**Supplementary Files**

Table S1. Codes and Registry of Senior Australians datasets used to identify individuals with mental health condition.

| **Description** | **Codes** | **Dataset** |
| --- | --- | --- |
| Anxiety | N05BA01–N05BA12, N05BE01 | Pharmaceutical Benefits Scheme (Rx-Risk-V) (Pratt et al., 2018) |
| Depression | N06AA01–N06AG02, N06AX03–N06AX11,  N06AX13–N06AX18, N06AX21–N06AX26 |
| Psychotic Illness | N05AA01–N05AB02, N05AB06–N05AL07,  N05AX07–N05AX13 |
| **Psychoses & depression/mood affective disorders** | 0550 | Aged Care Assessment Program (ACAP data dictionary) |
| Schizophrenia | 0551 |
| Depression/Mood affective disorders | 0552 |
| Other psychoses (includes paranoid states) | 0553 |
| **Neurotic, stress-related & somatoform disorders** | 0560 |
| Phobic & anxiety disorders (includes agoraphobia, panic  disorder) | 0561 |
| Nervous tension/stress | 0562 |
| Obsessive-compulsive disorder | 0563 |
| Other neurotic, stress-related & somatoform disorders | 0564 |
| **Other mental & behavioural disorders** | 0580 |
| Mental and behavioural disorders due to alcohol & other psychoactive substance use (includes alcoholism, Korsakov’s psychosis (alcoholic)) | 0581 |
| Adult personality & behavioural disorders | 0582 |
| Other mental & behavioural disorders n.o.s or n.e.c (includes harmful use of non-dependent substances e.g. laxatives analgesics, antidepressants, eating disorders e.g. anorexia nervosa, bulimia nervosa, mental disorders not otherwise specified) | 0599 |
|  |  |
| **Depression, mood and affective disorders, Bipolar** | 0550A | Aged Care Funding Instrument (ACFI User Guide) |
| **Psychoses** e.g. schizophrenia, paranoid states | 0550B |
| **Neurotic, stress related, anxiety, somatoform disorders** e.g. post-traumatic stress disorder, phobic and anxiety disorders, nervous tension/stress, obsessive-compulsive disorder | 0560 |
| **Other mental and behavioural disorders** e.g. due to alcohol or psychoactive substances (includes alcoholism, Korsakov’s psychosis), adult personality and behavioural disorders. | 0580 |
| **Suicide and non-suicidal self-injury hospitalisations**  Principal diagnosis | S00-T75, T79 | International Statistical Classification of Disease and Related Health Problems-Tenth Revision-Australian Modification (ICD-10-AM). |
| First reported external cause code | X60-X84, Y87.0 |

Table S2. Count, percentage, and age and sex-adjusted incidence rate of death by suicide, by calendar year and service type at time of death (n=532,507).

