

Changing general practitioner when entering residential aged care: impact on psychotropic medicine use and polypharmacy in 2,250 Australians with dementia

Heidi Welberry¹, Louisa Jorm¹, Sebastiano Barbieri¹, Benjamin Hsu¹, Andrea Schaffer¹, Mark Harris⁴, John Hall^{4,5}, Henry Brodaty^{2,3}

¹Centre for Big Data Research in Health, UNSW Sydney ²Centre for Healthy Brain Ageing (CHeBA), UNSW Sydney ³Dementia Collaborative Research Centre, School of Psychiatry, UNSW Sydney ⁴Centre for Primary Health Care and Equity, UNSW Sydney ⁵School of Population Health, UNSW Sydney

mini*
1st Annual
Research
Symposium and
Policy Forum

Background

Aged care systems around the world are under pressure because of ageing populations and the increasing prevalence of dementia. Systemic weaknesses have been widely recognised,^{1,2} and inappropriate medicine use was among the problems scrutinised by the Australian Royal Commission into the Quality and Safety of Aged Care, particularly the use of antipsychotics and sedatives as chemical restraints.^{2,3} Polypharmacy is common in residential aged care,^{4,5} as is potentially inappropriate prescribing.^{4,6} In Australian aged care facilities, psychotropic medicines (antipsychotics, benzodiazepines, antidepressants) are often dispensed to people with dementia,⁷ especially soon after entry into residential care, a critical transition point.⁸

One potential major adjustment for people during the transition to residential care is a change in general practitioner (GP).⁹ GPs are the major prescribers in Australian residential aged care,¹⁰ but little is known about how many residents change GPs when they enter aged care facilities, or the effect this has on their care. **We explored GP continuity for people with dementia entering residential care and how it influences their medicine use**, examining associations with both overall prescribing (including polypharmacy) and that of psychotropic medicines in particular.

Methods

We included participants from the 45 and Up Study¹¹ with diagnoses of dementia who entered permanent residential aged care during 1 January 2010 – 30 June 2014 and were alive six months after entry, who had been dispensed medications during the preceding two years only as concessional beneficiaries, and for whom at least three GP claims had been lodged prior to entry and at least one after entry into residential care. People with dementia were identified using previously described criteria:¹² any claim for dementia-specific medications (donepezil, rivastigmine, galantamine, memantine), or dementia diagnosis codes in hospitalisation records, aged care assessments, or the Aged Care Funding Instrument (used to assess required level of care) between July 2006 and entry into permanent residential care.

The category of GP most frequently seen by a resident during the six months after residential care entry was determined by comparing Medicare Benefits Schedule (MBS) claims for GP visits during this period with MBS records for the 24 months preceding entry. Three categories were defined:

