Vulnerable populations – Pinch points & policy priorities – preliminary results from the National Data linkage study

Equally Well 2023 Symposium, University of Technology Sydney, Sydney, 27 July 2023

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"Mental health and wellbeing is a basic human right... People living with mental illness have poorer physical health, ...less and lower quality health care than the rest of the population... People with psychosis die between 14 and 23 years earlier than the general population."

- Equally Well Consensus Statement, 2022

National Data linkage study

- The research will help improve understanding of the use of mental health-related treatments amongst the Australian population.
- Aligns with the Fifth National Mental Health and Suicide Prevention Plan.
- Replication of 2011 analysis by ABS (2017) using 2016 data.
- Project received CSU's HREC and ABS approval (CSU protocol number: H22289).
- Researchers must complete DataLab onboarding "Safe Researcher Training" to become authorised user in DataLab.
- Employs secure data asset: Multi-Agency Data Integration Project (MADIP) of the Australian Bureau of Statistics (ABS)
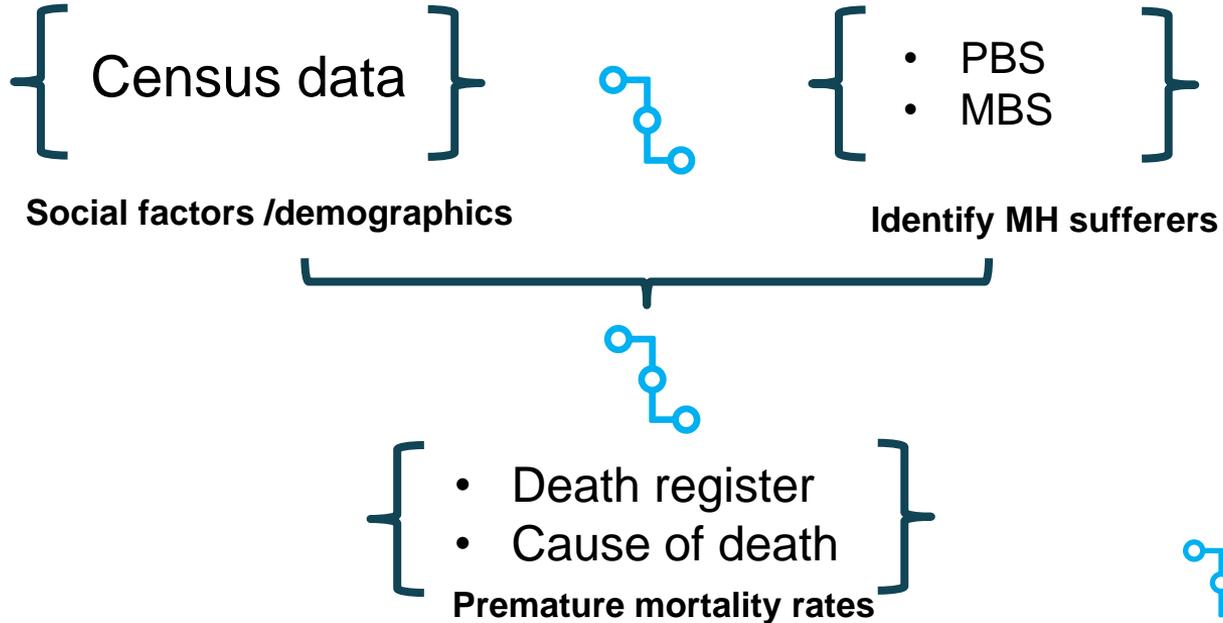
National Data linkage study

- MH-related services: a list of "Item Descriptors" was obtained from the MBS
- MH-related medications: a list of Anatomical Therapeutic Chemical (ATC) item codes obtained from the PBS
- List of MH-related services/medications: based AIHW, MHISSC, vetted by DMAAC (final list: MBS=234 Items; PBS=61 ATCs)
- MBS: Medicare-subsidised mental health-related services: psychiatrists, GPs, psychologists and other allied health professionals
- PBS: subsidised prescription medication: Antipsychotics, Anxiolytics, Antidepressants, and Psychostimulants, agents used for ADHD and nootropics
- Data integration performed using "spine ID"

