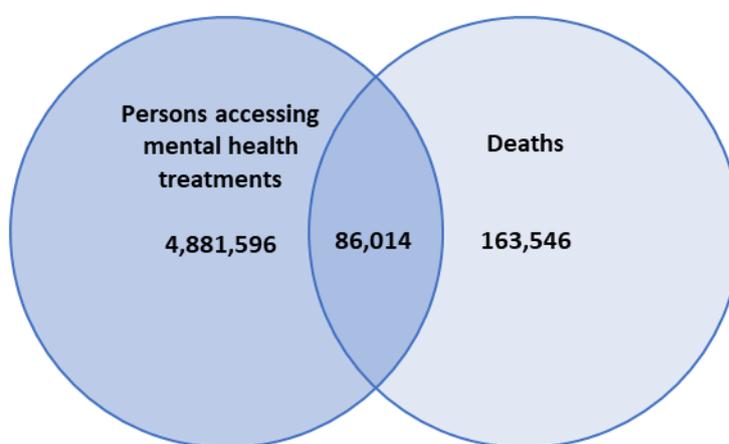

FIGURE 31 *Populations in Mental Health Services-Census-Deaths Integrated Dataset.*

Weights for the two populations can be calculated as the inverse of the linkage rate

The technique of data weighting enables the data user to adjust the sampled observations to accurately estimate the number of people in the population. For MBS/PBS items, including all persons who accessed mental health subsidised treatments in 2016, the average weight is 5,028,044/4,881,596 = 1.03. This indicates that each of the 4,881,596 records for persons who accessed mental health-related treatments represents, on average, 1.03 persons in 2016.

For the death registration records, including all persons who accessed mental health subsidised treatments in 2016, the average weight is 183,449/163,546 = 1.12.

For persons who accessed mental health-related treatments in 2016 and for whom there was a death registration over the sample period, their average MBS/PBS weight was 1.03, while their average death registration weight was 1.12. These 86,014 records, therefore, represent a total of 99,158 deaths for persons who accessed mental health-related treatments in 2016.

Estimated values have been rounded in this report. Death rates have been age-standardised to the 2001 Australian population to account for differences in the age structure of the population over time. This approach is used by the ABS (see ABS, 2023[16]).

The definition and calculation methods from the ABS (2017) report on the Mortality of people using mental health services and prescription medications[2] regarding death rates, Census, MBS data and PBS data have been used in this report.

Calculating potentially avoidable and excess deaths

The OECD excess death limits its calculations to persons aged between 15 and 74.[3] To calculate excess mortality, the numerator is the standardised death rate of people who accessed mental health-related treatments and the denominator is the overall mortality rate for the total population.[3] In this analysis, the rates were reverted to counts of death for the most common underlying causes of death and for the total population to obtain the number of deaths that would normally be expected for people accessing mental health-related treatments. Excess deaths were calculated by subtracting the number of expected deaths from the total number of deaths for people who accessed mental health-related treatments.

Although similar, the OECD method of calculation of excess mortality differs from the AIHW calculation of potentially avoidable mortality.[21] The AIHW classification of potentially avoidable mortality refers to deaths of persons under 75 years of age that arise from conditions that may be avoided through individualised care or treated through primary care or hospitalisation (METeOR, 2021). Whereas the OECD excess mortality indicator applies a population standardised death rate to specific groups of interest, the METeOR calculation includes certain specified and listed ICD 10 disease categories.[21] These include natural diseases (types of cancers, heart diseases, diabetes, etc.) and external causes (like suicides, accidents, assaults, etc.). In measuring Australia's excess mortality during COVID-19, the ABS used a slightly different method. It used age-specific death rates (ASDR), reverted the rates to counts of death to obtain an expected count, and used this figure to derive excess mortality.[1]

Appendix 4. Method. Data linkage, data extraction and data analysis

About the integrated dataset

The principal aim of this project was to replicate the work of the Mental Health Services-Census-Mortality Integrated Dataset project 2011, which was commissioned by the National Mental Health Commission and undertaken by the Australian Bureau of Statistics (ABS). The report was published in 2017 (titled "Mortality of People Using Mental Health Services and Prescription Medications", catalogue number 4329.0.00.006). The next report from this dataset will compare the 2016 and 2011 datasets.