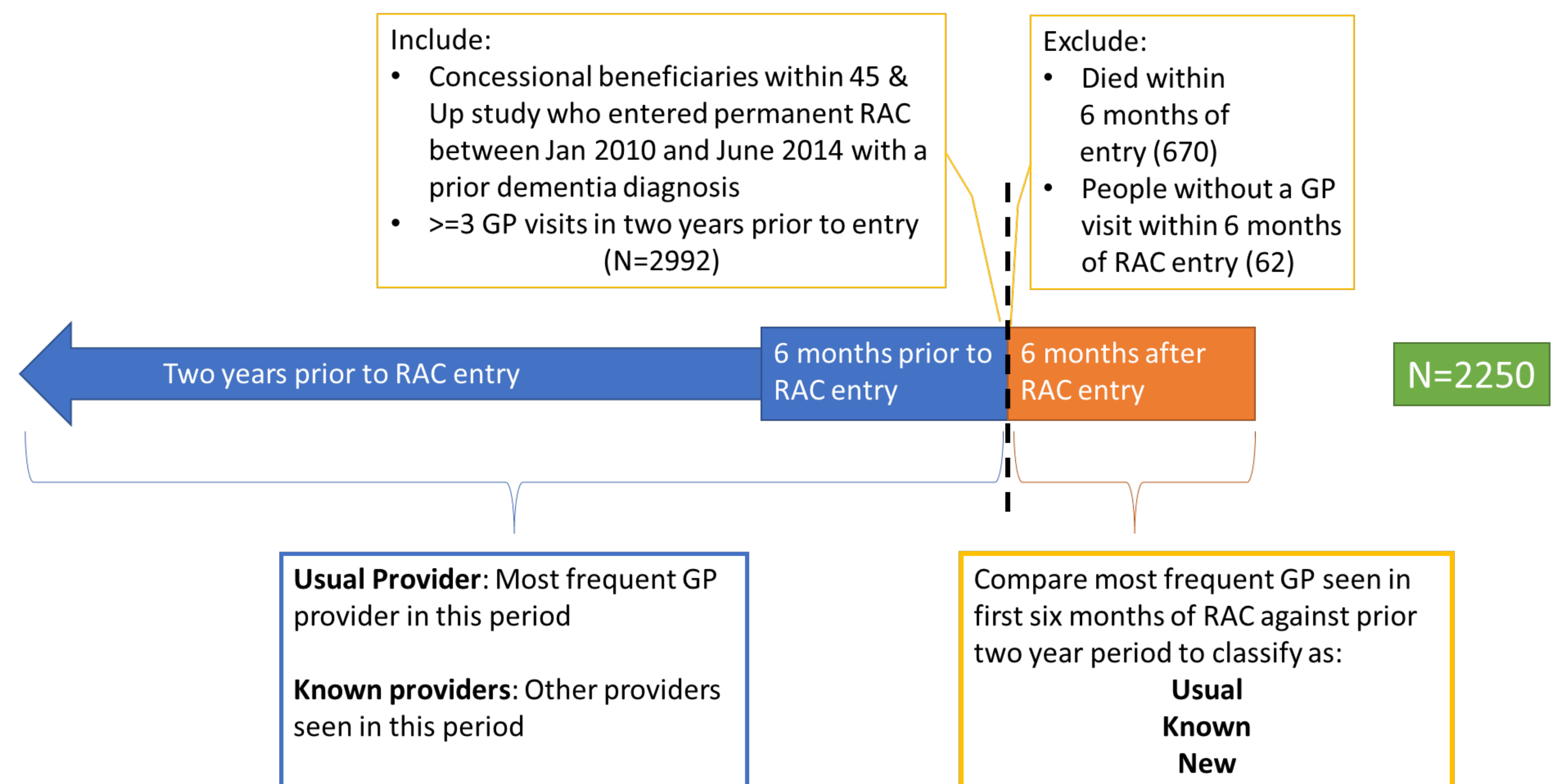
- **“usual”** when the GP most frequently seen by a resident had also been their most frequent GP prior to entry;
- **“known”** when the resident had seen the GP prior to entry but the GP was not their usual GP; and
- **“new”** when the resident had not seen the GP prior to entry to residential care.

Outcomes – six months after entry to RAC

1. Number of unique medicine dispensings (based on 7 digit ATC code)
2. Proportion with polypharmacy (≥ 5 medicines) and hyper-polypharmacy (≥ 10 medicines)
3. Proportion with an antipsychotic/ benzodiazepine/ antidepressant dispensing

Statistical Analysis

We calculated Inverse Probability of Treatment (IPT) weights to balance group characteristics using a range of covariates from the 45 and Up Baseline Survey, and prior health and social care use based on administrative datasets. The main analyses used IPT weighted regression – Logistic for binary outcomes and Poisson for count data to assess relative differences between groups. These additionally controlled for prior medicine use in the six month period before entry to RAC and prior hospitalisation (using the “survey” package in R).



Heidi was supported by an Australian Government Research Training Program scholarship; and scholarship top-up through Maintain Your Brain funded through NHMRC Boosting Dementia Research Team Grant. This research study was completed using data collected through the 45 and Up Study (www.saxinstitute.org.au). The 45 and Up Study is managed by the Sax Institute in collaboration with major partner Cancer Council NSW; and partners: the National Heart Foundation of Australia (NSW Division); NSW Ministry of Health; NSW Government Family and Community Services – Ageing, Carers and the Disability Council NSW; and the Australian Red Cross Blood Service. We thank the many thousands of people participating in the 45 and Up Study. We also thank the Centre for Health Record Linkage and the AIHW for the data linkage. Approved within the study: Exploring the relationship between social care, primary & secondary health service use and adverse health outcomes (Ethics Ref: 2015/12/623)