National Data linkage study

Census data

Social factors /demographics

- PBS
- MBS

Identify MH sufferers

- Death register
- Cause of death

Premature mortality rates

Data linking using unique ID ("spine")
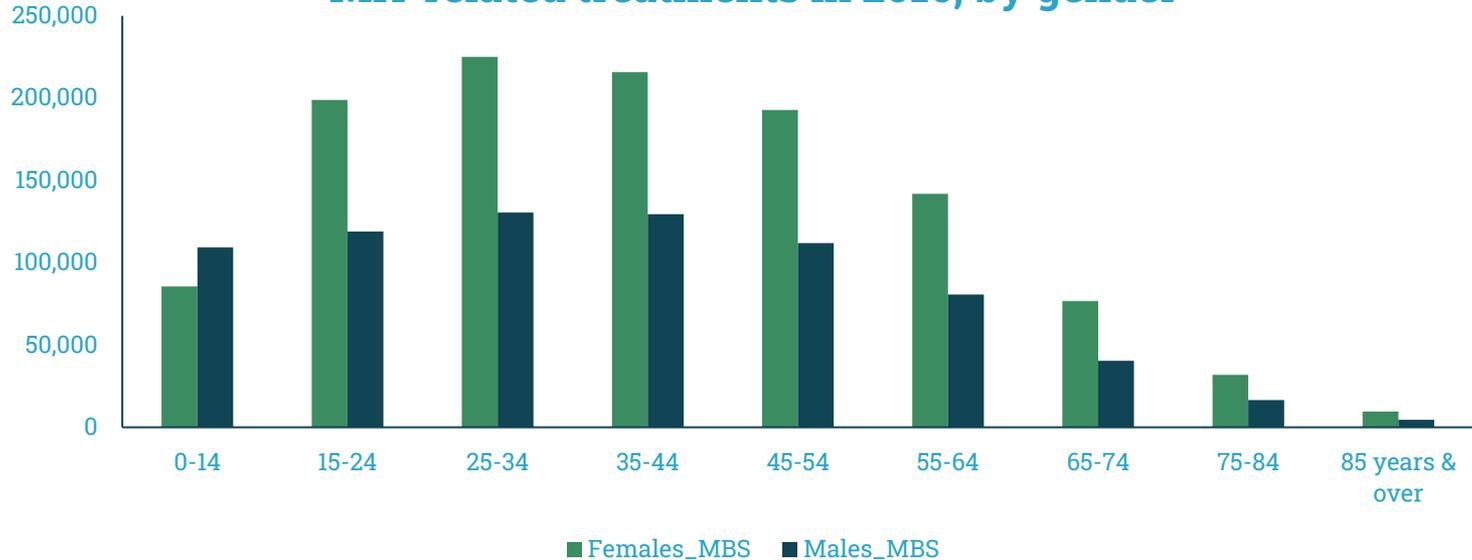
MBS-MH services only

Distribution of persons who accessed MBS subsidised MH-related treatments in 2016, by gender

Legend: ■ Females_MBS ■ Males_MBS

X-axis categories: 0-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85 years & over

