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How to Use the AGS 2015 Beers Criteria – A Guide for Patients, Clinicians, Health Systems, and Payors

By the AGS Workgroup on Improving Use of the Beers Criteria

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Abstract

The Beers Criteria are a valuable tool for clinical care and quality improvement, but may be misinterpreted and implemented in ways that cause unintended harms. In this paper, we describe the intended role of the 2015 AGS Beers Criteria, and provide guidance on how they should be used by patients, clinicians, health systems, and payors. A key theme underlying these recommendations is to use common sense and clinical judgment in applying the 2015 AGS Beers Criteria, and to remain mindful of nuances in the criteria. The criteria serve as a "warning light" to identify medications that have an unfavorable balance of benefits and harms in many older adults, particularly when compared to pharmacologic and non-pharmacologic alternatives. However, there are situations in which use of medications included in the criteria can be appropriate. As such, the 2015 AGS Beers Criteria work best not only when they identify potentially inappropriate medications, but when they educate clinicians and patients about the reasons those medications are included and the situations in which their use may be more or less problematic. The criteria are designed to support, rather than supplant, good clinical judgment.

Introduction:

The Beers Criteria were first introduced in 1991.[1] Since that time, widespread efforts to educate clinicians about the criteria and to employ them in quality improvement activities have had meaningful impacts on quality of care for older adults. Use of many medications included in the Beers Criteria has declined, others have been withdrawn from the market, and there is increased (although still too little) appreciation of the unique considerations that should be applied when prescribing for older adults.[2-7]

Yet, implementation and uptake of the Beers Criteria has not been without problems. Many clinicians misunderstand the purpose of the criteria, mistakenly believing that the criteria judge all uses of the listed drugs to be universally inappropriate. Health systems have often reinforced this perception, implementing quality improvement and decision support systems that implicitly consider any use of these medications to be problematic. In addition, some payors have adopted prior authorization requirements for Beers Criteria medications, which may be misapplied by the payor and/or misinterpreted by the prescribing clinician.[8] Understandably, implementation of the criteria in inflexible, dogmatic ways can breed resentment and lack of faith in the recommendations.[2,9,10] Moreover, they can negatively affect quality of care by restricting access to medications included in the criteria that are being used in appropriate ways, and create troublesome and unnecessary burdens for prescribers.[2]

The goal of this paper is to improve how the AGS 2015 Beers Criteria are used by patients, clinicians, health systems, and payors. In this paper, we provide guidance on how the criteria are intended to be used, and recommendations for implementing them in a manner that reflects this intent. Our hope is that patients, caregivers, clinicians, health systems leaders, and payors will use this guidance to direct implementation efforts that yield maximal benefits from the AGS 2015 Beers Criteria while minimizing

unintended harms. To this end, the American Geriatrics Society is also developing educational materials tailored to different audiences that are based on the recommendations in this article.

Methods:

To coincide with the 2015 update of the American Geriatrics Society Beers Criteria, the American Geriatrics Society (AGS) convened a workgroup consisting of 4 members of the update panel (MAS, JB, CD, RL), the CEO of AGS (NL), and the chair of the AGS Clinical Practice Committee (PM). The workgroup was tasked with developing guidance on the intended use and implementation of the AGS 2015 Beers Criteria and authoring the current report. The workgroup convened by conference calls and email communication to first develop a list of key principles to guide optimal use of the criteria, with a particular focus on the "drugs-to-avoid" elements of the criteria, and then to author the current report built around these principles. During each of these steps we solicited feedback from stakeholders (listed in the acknowledgements). The penultimate draft of the report was sent for outside review, and reviewed internally by AGS leaders with final approval by the AGS Board of Directors.

Key principles to guide optimal use of the AGS 2015 Beers Criteria:

Seven key principles that should be used to guide optimal use of the criteria are shown in Table 1. They are explained below.

