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Review

Clinical and Ethical Management of Polypharmacy in Older Adults With Limited Life Expectancy

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Abstract

Polypharmacy is a common and complex issue among older adults with limited life expectancy, often resulting in increased treatment burden, adverse drug events, and diminished quality of life. As life expectancy shortens, the risk–benefit profile of many medications changes significantly. Drugs initially prescribed for long-term prevention may lose relevance or cause harm when functional decline and symptom burden become dominant concerns. Clinical management must shift from disease-centered prescribing to individualized approaches that prioritize comfort, safety, and the patient's personal goals. Deprescribing becomes a central strategy, requiring careful evaluation of each medication's current utility, potential for harm, and alignment with patient values. Ethical challenges arise when discontinuing medications, especially when patients or caregivers associate ongoing treatment with hope or clinical effort. Balancing autonomy with professional responsibility demands transparent, compassionate communication and a strong understanding of ethical principles such as beneficence, non-maleficence, and justice. Clinicians must also navigate systemic barriers, including fragmented care, lack of deprescribing guidelines tailored to end-of-life contexts, and limited training in shared decision-making. Personalized medication management benefits from multidisciplinary input and structured tools that incorporate clinical judgment with patient-specific data. Functional assessments, time-to-benefit analysis, and regular medication reviews help identify therapies that can be safely withdrawn. Incorporating deprescribing protocols into transitional care and long-term care planning reduces polypharmacy-related complications. Addressing polypharmacy in this population requires a coordinated, values-based approach that respects the complexity of aging, the limitations of pharmacotherapy, and the importance of patient-centered care.

Keywords: *Polypharmacy, deprescribing, older adults, end-of-life care, ethical decision-making*

Introduction

Polypharmacy, typically defined as the concurrent use of five or more medications, is increasingly prevalent among older adults, particularly those with multiple chronic conditions and limited life expectancy. As the global population ages, clinicians are encountering a growing number of elderly patients nearing the end of life who are exposed to complex medication regimens. While some medications may be clinically justified, others contribute to a therapeutic burden with minimal benefit in the context of declining physiological reserve and shifting goals of care (1). In this population, the risks associated with polypharmacy are magnified, often outweighing potential benefits (2).

Older adults with limited life expectancy present unique clinical challenges that complicate conventional prescribing frameworks. Preventive medications intended to reduce long-term risks may no longer be appropriate when life expectancy is measured in months rather than years. Moreover, age-related changes in pharmacokinetics and pharmacodynamics increase vulnerability to drug toxicity. Clinical inertia and fragmented care systems may perpetuate unnecessary prescriptions, while deprescribing remains underutilized (3). This reluctance is often fueled by uncertainty about prognosis, lack of clear guidelines for end-of-life prescribing, and concerns about withdrawal effects or legal repercussions.

In recent years, clinical tools and guidelines have been developed to support deprescribing in older adults, yet their application in individuals with limited life expectancy remains inconsistent. Tools such as the STOPP/START criteria, Beers Criteria, and deprescribing algorithms offer frameworks for identifying potentially inappropriate medications, but they are often not tailored to the unique priorities of palliative or end-of-life care (4). Moreover, healthcare providers may lack training in navigating these complex decisions, particularly in settings with limited access to geriatric or palliative care expertise. Given the clinical, ethical, and systemic factors involved, optimizing medication use in this population requires a nuanced, patient-centered approach that balances symptom control, quality of life, and ethical responsibility.

Review

Polypharmacy in older adults with limited life expectancy presents a clinical and ethical dilemma where the benefits of continued pharmacological treatment must be carefully weighed against the potential harms. As patients approach the end of life, the focus of care often shifts from disease prevention to symptom management and quality of life. In this context, continuing medications intended for long-term benefit may no longer be appropriate. The lack of robust clinical guidelines tailored specifically to this population often leaves clinicians uncertain about how and when to deprescribe (5). Moreover, deprescribing involves more than clinical judgment; it requires sensitive communication with patients and caregivers, who may be emotionally attached to medications or fear that deprescribing signals a withdrawal of care.

Ethical concerns also come into play, particularly in balancing respect for patient autonomy with the responsibility to prevent harm. Decisions must be individualized, incorporating the patient's values, goals of care, and life expectancy. Interdisciplinary collaboration, especially with palliative care teams, can support a more holistic and ethically sound approach to medication management (6). Integrating clinical tools with shared decision-making frameworks may improve outcomes and reduce unnecessary drug burden in this vulnerable population.

