

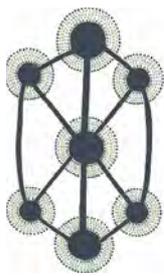
**Registry of Older
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**Antipsychotic medicines dispensed before and after entering
residential aged care:
Preliminary report and findings from the National Historical Cohort
of the Registry of Older South Australians**

**Report prepared by The Registry of Older South Australians (ROSA) Research
Team at the South Australian Health and Medical Research Institute
(SAHMRI)**

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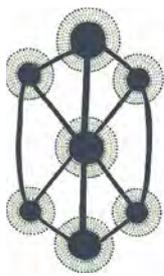
Report Description

This is a preliminary report prepared using data from the National Historical cohort of the Registry of Older South Australians (ROSA).¹ This report contains descriptive information regarding dispensed antipsychotic medicines for people entering permanent residential aged care in Australia between 1 July 2013 and 30 June 2015.

Data Sources

The National Historical cohort of the ROSA contains de-identified linked data from the Australian Institute of Health and Welfare's (AIHW) National Aged Care Data Clearinghouse (NACDC), Medicare Benefits Schedule, and Pharmaceutical Benefits Scheme (PBS). The NACDC includes the Aged Care Assessment Program (ACAP), the Aged Care Funding Instrument (ACFI), the National Death Index (NDI), and aged care services episodes datasets. For this report selected datasets from the NACDC and PBS were used.

The ACAP dataset is collected during aged care eligibility assessments and includes details on service approvals, individuals' diagnosed health conditions, functional limitations, demographic information and state of residence.² The ACFI dataset contains information about an individuals' relative care needs that is collected shortly after entry into permanent residential aged care and after significant changes in resident health status as part of a funding appraisal.³ The ACFI includes individuals' health conditions and specific activity, behavioural, and complex care needs. The PBS dataset contains records of all medicines that are subsidised and dispensed to residents including those on the Repatriation Pharmaceutical Benefits Scheme (RPBS). The PBS data are collected from community pharmacies and from hospitals that supply PBS subsidised medicines on discharge or to outpatients. The residential aged care episode dataset contains dates of entry into and exit from aged care facilities and program information distinguishing between permanent, respite, and transition care. The NDI dataset includes date of death which was used in this study.



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Study Period

Individuals with a permanent residential care entry between 1 July 2013 and 30 June 2015 were included in this study. Information on PBS medicines dispensed between 1 July 2012 and 30 June 2016 were included such that there was 12 months data prior to entry into permanent residential care and 12 months post entry for each resident.

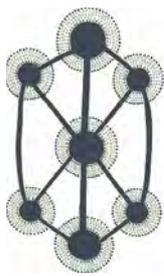
Included Cohort

Australians aged 65 years and over or aged 50 years and over and of Aboriginal or Torres Strait Islander descent who had an ACAT assessment were included. Residents who spent >100 days in residential aged care were included (n=97,739). Medicines dispensed in the 12 months before and after entering residential aged care were examined to determine changes in antipsychotic use at quarterly intervals.

Definitions

Residential aged care: Residential aged care is supported accommodation for people with care needs that can no longer be met in their own homes.⁴ This report includes people who lived in permanent residential aged care in an aged care facility for a cumulative period of more than 100 days. When calculating the entry date, if the residents had a consecutive entry for residential respite care with fewer than 7-day gap prior to permanent care, the start date for their residential respite care stay has been used as their entry date. This study does not include individuals who only used transition care programs, respite care where not consecutive with permanent care or fully non-government funded services which are not captured in government aged care data such as independent living units.

Antipsychotics: This includes medicines within the Anatomical Therapeutic Chemical (ATC) subgroup N05A, excluding lithium (N05AN) and prochlorperazine (N05AB04).⁵ Only those medicines that have been dispensed and subsidised through the PBS/RPBS have been included. Medicines which are dispensed as private prescriptions are not captured in the



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dataset. See Appendix (**Table A1**) for a list of antipsychotics which were dispensed to the cohort.