Key principle #1: Medications in the AGS 2015 Beers Criteria are *potentially* inappropriate, not *definitely* inappropriate. There is a common misperception that any use of a medication in the Beers Criteria is considered inappropriate. This is not correct. The Beers Criteria comprise medications which

have an unfavorable balance of benefits and harms for many older adults, particularly in light of available pharmacologic and non-pharmacologic alternatives. In some cases the drug is almost always a poor choice. However, there are some older adults in whom use of these medications is appropriate. Thus, Beers Criteria medications are "potentially inappropriate" and merit special scrutiny, but are not universally inappropriate in all patients.

Key principle #2: Read the rationale and recommendations statements for each criterion. The caveats and guidance listed there are important. Many medications are considered potentially inappropriate only in certain circumstances, or in most circumstances but with some key exceptions. These distinctions are highlighted in the rationale and recommendations statements for each criterion, and are vital for proper interpretation and use of the criteria (see Figure 1). As in all prescribing decisions, clinical judgment is required. As noted in key principle #1, a drug considered "potentially inappropriate" by the criteria may not always be a bad choice. Conversely, just because a medication is subject to an exemption (or not included in the criteria at all) does not automatically mean it is a good choice.

Key principle #3: Understand why medications are included in the AGS 2015 Beers Criteria, and adjust your approach to those medications accordingly. It is not only important to know that a medication is included on the Beers list, but to know *why* it is included on the list. This information is provided in the rationale statement for each drug, and should be used to guide decision-making. The risks of AGS 2015 Beers Criteria medications vary with the situation of each individual patient, and the importance of avoiding a given medication varies accordingly. For example, a Beers Criteria medication that increases risk of falls may be especially unsafe in a patient already at high risk of falls, and less risky – although not insignificant – in an older adult with low fall risk.

Key principle #4: Optimal application of the AGS 2015 Beers Criteria involves identifying potentially inappropriate medications, and where appropriate offering safer non-pharmacologic and pharmacologic therapies. Prior versions of the Beers Criteria have not offered alternatives to potentially inappropriate medications. Often the best therapeutic alternatives involve non-pharmacologic strategies, including patient counseling and lifestyle changes. Implementation of the AGS 2015 Beers Criteria with clinician education and clinical decision support systems could be improved by educating clinicians about safer, more effective therapies for the conditions for which Beers Criteria medications are commonly prescribed. The American Geriatrics Society and AGS 2015 Beers Criteria Expert Panel are working on developing these lists of alternative therapies.

Key principle #5: The AGS 2015 Beers Criteria should be a starting point for a comprehensive process of identifying and improving medication appropriateness and safety. The AGS 2015 Beers Criteria capture only a small percentage of the total burden of medication-related problems in older adults.[11,12] The criteria work best when used as a starting point to review and discuss a patient's entire medication regimen. This includes individualized inquiry into and assessment of medication indication, effectiveness, adverse effects, cost, and adherence, as well as concordance of the medication regimen with a patient's abilities and goals of care.[13]

Key principle #6: Access to medications included in the AGS 2015 Beers Criteria should not be excessively restricted by prior authorization and/or health plan coverage policies. Incentivizing judicious use of AGS 2015 Beers Criteria medications through insurance design can be reasonable. For certain medications, severe restrictions can be warranted. However, onerous restrictions on the many medications in the criteria that have appropriate uses can hinder good clinical care and create the perception that the Beers Criteria are a punitive tool, undercutting their educational function.[2,14,15]

Programs that restrict access to Beers Criteria medications should be carefully targeted and give the prescribing clinician, who is in the best position to evaluate the appropriateness of medications for individual patients, the opportunity to provide a valid clinical rationale that permits coverage.

Key principle #7: The AGS 2015 Beers Criteria are not equally applicable to all countries. The AGS 2015 Beers Criteria were developed principally based on medications available in the United States. Medications may be available in other countries that are potentially inappropriate but are not included in the list.[16,17] Prior versions of the Beers Criteria have been adapted for several countries. In the absence of country-specific adaptations of the Beers Criteria, in most cases it is reasonable to use broad-based categories included in the criteria to identify potentially inappropriate medications, for example benzodiazepines and strongly anticholinergic drugs.

