

Supplementary Material

Publication: Coleman LA, Brett J, Daniels BJ, Pearson S-A, Falster MO. Medicine reviews: do they reduce benzodiazepine use in older Australians? Public Health Res Pract. 2020

<https://doi.org/10.17061/phrp30452015>

Contents

| | |
|--|---|
| Supplementary Table 1: Variables used in propensity score matching..... | 2 |
| Supplementary Table 2: Standard difference between medicine review and control groups, for matching characteristics at baseline..... | 3 |
| Supplementary Table 3: Number of people exposed to benzodiazepines at the time of medicine review, and 90 days and 180 days follow-up, as well as in a matched comparison group exposed to benzodiazepines but who did not receive a medicine review, overall and stratified by volume of benzodiazepine exposure at baseline..... | 5 |
| Supplementary Figure 1: Benzodiazepine exposure at the time of medicine review, using the estimated period of exposure (EPE) of each dispensing..... | 6 |

Supplementary Table 1: Variables used in propensity score matching.

| Variable | Method | Subgroups |
|---|--|--|
| Sex | Patient Sex Characteristic. | M, F |
| Age | Age at date of medicine review. | 65 - 75 years 76 – 85 years 86 – 95 years 96+ years |
| Number of unique medications dispensed in the 90 days prior | The count of unique ATC codes within PBS dispensings in the 90 days prior to the medicine review. | 0-5, 6-10, 11+ |
| Number of benzodiazepine dispensings in the 90 days prior | The count of benzodiazepine dispensings within PBS dispensings in the 90 days prior to the medicine review. | 1, 2-4, 5+ |
| Volume of benzodiazepines (as Diazepam equivalent) dispensed in the 90 days prior | For each PBS dispensings of benzodiazepine in the 90 days prior to the medicine review, the tablet equivalent in diazepam was calculated, and multiplied by the pack size. These values were summed for every dispensing in the 90 day window. | 0-250mg, 251-500mg, 501mg+ |
| N. of GP Consultations in the Year prior | The count of MBS claims with “A01” or “A02” as the Item Group Code, in the 365 days prior to the medicine review. | 0-9, 10-19, 20-29, 30+ |
| N. of Specialist Consultations in the Year prior | The count of MBS claims with “A03” as the Item Group Code, in the 365 days prior to the medicine review. | 0, 1+ |
| N. of unique GPs and Specialists in the year prior | The count of unique Service Provider IDs in MBS claims with “A01”, “A02” and “A03” as the Item Group Code, in the 365 days prior to the medicine review. | 0-1, 2-3, 4-5, 6+ |
| RxRisk Flags | 46 flags for a variety of pathologies which have been validated in the Australian Setting using ATC Codes. The flags required 6 months of PBS dispensings prior to the medicine review. | n/a |

Supplementary Table 2: Standard difference between medicine review and control groups, for matching characteristics at baseline.

