

**Kathryn McGrath, MD;**  
**Emily R. Hajjar, PharmD,**  
**BCPS, BCACP, CGP;**  
**Chandrika Kumar, MD,**  
**FACP; Christopher**  
**Hwang, MD; Brooke**  
**Salzman, MD**

Department of Family and  
 Community Medicine, Divi-  
 sion of Geriatric Medicine  
 and Palliative Care (Drs.  
 McGrath, Hwang, and  
 Salzman), Department of  
 Pharmacy Practice, Jefferson  
 College of Pharmacy (Dr.  
 Hajjar), Thomas Jefferson  
 University, Philadelphia,  
 PA; Department of Internal  
 Medicine, Yale University  
 School of Medicine, New  
 Haven, Conn (Dr. Kumar)

✉ [Kathryn.mcgrath@jefferson.edu](mailto:Kathryn.mcgrath@jefferson.edu)

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# Deprescribing: A simple method for reducing polypharmacy

Polypharmacy brings with it increased risks for adverse drug events and reduced functional capacity. This 4-step plan will help you safely deprescribe in older adults.

## PRACTICE RECOMMENDATIONS

› *Avoid medications that are inappropriate for older adults because of adverse effects, lack of efficacy, and/or potential for interactions.* **(A)**

› *Discontinue medications when the harms outweigh the benefits in the context of the patient's care goals, life expectancy, and/or preferences.* **(C)**

› *Utilize resources such as the STOPP/START and Beers criteria to help you decide where to begin the deprescribing process.* **(B)**

### Strength of recommendation (SOR)

- (A)** Good-quality patient-oriented evidence
- (B)** Inconsistent or limited-quality patient-oriented evidence
- (C)** Consensus, usual practice, opinion, disease-oriented evidence, case series

**CASE ▶** An 82-year-old woman with a history of hypertension, diabetes, hyperlipidemia, stage 3 chronic kidney disease, anxiety, urge urinary incontinence, constipation, and bilateral knee osteoarthritis presents to her primary care physician's office after a fall. She reports that she visited the emergency department (ED) a week ago after falling in the middle of the night on her way to the bathroom. This is the third fall she's had this year. On chart review, she had a blood pressure (BP) of 112/60 mm Hg and a blood glucose level of 65 mg/dL in the ED. All other testing (head imaging, chest x-ray, urinalysis) was normal. The ED physician recommended that she stop taking her lisinopril-hydrochlorothiazide (HCTZ) and glipizide extended release (XL) until her follow-up appointment. Today, she asks about the need to restart these medications.

**P**olypharmacy is common among older adults due to a high prevalence of chronic conditions that often require multiple medications for optimal management. Cut points of 5 or 9 medications are frequently used to define polypharmacy. However, some define polypharmacy as taking a medication that lacks an indication, is ineffective, or is duplicating treatment provided by another medication.

Either way, polypharmacy is associated with multiple negative consequences, including an increased risk for adverse drug events (ADEs),<sup>1-4</sup> drug-drug and drug-disease interactions (TABLE 1<sup>5,6</sup>),<sup>7</sup> reduced functional capacity,<sup>8</sup> multiple geriatric syndromes (TABLE 2<sup>5,9-12</sup>), medication non-adherence,<sup>13</sup> and increased mortality.<sup>14</sup> Polypharmacy also contributes to increased health care costs for both the patient and the health care system.<sup>15</sup>

**■ Taking a step back.** Polypharmacy often results from prescribing cascades, which occur when an adverse drug effect is misinterpreted as a new medical problem, leading to the prescribing of more medication to treat the initial drug-induced symptom. Potentially inappropriate medications



Polypharmacy often occurs when an adverse drug effect is misinterpreted as a new medical problem, leading to the prescribing of more medication to treat the initial drug-induced symptom.