Application of key principles – overview

The following section suggests how patients, clinicians, and health systems and payors can apply the key principles to improve pharmaceutical care for older adults. These are summarized in Table 2, and a case example is provided in Figure 2.

Application of key principles for patients and caregivers:

Talking with clinicians about AGS 2015 Beers Criteria medications: Older adults should not stop taking a drug just because it is included in the Beers Criteria. Rather, they should discuss with their clinicians if that medication is the right choice for them, and inquire if there are safer or more effective alternatives. As part of this conversation, patients should be prepared to discuss symptoms that they think might be

due to their medication(s), review how much the medication(s) seems to be helping them, and raise any other issues of concern about the medication. Similarly, patients should discuss with their clinicians the indication and planned duration of use for the medication. More than one perspective can be helpful, and it can be particularly useful to discuss these topics with one's prescriber(s), pharmacist(s), and other health care providers.

Engaging patients and caregivers as active participants in care: Patient care is improved when patients and caregivers are actively involved in their care.[18,19] Since Beers Criteria medications comprise only a small proportion of problematic prescribing, active engagement in pharmacotherapy should extend beyond Beers Criteria medications to cover the patient's entire medication regimen. Engagement in pharmacotherapy includes patients learning about their medications, the reasons they are taking these medications, and what adverse effects (i.e. side effects) they can cause. A good source for this information is the National Library of Medicine's MedlinePlus website (http://www.nlm.nih.gov/medlineplus/druginformation.html). Optimal patient involvement also includes periodically reviewing their medications with their clinicians, including prescribers and pharmacists. In these reviews, patients and caregivers should report any problems with their medications, including potential adverse events, perceived lack of effectiveness, and problems with adherence or cost. Such discussions should occur at least annually, and any time a new medication is prescribed.

True patient engagement involves not just an activated patient and caregiver, but the willingness and ability of clinicians to engage patients in shared decision-making and incorporate patient preferences and values into their treatment recommendations. At times this may involve using an AGS 2015 Beers Criteria medication that the clinician might otherwise avoid.

Patient- and community-focused organizations: Organizations that have expertise and a focus on communicating with older adults and caregivers can play an important role in educating people and their communities about the AGS 2015 Beers Criteria, and promoting their appropriate uptake and use.

Application of key principles for clinicians:

The 2015 AGS Beers Criteria as a "warning light": The AGS 2015 Beers Criteria are not intended to identify medications that are uniformly inappropriate, but rather to call attention to medications that are commonly problematic, and thus should be avoided in most older adults. A good way to think about the role of the criteria is that when a clinician considers prescribing a Beers Criteria medication, a "warning light" should go off in his or her head. This warning light should remind the clinician of the potentially unfavorable balance of benefits and harms from the medication, and prompt consideration of whether other treatment approaches would be better. Questions to address include (a) Why is the patient taking the drug, and is it truly needed?; (b) Are there are safer and/or more effective alternatives for the patient?; and (c) Does this patient have particular characteristics that increase or mitigate the risk of this medication?

This heightened awareness should occur not only at the time the drug is initially prescribed, but should continue over time and prompt ongoing monitoring to assess whether the therapy is effective and/or causing adverse effects. In many cases, this heightened awareness should lead to periodic attempts to discontinue or reduce doses of the medication. Even for patients who have tolerated Beers Criteria medications, adverse effects and/or reduced effectiveness can occur years into therapy due to the physiology of aging and other changes in clinical status.