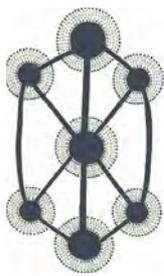
Typical and atypical antipsychotics: Subclasses of antipsychotic medicines. Atypical antipsychotics are also referred to as second generation antipsychotics. **Table A1** (Appendix) classifies each antipsychotic in the study as typical or atypical.⁶

Dementia ascertainment: Reported dementia in the ACAP or ACFI assessments were used to ascertain whether someone had dementia.

Time periods: Equal quarters of 91 days were examined pre and post-entry into care: 0-3 months (days 0-91), 3-6 months (days 92-182), 6-9 months (days 183-273), 9-12 months (days 274-364).

Statistical Analysis

Descriptive statistics are provided. This includes means, standard deviations (SD), medians, interquartile ranges (IQRs), frequencies, proportions, prevalence estimates, and confidence intervals (CI).



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Preliminary results

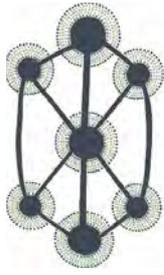
Cohort characteristics

There were 97,739 residents included in this study. The mean age for residents was 84.1 (SD=7.2) years, 62.8% were female and the median co-morbidity score⁷ for the cohort was 5 (IQR=3-7). In the cohort, 48.1% had a diagnosis of dementia (**Table 1**).

Antipsychotics dispensed before and after entering residential aged care

In the three months following entry to residential aged care 20.9% (n=20,383) of residents were dispensed at least one antipsychotic. Of these residents, 45.5% (n=9,269) had not received an antipsychotic in the 12 months prior to entering residential aged care. Of those who first received antipsychotic(s) after entering residential aged care, and were alive at 12 months, 64.2% (n=4,463) were dispensed antipsychotic(s) between 9 and 12 months after entering residential aged care. The prevalence of antipsychotic dispensing in the three months following entry to residential care by Australian state or territory are shown in **Table 2**. **Figure 1** shows the prevalence of individuals with at least one dispensed antipsychotic in quarterly intervals in the 12 months before and 12 months after entering residential aged care, and **Figure 2** shows this stratified by whether people were diagnosed with dementia.

For all residents in the three months following entry to residential care, 2.1% (95%CI: 2.0-2.2) were dispensed typical antipsychotic(s) only and 17.3% (95%CI: 17.0-17.5) were dispensed atypical antipsychotic(s) only. An additional 1.5% (95%CI: 1.4-1.5) of residents were dispensed both typical and atypical antipsychotics in the three months after entering residential aged care (**Table 3**) which may reflect concurrent use or switching. The most prevalent antipsychotics dispensed in the three months after entering residential aged care were risperidone (13.0% of total cohort; 95%CI: 12.8-13.2), quetiapine (3.5%; 95%CI: 3.4-3.7), olanzapine (3.1%; 95%CI: 3.0-3.2) and haloperidol (3.1%; 95%CI: 2.9-3.2) (**Table 4**).



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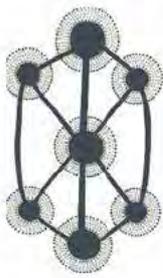
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Table 1. Resident characteristics, stratified by antipsychotic use in the first 3 months of entering residential aged care.