(PIMs), which are medications that should be avoided in older adults and in those with certain conditions, are also more likely to be prescribed in the setting of polypharmacy.<sup>16</sup>

■ **Deprescribing is the process** of identifying and discontinuing medications that are unnecessary, ineffective, and/or inappropriate in order to reduce polypharmacy and improve health outcomes. Deprescribing is a collaborative process that involves weighing the benefits and harms of medications in the context of a patient's care goals, current level of functioning, life expectancy, values, and preferences. This article reviews polypharmacy and discusses safe and effective deprescribing strategies for older adults in the primary care setting.

#### How many people on how many meds?

According to a 2016 study, 36% of community-dwelling older adults (ages 62-85 years) were taking 5 or more prescription medications in 2010 to 2011—up from 31% in 2005 to 2006.<sup>17</sup> When one narrows the population to older adults in the United States who are hospitalized, almost half (46%) take 7 or more

medications.<sup>18</sup> Among frail, older US veterans at hospital discharge, 40% were prescribed 9 or more medications, with 44% of these patients receiving at least one unnecessary drug.<sup>19</sup>

#### The challenges of multimorbidity

In the United States, 80% of those 65 and older have 2 or more chronic conditions, or multimorbidity.<sup>20</sup> Clinical practice guidelines making recommendations for the management of single conditions, such as heart failure, hypertension, or diabetes, often suggest the use of 2 or more medications to achieve optimal management and fail to provide guidance in the setting of multimorbidity. Following treatment recommendations for multiple conditions predictably leads to polypharmacy, with complicated, costly, and burdensome regimens.

Further, the research contributing to the development of clinical practice guidelines frequently excludes older adults and those with multimorbidity, reducing applicability in this population. As a result, many treatment recommendations have uncertain ben-

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INSTANT POLL

How many times during the past month have you deprescribed medications for patients?

- None
- None, but I deprescribe at least several times a year
- Once
- 2-5
- 5-10

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**TABLE 1**  
**Watch for these drug-disease interactions<sup>5,6</sup>**

Disease	Drugs	Effect
Congestive heart failure	<ul style="list-style-type: none"> <li>• NSAIDs and COX-2 inhibitors</li> <li>• Thiazolidinediones</li> <li>• Nondihydropyridine CCBs</li> </ul>	Potential to promote fluid retention and exacerbate heart failure
Dementia	<ul style="list-style-type: none"> <li>• Anticholinergics</li> <li>• Antipsychotics (chronic and as-needed use)</li> <li>• Benzodiazepines</li> <li>• H2-receptor antagonists</li> <li>• Nonbenzodiazepine-receptor agonists (eszopiclone, zolpidem, zaleplon)</li> </ul>	Adverse CNS effects Antipsychotics are associated with greater risk of cerebrovascular accident and mortality in individuals with dementia.
Gastric or duodenal ulcers	<ul style="list-style-type: none"> <li>• Aspirin (&gt;325 mg/d)</li> <li>• NSAIDs</li> </ul>	May exacerbate existing ulcers or cause new or additional ulcers
Chronic kidney disease	<ul style="list-style-type: none"> <li>• NSAIDs</li> </ul>	May increase risk of acute kidney injury and cause further decline of renal function
Urinary incontinence	<ul style="list-style-type: none"> <li>• Estrogen (oral and transdermal)</li> <li>• Peripheral alpha-1 blockers</li> <li>• Diuretics</li> <li>• Cholinesterase inhibitors</li> </ul>	Aggravation of incontinence
BPH	<ul style="list-style-type: none"> <li>• Anticholinergic drugs</li> </ul>	May cause urinary retention

BPH, benign prostatic hyperplasia; CCBs, calcium channel blockers; CNS, central nervous system; COX, cyclooxygenase; NSAIDs, nonsteroidal anti-inflammatory drugs.

efit and may be harmful in the multimorbid older patient.<sup>21</sup>

**CASE ►** In addition to the patient's multimorbidity, she had a stroke at age 73 and has some mild residual left-sided weakness. Functionally, she is independent and able to perform her activities of daily living and her instrumental activities of daily living. She lives alone, quit smoking at age 65, and has an occasional glass of wine during family parties. The patient's daughter and granddaughter live 2 blocks away.