Assessing adverse effects: Many of the adverse effects of AGS 2015 Beers Criteria medications can be subtle, yet important. For example, AGS 2015 Beers Criteria medications may induce mild decreases in cognitive function that can impact daily functioning and quality of life, or small changes in balance and gait stability that increase the risk of falls. These adverse events may not be recognized or reported by patients or their caregivers, or may be mistakenly attributed by patients, caregivers, or clinicians as symptoms of an underlying condition or simply a result of old age.[20-22] Careful inquiry is often necessary, coupled with attention to the adage that "any symptom in an older adult is a medication side effect until proven otherwise." Often the only way to determine if a patient's symptoms are due to a drug is to withdraw the medication and see if the symptoms improve, either informally or as part of a more systematic N-of-1 trial.[23]

How the AGS 2015 Beers Criteria fit into the larger picture of improving prescribing for older adults: Many serious adverse drug events in older adults are caused by medications not included in the Beers Criteria.[11] Common culprits such as warfarin are not listed as drugs-to-avoid in the AGS 2015 Beers Criteria because for many older adults their benefits outweigh their potential harms.[24] Nonetheless, attention to AGS 2015 Beers Criteria medications should not detract from closely monitoring and preventing adverse events from other high-risk medications. Similarly, attention to the AGS 2015 Beers Criteria should not detract from evaluating and addressing other issues of fundamental importance including medication reconciliation, medication adherence, unnecessary medication use, and underuse of potentially beneficial medications. Discussions about AGS 2015 Beers Criteria medications can be an excellent entrée to a broader discussion that addresses these other key aspects of medication use.

The AGS 2015 Beers Criteria are complementary to other explicit criteria used to assess medication appropriateness, such as the STOPP criteria.[25-27] Similarly, the AGS 2015 Beers Criteria should be used to complement, rather than compete with, criteria that evaluate other domains of prescribing quality, for example the START criteria to evaluate underuse of potentially beneficial medications in older adults.[28] Finally, it is important to note that the AGS 2015 Beers Criteria focus on medications which are particularly problematic for older adults. Many medications that are problematic across the age spectrum are not included, but merit close scrutiny as well.

Talking with patients and their caregivers about AGS 2015 Beers Criteria medications: The criteria can provide a useful tool for engaging patients and caregivers in discussion about their medications. They can be used to start a larger conversation about effectiveness, adverse effects, cost, adherence, and goals of care for the patient's entire medication regimen. They can also be a useful adjunct for helping physicians counsel patients about stopping medications which appear on the list, particularly if they are reluctant to stop those medications.

Talking with other clinicians about AGS 2015 Beers Criteria medications: Primary care and generalist clinicians should not automatically defer to their specialist colleagues if that specialist prescribed an AGS 2015 Beers Criteria medication, and vice versa.[21] Rather, the Beers list can provide a foundation for a discussion between clinicians of whether the patient truly needs the medication, and whether there are safer and more effective alternatives.

Stopping AGS 2015 Beers Criteria medications: Many Beers medications should not be stopped abruptly because of the high risk of precipitating a withdrawal reaction. A good rule of thumb is that a drug dose is usually safe to taper down at the same rate that it can safely be tapered up.[29]

Role of health care professionals other than prescribers and pharmacists: Registered nurses and other health care professionals can play an important role even in the absence of direct prescribing authority. For example, nurses often see and assess for medication problems in the home, hospital, post-acute, and long-term care settings, and often help in making a decision to give or not to give a Beers medication prescribed on an as-needed basis. As such, they are important partners in identifying, addressing, and educating patients about potential problems with AGS 2015 Beers Criteria medications.[30]

Application of key principles for health systems and payors:

Use in clinical decision support systems: The AGS 2015 Beers Criteria are well-suited to clinical decision support, and studies have shown they can be deployed to good effect in this setting.[31] Decision support systems are likely to be most useful when they suggest alternative pharmacologic and non-pharmacologic therapies that can be used in place of Beers Criteria medications.

