

Rhode Island Has the Highest Rate of Medicare Part D Claims for Benzodiazepines Among New England States

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ABSTRACT

BACKGROUND: Benzodiazepine use among older adults is discouraged.

METHODS: We analyzed the Medicare Part D Prescribers by Provider and Drug dataset to determine the number of benzodiazepine claims per 100 Medicare enrollees for each NE state between 2016–2020, and to determine the percentage of benzodiazepine claims by provider type.

RESULTS: Rhode Island led all NE states with the highest annual rates of Part D benzodiazepine claims for all years from 2016 to 2020. Benzodiazepine claims decreased in all NE states over the 5-year period. Internal medicine and family practice providers were associated with the highest percentage of benzodiazepine claims.

CONCLUSION: While Part D benzodiazepine claims declined between 2016–2020, the overall volume of dispensings suggests that these medications remain overprescribed among older adults. Our findings underscore the need for intensified efforts to reduce benzodiazepine use among Medicare beneficiaries in RI.

KEYWORDS: Benzodiazepine, Medicare Part D, Deprescribing

INTRODUCTION

The opioid crisis caused a reckoning about the immense risks of addictive medication. Benzodiazepines are like opioids in that they are frequently prescribed despite having risks that can outweigh the therapeutic benefit. Benzodiazepines remain commonly prescribed for an array of conditions such as anxiety, insomnia, panic and seizure disorders, and skeletal muscle spasms.¹ They are also prescribed for many off-label conditions, and are often used illicitly.² National survey data from 2015–2016 indicate that approximately 10% of US adults reported using benzodiazepines during the past year,³ and an estimated 8.7% of US adults age 65–80 years received benzodiazepines in 2008 (men 6.2%, women 10.8%).⁴ In 2016, an estimated 8.5% of adults age 65–75 years in the US veteran's population were prescribed benzodiazepines.⁵ Three benzodiazepine drugs, alprazolam, clonazepam and lorazepam, were among the top 100 drugs dispensed in the US in 2020.⁶

Harms of benzodiazepines include central nervous system depression, cognitive impairment, and an increased risk of accidents and falls.^{1,7} Tolerance and dependence occurs with chronic use, and it can be intensely difficult for patients to discontinue therapy. In 2020 the US Food and Drug Administration added a boxed warning to all benzodiazepine products alerting prescribers about these risks.⁸

Benzodiazepine use among older adults is particularly discouraged. The Beers Criteria for Potentially Inappropriate Medication Use in Older Adults offers a “strong” recommendation to generally avoid benzodiazepines, noting that elderly patients have increased sensitivity to and decreased metabolism of these agents.⁹ The *Choosing Wisely* initiative includes a recommendation by the American Geriatrics Society that clinicians and older patients should question the use of benzodiazepines as an initial therapy for insomnia or agitation.¹⁰

To assess the extent of prescription benzodiazepine use among older adults in Rhode Island (RI) we analyzed Medicare Part D data to compare the number of benzodiazepine claims per beneficiary within each New England (NE) state. We also determined the provider types that most frequently issued benzodiazepine prescriptions. The results provide a backdrop for discussion about the narrowing indications for benzodiazepines and deprescribing these drugs.

METHODS

We conducted a series of retrospective cross-sectional analyses of the Medicare Part D Prescribers by Provider and Drug Dataset for the years 2016–2020. These data are publicly available for download from the Centers for Medicare & Medicaid Services (CMS) website.¹¹ The data are patient de-identified, and include provider-level summaries of pharmacy dispensings issued to Medicare Part D enrollees for both Medicare Advantage and stand-alone prescription drug plans.

From these data we determined the total annual claim counts in each NE state for each year from 2016–2020, for alprazolam, chlorthalidopoxide, clonazepam, clorazepate, diazepam, estazolam, flurazepam, lorazepam, oxazepam, temazepam, and triazolam. Claim counts represent unique pharmacy dispensing events (i.e., new prescriptions and refills). Patients using benzodiazepines chronically would have multiple claims per year. To enable cross-state

comparisons, we divided the total number of annual benzodiazepine claims in each state by the number of Medicare beneficiaries enrolled in either Medicare Advantage or stand-alone Part D drug plans in that state as of December of the enrollment year.¹² We then calculated the annual number of benzodiazepine claims per 100 enrolled Medicare beneficiaries for each NE state.