Her current medications include glipizide XL 10 mg/d and lisinopril-HCTZ 20-25 mg/d, which she has temporarily discontinued at the ED doctor's recommendation, as well as: amlodipine 10 mg/d, metformin 1000 mg BID, senna 8.6 mg/d, docusate 100 mg BID, furosemide 40 mg/d, and ibuprofen 600 mg/d (for knee pain). She reports taking omeprazole 20 mg/d "for almost 20 years," even though

she has not had any reflux symptoms in recent memory. After her stroke, she began taking atorvastatin 10 mg/d, aspirin 81 mg/d, and clopidogrel 75 mg/d, which she continues to take today. About a year ago, she started oxybutynin 5 mg/d for urinary incontinence, but she has not noticed significant relief. Additionally, she takes lorazepam 1 mg for insomnia most nights of the week.

A review of systems reveals issues with chronic constipation and intermittent dizziness, but is otherwise negative. The physical examination reveals a well-appearing woman with a body mass index of 26. Her temperature is 98.5° F, her heart rate is 78 beats/min and regular, her respirations are 14 breaths/min, and her BP is 117/65 mm Hg. Orthostatic testing is negative. Her heart, lung, and abdominal exams are within normal limits. Her timed up and go test is 14 seconds. Her blood glucose level today in the office after eating breakfast 2 hours ago is 135 mg/dL (normal: <140 mg/dL).

TABLE 2

Geriatric syndromes associated with polypharmacy<sup>5,9-12</sup>

Geriatric syndromes	Specific drug classes—with selected examples
Delirium and dementia	Anticholinergics <ul style="list-style-type: none"> <li>• Antidepressants: Amitriptyline, doxepin, paroxetine</li> <li>• Antihistamines: Diphenhydramine, hydroxyzine</li> <li>• Antimuscarinics: Oxybutynin, tolterodine</li> <li>• Antipsychotics: Chlorpromazine, olanzapine</li> <li>• Antispasmodics: Atropine, dicyclomine, scopolamine</li> <li>• Skeletal muscle relaxants: Cyclobenzaprine</li> </ul> Benzodiazepines Corticosteroids H2-receptor antagonists Sedative hypnotics
Falls	Anticonvulsants, antihypertensives, antipsychotics, benzodiazepines, non-benzodiazepine–benzodiazepine receptor agonists, opioids, SSRIs, TCAs
Urinary incontinence	Anticholinesterase inhibitors, antidepressants, antihistamines, antihypertensives (calcium channel blockers, diuretics, peripheral alpha-1 blockers), antipsychotics, opioids, sedative-hypnotics
Dizziness or orthostasis	Anticholinergics (as above) Antihypertensives: Peripheral alpha-1 blockers, central alpha blockers Sulfonylureas (long duration)
Weight loss	Dysphagia: Bisphosphonates, doxycycline, iron, NSAIDs, potassium Affecting taste and smell: ACE inhibitors, allopurinol, antibiotics, anticholinergics, antihistamines, calcium channel blockers Reducing appetite: Antibiotics, anticonvulsants, benzodiazepines, digoxin, metformin, opioids, SSRIs
Constipation	Anticholinergics, calcium channel blockers, opioids

ACE, angiotensin-converting enzyme; H, histamine; NSAIDs, nonsteroidal anti-inflammatory drugs; SSRIs, selective serotonin reuptake inhibitors; TCAs, tricyclic antidepressants.

Laboratory tests performed at the time of the ED visit show a creatinine level of 1.2 mg/dL (normal range: 0.6 to 1.1 mg/dL), a glomerular filtration rate (GFR) of 44 units (normal range: >60 units), a hemoglobin level of 9.8 g/dL (normal range: 12-15.5 g/dL), and a thyroid stimulating hormone level of 1.4 mIU/L (normal range: 0.5-8.9 mIU/L). A recent hemoglobin A1C is 6.8% (normal: <5.7%), low-density lipoprotein (LDL) level is 103 mg/dL (optimal <100 mg/dL), and high-density lipoprotein (HDL) level is 65 mg/dL (optimal >60 mg/dL). An echocardiogram performed a year ago showed mild aortic stenosis with normal systolic and diastolic function.

