

# Screening for Medication Appropriateness in Older Adults

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## KEYWORDS

• Elderly • Geriatrics • Deprescribing • Inappropriate prescribing • Polypharmacy

## KEY POINTS

- Medication appropriateness is a critical issue in older adults, who are exposed to multiple medications and are more vulnerable to medication-related problems.
- Improving medication appropriateness needs to be addressed in all care settings; each care setting (community, hospital, nursing home) presents unique challenges and opportunities regarding appropriate medication use.
- Focused screening and intervention to improve medication appropriateness can be accomplished using readily available tools that can be integrated into clinical processes and, in some cases, into the electronic medical record.

## INTRODUCTION

Medications are the most frequently used form of therapy for medical problems in older adults.<sup>1</sup> Older adults often have multiple medical conditions that may require several medications to manage.<sup>2</sup> Although pharmacotherapy can improve quality and quantity of life for older adults, there are also inherent risks. Of potential concern

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is that inappropriate medication use can lead to medication-related problems, such as adverse drug reactions, therapeutic failures, and adverse drug withdrawal events.<sup>3</sup> These medication-related problems are associated with morbidity, mortality, and additional health care costs.

Medication appropriateness is a global concept composed of 3 specific domains: (1) overuse, (2) potentially inappropriate medication (PIM) use, and (3) underuse (**Table 1**). Overuse can be defined as the use of more medications than clinically needed. Examples of medication overuse include duplication of therapy (eg, use of 2 nonsteroidal anti-inflammatory drugs), use of medication with no medical indication (eg, proton pump inhibitor [PPI] without an indication), or use of a medication that is not effective. Overuse is frequently referred to as polypharmacy, although it is important to recognize that the target of screening is *unnecessary* polypharmacy.<sup>4</sup> The Screening Tool of Older Person's Prescriptions (STOPP) is explicit criteria organized by physiologic system along with explanations to help providers discontinue unnecessary medications (and those that are potentially inappropriate).<sup>5,6</sup> PIM use is defined as medication use where the risk outweighs the benefit. Most commonly, PIM use is assessed with explicit criteria, such as the American Geriatrics Society Beers Criteria for Potentially Inappropriate Medication Use in Older Adults, which are guidelines to help clinicians to maximize benefit and minimize harm when prescribing medications to older adults.<sup>6,7</sup> Underuse is the lack of medication therapy in those with a clinical indication based on guideline recommendations. It can be due to a host of reasons, including lack of sufficient evidence in older adults (because of their frequent exclusion from studies), inadequate insurance coverage, patient goals of care, and provider perception of the patient's prognosis, to name a few. Underuse can be assessed with explicit criteria like the Screening Tool to Alert doctors to Right Treatment (START) criteria, which is a validated tool that helps identify prescribing omissions by physiologic system.<sup>6,8</sup> **Table 2** provides clinical examples of types of prescribing problems by care setting.

Screening for appropriate medication use in older adults thus ideally involves the use of patient-level information and an up-to-date evidence base. For patient-level information, the following information is needed: (1) an accurate medical problem list, and (2) a comprehensive and up-to-date medication list, including prescription, over-the-counter, and supplement use. In addition, an up-to-date evidence base is needed in order to inform the identification and resolution of medication-related problems. Importantly, patient preferences should always be solicited and incorporated into such screening and any subsequent decision-making regarding pharmacotherapy.

**Table 1**  
**Three domains of medication appropriateness**

Domain	Definition	Example Measures
Overuse	Use of more medications than clinically necessary	Explicit: STOPP Implicit: MAI
PIM use	Use where the risk outweighs the benefit	Explicit: Beers Criteria/STOPP Implicit: MAI
Underuse	Absence of evidence-based medication use in those with a clinical indication	Explicit: START Implicit: AOU index

*Abbreviations:* AOU, assessment of underutilization; MAI, medication appropriateness index.

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