One major caveat to our calculations is that for deidentification purposes the database only includes events where a prescriber was associated with 11 or more prescriptions for a specific benzodiazepine drug during the year. For example, if Part D benzodiazepine claims dispensed to patients of physician A.B. Smith included 21 prescriptions for lorazepam, 13 prescriptions for diazepam, and 4 prescriptions for alprazolam, only the lorazepam and diazepam prescriptions would appear in the database. Thus, the data enable a general assessment of the annual volume of benzodiazepine claims but cannot be used to derive precise estimates of total dispensings.

We also determined the percentage of benzodiazepine claims issued by provider type for each NE state in 2020. Using the provider designations listed in the database, we created three groups which represented more than 90% of all benzodiazepine claims: 1.) Internal Medicine/Family Practice; 2.) Psychiatry and/or Neurology; and 3.) Mid-Level Prescribers, which included Physician Assistant, Nurse Practitioner, and Certified Clinician Assistant. We contrasted the proportions of benzodiazepine claims issued from these provider type groupings across the NE states.

We did not test the statistical significance of differences in claims for benzodiazepines between NE states or over time because the data are aggregated at the provider and drug product levels, precluding variance-based testing. We calculated 95% confidence intervals around the claims rates, but the large number of observations resulted in overpowering that yielded extremely small intervals and no additional insights. This study was deemed exempt by the IRB at the University of Rhode Island, as the data are publicly available and do not include patient-specific information.

RESULTS

In 2020 there were 177,605 total claims for benzodiazepines in RI, dispensed to 169,563 enrollees of Medicare Advantage and stand-alone Part D drug plans. This equates to 105 benzodiazepine claims per 100 enrolled Medicare beneficiaries, or roughly 1 claim for each beneficiary. RI led all NE states with the highest rates of annual Part D benzodiazepine claims per 100 Medicare beneficiaries for all years from 2016 to 2020 (Figure 1). The rate in 2020 was similar in Massachusetts (MA), for which there were 96.8 annual benzodiazepine claims per 100 beneficiaries, while lowest rates were observed for Vermont (VT) and Maine (ME), which had 62.4 and 60.4 annual benzodiazepine claims per 100 beneficiaries, respectively.

Figure 1. Total Annual Part D Pharmacy Claims for Benzodiazepines Per 100 Medicare Beneficiaries Among New England States: 2016–2020.

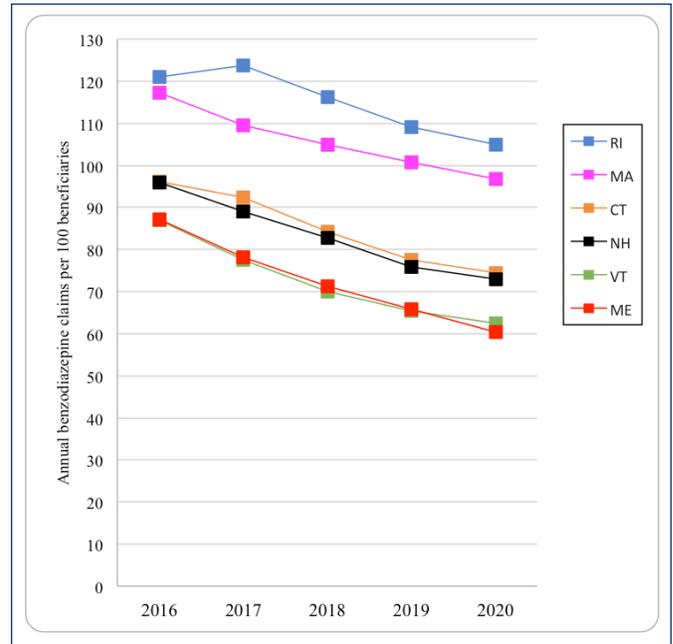
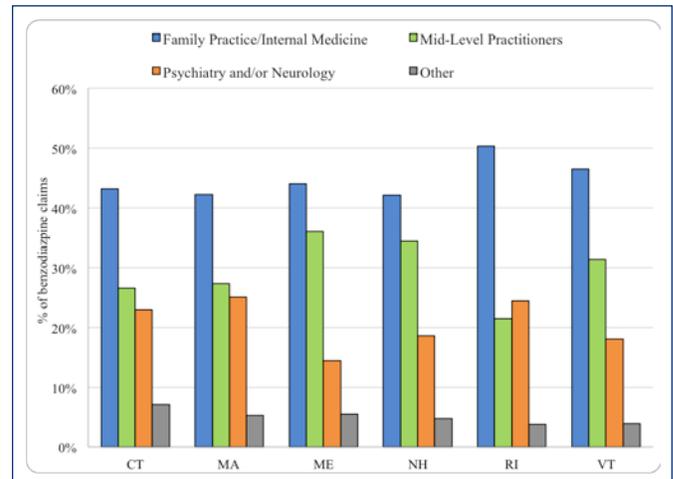