### Starting the deprescribing process: Several approaches to choose from

The goal of deprescribing is to reduce polypharmacy and improve health outcomes. It is a process defined as, “reviewing all current medications; identifying medications to be ceased, substituted, or reduced; planning a deprescribing regimen in partnership with the patient; and frequently reviewing and supporting the patient.”<sup>22</sup> A medication review should include prescription, over-the-counter (OTC), and complementary/-alternative medicine (CAM) agents.

Until recently, studies evaluating the process of deprescribing across drug classes

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More than  
one-third of US  
men and women  
ages 62 to  
85 years are  
taking  
5 or more  
prescription  
medications.

TABLE 3

Tools to identify polypharmacy and assist with appropriate medication use<sup>5,6,27-30</sup>

Tool	Description
Beers criteria <sup>5</sup>	An evidence-based list of potentially inappropriate medications that are best avoided, prescribed at reduced dosage or with caution, or carefully monitored in older adults and in those with certain diseases or syndromes
STOPP/START criteria <sup>6</sup>	A Screening Tool of Older People's Prescriptions (STOPP) and Screening Tool to Alert to Right Treatment (START)
Deprescribing.org	4 evidence-based guidelines to support clinicians in safely reducing or stopping medication in 4 specific drug classes: proton pump inhibitors, benzodiazepine-receptor agonists, antipsychotics, and antihyperglycemics
Medication Management Instrument for Deficiencies in the Elderly (MedMaIDE) <sup>27</sup>	Addresses issues surrounding medication compliance and management in the home setting
Medi-Cog <sup>28</sup>	A 7-minute tool designed to assess cognitive literacy and pillbox skills in order to optimize medication safety. It is a combination of the Mini-Cog, a validated cognitive screen, and the Medication Transfer Screen (MTS), a pillbox skills test.
Appropriate Medications for Older people (AMO)-Tool <sup>29</sup>	Composed of 8 open-ended questions. Developed for the long-term care setting, the tool does not provide specific, rigid prescribing criteria, but asks open-ended questions and, therefore, relies strongly on interpretation by the prescriber.
Good Palliative-Geriatric Practice Algorithm <sup>30</sup>	Assists with drug discontinuation in the outpatient setting. Asks the prescriber to consider drug indication, dose, benefits, and potential adverse effects.

and disease conditions were limited, but new research is beginning to show its potential impact. After deprescribing, patients experience fewer falls and show improvements in cognition.<sup>23</sup> While there have not yet been large randomized trials to evaluate deprescribing, a recent systematic review and meta-analysis showed that use of patient-specific deprescribing interventions is associated with improved survival.<sup>24</sup> Importantly, there have been no reported adverse drug withdrawal events or deaths associated with deprescribing.<sup>23</sup>

Smaller studies have reported additional benefits including decreases in health care costs, reductions in drug-drug interactions and PIMs, improvements in medication adherence, and increases in patient satisfaction.<sup>25</sup> In addition, the removal of unnecessary medications may allow for increased consideration of prescribing appropriate medications with known benefit.<sup>25</sup>

Practically speaking, every encounter be-

tween a patient and health care provider is an opportunity to reduce unnecessary medications. Electronic alert systems at pharmacies and those embedded within electronic health record (EHR) systems can also prompt a medication review and an effort to deprescribe.<sup>26</sup> Evidence-based tools to identify polypharmacy and guide appropriate medication use are listed in TABLE 3.<sup>5,6,27-30</sup> In addition, suggested approaches to beginning the deprescribing process are included in TABLE 4.<sup>5,31-33</sup> And a medication class-based approach to deprescribing is provided in TABLE 5.<sup>5,34-45</sup>