Changing general practitioner when entering residential aged care: impact on psychotropic medicine use and polypharmacy in 2,250 Australians with dementia

mini*
1st Annual Research Symposium and Policy Forum

Heidi Welberry¹, Louisa Jorm¹, Sebastiano Barbieri¹, Benjamin Hsu⁴, Andrea Schaffer¹, Mark Harris⁴, John Hall^{4,5}, Henry Brodaty^{2,3}

¹Centre for Big Data Research in Health, UNSW Sydney ²Centre for Healthy Brain Ageing (CHeBA), UNSW Sydney ³Dementia Collaborative Research Centre, School of Psychiatry, UNSW Sydney ⁴Centre for Primary Health Care and Equity, UNSW Sydney ⁵School of Population Health, UNSW Sydney

Results

A total of 2250 residents with dementia were included in our study. Their mean age was 84.1 years (standard deviation [SD], 7.0 years; 1236 were women (54.9%). The most frequently seen GP in residential care was their usual GP for 625 residents (27.8%), a known GP for 645 residents (28.7%), or a new GP for 980 residents (43.6%).

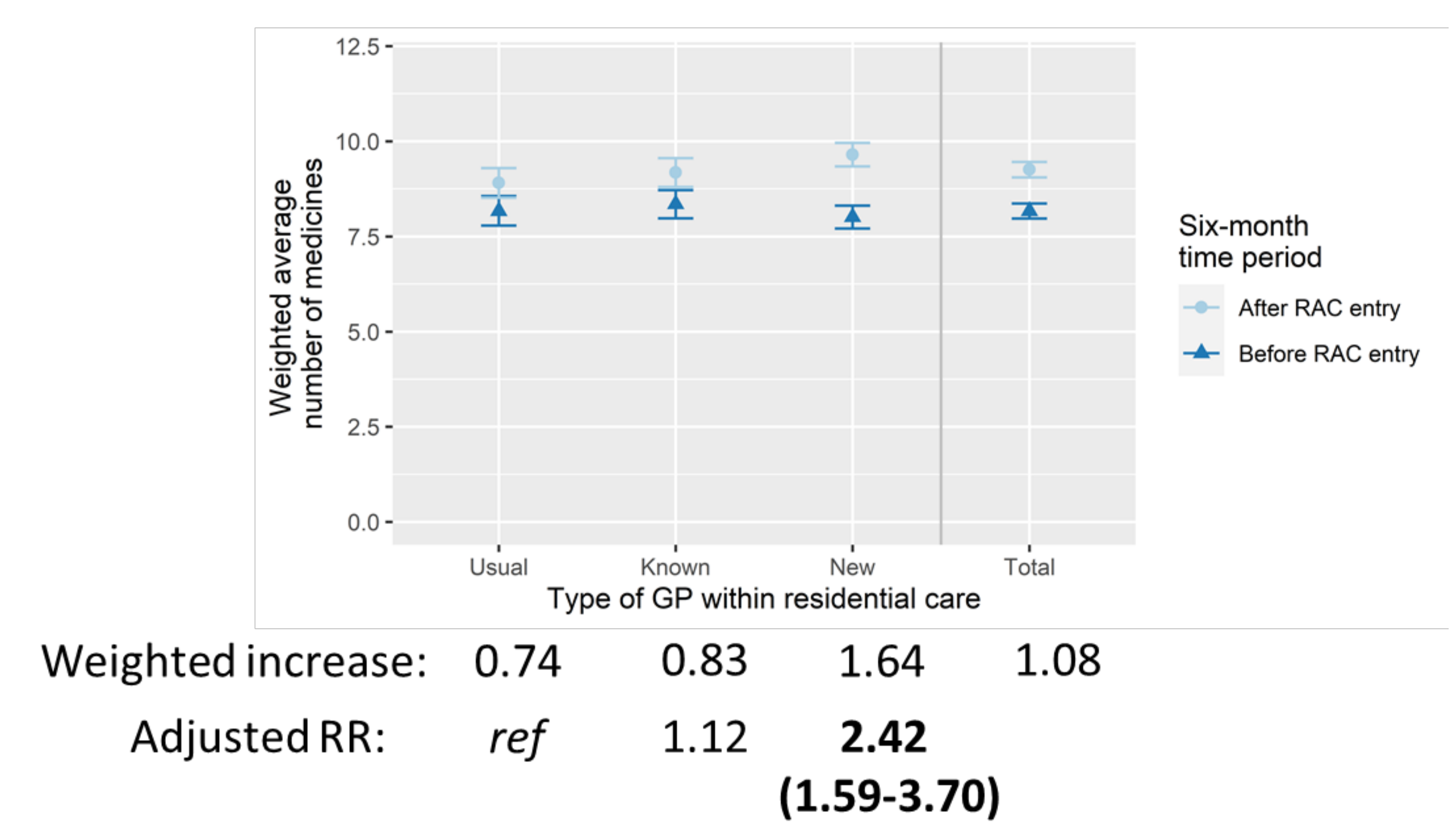
The increase in mean number of medicines for the new GP group (+1.6 medicines; 95% CI, 1.4–1.9 medicines) was larger than for the usual GP group (+0.7 medicines; 95% CI, 0.4–1.1 medicines; adjusted rate ratio [aRR], 2.42; 95% CI, 1.59–3.70); the mean increases for the known (+0.8 medicines; 95% CI, 0.5–1.2 medicines) and usual GP groups were similar (aRR, 1.12; 95% CI, 0.71–1.75) (**Panel A**).