This project extends the previous work using a 2016 dataset from the ABS's Multi-Agency Data Integration Project (MADIP). Funding for this work was provided by the Australian Government Department of Health and Aged Care.

This work involved integrating data items from the Medicare Benefits Schedule (MBS), and Pharmaceutical Benefits Scheme (PBS), which are linked to the 2016 Census of Population dataset. In addition, death records are sourced from the ABS Causes of Death collection (available from Registries of Births, Deaths, and Marriages of Australia's eight individual states and territories). Death registration records include deaths that occurred between 10 August 2016 and 27 September 2017 (inclusive) which were linked to the 2016 Census.

Using the 2016 dataset, this study can shed some light on the various attributes of mortality rates of persons who accessed mental health-related treatments in 2016. A better understanding of national mortality rates will help evaluate mental health initiatives and funding programs already in place and thus better inform future programs.

Data confidentiality of this report is protected by various applicable laws enacted by the Australian Government, including the Census and Statistical Act (1905), the Privacy Act (1988), the Health Insurance Act of 1973 and the National Health Act (1953), which protect confidential MBS and PBS information provided by the Department of Health and Aged Care and Services Australia. Data from the Registries of Births, Deaths and Marriages, and Cause of Death are protected by the Census and Statistical Act (1905) and the Privacy Act (1988).

2016 data source	Details	MADIP product	Data custodian
MBS	Medicare Benefits Schedule, claims data	MADIP GE	Department of Health and Aged Care
PBS	Pharmaceutical Benefits Scheme, prescription data	MADIP GE	Department of Health and Aged Care
Death Register	Deaths, registration details	MADIP GE	ABS, from state/territory Registries of Births, Deaths and Marriages
Underlying cause of death	Registries of Births, Deaths and Marriages, Cause of Death details	MADIP GE	ABS
Census	Census of Population and Housing, Family level variables	MADIP GE	ABS

Appendix 5. Population characteristics of people using MBS and/or PBS mental health-related treatments

Characteristics of persons who accessed MBS services and/or PBS prescription medications

An estimated 5.0 million persons, or 21.2% of the Australian population, accessed mental health-related treatments in 2016. More females received mental health-related treatment than males, with an estimated 3.1 million females (25.5% of the female Australian population) receiving treatment, while 1.9 million males (16.7% of the male Australian population) received treatment. For males, individuals aged 35–54 accessed mental health-related treatments more frequently than other age groups. Females in the 45–54 age group accessed mental health-related treatments more frequently than other age groups.
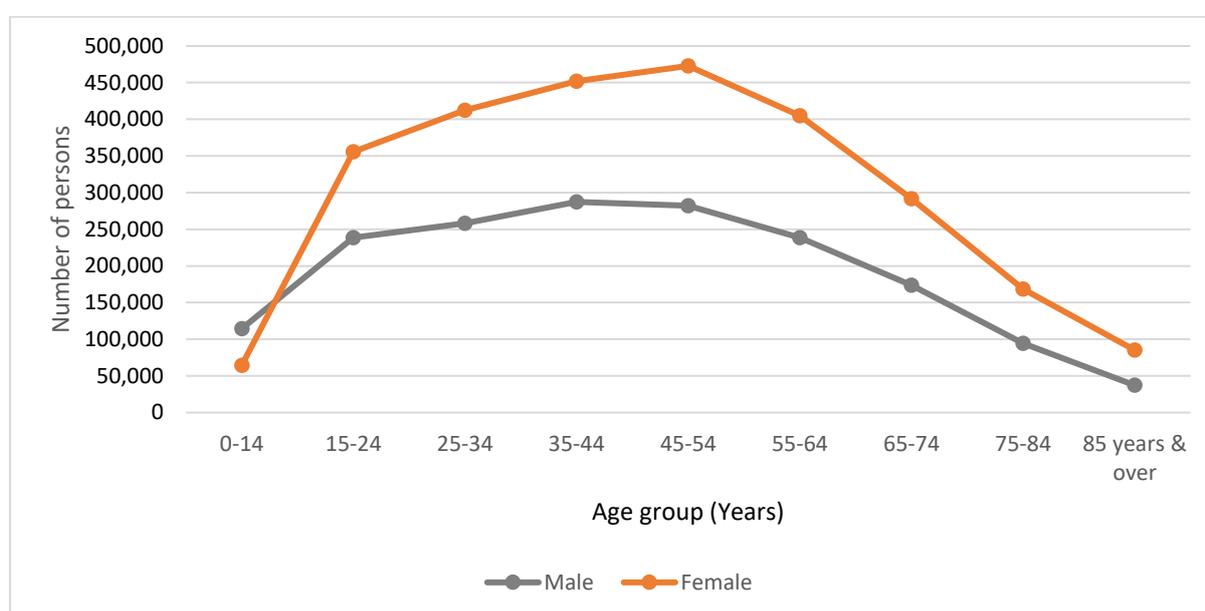