Figure 2. Prescriber Types Associated with Benzodiazepine Claims in Medicare Part D, 2020



Mid-level practitioners category includes physician assistant, nurse practitioner and certified clinical assistant

There was a decreasing trend in total annual benzodiazepine claims per 100 beneficiaries for every NE state over the 5-year period, with one exception being a slightly increased rate of benzodiazepine claims in RI for 2017 compared with 2016. Otherwise, rates of annual benzodiazepine claims per 100 beneficiaries decreased year after year in each NE state. ME had the most substantial decrease in total annual benzodiazepine claims per 100 beneficiaries over the 5-year span, as the ME rate in 2020 was 30% less than the ME rate in 2016. In contrast, RI experienced a lesser 13.3% decline

in benzodiazepine claims per 100 beneficiaries in 2020 as compared with the RI rate for 2016.

Figure 2 depicts the top prescriber types associated with benzodiazepine claims for each NE state in 2020. For all NE states, Internal Medicine/Family Practice providers were associated with the highest percentage of benzodiazepine claims. RI had the highest percentage of claims that were prescribed by Internal Medicine/Family Practice providers (50.4%), while Psychiatry/Neurology was the second most frequent prescriber type in RI (22% of claims). In all other NE states mid-level practitioners were the second most frequent prescriber type. The percentage of benzodiazepines issued by mid-level practitioners was lowest in RI (21%) and highest in ME (36%) and NH (35%).

DISCUSSION

We were encouraged to observe a decreasing trend in the annual rate of benzodiazepine claims in Medicare Part D in RI and for all other NE states, which suggests that efforts to limit the use of these medications among older adults are having an effect. However, the overall number of benzodiazepines dispensed in Medicare Part D across NE states reveals that these medications continue to be commonly prescribed. Notably, the highest rate of benzodiazepine claims occurred in RI, which had approximately 1 benzodiazepine claim for each Medicare beneficiary in 2020. This was more than 40% higher than the rate for ME and VT. These findings suggest the need for coordinated and intensified efforts to reduce the use of benzodiazepines among Medicare beneficiaries in RI, involving prescribers, pharmacists, payers and patients.

Several explanations may be offered to explain the higher rate of benzodiazepine claims in RI as compared with other NE states. Perhaps Medicare beneficiaries in RI have a higher prevalence of conditions for which benzodiazepines are prescribed. We were unable to assess medical diagnoses, which are not included in this database. However, benzodiazepine use has been reported to be higher in the Medicare disability population as compared with Medicare beneficiaries age 65 or older.¹³ Thus, we wondered if the Medicare disability population was proportionally higher in RI than in other NE states. Yet these percentages are roughly the same for RI, NH, ME and VT, with each state having 14–15% of Medicare disability enrollees as a percentage of all Medicare enrollment in 2020. Another possible explanation for the higher rate of benzodiazepine claims in RI might be a greater degree of medicalization in RI, attributed to easier access to more densely situated providers and systems of care. This may also explain the higher rates of benzodiazepine claims observed for MA as compared with more rural NE states.

We also observed substantial variation across NE states in the types of providers who issued benzodiazepine prescriptions. Overall, 42–52% of benzodiazepine claims were prescribed by Internal Medicine/Family Practice providers. This

suggests that efforts to reduce the use of benzodiazepines should focus on primary care. Additionally, benzodiazepine claims were more frequently issued by mid-level providers in NH, ME and VT as compared with other NE states, and least frequently in RI. It is unclear if these differences belie different inclinations for benzodiazepine prescribing among mid-level practitioners across NE states, or rather reflect differing roles of mid-level practitioners. Nevertheless, 21–36% of benzodiazepine claims were issued by mid-level practitioners, and interventions to reduce benzodiazepine prescribing should include these providers. Relatively fewer benzodiazepine claims were issued by psychiatrists and neurologists (14–25%). This finding aligns with a previous analysis of commercial pharmacy claims that found that a relatively small proportion of benzodiazepine prescriptions were issued for older adults by psychiatrists specifically (5.7%).⁴