After weighting and adjusting for pre-residential care levels of poly- and hyperpolypharmacy and for emergency hospitalisation, the odds of polypharmacy (adjusted odds ratio [aOR], 1.53; 95% CI, 1.09–2.14) and hyperpolypharmacy in residential care (aOR, 1.47; 95% CI, 1.14–1.89) were higher for the new GP group than for the usual GP group. Odds for the known and usual GP groups were similar (polypharmacy: aOR, 0.93; 95% CI, 0.64–1.36; hyperpolypharmacy: aOR, 1.21; 95% CI, 0.92–1.60). (**Panel B**).

After weighting and adjusting for pre-residential care levels of medicine use and prior emergency hospitalisation, the odds of being dispensed any psychotropic medicine (aOR, 1.64; 95% CI, 1.24–2.18), antipsychotics (aOR, 1.59; 95% CI, 1.18–2.12), or benzodiazepines (aOR, 1.69; 95% CI, 1.25–2.30) were each higher for the new GP than the usual GP group; those for the dispensing of antidepressants were similar (aOR, 1.32; 95% CI, 0.98–1.77). For all medicine types, the odds were similar for the usual and known GP groups. (**Panel C**).

The odds of antipsychotics (aOR, 1.85; 95% CI, 1.31–2.61), benzodiazepines (aOR, 1.89; 95% CI, 1.24–2.90), and antidepressants (aOR, 1.64; 95% CI, 1.10–2.44) being initiated for residents were each higher for the new GP than the usual GP group. The odds of initiating antipsychotics (aOR, 1.31; 95% CI, 0.88–1.96), benzodiazepines (aOR, 1.27; 95% CI, 0.75–2.15), or antidepressants (aOR, 1.41; 95% CI, 0.89–2.21) were similar for the known GP and usual GP groups. (**Panel D**).