FIGURE 32 *Annual number of persons who accessed mental health-related treatments in 2016 based on sex and age.*

The median age for persons who accessed mental health-related treatments in 2016 was 47 years, which is substantially higher than the median age of 38 years estimated for the entire Australian population. Of the 5.0 million persons who accessed mental health-related treatments, 19.2% were 65 years and above, compared with 15.7% in the Australian population. Approximately 17.4% were aged less than 25 years compared with 31.4% recorded for the Australian population.
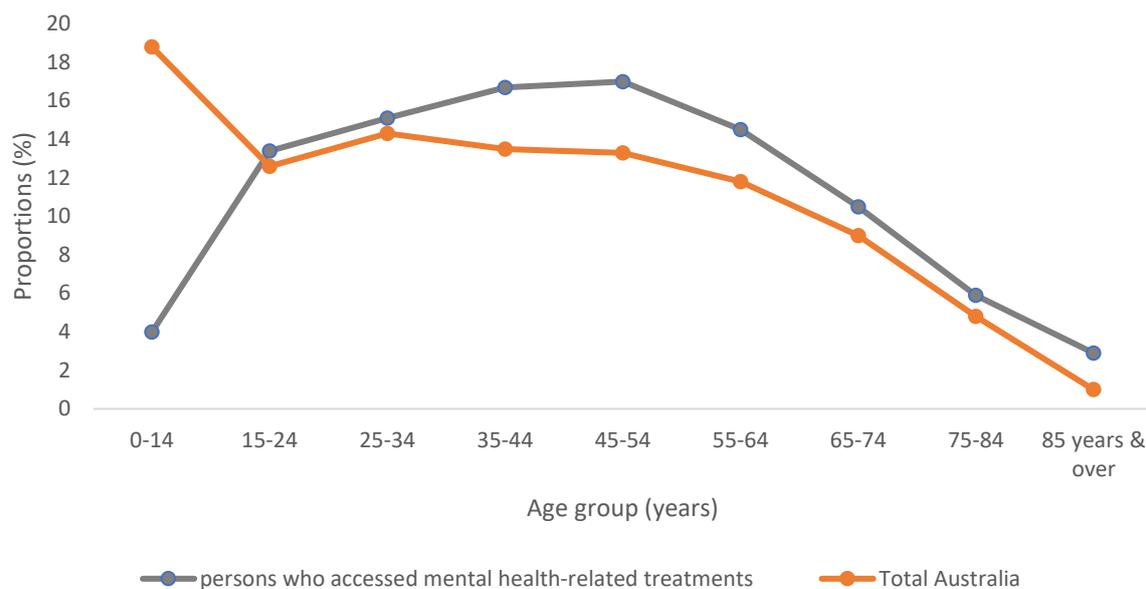
FIGURE 33 *Age structure of population. Persons who accessed mental health-related treatments in 2016 compared to total Australia.*

Of the 5.0 million persons who accessed mental health-related treatments, 2.3 million accessed the MBS subsidised mental health-related services, while 4.0 million accessed PBS subsidised mental health-related medication prescriptions in 2016. The number of persons who accessed these treatments comprises 9.7% and 16.9% of the Australian population, respectively.

