



Measure Title	APPROPRIATE MEDICATION USE IN THE ELDERLY	
Disease State	Medication Side Effects	Indicator Classification¹ Medication Monitoring
Strength of Recommendation²	B	
Physician Specialties	Family Practice, Internal Medicine, Gerontology	
Clinical Rationale	<p>Disease Burden</p> <ul style="list-style-type: none"> • Researchers have documented widespread inappropriate medication use by elderly persons in hospitals, nursing homes, board and care facilities, physician office practices, hospital outpatient departments, and homebound elderly, with the estimated prevalence of potentially inappropriate use ranging from 12% to 40% and a prevalence of adverse drug effects ranging from 5% to 35% [1-6]. • One recent study of a Medicare population found a potentially inappropriate medication prevalence of 23% [7]. • Another study found that 35% of ambulatory adults have experienced an adverse drug effect, with 29% of those requiring further care as a result of the event [8, 9]. <p>Reason for Indicated Intervention or Treatment</p> <ul style="list-style-type: none"> • The Institute of Medicine Report <i>To Err is Human</i> has cited inappropriate medication use as a major area of poor quality in U.S. healthcare [10]. • Adverse drug events have been linked to preventable problems such as depression, constipation, falls, immobility, confusion, and hip fractures. In addition, medication related problems have been estimated to cause 106,000 deaths annually at a cost of \$85 billion, [1, 11, 12]. • Thirty percent of hospital admissions in elderly patients can be linked to adverse drug effects or drug related problems [9]. <p>Evidence supporting Intervention or Treatment</p> <ul style="list-style-type: none"> • The number of controlled trials on medication use in the elderly is limited. • A case control study of 2300 Medicare managed care elderly using the Beers Criteria to identify a set of potentially inappropriate medications found that those patients receiving one of these medications had a significantly higher total costs, provider costs, facility costs, and a higher mean number of inpatient, outpatient, and emergency department visits, even after controlling for sex, co-morbidities, and total number of prescriptions [7]. • A cohort study of 4300 elderly community dwelling adults using both the Drug Utilization Review (DUR) Criteria and the 1997 Beers criteria to identify a set of potentially inappropriate medications found that use of inappropriate medications identified by either set of criteria was not associated with mortality. The investigators did find a significant association between inappropriate drug use using the DUR Criteria and decline in basic self care [13]. <p>Clinical Recommendations</p> <ul style="list-style-type: none"> • The Centers for Medicare and Medicaid endorse the Beers Criteria lists containing specific drugs to avoid in the elderly [8]. 	

- The following statement was released in 2004 in joint position statement by the American Medical Directors Association and the American Society of Consultant Pharmacists: “The Beers list is a helpful general guide regarding potentially inappropriate medication use of medications for older adults, but it must be used in conjunction with a patient centered care process...The Beers list should be used as a general guide for assessing the potential inappropriateness of medications, not as an isolated justification for any recommendation, including discontinuation of a medication.” [14].
- The Iowa City (IA): University of Iowa Gerontological Nursing Interventions Research Center recommends “the Beer's list should be used when planning medication initiation, reviewing established medication regimens, or making changes in the medication regimen.” [15].

Source	Health Benchmarks, Inc.
Denominator	Members ages 65 years and older by the end of the measurement year who were continuously enrolled during the measurement year who received and prescription during the measurement year.
Denominator Exclusion	None
Numerator	Members in the denominator who did NOT receive any prescriptions for drugs that are potentially inappropriate for use in the elderly with a severity rating of “Low” [8]
Interpretation of Score	High score implies better performance
Physician Attribution	Score all physicians (in the selected specialties) who saw the member during the reporting year.
External Files Required for Analysis	V58.elderly2_num_medlist_2006.xls
References	<ol style="list-style-type: none"> 1. Zhan, C., et al., <i>Potentially inappropriate medication use in the community-dwelling elderly: findings from the 1996 Medical Expenditure Panel Survey</i>. <i>Jama</i>, 2001. 286(22): p. 2823-9. 2. Hanlon, J.T., et al., <i>Update on drug-related problems in the elderly</i>. <i>Am J Geriatr Pharmacother</i>, 2003. 1(1): p. 38-43. 3. Hanlon, J.T., L.A. Shimp, and T.P. Semla, <i>Recent advances in geriatrics: drug-related problems in the elderly</i>. <i>Ann Pharmacother</i>, 2000. 34(3): p. 360-5. 4. Aparasu, R.R. and J.R. Mort, <i>Inappropriate prescribing for the elderly: beers criteria-based review</i>. <i>Ann Pharmacother</i>, 2000. 34(3): p. 338-46. 5. Liu, G.G. and D.B. Christensen, <i>The continuing challenge of inappropriate prescribing in the elderly: an update of the evidence</i>. <i>J Am Pharm Assoc (Wash)</i>, 2002. 42(6): p. 847-57. 6. Fick, D.M., et al., <i>A randomized study to decrease the use of potentially inappropriate medications among community-dwelling older adults in a southeastern managed care organization</i>. <i>Am J Manag Care</i>, 2004. 10(11 Pt 1): p. 761-8.