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 2008a | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017a |
| **Home care package (*n*=47,317)** | | | | | | | | | | |
| Total receiving HCP b | 61,949 | 66,990 | 72,229 | 77,323 | 80,537 | 84,761 | 82,450 | 89.299 | 93,476 | 99,581 |
| Total deaths | 2360 | 4446 | 4963 | 5408 | 5852 | 5790 | 5680 | 5443 | 4932 | 2443 |
| Deaths by suicide *n* (% of all deaths) | np | np | 10 (0.20) | 10 (0.18) | 8 (0.14) | 17 (0.29) | 12 (0.21) | 7 (0.13) | np | np |
| Crude mortality rate (all deaths) e | 7619.2 | 6636.8 | 6864.5 | 6994.0 | 7266.2 | 6831.0 | 6889.0 | 6095.3 | 5276.2 | 4906.6 |
| Crude suicide mortality rate e | np | np | 13.8 | 12.9 | 9.9 | 20.1 | 14.6 | 7.8 | np | np |
| Adjusted suicide mortality rate (95%CI) e,c | np | np | 14.1  (5.9-22.4) | 13.3  (5.3-21.3) | 10.0  (30.7-17.0) | 20.2  (10.3-30.0) | 14.6  (6.2-23.0) | 7.6  (1.6-13.7) | np | np |
| **Residential aged care (*n*=423,884)** | | | | | | | | | | |
| Total receiving PRAC b | 218,383 | 220,417 | 224,053 | 226,425 | 230,351 | 235,534 | 227,896 | 236,056 | 241,018 | 242,405 |
| Total deaths | 20,095 | 39,107 | 42,612 | 45,838 | 48,770 | 49,576 | 52,055 | 53,316 | 49,781 | 22,734 |
| Deaths by suicide *n* (% of all deaths) | 5 (0.02) | 9 (0.02) | 22 (0.05) | 18 (0.04) | 13 (0.03) | 16 (0.03) | 14 (0.03) | 9 (0.02) | 17 (0.03) | 6 (0.03) |
| Crude mortality rate (all deaths) e | 18403.4 | 17742.3 | 19018.7 | 20244.2 | 21172.0 | 21048.3 | 22841.6 | 22586.2 | 20654.5 | 18757.0 |
| Crude suicide mortality rate e | 4.6 | 4.1 | 9.8 | 7.9 | 5.6 | 6.8 | 6.1 | 3.8 | 7.1 | 5.0 |
| Adjusted suicide mortality rate (95%CI) e,c | 4.6  (1.8-7.4) | 4.3  (1.6-6.9) | 10.5  (6.3-14.7) | 8.6  (4.8-12.4) | 6.0  (2.8-9.2) | 7.2  (3.7-10.7) | 6.4  (3.1-9.6) | 4.0  (1.4-6.6) | 7.0  (3.6-10.4) | 5.2  (2.2-8.1) |
| **Awaiting care (*n*=61,306) d** | | | | | | | | | | |
| Total deaths | 3600 | 6911 | 6672 | 7042 | 7181 | 7568 | 7852 | 8142 | 4982 | 1356 |
| Deaths by suicide *n* (% of all deaths) | 7 (0.19) | 10 (0.14) | 12 (0.18) | 18 (0.26) | 22 (0.31) | 22 (0.29) | 17 (0.22) | 19 (0.23) | 15 (0.30) | 2 (0.15) |

Abbreviations: CI=Confidence Interval; np=not published to prevent disclosure of numbers between 1 and 4.

a Six months only, denominator halved in calculation of rates; b Users at 30 June of the year plus new admissions to 30 June of following year; c Adjusted for age and sex, standardised using the direct method (reference year=2012); d population data not available for calculation of incidence rates ; e per 100,000

Table S2. Results of logistic regression modelling of factors from time of aged care eligibility assessment associated with mortality from suicide compared to mortality due to other causes, by service at time of death (NSW, SA, VIC, QLD only).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **Residential aged care (*n*=365,915)** |  | **Awaiting care (*n*=47,456)** |
|  | **aOR (95%CI)** |  | **aOR (95%CI)** |
| Age (per 1 year increment) |  | 0.95 (0.93-0.97) |  | 0.95 (0.93-0.97) |
| Women vs men |  | **0.30 (0.20-0.46)** |  | **0.54 (0.36-0.81)** |
| Born outside Australia (yes vs no) |  | 1.45 (0.93-2.26) |  | **2.43 (1.60-3.69)** |
| Non-English Speaking (yes vs no) |  | 0.98 (0.48-1.98) |  | 1.16 (0.63-2.13) |
| Living outside major city |  | 1.20 (0.75-1.90) |  | 0.84 (0.52-1.36) |
| Socio-economic status a |  | 1.07 (0.92-1.24) |  | **1.10 (0.95-1.27)** |
| Living alone b (yes vs no) |  | N/A |  | 1.93 (1.26-2.94) |
| Availability of a carer b (yes vs no) |  | N/A |  | 0.51 (0.32-0.80) |
| Number of health conditions a |  | 1.02 (0.76-1.38) |  | 0.72 (0.54=0.94) |
| Frailty index a |  | 0.67 (0.52-0.86) |  | 0.53 (0.41-0.70) |
| Dementia (yes vs no) |  | 0.39 (0.26-0.60) |  | **0.41 (0.19-0.89)** |
| Mental health condition (yes vs no) |  | **3.65 (2.44-5.44)** |  | **3.51 (2.37-5.21)** |
| Self-injury (yes vs no) |  | **44.7 (22.3-89.7)** |  | **63.2 (27.4-145.9)** |

Abbreviations: ACAT=Aged Care Assessment; aOR=Adjusted Odds Ratio; CI=Confidence interval.

**Boldface** denotes α<0.05 after Bonferroni correction; time from approval to death included in all modelling as a covariate

a continuous variable per increment displayed in Table 1; b not included in modelling for residential aged care.