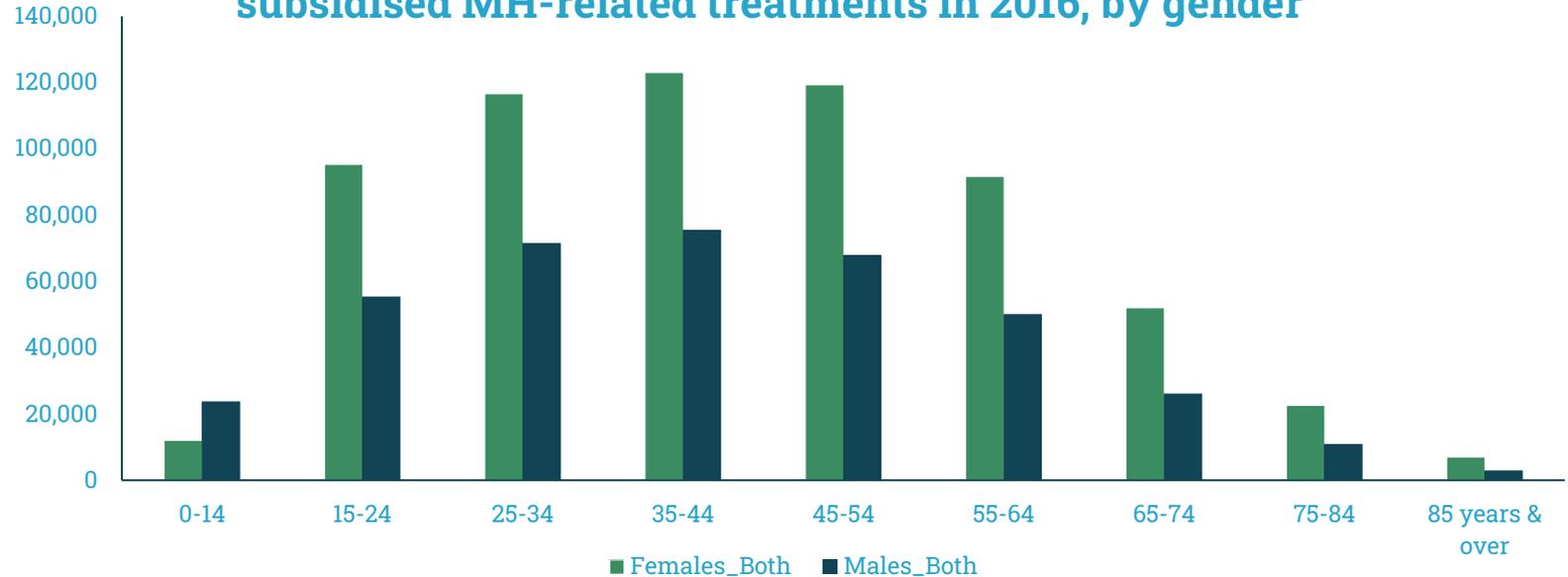Y-axis: 0 to 250,000

PBS-MH medications only

Distribution of persons who accessed PBS subsidised MH-related treatments in 2016, by gender
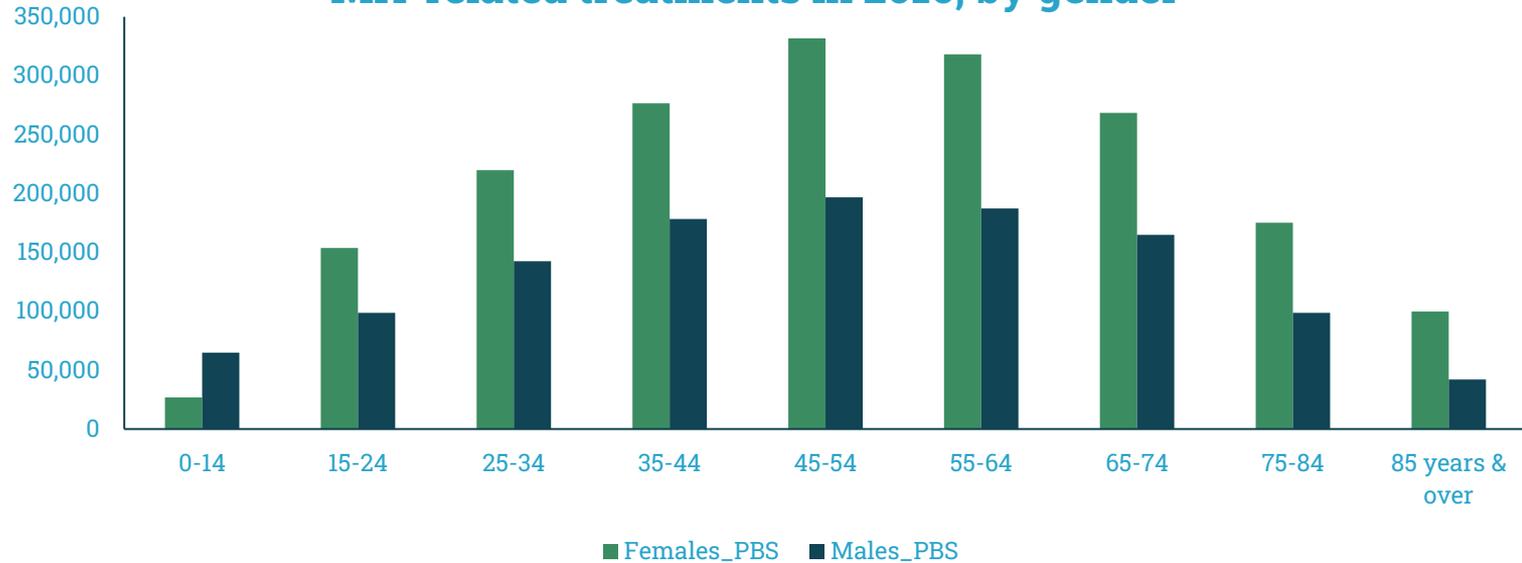
■ Females_PBS ■ Males_PBS