Persons who accessed MBS and/or PBS subsidised mental health-related treatments, 2016

Type of treatment	Persons (n)	Proportion (%)
MBS subsidised mental health-related services		
GP	1,528,885	6.40%
Other allied health providers	58,057	0.20%
Psychiatrists	279,234	1.20%
Psychologists/Clinical Psychologists	429,372	1.80%
Total persons who accessed MBS subsidised MH-related services	2,295,548	9.70%
PBS subsidised mental health-related prescription medication		
Antipsychotics	248,135	1.05%
Anxiolytics	580,163	2.45%
Hypnotics & sedatives	526,862	2.22%
Antidepressants	2,527,425	10.66%
Psychostimulants, agents used for ADHD and nootropics	120,353	0.51%
Total persons who access PBS subsidised MH-related services	4,002,938	16.88%
Total persons who accessed MBS and/or PBS subsidised mental health-related treatments	5,028,044	21.20%

TABLE 5 *Persons who accessed MBS and/or PBS subsidised mental health-related treatments, 2016.*

Across age groups, the proportion of persons who accessed mental health-related treatments in 2016 varied substantially. The rates of access to PBS mental health-related prescription medications increase with age. In contrast, MBS mental health-related services are mostly highest for persons aged 15–44 years and lowest for children and older age groups.
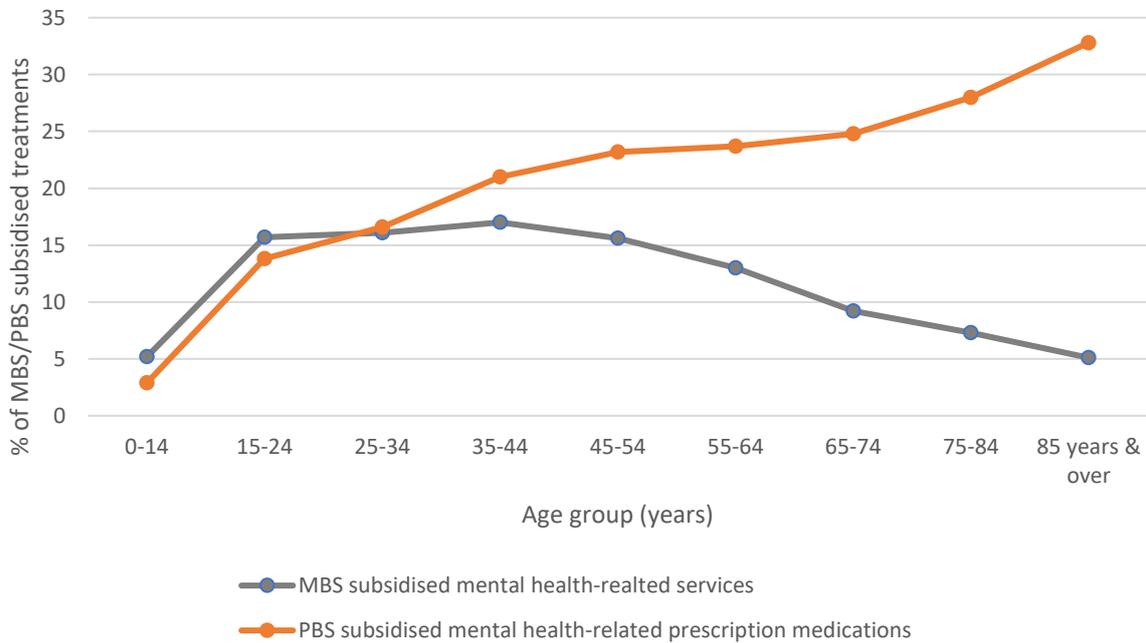

FIGURE 34 *Proportion of persons who accessed mental health-related treatments in 2016.*