| Characteristic | People who received a medicine review | | Comparison group | | Standard Difference |
|--|---------------------------------------|---------|------------------|---------|---------------------|
| | n | %n of N | n | %n of N | |
| Demographics | | | | | |
| Sex (Female) | 2720 | 68% | 2661 | 66.5% | 0.031 |
| Age | | | | | |
| 65 - 75 | 807 | 20.2% | 901 | 22.5% | 0.102 |
| 76 – 85 | 1603 | 40.1% | 1700 | 42.1% | |
| 86 – 95 | 1427 | 35.7% | 1243 | 31.1% | |
| 95+ | 165 | 4.1% | 158 | 4.0% | |
| Service utilisation in the year prior to medicine review | | | | | |
| Number of GP consultations in the year prior | | | | | |
| 0-9 | 564 | 14.1% | 590 | 14.7% | 0.137 |
| 10-19 | 1476 | 36.9% | 1648 | 41.2% | |
| 20-29 | 955 | 23.9% | 955 | 23.9% | |
| 30+ | 1007 | 25.2% | 809 | 20.2% | |
| Number of specialist consultations in the year prior | | | | | |
| 0 | 2410 | 60.2% | 2139 | 53.4% | 0.137 |
| 1+ | 1592 | 39.8% | 1863 | 46.6% | |
| Number of unique GPs and specialists in the year prior | | | | | |
| 0-1 | 699 | 17.5% | 586 | 14.6% | 0.101 |
| 2-3 | 1686 | 42.1% | 1629 | 40.7% | |
| 4-5 | 954 | 23.8% | 1023 | 25.6% | |
| 6+ | 663 | 16.6% | 764 | 19.1% | |
| Benzodiazepine dispensing in the 90 days prior to medicine review | | | | | |
| Number of benzodiazepine dispensings in the 90 days prior | | | | | |
| 1 | 872 | 21.8% | 922 | 23.0% | 0.125 |
| 2-4 | 2299 | 57.5% | 2442 | 61.0% | |
| 5+ | 831 | 20.8% | 638 | 39.9% | |
| Volume of benzodiazepines (as Diazepam equivalent) dispensed in the 90 days prior | | | | | |
| 0-250 mg | 1465 | 36.6% | 1465 | 36.6% | 0 |
| 251-500 mg | 1458 | 36.4% | 1458 | 36.4% | |
| 501+ mg | 1079 | 27.0% | 1079 | 27.0% | |
| Other medicine dispensing in the 90 days prior to medicine review | | | | | |
| Number of unique medications dispensed in the 90 days prior | | | | | |
| 0-5 | 422 | 10.5% | 509 | 12.7% | 0.085 |
| 6-10 | 1846 | 46.1% | 1897 | 47.4% | |
| 11+ | 1734 | 43.3% | 1596 | 39.9% | |
| Medicine groups, classified by RxRisk * | | | | | |
| Alcohol | 8 | 0.2% | 3 | 0.1% | 0.034 |
| Allergies | 55 | 1.4% | 48 | 1.2% | 0.016 |
| Anticoagulants | 764 | 19.1% | 824 | 20.6% | 0.038 |
| Antiplatelet | 1789 | 44.7% | 1613 | 40.3% | 0.089 |
| Anxiety | 2273 | 56.8% | 2201 | 55.0% | 0.036 |
| Arrhythmia | 544 | 13.6% | 562 | 14.0% | 0.013 |
| Benign Prostatic Hyperplasia | 55 | 1.4% | 80 | 2% | 0.049 |
| Bipolar | 39 | 1.0% | 8 | 0.2% | 0.102 |
| Chronic Airways Disease | 1390 | 34.7% | 1470 | 36.7% | 0.042 |