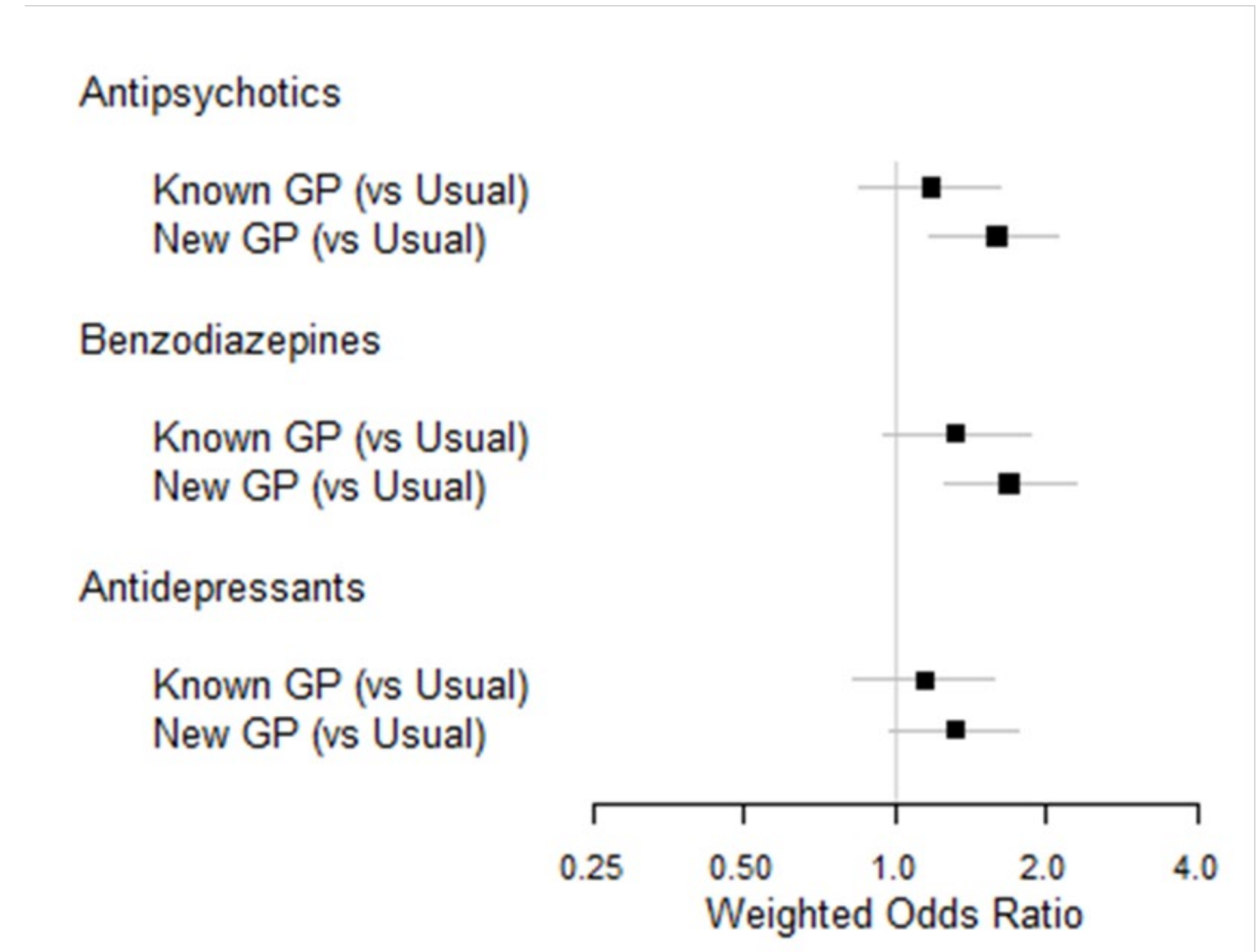
A Weighted number of medicines dispensed and Weighted increase (controlling for prior use and prior hospitalisation)