Use in monitoring provider- and systems-level prescribing practices: The AGS 2015 Beers Criteria are useful for monitoring quality of care across populations of clinicians and patients. Since these medications are inappropriate for most older patients, in most settings lower rates of use are preferable. However, because there are circumstances in which use of these medications are reasonable, monitoring systems should not judge care to be inappropriate for any specific patient on the basis of that patient taking a Beers Criteria medication. For similar reasons, the target rate of use for performance measurement programs should not be 0%. Performance measurement systems should also be careful to integrate performance measures for Beers Criteria medications with measures that address other important domains of quality in pharmaceutical care. Focusing clinician attention exclusively on Beers

Criteria medications may result in insufficient attention to other aspects of prescribing such as medication monitoring, medication adherence, and underuse of medications that for many patients are more important than the Beers Criteria.

Use in prior authorization and insurance coverage decisions: There is a reasonable role for health plan design to flag AGS 2015 Beers Criteria medications for extra attention and review. Some medications included in the criteria are particularly harmful and/or have very few reasonable indications, justifying tight controls. However, many medications in the criteria can sometimes have appropriate uses. Excessive restrictions on use of these medications and ignoring caveats listed in the criteria may harm patients by limiting their access to therapies which help them. Moreover, excessive restrictions cause undue burden on prescribers and can inappropriately frame the Beers Criteria in a punitive light. As a result, in most cases where AGS 2015 Beers Criteria medications require authorization, clinicians should have access to a streamlined process to justify their use. (This streamlined process should ideally be available across a range of prior authorization issues, not just for AGS 2015 Beers Criteria medications). When AGS 2015 Beers Criteria medications are flagged for approval or review, where possible appropriate alternative therapies should be suggested.

Conclusions:

The ability of the AGS 2015 Beers Criteria to improve care depends on their being applied in a thoughtful manner. We encourage patients, clinicians, and health systems to use the key principles outlined in this paper to guide how they implement the Beers Criteria so as to improve outcomes while minimizing unintended harms.

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Table 1: Key principles to guide optimal use of the AGS 2015 Beers Criteria:

1	Medications in the AGS 2015 Beers Criteria are *potentially* inappropriate, not *definitely* inappropriate
2	Read the rationale and recommendations statements for each criterion. The caveats and guidance listed there are important
3	Understand why medications are included in the AGS 2015 Beers Criteria, and adjust your approach to those medications accordingly
4	Optimal application of the AGS 2015 Beers Criteria involves identifying potentially inappropriate medications, and where appropriate offering safer non-pharmacologic and pharmacologic therapies
5	The AGS 2015 Beers Criteria should be a starting point for a comprehensive process of identifying and improving medication appropriateness and safety
6	Access to medications included in the AGS 2015 Beers Criteria should not be excessively restricted by prior authorization and/or health plan coverage policies
7	The AGS 2015 Beers Criteria are not equally applicable to all countries

Table 2: Application of key principles for patients, clinicians, and health systems

Patients	• If you are taking a Beers Criteria medication, talk with your clinician(s) before stopping the medication. Ask your clinician(s) if there are safer or more effective therapies, including non-pharmacologic therapies. • Review indications and adverse effects of all your medications from a trusted source (e.g., Medline Plus, http://www.nlm.nih.gov/medlineplus/druginformation.html) • Talk with your clinicians (prescribers and pharmacists) about your medications. Discuss whether your medications are effective for the purpose for which they are prescribed, and whether any symptoms you are having could be adverse effects (side effects) of your medications. Keep in mind that any given symptom may or may not be a drug side effect.
Clinicians	• Think of the AGS 2015 Beers Criteria as a "warning light" that should prompt close review and monitoring of a medication • Closely assess patients for potential adverse effects of Beers list medications, keeping in mind that many effects may be subtle yet important • Use the AGS 2015 Beers Criteria as an entrée into a larger review and discussion of medication prescribing quality • Don't automatically defer to a colleague who prescribed an AGS 2015 Beers Criteria medication. Use the criteria as a tool to stimulate dialogue between clinicians as to whether a drug is really warranted. • When stopping AGS 2015 Beers Criteria medications, be sure to slowly taper down the dose rather than abruptly stop medications whose discontinuation may prompt a withdrawal reaction • A variety of health care professionals, including nurses, can play an important role in addressing management of AGS 2015 Beers Criteria medications.
Health Systems and Payors	• The AGS 2015 Beers Criteria are well-suited to clinical decision support systems. These work best when alerts about AGS 2015 Beers Criteria medications are accompanied by suggestions for alternative therapies. • The AGS 2015 Beers Criteria are reasonable to use for performance measurement across large groups of patients and providers but should not be used to judge care for any individual patient. Performance measures based on the AGS 2015 Beers Criteria should be careful not distract clinicians from attending to other important aspects of pharmaceutical care in older adults. • There is a reasonable role in health plan design for AGS 2015 Beers Criteria medications to be flagged for extra attention, but the criteria should not be used as the sole standard for health plan coverage determination or prior authorization.