Characteristic	All participants (n=97,739)	Antipsychotic dispensed (n=20,383)	No antipsychotic dispensed (n=77,356)
Age (years), mean (SD)	84.1 (7.2)	81.8 (7.4)	84.7 (7.1)
Female, n (%)	61,415 (62.8)	11,459 (56.2)	49,956 (64.6)
Diagnosed dementia, n (%)*	47,043 (48.1)	15,438 (75.7)	31,605 (40.9)
Co-morbidity score, median (IQR)**	5 (3-7)	5 (3-7)	5 (3-7)
Activity limitations, n (%)			
Domestic assistance	93,739 (96.0)	19,426 (95.5)	74,313 (96.2)
Transport	93,365 (95.6)	19,690 (96.8)	73,675 (95.3)
Social and community participation	91,195 (93.4)	19,329 (95.0)	71,866 (93.0)
Meals	90,164 (92.4)	19,154 (94.1)	71,010 (91.9)
Health care tasks	87,855 (90.0)	19,300 (94.8)	68,555 (88.7)
Home maintenance	80,480 (82.4)	16,907 (83.1)	63,573 (82.3)
Self-care	78,726 (80.6)	17,374 (85.4)	61,352 (79.4)
Moving around	72,050 (73.8)	15,132 (74.4)	56,918 (73.7)
Movement activities	32,763 (33.6)	6,527 (32.1)	26,236 (34.0)
Communication	22,200 (22.7)	6,758 (33.2)	15,442 (20.0)

*Dementia was ascertained if reported as a health condition in either the ACAP or ACFI assessments.

**Number of comorbidities ascertained using the RX-Risk-V prescription-based co-morbidity measure⁷ using 6 months of PBS claims data prior to entry into residential care.



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Figure 1. Prevalence of antipsychotic dispensing prior to and after entering residential aged care.

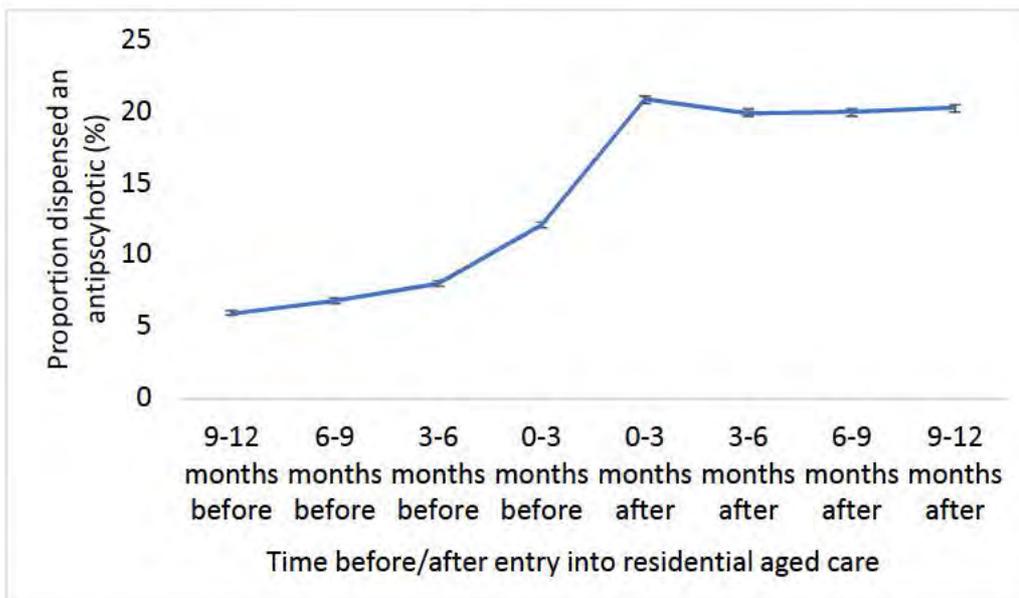
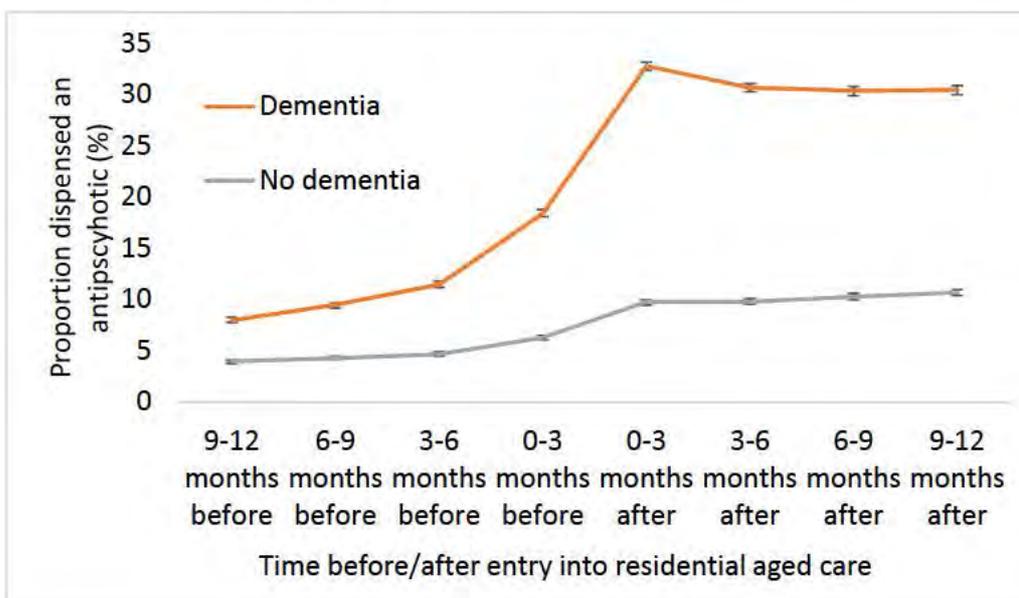
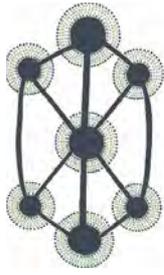