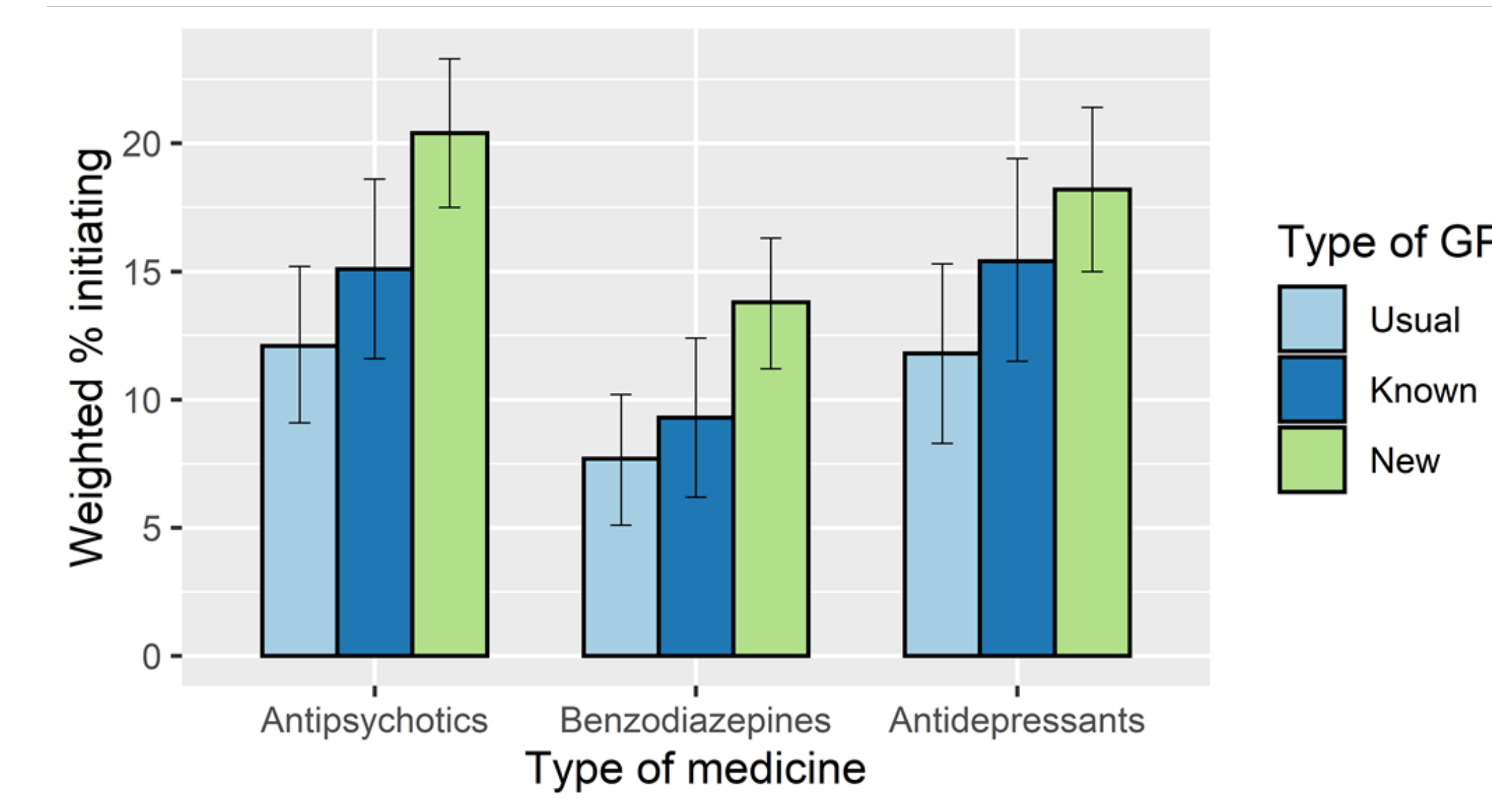
B Weighted % with Polypharmacy and Hyperpolypharmacy before and after RAC entry

GP type	Weighted % with ≥ 5 medicines post-entry	Weighted % with ≥ 10 medicines post-entry
Usual	84.6	33.8
Known	84.6	43.2
New	88.6	46.2

C Weighted odds of a psychotropic dispensing in RAC (controlling for prior use and prior hospitalisation)



D Initiation among those naïve to the medicine



Heidi was supported by an Australian Government Research Training Program scholarship; and scholarship top-up through Maintain Your Brain funded through NHMRC Boosting Dementia Research Team Grant. This research study was completed using data collected through the 45 and Up Study (www.saxinstitute.org.au). The 45 and Up Study is managed by the Sax Institute in collaboration with major partner Cancer Council NSW; and partners: the National Heart Foundation of Australia (NSW Division); NSW Ministry of Health; NSW Government Family and Community Services – Ageing, Carers and the Disability Council NSW; and the Australian Red Cross Blood Service. We thank the many thousands of people participating in the 45 and Up Study. We also thank the Centre for Health Record Linkage and the AIHW for the data linkage. Approved within the study: Exploring the relationship between social care, primary & secondary health service use and adverse health outcomes (Ethics Ref: 2015/12/623)

Changing general practitioner when entering residential aged care: impact on psychotropic medicine use and polypharmacy in 2,250 Australians with dementia

mini*
1st Annual
Research
Symposium and
Policy Forum

Heidi Welberry¹, Louisa Jorm¹, Sebastiano Barbieri¹, Benjamin Hsu^{4,5}, Andrea Schaffer¹, Mark Harris⁴, John Hall^{4,5}, Henry Brodaty^{2,3}

¹Centre for Big Data Research in Health, UNSW Sydney ²Centre for Healthy Brain Ageing (CHeBA), UNSW Sydney ³Dementia Collaborative Research Centre, School of Psychiatry, UNSW Sydney ⁴Centre for Primary Health Care and Equity, UNSW Sydney ⁵School of Population Health, UNSW Sydney

Discussion

We found that most people with dementia changed GPs when they entered residential care: 44% to previously unfamiliar GPs, and 29% to GPs known to them but not their usual GPs. There are no national data with which to directly compare our estimates, but an earlier study in South Australia similarly found that 62–76% of patients discharged from hospital to residential aged care facilities changed GPs.¹³