Figure 1: How to read a Beers criterion: an example

Therapeutic Category/ Drug(s)	Rationale	Recommendation	Quality of Evidence	Strength of Recommendation
Alpha1 blockers Doxazosin Prazosin Terazosin	High risk of orthostatic hypotension; not recommended as routine treatment for hypertension; alternative agents have superior risk/benefit profile.	Avoid use as an antihypertensive.	Moderate	Strong
	↑	↑	↑	↑
	Read this to understand why drug is considered potentially inappropriate in older adults, e.g., frequent adverse events, risk/benefit profile, other guideline recommendations.	Read this to understand in what circumstances the drug is considered a potentially inappropriate medication (PIM). In this example, use of an alpha1-blocker for routine treatment of hypertension is considered potentially inappropriate. Use for other conditions such as lower urinary tract symptoms in men is *not* considered potentially inappropriate by this criterion. However, this does not automatically make the medication appropriate; usual clinical judgment applies.	Quality of evidence on which recommendation is based. Evidence was rated by the Beers panel based on a structured process.	Strength of recommendation. This was decided by the Beers panel based on the anticipated balance of risks and benefits from the medication.

Figure 2: Optimal use of the AGS 2015 Beers Criteria – A Case Example

Ms. A is an 82 year-old woman who is visiting Dr. B for the first time. Dr. B reviews the patient's medication list and sees that she is taking amiodarone to treat atrial fibrillation. She has been on this medication for several years and reported "no problems" with it during visits with her previous provider.

Patient	Ms. A reviews her medications on Medline Plus (http://www.nlm.nih.gov/medlineplus/druginformation.html). She has had low-grade but persistent malaise and anorexia for years. Before, she thought these symptoms were simply a part of getting old, but she now realizes that they can be adverse effects of amiodarone. She reports these symptoms to her physician and asks if they could be a side effect of amiodarone. She also notes that this drug is on the Beers list and asks her physician if another drug might be safer or more effective.
Clinician	Dr. B remembers that amiodarone is on the AGS 2015 Beers Criteria because of its multiple toxicities, and is considered a potentially inappropriate medication for the management of atrial fibrillation because there are safer alternatives. She asks Ms. A about common and serious adverse effects of amiodarone, and elicits her symptoms of malaise and anorexia. Dr. B emails Ms. A's cardiologist to inform him of the patient's symptoms and discuss options for using another medication; he concurs this would be reasonable. Dr. B contacts Ms. A to suggest substituting another medication for management of her atrial fibrillation, and following her symptoms to see if they improve.
Health system	The health system in which Dr. B practices establishes a clinical decision support system through its electronic medical records. Recognizing that Ms. A is taking amiodarone, the system sends an alert to Dr. B shortly before the visit. The alert notes that the drug is an AGS 2015 Beers Criteria medication, briefly describes the rationale for its inclusion on the Beers list, and links to easy-to-use resources about signs and symptoms of amiodarone toxicity and alternative medications to manage atrial fibrillation.

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