Distribution of persons who accessed both MBS & PBS subsidised MH-related treatments in 2016, by gender

Legend: Females_Both, Males_Both

Comparison: 2011/2016

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

Age_cat	Males			Females		
	2,011	2,016	CAGR	2,011	2,016	CAGR
0-14	105,749	198,129	13.4%	60,670	124,523	15.5%
15-24	119,572	273,111	18.0%	188,916	448,010	18.9%
25-34	154,940	344,659	17.3%	245,509	561,530	18.0%
35-44	190,289	383,462	15.0%	301,150	615,457	15.4%
45-54	182,462	376,757	15.6%	293,551	644,049	17.0%
55-64	167,291	318,184	13.7%	287,194	551,682	13.9%
65-74	159,200	231,550	7.8%	274,819	397,246	7.6%
75 years & over	150,064	176,011	3.2%	309,472	346,105	2.3%
All Ages	1,229,567	2,301,863	13.4%	1,961,281	3,688,602	13.5%

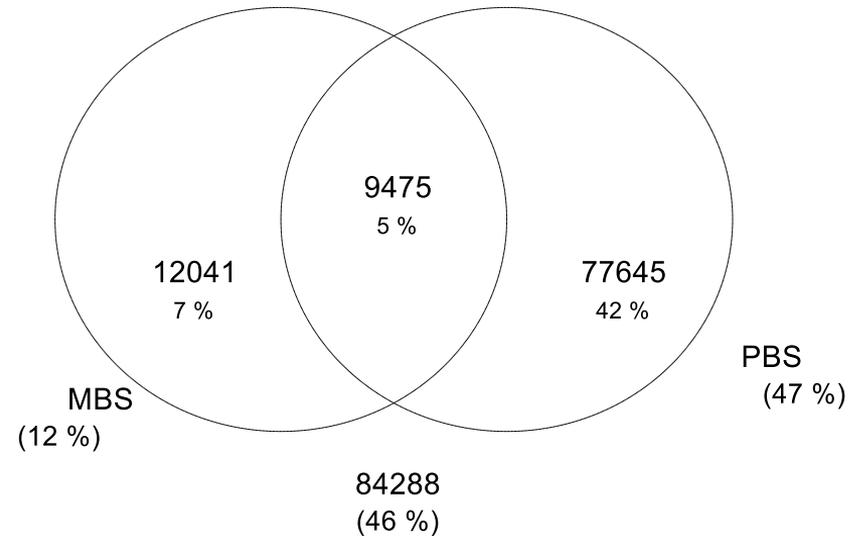Notes: Compound annual growth rate (CAGR). The national average population annual growth rate from 2011-2016 was 1.6% (ABS, 2017 cat. No. 3101.0 - Australian Demographic Statistics, Dec 2016).

Deaths for persons who accessed MBS and/or PBS

2011: N=153451
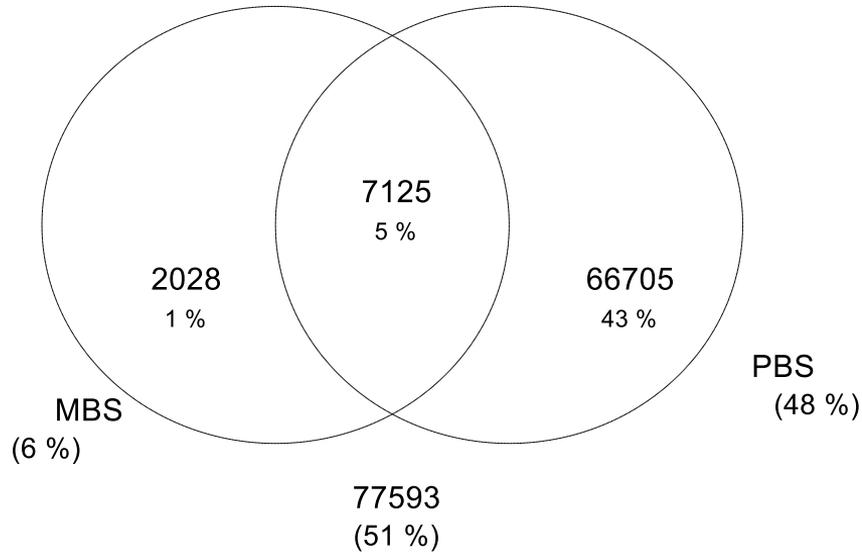
7125
5 %

2028
1 %

66705
43 %

PBS
(48 %)