Residents seeing new GPs were dispensed more medicines, including antipsychotics and benzodiazepines than other new residents with dementia, the increase in dispensing after entering residential care was greater for these people, and the proportion subject to polypharmacy was larger. New GPs may appropriately initiate new treatments in response to recent changes in a patient's needs or a differing view of these needs. Polypharmacy in older people can be appropriate, but it also increases the risks of medication errors and hazardous interactions.¹⁴ The expected benefits of antipsychotics and benzodiazepines for older people with dementia are small and the risk of adverse effects is high, prompting recommendations to first try non-pharmacological alternatives.³

Conclusions

Medicine use increases to a greater degree and psychotropic drugs are dispensed at higher rates for people with dementia who change GP when they enter residential aged care than for people who continue seeing their regular GP. Facilitating GP continuity of care and better supporting GP handover processes could help prevent potentially inappropriate initiation of psychotropic medicines.

This Paper was published in the Medical Journal of Australia in July 2021:

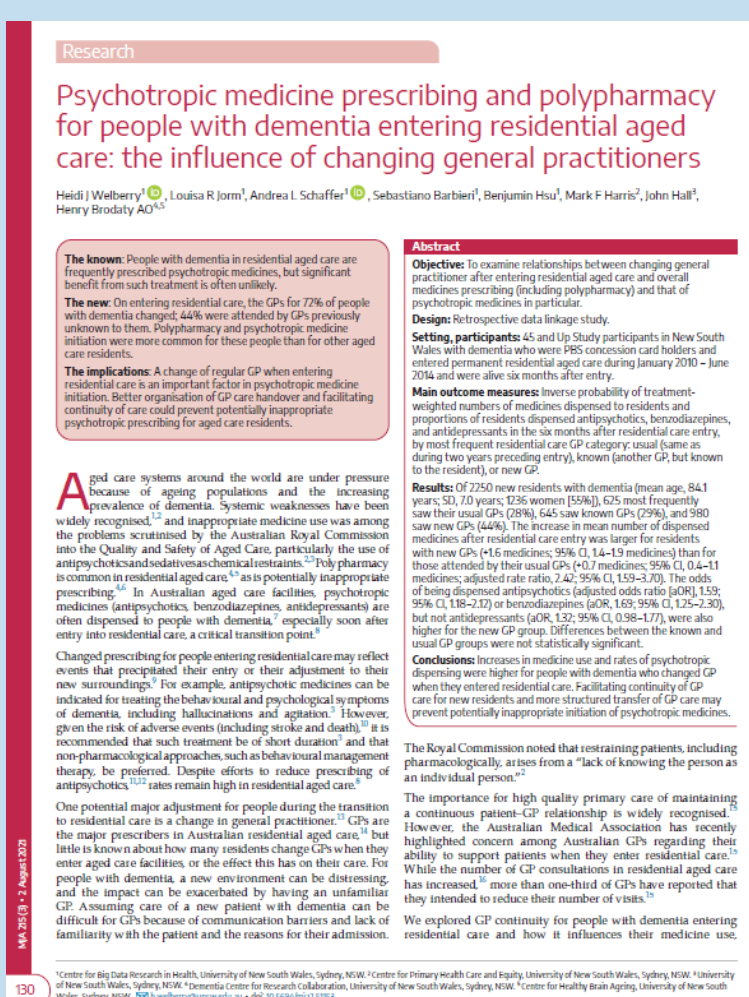
<https://www.mja.com.au/journal/2021/215/3/psychotropic-medicine-prescribing-and-polypharmacy-people-dementia-entering>

An associated podcast is available here:

<https://www.mja.com.au/podcast/215/2/mja-podcasts-2021-episode-28-psychotropics-and-dementia-effect-changing-gp-heidi>