Figure 2. Prevalence of antipsychotic dispensing prior to and after entering residential aged care, stratified by dementia status.





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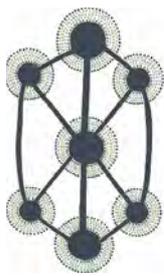
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Table 2. Prevalence of antipsychotic* dispensing prior to and after entering residential care, stratified by Australian state or territory at the time of the ACAT assessment.

Cohort (Total number of residents)	Prevalence, % (95% Confidence Interval)				
	Any use 12 months prior to entry	0-3 months after entry	3-6 months after entry	6-9 months after entry	9-12 months after entry
National (n=97,739)	14.7 (14.5-14.9)	20.9 (20.6-21.1)	19.9 (19.7-20.2)	20.0 (19.7-20.2)	20.3 (20.0-20.5)
NSW (n=32,958)	12.8 (12.5-13.2)	20.0 (19.6-20.5)	19.6 (19.2-20.1)	19.5 (19.4-20.4)	20.2 (19.7-20.7)
Vic (n=26,160)	16.6 (16.2-17.1)	21.9 (21.4-22.4)	20.8 (20.3-21.3)	20.7 (20.2-21.2)	21.1 (20.5-21.6)
Qld (n=17,084)	15.9 (15.4-16.5)	21.7 (21.1-22.4)	20.6 (19.9-21.2)	20.5 (19.9-21.2)	21.0 (20.3-21.7)
SA (n=9,256)	13.5 (12.8-14.2)	19.5 (18.7-20.4)	18.6 (17.8-19.4)	19.1 (18.3-20.0)	19.0 (18.2-19.9)
WA (n=8,271)	16.3 (15.5-17.1)	21.8 (20.9-22.7)	19.5 (18.6-20.4)	19.6 (18.7-20.5)	19.4 (18.4-20.3)
Tas (n=2,717)	12.3 (11.0-13.5)	17.8 (16.4-19.3)	17.8 (16.3-19.3)	17.2 (15.6-18.7)	17.2 (15.6-18.8)
ACT (n=1,063)	11.2 (9.3-13.1)	18.3 (15.9-20.6)	17.3 (14.9-19.7)	16.8 (14.4-19.2)	16.5 (14.0-19.0)
NT (n=230)	8.3 (4.7-11.8)	15.7 (10.6-20.4)	17.0 (11.9-22.0)	17.0 (11.8-22.2)	16.4 (11.2-21.7)

*All N05A excluding lithium (N05AN) and prochlorperazine (N05AB04)

Note: Current state is at time of ACAP assessment as we are currently waiting on data indicating the Australian state or territory where the resident's aged care facility is located from AIHW for the ROSA National Historical Cohort. Based on data already received we estimate that approximately 2.2% of aged care recipients have an ACAT in one state and move to another state.