MBS
(6 %)

77593
(51 %)

2016: N=183449

9475
5 %

12041
7 %

77645
42 %

PBS
(47 %)

MBS
(12 %)

84288
(46 %)

Comparison: 2011/2016
Number of deaths for persons
who accessed MBS and/or PBS
subsidised mental health-related treatments
by sex/age groups

Sex/Age_cat	Deaths (2011)	Deaths (2016)	CMR (2016)	SMR (2016)	CAGR
Males					
0–24	278	582	1.24	2.09	15.90%
25–34	470	1,333	3.87	2.22	23.20%
35–44	925	1,957	5.10	2.02	16.20%
45–54	1,941	3,254	8.64	2.06	10.90%
55–64	3,925	5,413	17.01	1.90	6.60%
65–74	7,288	8,573	37.02	1.45	3.30%
75–84	13,239	12,358	97.86	1.06	-1.40%
85 years and over	7,389	13,456	270.58	1.60	12.70%
Total males	35,457	46,428	20.17	1.87	5.50%
Females					
0–24	138	467	0.82	2.29	27.60%
25–34	298	575	1.02	2.29	14.00%
35–44	701	1,163	1.89	2.04	10.70%
45–54	1,459	2,644	4.11	2.19	12.60%
55–64	3,098	4,429	8.03	1.92	7.40%
65–74	5,909	7,363	18.54	1.45	4.50%
75–84	11,447	12,426	54.10	1.10	1.70%
85 years and over	17,351	23,568	202.45	1.15	6.30%
Total females	40,401	52,733	14.30	1.88	5.50%
Persons					
0–24	417	1,049	1.01	2.20	20.30%
25–34	768	1,908	2.11	2.26	20.00%
35–44	1,626	3,120	3.12	2.03	13.90%
45–54	3,400	5,898	5.78	2.14	11.60%
55–64	7,023	9,842	11.31	1.91	7.00%
65–74	13,197	15,936	25.34	1.45	3.80%
75–84	24,686	24,784	69.62	1.09	0.10%
85 years and over	24,740	37,024	222.84	1.26	8.40%
Total persons	75,858	99,161	16.55	1.88	5.50%

Notes: Crude Mortality Rate (CMR)
Compound annual growth rate (CAGR)
Standardised Mortality Rate (SMR) to the 2011 MH population

Comparison: 2011/2016
Number of deaths for persons who accessed MBS and/or PBS subsidised mental health-related treatments by selected population characteristics (1/3)

	Deaths 2011	Deaths 2016	SMR
State/territory of usual residence			
New South Wales	25,388	31,534	1.37
Victoria	19,479	25,909	1.30
Queensland	14,057	20,004	1.30
South Australia	6,834	8,737	1.29
Western Australia	6,949	8,804	1.49
Tasmania	2,303	2,829	1.33
Northern Territory	197	280	1.47
Australian Capital Territory/Overseas Territories	651	1,064	1.32
Total Australia	75,858	99,161	1.44
Remoteness Areas			
Major Cities	47,686	63,129	1.45
Inner Regional	18,942	21,418	1.62
Outer Regional	8,206	8,251	1.67
Remote/Very Remote	1,023	923	1.88
Total	75,858	99,161	1.44

Notes: Crude Mortality Rate (CMR)
Compound annual growth rate (CAGR)
Standardised Mortality Rate (SMR) to the 2011 MH population

Comparison: 2011/2016
**Number of deaths for persons
who accessed MBS and/or PBS
subsidised mental health-related treatments
by selected population characteristics (2/3)**

	Deaths 2011	Deaths 2016	SMR
Index of Relative Socio-economic Disadvantage			
Quintile_1 (Most disadvantaged areas)	24,504	10,893	2.79
Quintile_2	18,112	10,107	1.62
Quintile_3	13,522	8,519	1.53
Quintile_4	10,645	7,458	1.45
Quintile_5 (Least disadvantaged areas)	8,376	6,183	1.45
Total	75,858	99,161	1.44
Country of birth			
Overseas	48,078	31,100	1.01
Australia	22,218	60,655	2.13
Total	75,858	99,161	1.44
Need assistance with disability, long term illness/problems related to old age			
Needs assistance	43,960	59,129	1.33
Does not need assistance	27,238	27,853	1.85
Total	75,858	99,161	1.44