References

1. Macdonald A, Cooper B. Long-term care and dementia services: An impending crisis. *Age Ageing*. 2007;36(1):16–22.
2. Tracey R, Briggs L. Neglect, The Interim Report of the Royal Commission into Aged Care [Internet]. Vol. 1. Canberra; 2019. Available from: <https://agedcare.royalcommission.gov.au/publications/Documents/interim-report/interim-report-volume-1.pdf>
3. The Royal Australian and New Zealand College of Psychiatrists. Antipsychotic medications as a treatment of behavioural and psychological symptoms of dementia [Internet]. Professional Practice Guideline. 2016 [cited 2020 Apr 21]. Available from: https://www.ranzcp.org/files/resources/college_statements/practice_guidelines/pg10-pdf.aspx
4. Jakanovic N, Tan ECK, Dooley MJ, Kirkpatrick CM, Elliott RA, Bell JS. Why is polypharmacy increasing in aged care facilities? The views of Australian health care professionals. *J Eval Clin Pract*. 2016;22(5):677–82.
5. Onder G, Liperoti R, Fialova D, Topinkova E, Tosato M, Danese P, et al. Polypharmacy in nursing home in Europe: Results from the SHELTER study. *Journals Gerontol - Ser A Biol Sci Med Sci*. 2012;67 A(6):698–704.
6. Harrison SL, Kouladjian O'Donnell L, Bradley CE, Milte R, Dyer SM, Gnanamanickam ES, et al. Associations between the Drug Burden Index, Potentially Inappropriate Medications and Quality of Life in Residential Aged Care. *Drugs and Aging [Internet]*. 2018;35(1):83–91. Available from: <https://doi.org/10.1007/s40266-017-0513-3>
7. Smeets CHW, Gerritsen DL, Zuidema SU, Teerenstra S, van der Spek K, Smalbrugge M, et al. Psychotropic drug prescription for nursing home residents with dementia: prevalence and associations with non-resident-related factors. *Aging Ment Heal [Internet]*. 2018;22(9):1239–46. Available from: <https://doi.org/10.1080/13607863.2017.1348469>
8. Harrison SL, Sluggett JK, Lang C, Whitehead C, Crotty M, Corlis M, et al. The dispensing of psychotropic medicines to older people before and after they enter residential aged care. *Med J Aust*. 2020;309–13.
9. Reed RL. Models of general practitioner services in residential aged care facilities. *Aust Fam Physician*. 2015;44(4):176–9.
10. Australian Institute of Health and Welfare (AIHW). Mental Health Services in Australia [Internet]. 2020 [cited 2020 Apr 27]. Available from: <https://www.aihw.gov.au/reports/mental-health-services/mental-health-services-in-australia/report-contents/mental-health-related-prescriptions/prescriptions>
11. 45 and Up Study Collaborators; Banks E, Redman S, Jorm L, et al. Cohort profile: the 45 and up study. *Int J Epidemiol* 2008; 37: 941–947.
12. Welberry HJ, Brodaty H, Hsu B, Barbieri S, Jorm LR. Measuring dementia incidence within a cohort of 267,153 older Australians using routinely collected linked administrative data. *Sci Rep [Internet]*. 2020;10(1):8781. Available from: <https://www.nature.com/articles/s41598-020-65273-w>
13. Crotty M, Rowett D, Spurling L, Giles LC, Phillips PA. Does the addition of a pharmacist transition coordinator improve evidence-based medication management and health outcomes in older adults moving from the hospital to a long-term care facility? Results of a randomized, controlled trial. *Am J Geriatr Pharmacother*. 2004 Dec;2(4):257–64.
14. Nguyen JK, Fouts MM, Kotabe SE, Lo E. Polypharmacy as a risk factor for adverse drug reactions in geriatric nursing home residents. *Am J Geriatr Pharmacother [Internet]*. 2006;4(1):36–41. Available from: <http://www.sciencedirect.com/science/article/pii/S1543594606000031>



Heidi was supported by an Australian Government Research Training Program scholarship; and scholarship top-up through Maintain Your Brain funded through NHMRC Boosting Dementia Research Team Grant. This research study was completed using data collected through the 45 and Up Study (www.saxinstitute.org.au). The 45 and Up Study is managed by the Sax Institute in collaboration with major partner Cancer Council NSW; and partners: the National Heart Foundation of Australia (NSW Division); NSW Ministry of Health; NSW Government Family and Community Services – Ageing, Carers and the Disability Council NSW; and the Australian Red Cross Blood Service. We thank the many thousands of people participating in the 45 and Up Study. We also thank the Centre for Health Record Linkage and the AIHW for the data linkage. Approved within the study: Exploring the relationship between social care, primary & secondary health service use and adverse health outcomes (Ethics Ref: 2015/12/623)