Aligning Polypharmacy with End-of-Life Goals

As patients approach the final stages of life, the therapeutic landscape must shift to reflect their changing clinical realities. Polypharmacy, often driven by disease-specific guidelines and fragmented care, can persist long after its intended benefits diminish. This dissonance between treatment burden and patient priorities is particularly pronounced in those with limited life expectancy. Medications initiated for primary or secondary prevention, such as statins,

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bisphosphonates, or tight glycemic control agents, may continue to be prescribed despite a lack of meaningful benefit in the context of a shortened life trajectory. The inertia behind these prescriptions is rarely the result of negligence; instead, it reflects systemic challenges, including prescriber uncertainty, fragmented records, and the absence of clear guidance for deprescribing in late life (7).

Clinical priorities in end-of-life care emphasize symptom control, comfort, and the preservation of dignity. Polypharmacy, when unmanaged, can undermine these goals by introducing unnecessary adverse effects, complicating regimens, and increasing caregiver burden. Many medications carry a cumulative risk of side effects such as falls, sedation, gastrointestinal distress, and renal dysfunction, which can significantly impair quality of life. For patients already experiencing functional decline or frailty, these side effects often represent a greater threat than the conditions the drugs aim to treat (8).

Personalized deprescribing requires a shift from disease-centered to goal-directed care. This involves reviewing the full medication list with a focus on time to benefit, life expectancy, and current symptom burden. Certain medications may no longer be aligned with a patient's evolving goals, especially when the likelihood of benefit is measured in years, but remaining life is measured in months. In these cases, the justification for continued use becomes increasingly tenuous. Shared decision-making frameworks allow clinicians to integrate patient preferences, values, and fears into the medication review process, creating a dialogue that respects the complexity of each case.

The care environment also influences prescribing behaviors. In institutional settings such as nursing homes or hospitals, prescriptions are often carried forward from previous providers, rarely questioned unless an acute issue arises. Continuity of care remains a major barrier to rationalizing medication use. Even when clinicians identify drugs that may no longer be necessary, they may hesitate to discontinue them in the absence of explicit deprescribing protocols or interdisciplinary support. This is especially problematic when multiple specialists are involved, each focusing on their own disease area rather than the patient's overall wellbeing (9).

Efforts to align polypharmacy with end-of-life goals must also account for emotional and psychological dimensions. For some patients, medications represent a source of hope or routine. Conversations about discontinuation require sensitivity and clinical skill, particularly when addressing drugs with strong symbolic value, such as cancer therapies or cardiac medications. Health professionals need training to navigate these discussions with empathy while maintaining a clear focus on the patient's clinical reality. Within this evolving space, research continues to explore how deprescribing interventions can be implemented effectively without sacrificing patient trust or symptom control. Several studies highlight the potential for structured medication reviews, especially when led by interdisciplinary teams, to reduce drug burden while maintaining or improving quality of life (10).

Ethical Challenges in Deprescribing Decisions

Deprescribing in older adults with limited life expectancy brings forward a set of ethical questions that cannot be separated from the clinical act itself. Medical decisions are rarely value-neutral, but deprescribing amplifies moral complexity. The shift from intervention to intentional withdrawal often challenges deeply held beliefs about responsibility, care, and professional duty. Many clinicians report discomfort when stopping a medication that was once carefully chosen, even when the balance of risks and benefits has clearly shifted. This reluctance is not simply clinical, it is ethical, shaped by fears of perceived abandonment, patient distress, and the weight of "doing less" in a culture that often equates action with care (11).

Patient autonomy is frequently invoked in discussions around deprescribing, but its application can be uneven. Autonomy requires not just the ability to choose, but access to information that is understandable, relevant, and framed within the patient's goals. In real-world practice, conversations

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about medication often occur during moments of stress, hospital admissions, disease progression, or cognitive decline. In these settings, patients may defer to clinicians or family or may lack the cognitive clarity needed to participate meaningfully. Respecting autonomy in such contexts demands more than asking for consent; it involves proactive, anticipatory communication about treatment goals, potential harm, and what matters most to the individual (12).