REDUCING BENZODIAZEPINE USE

Strategies for reducing the use of benzodiazepines include 1) prescribing these medications less frequently and for shorter duration, and 2) discontinuing the use of benzodiazepines. The first strategy is supported by an increasing emphasis on safer alternatives to benzodiazepines for most indications, including generalized anxiety disorder. US experts^{14,15} and guidelines from the United Kingdom¹⁶ and Canada¹⁷ highlight a preferred role for cognitive behavioral therapy (CBT), and recommend selective serotonin receptor inhibitors and serotonin-norepinephrine reuptake inhibitors as first line pharmacotherapy choices for chronic anxiety, while benzodiazepines should be limited to as-needed and short-term use.

Benzodiazepines are also prescribed for patients with post-traumatic stress disorder (PTSD), yet antidepressants are favored for this condition as well. Guidelines from the VA/DOD for the Management of PTSD and Acute Stress Disorder¹⁸ include a “strong against” for benzodiazepines as monotherapy in PTSD due to a lack of evidence for benefit and known harms.

CBT has also been proven to be effective for insomnia,¹⁹ yet medication is often prescribed. Guidelines from the American Academy of Sleep Medicine (AASM) state that the benefits of triazolam are approximately equal to its harms (based on high-quality evidence). The AASM rating of temazepam is more favorable, yet the AASM also note that robust long-term safety data for temazepam are lacking. Only triazolam and temazepam are addressed in the AASM guidelines, reflecting the lack of evidence for use of other benzodiazepines for insomnia.

Muscle spasticity is another condition for which benzodiazepines such as diazepam and clonazepam are prescribed. While these medications can be efficacious for this indication, they are less suitable than other agents for chronic spasticity due a high risk of tolerance and dependence.²⁰ Two other established roles of benzodiazepines include the

management of acute alcohol withdrawal²¹ and as an acute or adjunctive therapy for seizure disorders.²² These lesser prevalent conditions likely do not represent the majority of benzodiazepine prescribing in Medicare Part D.

A second emphasis for reducing the use of benzodiazepines is to discontinue their use when clinically appropriate. The benefit to harm calculus sides more towards harm as people age, and an earnest discussion about the risks of benzodiazepines with advancing age may provide patients with the motivation needed to transition off of therapy. However, cessation of chronic benzodiazepine use can be extraordinarily difficult and should never be abrupt; slow gradual tapering is essential. Severe withdrawal effects can include delirium tremens, convulsions, psychosis and suicidal ideation.²³ Patients can also experience altered perception, headache, insomnia, irritability, nausea, and muscle aches, among other symptoms.²⁴ For a basic outline of relevant considerations and a suggested tapering protocol, we refer the reader to a guidance document developed by the VA's National Center for PTSD entitled *Helping Patients Taper from Benzodiazepines*.²⁵ Additionally, practitioners should center the approach to discontinuation upon the lived experience of the patient, as the physical and emotional challenges posed by benzodiazepine cessation can have profound and continuing impacts.²⁶

This study has several limitations. Foremost, the Medicare Part D data used for this analysis enable only a general assessment of the annual volume of benzodiazepine claims for each NE state. Our results should not be interpreted as an epidemiologic estimate of the prevalence of benzodiazepine use, and differences in benzodiazepine claims across NE states may be attributable to varying demographic or clinical characteristics. The data used in this study do not include patient diagnoses, and we were unable to determine the indications for benzodiazepine use. Additionally, differences in the proportions of provider specialties associated with benzodiazepine claims should not be generalized beyond Part D enrollees. Finally, we omitted discussion of the substantial risk associated with the concurrent use of benzodiazepines and opioids as this was beyond the scope of our study.

CONCLUSION

While rates of Part D benzodiazepine claims declined between 2016-2020 for all NE states, the overall volume of dispensings suggests that these medications remain overprescribed among older adults. Highest rates of benzodiazepine claims were observed for RI. Throughout NE, a majority of benzodiazepine claims were issued by primary care and mid-level providers. Our findings underscore the need for coordinated and intensified efforts to reduce the use of benzodiazepines among NE Medicare beneficiaries, involving prescribers, pharmacists, payers and patients.

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