| | | | | | |
|---------------------------------|------|-------|------|-------|-------|
| Congestive Heart Failure | 1035 | 25.9% | 1008 | 25.2% | 0.015 |
| Dementia | 288 | 7.2% | 52 | 1.3% | 0.296 |
| Depression | 2346 | 58.6% | 1992 | 49.8% | 0.178 |
| Diabetes | 773 | 19.3% | 798 | 19.9% | 0.016 |
| Epilepsy | 682 | 17.0% | 586 | 14.6% | 0.066 |
| Glaucoma | 445 | 11.1% | 423 | 10.6% | 0.018 |
| Gastroesophageal Reflux Disease | 2579 | 64.4% | 2651 | 66.2% | 0.038 |
| Gout | 348 | 8.7% | 391 | 9.8% | 0.037 |
| Hepatitis B | 0 | 0% | 0 | 0% | N/A |
| Hepatitis C | 0 | 0% | 0 | 0% | N/A |
| HIV | 1 | 0.1% | 1 | 0.1% | 0 |
| Hyperkalaemia | 0 | 0% | 0 | 0% | N/A |
| Hyperlipemia | 2132 | 53.3% | 2257 | 56.4% | 0.063 |
| Hypertension | 2179 | 54.4% | 2303 | 57.6% | 0.062 |
| Hyperthyroidism | 42 | 1.0% | 41 | 1.0% | 0.002 |
| Hypothyroidism | 570 | 14.2% | 535 | 13.4% | 0.025 |
| Irritable Bowel Syndrome | 55 | 1.4% | 65 | 1.6% | 0.021 |
| IHD: Angina | 796 | 19.9% | 806 | 20.1% | 0.006 |
| IHD: Hypertension | 1984 | 49.6% | 2043 | 51.0% | 0.029 |
| Incontinence | 217 | 5.4% | 182 | 4.5% | 0.040 |
| Inflammation/Pain | 860 | 21.5% | 897 | 22.4% | 0.022 |
| Liver Failure | 457 | 11.4% | 321 | 8.0% | 0.115 |
| Malignancies | 102 | 2.5% | 114 | 2.8% | 0.019 |
| Malnutrition | 0 | 0% | 0 | 0% | N/A |
| Migraine | 34 | 0.8% | 41 | 1.0% | 0.018 |
| Osteoporosis/Pagets Disease | 856 | 21.4% | 808 | 20.2% | 0.030 |
| Pain | 2302 | 57.5% | 2204 | 55.1% | 0.049 |
| Pancreatic insufficiency | 35 | 0.9% | 42 | 1.0% | 0.018 |
| Parkinson's Disease | 318 | 8.0% | 240 | 6.0% | 0.077 |
| Psoriasis | 35 | 0.9% | 30 | 0.8% | 0.014 |
| Psychotic Illness | 1131 | 28.3% | 347 | 8.7% | 0.522 |
| Pulmonary Hypertension | 3 | 0.1% | 1 | 0.1% | 0.022 |
| Renal Disease | 75 | 1.9% | 86 | 2.1% | 0.020 |
| Smoking Cessation | 68 | 1.7% | 68 | 1.7% | 0 |
| Steroid-responsive disease | 883 | 22.1% | 911 | 22.8% | 0.017 |
| Transplant | 4 | 0.1% | 6 | 0.1% | 0.014 |
| Tuberculosis | 0 | 0% | 0 | 0% | N/A |

Supplementary Table 3: Number of people exposed to benzodiazepines at the time of medicine review, and 90 days and 180 days follow-up, as well as in a matched comparison group exposed to benzodiazepines but who did not receive a medicine review, overall and stratified by volume of benzodiazepine exposure at baseline.

| Exposure to benzodiazepines | Medicine Review | | Comparison group | | p-value |
|--|-----------------|----------|------------------|----------|---------|
| | n | (% of N) | n | (% of N) | |
| Total cohort | | | | | |
| People (N) | 4002 | 100% | 4002 | 100% | - |
| Exposure at 90 days | 2814 | 70.31% | 2698 | 67.42% | 0.006 |
| Exposure at 180 days | 2547 | 63.94% | 2480 | 61.97% | 0.120 |
| Low use at baseline (0-250mg) | | | | | |
| People (N) | 1465 | 100% | 1465 | 100% | - |
| Exposure at 90 days | 727 | 49.6% | 673 | 45.9% | 0.046 |
| Exposure at 180 days | 677 | 46.2% | 629 | 42.9% | 0.074 |
| Medium use at baseline (251-500 mg) | | | | | |
| People (N) | 1458 | 100% | 1458 | 100% | - |
| Exposure at 90 days | 1163 | 79.8% | 1102 | 75.6% | 0.007 |
| Exposure at 180 days | 1034 | 70.9% | 1005 | 68.9% | 0.242 |
| High use at baseline (500mg+) | | | | | |
| People (N) | 1079 | 100% | 1079 | 100% | - |
| Exposure at 90 days | 924 | 85.6% | 923 | 85.5% | 0.951 |
| Exposure at 180 days | 836 | 77.5% | 846 | 78.4% | 0.604 |

Supplementary Figure 1: Benzodiazepine exposure at the time of medicine review, using the estimated period of exposure (EPE) of each dispensing.

