# Beers Criteria and STOPP/START Criteria: Medication Evaluation with Screening Tools in Elderly Outpatients

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## Background

Medication adverse effects can have profound medical and safety consequences in elderly patients. Strategies to identify both potentially inappropriate and appropriate medications have been developed.

Tools utilized to identify potentially inappropriate medications (PIMs) include the Beers criteria and the Screening Tool of Older Person's Prescriptions (STOPP) criteria and a tool utilized to identify potentially appropriate medications is the Screening Tool to Alert doctors to Right Treatment (START) criteria.

## Objective and Outcomes

**Objective**: Develop screening tool for pharmacists to evaluate medication lists in elderly patients

**Primary outcome**: Beers vs. STOPP
- Number of PIMs
- Pill burden
- Anticholinergic Drug Scale (ADS) scores
- Prescription cost savings

**Secondary outcome**: START criteria
- Number of omissions
- Medication name

## Methods

**Retrospective chart review**
- 250 charts

**Inclusion criteria**
- Initial geriatric assessment

**Exclusion criteria**
- No medications
- Unable to obtain medication list
- Less than age 65 years

## Baseline Characteristics

**Average age**

81.5 years

**Sex**

69% female
31% male

**Level of education**

18% less than high school
38% high school
44% college

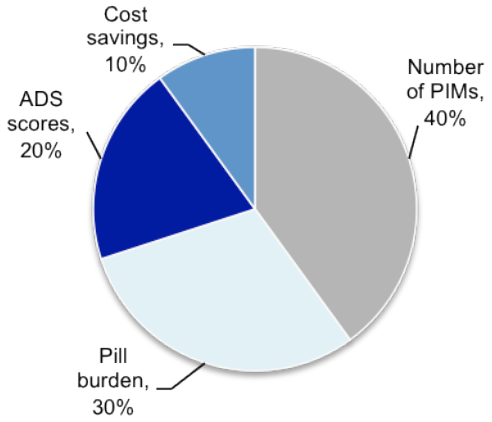
**Residence**

69% house
16% apartment
15% retirement community/other

**Mini Mental Status Exam**

14% normal cognitive function
56% mild cognitive impairment
25% moderate cognitive impairment
4% severe cognitive impairment

## Composite Outcome




## Primary Outcome: Beers vs. STOPP

| | Beers | STOPP | p value* | Additional findings |
|---|---|---|---|---|
| **PIMs** | 44% | 33.6% | *0.022* | Trend for Beers to identify more PIMs (p = 0.059) |
| **Decreased pill burden** | 44.4% | 34.8% | *0.035* | Trend for greater pill burden decrease with Beers (p = 0.065) |
| **Decrease in ADS scores** | 22% | 16% | 0.110 | Greater decrease in ADS scores with Beers (*p = 0.012*) |
| **Cost savings** | 35.2% | 22% | *0.003* | Higher cost savings with Beers (*p = 0.003*) |

** p < 0.05 considered statistically significant*

## Results

**Primary outcome**: Beers criteria performed significantly better than the STOPP criteria when evaluated as a composite outcome (p = 0.001)

**Secondary outcome**: Potentially appropriate medications were identified in 6% of patients per the START criteria

## Limitations

- Underpowered
- Lack of access to medical history
- Cost of additional medications not considered
- Updated Beers criteria

## Conclusions

Beers criteria is more appropriate to use in this geriatric referral-based clinic

Updated Beers criteria may produce different results

## References

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