Notes: Crude Mortality Rate (CMR)
Compound annual growth rate (CAGR)
Standardised Mortality Rate (SMR) to the 2011 MH population

Comparison: 2011/2016
Number of deaths for persons who accessed MBS and/or PBS subsidised mental health-related treatments by selected population characteristics (3/3)

	Deaths 2011	Deaths 2016	SMR
Unpaid assistance to a person with a disability (aged 15 & >)			
Did not provide unpaid assistance	60,308	76,004	1.52
Provided unpaid assistance	3,839	4,276	1.71
Total	75,801	99,085	1.52
Labour force status (persons aged 15-64 years)			
Employed, worked full-time	1,164	2,061	1.29
Employed, worked part-time	955	1,411	1.54
Employed, away from work	628	946	1.27
Total unemployed	301	846	0.98
Total	13,177	19,739	1.42
Level of highest educational attainment (persons aged 15-64 years)			
BachD_or>	1,364	2,304	1.51
CertIII-IV, AdvDip, Dip	2,954	4,727	1.57
Yr_12	1,561	2,431	1.33
Yr_11_or<	5,397	6,674	1.36
Total	13,177	19,739	1.42

Notes: Crude Mortality Rate (CMR)
Compound annual growth rate (CAGR)
14 Standardised Mortality Rate (SMR) to the 2011 MH population

Comparison: 2011/2016

Deaths of persons who accessed MBS and/or PBS subsidised mental health-related by underlying cause of death

Underlying cause of death (UCOD)	2011		2016		
	Deaths	% of deaths	Deaths	% of deaths	SMR
Ischaemic heart diseases (I20-I25)	9,303	12.3%	9,930	10.0%	1.22
Trachea, bronchus and lung cancer (C33-C34)	5,069	6.7%	4,995	5.0%	1.33
Cerebrovascular diseases (I60-I69)	4,923	6.5%	6,165	6.2%	1.04
Dementia, excluding Alzheimer's disease (F01 F03)	4,756	6.3%	7,420	7.5%	0.84
Chronic lower respiratory diseases (J40-J47)	4,002	5.3%	5,870	5.9%	0.89
Colon, sigmoid, rectum and anus cancer (C18-C21)	2,431	3.2%	2,445	2.5%	1.30
Blood and lymph cancer (including leukaemia) (C81-C96)	2,300	3.0%	2,265	2.3%	1.33
Total Deaths	75,858	100.0%	99,161	100.0%	

Implications

1

Rate of mental illness among women is escalating. How to devise an effective open dialogue about MH concerns?

2

More funding to support campaigns on MH awarnessness. Dedicated programs for women facing MH issues.

3

Train more professionals: GP, psychiatrists, psychologists/clinical psychologists, allied health

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4

Funding model focusing on areas that are disadvantaged.

5

Suffers with pre-existing health conditions should be given more attention.

Special thanks to :

- Australian Government Department of Health and Aged Care
- NSW Ministry of Health
- Equally Well Australia
- Disability, Ageing, Carers and Mental Health (ABS)
- Mortality Data Centre, Health and Vital Statistics Section (ABS)
- Data Strategy, Integration and Services (ABS)
- DataLab Output Clearance Team (ABS)
- Equally Well Data Management & Analytics Advisory Committee (DMAAC)
- The National Mental Health Information Strategy Standing Committee (MHISSC)
- Healthy Minds, Healthy Bodies project team (HMHB, Dept. of Health and Aged Care)
- Australian Institute of Health and Welfare (AIHW)

THANKS!

Any questions?

References

- Australian Bureau of Statistics, Characteristics of people using mental health services and prescription medication, 2011, cat. no. 4329.0, ABS, Canberra, October 2014

- Australian Bureau of Statistics, Australian Demographic Statistics, cat. no. 3101.0, ABS, Canberra, Dec 2016

- Australian Institute of Health and Welfare 2016. Australia's health 2016. Australia's health series no. 15. Cat. no. AUS 199. Canberra: AIHW

- Australian Bureau of Statistics, - Mortality of People Using Mental Health Services and Prescription Medications, Analysis of 2011 data, cat. no. 4329.0.00.006, ABS, Canberra, Sep 2017

Appendix A

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