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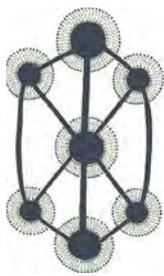
Table 3. Prevalence of atypical and typical antipsychotics dispensed prior to and after entering residential care.

	Prevalence of use, % (95% Confidence Interval)				
	Any use 12 months prior to entry (n=97,739)	0-3 months after entry (n=97,739)	3-6 months after entry (n=90,465)	6-9 months after entry (n=84,269)	9-12 months after entry (n=78,903)
Typical only	1.7 (1.7-1.8)	2.1 (2.0-2.2)	1.5 (1.4-1.6)	1.5 (1.4-1.6)	1.5 (1.4-1.6)
Atypical only	12.2 (12.0-12.4)	17.3 (17.0-17.5)	17.7 (17.4-17.9)	17.8 (17.5-18.1)	18.1 (17.8-18.3)
Both Typical and Atypical	0.8 (0.7-0.9)	1.5 (1.4-1.5)	0.8 (0.7-0.8)	0.7 (0.6-0.8)	0.7 (0.6-0.7)

Table 4. Antipsychotics most commonly dispensed after entering residential care.

Medicine (ATC code)	Prevalence of use, % (95% Confidence Interval)				
	Any use 12 months prior to entry (n=97,739)	0-3 months after entry (n=97,739)	3-6 months after entry (n=90,465)	6-9 months after entry (n=84,269)	9-12 months after entry (n=78,903)
Risperidone (N05AX08)	8.3 (8.2-8.5)	13.0 (12.8-13.2)	12.3 (12.1-12.5)	12.1 (11.9-12.4)	12.1 (11.8-12.3)
Quetiapine (N05AH04)	2.8 (2.7-2.9)	3.5 (3.4-3.7)	3.6 (3.5-3.7)	3.7 (3.5-3.8)	3.8 (3.7-3.9)
Olanzapine (N05AH03)	2.7 (2.6-2.8)	3.1 (3.0-3.2)	3.1 (3.0-3.3)	3.2 (3.1-3.3)	3.3 (3.2-3.4)
Haloperidol (N05AD01)	1.9 (1.9-2.0)	3.1 (2.9-3.2)	1.8 (1.7-1.9)	1.8 (1.7-1.8)	1.7 (1.6-1.8)

All other antipsychotics were dispensed to $\leq 0.2\%$ of the residents in the three months following entry to residential aged care.



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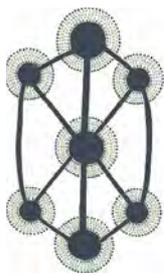
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Appendix

Table A1. List of PBS subsidised antipsychotics assessed in this study.

ATC code	Medicine name
Typical	
N05AA01	Chlorpromazine
N05AB02	Fluphenazine
N05AB06	Trifluoperazine
N05AC01	Periciazine
N05AD01	Haloperidol
N05AF01	Flupentixol
N05AF05	Zuclopenthixol
Atypical	
N05AE04	Ziprasidone
N05AH02	Clozapine
N05AH03	Olanzapine
N05AH04	Quetiapine
N05AH05	Asenapine
N05AL05	Amisulpride
N05AX08	Risperidone
N05AX12	Aripiprazole
N05AX13	Paliperidone

Note: Antipsychotics not captured in study: Lurasidone (N05AE05) was listed on the PBS during the study period, however, there were no dispensations for this cohort during that time. Additional antipsychotics not included in this report include Brexpiprazole (N05AX16) which was added to the PBS after the study period. Droperidol (N05AD08) was removed from the PBS in 2017 but not dispensed to any residents in this study.



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