Rates of consultation with general practitioners for MBS subsidised mental health-related services are highest for persons aged 15–44 (1.5 million persons or 6.4% of the Australian population). Access to MBS subsidised mental health-related consultations was the least common among allied health providers (58,057 persons or 0.2% of the Australian population).
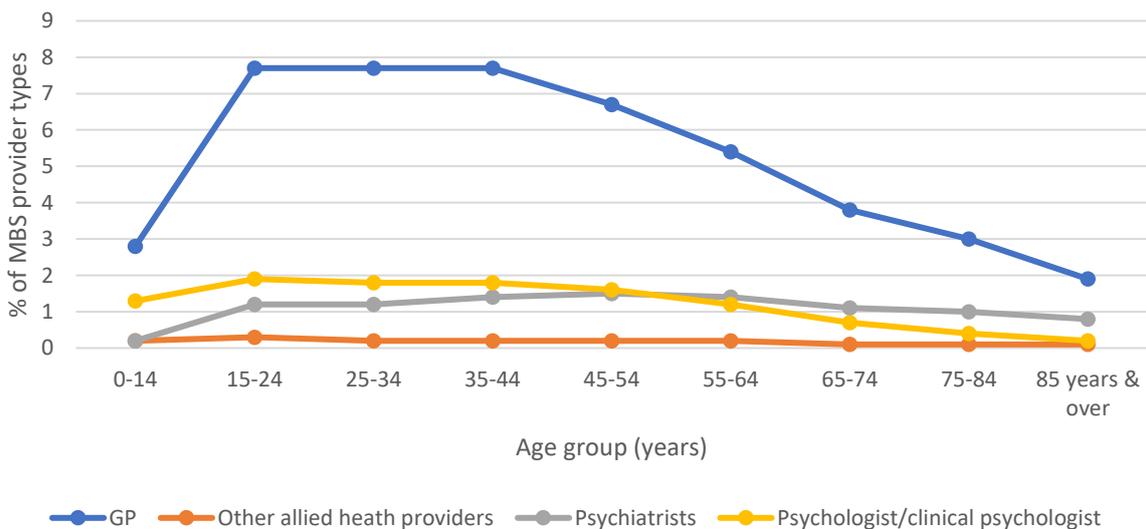

FIGURE 35 *Proportion of persons who accessed mental health-related treatments in 2016 by service providers.*

Antidepressants were the most accessed PBS subsidised mental health-related prescription medications (2.5 million persons or 10.7% of the Australian population) and rates of access increase with age for this type of prescription medication. Anxiolytics were the second most accessed mental health-related prescription medications in 2016 (580,163 persons or 2.5% of the Australian population) and rates of access for anxiolytics and antipsychotics tend to increase with age, although to a much smaller extent than antidepressants.
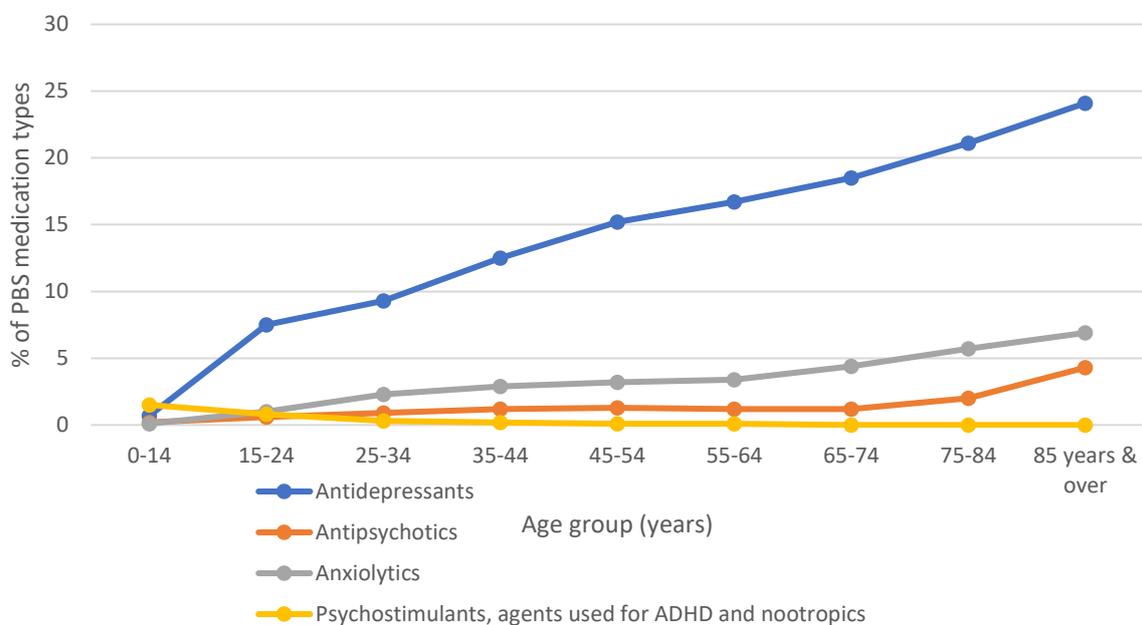

FIGURE 36 *Proportion of persons who accessed mental health-related treatments in 2016 by medications.*

Appendix 6. Contributors

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