

# The Brewing of an Updated 2019 Beers Criteria and its Impact on the Older Medicare Beneficiaries

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## BACKGROUND

- The American Geriatrics Society (AGS) Beers Criteria provides guidance on potentially inappropriate medications (PIMs) in older (65+ years old) adults.
- The Beers Criteria are intended to improve drug safety, reduce adverse drug events, and optimize medication selection in older adults.<sup>1,2</sup>
- The 2019 Beers Criteria update
  - Further clarified the language and rationale of recommendations.
  - Streamlined recommendations based on:
    - Updated level of evidence.
    - Updated safety profiles.
    - Medication use/availability in the United States, and
    - Applicable/relevant effects unique to older adults.<sup>1</sup>
- Despite access to these criteria, PIM use among older adults is still prevalent:
  - PIM usage was found in 46% of noninstitutionalized African American older adults:
    - 56% of those PIMs increased the risk of falls and fractures.
    - Proton pump inhibitors (46%) and those taking ≥ 2 central nervous system (CNS) active agents (18%) were the most common PIMs.<sup>3</sup>
  - The presence of certain sociodemographic characteristics are more likely in those with PIM usage.
    - PIM prevalence was higher in those aged 75-79, female, white, or not currently married.
    - The most prevalent PIMs were benzodiazepines (BZD) (17%), non-BZD hypnotics (16%), and antidepressants (15%).
    - Female drivers were twice as likely to use PIMs.
    - PIM prevalence was significantly higher in urban areas (73%) vs. suburban (14%) or rural (13%) areas.<sup>4</sup>
  - Opioids (76%) and BZDs (62%) were the most common PIM classes in those taking 2+ CNS medications.<sup>5</sup>
- PIM use in older adults is associated with a(an):
  - Increased incidence of adverse drug reactions.<sup>6</sup>
  - Greater risk of hospitalizations and ER visits.<sup>7,8</sup>
  - Significantly higher mean annual health care costs.<sup>9</sup>

## OBJECTIVES

Identify the prevalence of PIM use in a non-institutionalized Medicare beneficiary population based on the 2019 Beers Criteria.

## METHODS

- 14 health fairs targeting outpatient Medicare beneficiaries were held in 10 cities throughout Northern/Central California in Fall 2018.
- Beneficiaries were offered medication therapy management (MTM) services at each clinic site.
- MTM interventions were provided by trained student pharmacists (under the supervision of a licensed pharmacist) from the University of the Pacific.
- Each intervention was conducted via a guided structured interview.
  - Demographic, disease state, drug and medication-related findings data were recorded.
- Beneficiaries' prescription medications were entered in the Medicare Plan Finder Tool (available at [www.medicare.gov](http://www.medicare.gov)) and their unique Drug List ID and Password were recorded.
- Prescription medication and chronic condition data were cross-referenced using both the 2015 and updated 2019 Beers Criteria.
  - Data on the following metrics in the study sample are reported:
    - PIMs
    - PIMs due to drug-disease/syndrome
    - Potentially clinically important drug-drug interactions
- Beneficiaries 65 years of age or older and taking ≥ 1 prescription medication comprised the study sample.
- Descriptive and inferential statistics were used to summarize collected data and the probability of making a Type 1 error was set to 0.05 a-priori.
- All statistics were performed via IBM SPSS Statistics (IBM, Armon, NY).

**Table 1: Demographic and Clinical Characteristics**

Characteristic	Number (%)
Sex, (n= 724)	
Female	463 (64.0)
Male	261 (36.0)
Age (years), (n= 725)	
65-74	307 (42.3)
75-84	296 (40.8)
≥ 85	122 (16.8)
Race, (n= 725)	
White/Caucasian	556 (77.3)
Asian	114 (15.9)
Black/African American	32 (4.4)
Other/Refused to answer	14 (1.9)
Hispanic/Latino, (n= 723)	
Yes	56 (7.8)
Subsidy recipient, (n= 665)	
Yes	49 (7.4)
Total Number of Prescription Medications, (n= 725)	
1-2	131 (18.1)
3-4	192 (26.5)
5-6	165 (22.8)
7+	237 (32.7)
Mean ± SD	5.6 ± 3.4
Total Number of OTC Medications, (n= 672)	
0	22 (3.3)
1-2	229 (34.1)
3-4	214 (31.8)
5+	207 (30.8)
Mean ± SD	3.7 ± 2.5
Chronic Conditions, (n= 717)	
Mean ± SD	4.22 ± 2.56

abbreviations: OTC = Over-The-Counter, SD = standard deviation

## RESULTS

### KEY



= Number of Beneficiaries

PIMs = Potentially Inappropriate Medications  
SNRI = Serotonin-Norepinephrine Reuptake Inhibitor

**Figure 1: Total number of beneficiaries with at least 1 PIM identified by the 2019 vs 2015 Beers Criteria**



**Figure 2: The top five PIMs identified by the 2019 Beers Criteria**



**Figure 3: Top 7 PIMs identified from the 2019 Beers Criteria additions**



## RESULTS

- In total, 768 Medicare beneficiaries underwent MTM services at the health fairs in 2018.
  - Of those, 725 patients were at least 65 years of age and taking at least 1 prescription medication.
- Those with allergic rhinitis, anxiety, arthritis, asthma, cancer, depression, GERD/heartburn, incontinence, insomnia, pain, were statistically more likely to have PIMs based off both 2015 and 2019 Beers Criteria.
- An increase in the number of PIMs identified using either criteria was associated with:
  - A worsening self-reported health status over the past 4 weeks.
  - An increase in the prevalence of severe drug-drug interactions.

## DISCUSSION/CONCLUSION

- As the prevalence of PIMs increases, the importance of reevaluating prescribing patterns increases.
- A reduction in prescribing of PIMs may result in an improved self-reported health status, fewer severe DDIs and an overall better quality-of-life in older adults.
- Awareness among prescribing health care practitioners of the risk and impact of PIM usage in the geriatric population is an important component of a patient-centric approach to healthcare.
- The Beers Criteria continues to provide a resource for healthcare practitioners assisting older adults. With the 2019 update, AGS refined the criteria to better identify PIMs more specific to this population. These changes provide an overall safer approach to prescribing among the geriatric population.

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