Moral distress among healthcare providers is also a growing concern, particularly when clinicians feel compelled to maintain medications that no longer serve the patient's best interests. Institutional policies, fear of litigation, and family expectations can pressure providers into sustaining therapies that conflict with palliative intent. The act of deprescribing is often framed as a reduction of care, yet in many cases it represents a shift toward more personalized and ethically grounded treatment. The ethical principle of non-maleficence takes on renewed urgency when continued medication causes adverse effects without meaningful benefit. Clinicians are ethically obligated to act in the patient's best interest, even when that action involves stepping back (13).

The principle of justice, while less frequently discussed in individual care decisions, becomes relevant when considering the broader impact of polypharmacy. Medications carry financial, logistical, and social costs, often disproportionately borne by older adults with limited resources. Pills must be organized, administered, and monitored, frequently involving caregivers whose lives are shaped by these routines. In some health systems, medication costs strain not just individuals, but the sustainability of care itself. Rationalizing prescribing through an ethical lens involves recognizing the value of resource stewardship, not at the expense of individual dignity, but in alignment with it.

Some clinicians seek ethical clarity through multidisciplinary discussions or ethical consultations, especially when the path forward is contested. These forums can help surface hidden values, reveal implicit biases, and foster more collaborative decision-making. Ultimately, deprescribing is not merely a pharmacological adjustment. It reflects the moral relationship between clinicians, patients, and families, a relationship that must be navigated with humility, transparency, and sustained attention to the ethical terrain of care near the end of life (14).

Clinical Strategies for Personalized Medication Management

Managing medications in older adults with limited life expectancy requires a departure from standard disease-driven prescribing. At this stage of care, the clinical focus shifts toward quality of life, comfort, and reducing treatment burden. Many medications prescribed for long-term disease prevention may no longer align with the patient's prognosis or priorities. Reassessing these treatments is essential, and doing so through a structured, individualized approach enables clinicians to make safer, more meaningful decisions (15).

Effective medication management begins with a full clinical review that incorporates not only the drug list, but also the patient's physical function, cognitive status, symptom experience, and goals of care. Functional assessments provide a clearer picture of what a patient can tolerate and benefit from. A person with moderate frailty or advanced dementia may not derive the same utility from medications like antiplatelets or bisphosphonates as a more robust counterpart. Medication appropriateness must be understood within the broader framework of the patient's life expectancy, care preferences, and risk of harm. Clinical tools such as the Drug Burden Index and STOPPFrail criteria can be helpful, especially when used by clinicians familiar with geriatric care principles (16).

Personalization also requires thoughtful communication. Many patients are open to reducing their medications once the rationale is clearly explained. However, conversations about deprescribing can be sensitive, especially when medications have been used for many years or are perceived as essential. Clinicians should focus on

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how medication changes align with the patient's current goals, whether that means minimizing side effects, improving alertness, or simply reducing the complexity of the regimen. Family members and caregivers should also be engaged in these discussions, particularly when the patient has cognitive impairment or depends on others for medication administration (17).

In practice, successful implementation of personalized medication strategies depends on interprofessional collaboration. Pharmacists bring valuable expertise in evaluating drug interactions, optimizing doses, and suggesting tapering protocols. Geriatricians and palliative care providers often take the lead in addressing medications that affect function, mood, and symptom control. Nurses may identify patterns that suggest adverse drug effects, such as confusion, dizziness, or anorexia. Involving each member of the care team contributes to a more nuanced understanding of the patient's condition and improves the likelihood that medication changes will be safe and well-tolerated.

Transitions between care settings are high-risk periods for medication-related errors. Older adults discharged from hospitals often return home or to long-term care facilities with a longer medication list than when they were admitted. Without a coordinated review, these changes may persist unnecessarily, increasing the risk of adverse events. Embedding deprescribing protocols into discharge planning can prevent polypharmacy from escalating. Equally important is follow-up, as some effects of deprescribing may take time to emerge. Scheduled reviews, home visits, or telehealth check-ins can help ensure that medication adjustments continue to reflect the patient's evolving needs and conditions (18).

Conclusion

Personalized deprescribing in older adults with limited life expectancy is both a clinical necessity and an ethical responsibility. Aligning medication regimens with patient goals improves comfort, reduces harm, and supports dignity at the end of life. Effective strategies require interdisciplinary collaboration, clear communication, and structured decision-making. Prioritizing individual values over standardized protocols is key to delivering meaningful, patient-centered care.

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Conflict of interest

There is no conflict of interest.

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Data availability

All data is available within the manuscript.

Author contribution

All authors contributed to conceptualizing, data drafting, collection and final writing of the manuscript.

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