

1. Potentially Inappropriate Anticholinergic Drugs in the Elderly

Rationale:

Explicit criteria have been published that identify a number of medications that are potentially inappropriate for use in the elderly (PIMs). Commonly referred to as the “Beers List”, the criteria identify a number of medications are either not effective, cause harmful side effects, and/or other more suitable agents are available for treating the same medical conditions.¹ While the prevalence of use of such agents has been included in published quality measures,² the wide assortment of agents included in the list may not lend itself to the development of focused clinical interventions, as the agents vary widely in chemical structure, pharmacologic activity, and therapeutic indications.

However, a considerable subset of the listed agents do share a common pharmacologic property, in that they demonstrate anticholinergic activity. Considering that anticholinergic agents identified in the Beers List can all contribute to a similar constellation of adverse effects in the elderly (delirium, falls, low blood pressure, urinary retention, and cardiac arrhythmias),³⁻⁵ process measures that focus specifically on these potentially inappropriate anticholinergic agents may be effective in assessing quality of prescription drug use and also facilitate the development of effective, focused clinical interventions.⁶

Efforts to avoid such agents in skilled nursing facilities have successfully improved care but, as of yet, no such effort has been systematically applied to the community dwelling elderly.^{7, 8} In fact, the use of some of these agents has perhaps increased in recent years, suggesting that the application of a similar intervention to Medicare Part D beneficiaries will be highly beneficial. Therefore, to improve the overall quality of prescribing in Medicare Part D beneficiaries, the prevalence of use of potentially inappropriate anticholinergic drugs (PIADs), as identified by the Beers List,¹ will be utilized as the primary focus of this quality measure.

Measure Domain: Patient Safety

Measure Type: Process

Eligible Population: Medicare Part D enrollees

Measurement Period: Six months

Risk Adjustment: No

Data Source(s): Prescription drug claims (PDEs)



Exclusion criteria:

- Claim utilized non- standard format
- Claims for medical supplies or durable medical equipment
- Dispensed date falls outside of measurement period
- Drugs not covered by the Part D plan
- Claim for compounded prescription
- Quantity dispensed is null, non-numeric, or <1
- Partially filled prescription
- Claim is duplicative or reversed
- Beneficiary <65 years of age at beginning of measurement period
- Drug product dispensed: NDC matches with comprehensive drug database (Lexicon by Multum; Denver, CO)

Definition of Terms

Potentially Inappropriate Anticholinergic Drugs (PIADs)

All drugs identified in the Table 1 of the Beers Criteria (2002 Criteria for Potentially Inappropriate Medication Use in Older Adults: Independent of Diagnoses or Conditions)¹ and that have known anticholinergic properties are included in this measure. These include:

Drug	Drug	Drug
Amitriptyline	Dicyclomine	Methocarbamol
Atropine	Diphenhydramine	Methscopolamine
Belladonna	Disopyramide	Orphenadrine
Carisoprodol	Doxepin	Oxybutynin IR
Chlorpheniramine	Glycopyrrolate	Perphenazine
Chlorzoxazone	Homatropine	Promethazine
Clidinium	Hydroxyzine	Propantheline
Cyclobenzaprine	Hyoscyamine	Scopolamine
Cyproheptadine	l-hyoscyamine	Trimethobenzamide
Dexchlorpheniramine	Metaxalone	Tripeleennamine

IR= immediate release; Beers list excludes controlled release oxybutynin products; PIAD calculation does not include products intended for nasal, ophthalmic, topical, or vaginal dosage routes of administration.



Measure IA. Percentage of Prescription Drug Events

Description: The percentage of prescription drug events (PDEs) that are for potentially inappropriate anticholinergic drugs (PIADs) in the measurement period

Numerator Statement: The total number of complete PDEs processed during the measurement period that are for PIADs.

Denominator Statement: The total number of complete PDEs processed during the measurement period

Measure IB. Percentage of Beneficiaries Receiving

Description: The percentage of Medicare Part D beneficiaries with ≥ 1 potentially inappropriate anticholinergic drugs (PIADs) in the measurement period.

Numerator Statement: The total number of Part D enrollees with ≥ 1 anticholinergic Beers List medication claims during the measurement period.

Denominator Statement: The total number of Part D enrollees with one or more complete PDE claims during the measurement period.

References

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3. Tune L, Carr S, Hoag E, Cooper T. Anticholinergic effects of drugs commonly prescribed for the elderly: potential means for assessing risk of delirium. *Am J Psychiatry.* Oct 1992;149(10):1393-1394.
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7. Goulding MR. Inappropriate medication prescribing for elderly ambulatory care patients. *Arch Intern Med.* Feb 9 2004;164(3):305-312.
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