7. Fick, D., et al., *Potentially inappropriate medication use in a managed care population: association with higher costs and utilization*. J Manag Care Pharm, 2001. **7**: p. 407-413.
8. Fick, D.M., et al., *Updating the Beers criteria for potentially inappropriate medication use in older adults: results of a US consensus panel of experts*. Arch Intern Med, 2003. **163**(22): p. 2716-24.
9. Hanlon, J.T., et al., *Adverse drug events in high risk older outpatients*. J Am Geriatr Soc, 1997. **45**(8): p. 945-8.
10. Linda Kohn, J.C. and M. Donaldson, *To Err Is Human: Building a Safer Health System*. Committee on Quality of Health Care in America, Institute Of Medicine, ed.
11. Bootman, J.L., D.L. Harrison, and E. Cox, *The health care cost of drug-related morbidity and mortality in nursing facilities*. Arch Intern Med, 1997. **157**(18): p. 2089-96.
12. Perry, D., *When medicine hurts instead of helps*. Consultant Pharmacist, 1999. **14**: p. 1326-1330.
13. Hanlon, J.T., et al., *Impact of inappropriate drug use on mortality and functional status in representative community dwelling elders*. Med Care, 2002. **40**(2): p. 166-76.
14. *AMDA and ASCP Joint Position Statement on the Beers List of potentially Inappropriate Medications in Older Adults*. 2004, American Medical Directors Association: Columbia, MD.
15. Bergman-Evans, B., *Improving medication management for older adult clients*. 2004, University of Iowa Gerontological Nursing Interventions Research Center, Editor: R.D.C. Iowa City (IA). p. 55.

¹ **Indicator Classification** (Adapted from Health Plan Employer Data Information Set (HEDIS®) technical specifications)

Diagnosis	Measures applicable to patients receiving diagnostic workups for a symptom or condition that delineate appropriate laboratory or radiological testing to be performed (e.g. evaluation of thyroid nodule; pregnancy test in patients with vaginal bleeding or abdominal pain)
Effectiveness of Care	
Prevention	Measures applicable to asymptomatic individuals that are designed to prevent the onset of the targeted condition (e.g. immunizations).
Screening	Measures applicable to asymptomatic patients who have risk factors or pre-clinical disease, but in whom the condition has not become clinically apparent (e.g. pap smears; screening for elevated blood pressure).
Disease Management	Measures applicable to individuals diagnosed with a condition that are part of the treatment or management of the condition (e.g. cholesterol reduction in patients with diabetes; radiation therapy following breast conserving surgery; appropriate follow-up after acute event).
Medication Monitoring	Measures applicable to patients taking medications with narrow therapeutic windows and / or potential preventable significant side effects or adverse reactions (e.g. thyroid stimulating hormone (TSH) testing after levothyroxine dose change; hepatic enzyme monitoring for patients using antimycotic pharmacotherapy)

Medication Adherence	Measures applicable to patients taking medications for chronic conditions that are designed to assess patient adherence to medication (e.g. adherence to lipid lowering medication).
Utilization	Measures applicable to patients receiving treatment for a symptom or condition that advocate appropriate utilization of laboratory and pharmaceutical resources (e.g. conservative use of imaging for low back pain; inappropriate use of antibiotics for viral upper respiratory infection).

²Strength of Recommendation

Strength of Recommendation Based on a Body of Evidence

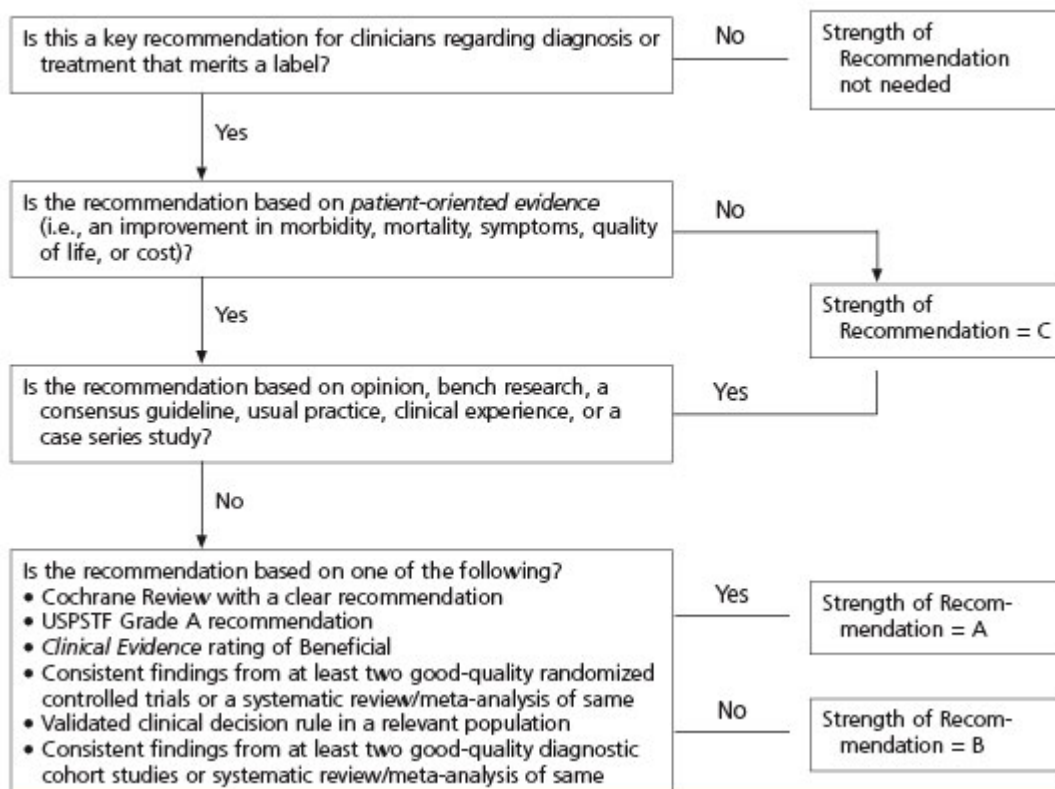


FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation based on the benefits, harms, and costs of the intervention being recommended. (USPSTF = U.S. Preventive Services Task Force)