Although no gold standard process exists for deprescribing, experts suggest that any deprescribing protocol should include the following steps:<sup>32,46</sup>

**1. Start with a "brown bag" review of the patient's medications.**

Have the patient bring all of his/her medications in a bag to the visit; review them together or have the medication history taken

TABLE 4

Where to start: Which drugs to deprescribe<sup>5,31-33</sup>

Consider deprescribing drugs that...	For example...
... are potentially inappropriate.	<ul style="list-style-type: none"> <li>• Drugs listed on the Beers List,<sup>5</sup> such as benzodiazepines, NSAIDs, anticholinergic drugs</li> </ul>
... lack therapeutic efficacy.	<ul style="list-style-type: none"> <li>• Antihypertensives that have not provided blood pressure control despite patient adherence</li> <li>• SSRIs started for mood changes without notable improvements</li> <li>• Oxybutynin started for urinary incontinence without any improvement in symptoms</li> <li>• Docusate prescribed for constipation</li> </ul>
... lack a particular indication.	<ul style="list-style-type: none"> <li>• A diuretic started for edema in a patient without congestive heart failure</li> <li>• A PPI prescribed as prophylaxis during a hospital stay that was continued on discharge</li> <li>• An SSRI for prior (but resolved) depression</li> <li>• An antihypertensive for a frail patient who now has below-target blood pressure</li> </ul>
... are unlikely to provide additional benefit during a patient's lifespan. <sup>32</sup>	<ul style="list-style-type: none"> <li>• A statin started for primary prophylaxis in a patient with life expectancy &lt;5 years. A bisphosphonate in a low-risk patient with life expectancy &lt;5 years.</li> </ul>
... take a long time to benefit patients.	<ul style="list-style-type: none"> <li>• Statins do not produce benefit until about 2 years after initiation (in low-risk patients).<sup>31</sup></li> <li>• Aspirin as primary prophylaxis in a low-risk patient may not produce benefit for at least 5 years.<sup>33</sup></li> </ul>
... the patient would like to consider stopping.	<ul style="list-style-type: none"> <li>• Patient identifies an adverse effect from a medication</li> </ul>
... have complex dosing regimens.	<ul style="list-style-type: none"> <li>• Medications (eg, beta-blockers) dosed bid could be changed to long-acting formulations.</li> </ul>

bid, twice daily; NSAIDs, nonsteroidal anti-inflammatory drugs; PPI, proton pump inhibitor; SSRI, selective serotonin reuptake inhibitor.

by a pharmacist. Determine and discuss the indication for each medication and its effectiveness for that indication. Consider the potential benefits and harms of each medication in the context of the patient's care goals and preferences. Assess whether the patient is taking all of the medications that have been prescribed, and identify any reasons for missed pills (eg, adverse effects, dosing regimens, understanding, cognitive issues).

## 2. Talk to the patient about the deprescribing process.

Talk with the patient about the risks and benefits of deprescribing, and prioritize which medications to address in the process. Prioritize the medications by balancing patient preferences with available pharmacologic ev-

idence. If there is a lack of evidence supporting the benefits for a particular medication, consider known or suspected adverse effects, the ease or burden of the dosing regimen, the patient's preferences and goals of care, remaining life expectancy, the time until drug benefit is appreciated, and the length of drug benefit after discontinuation.

## 3. Deprescribe medications.

If you are going to taper a medication, develop a schedule in partnership with the patient. Stop one medication at a time so that you can monitor for withdrawal symptoms or for the return of a condition.

■ **Acknowledging potential barriers to deprescribing** may help structure conversations and provide anticipatory guidance to

TABLE 5

Deprescribing considerations by medication class<sup>5,34-45</sup>

Drug class	Reason to consider deprescribing	Potential benefits of deprescribing	Recommendations
Antipsychotics	<ul style="list-style-type: none"> <li>Started for patients with dementia, despite lack of evidence to support their use</li> <li>Can cause cardiovascular, metabolic, and cognitive adverse effects, including stroke and death</li> </ul>	<ul style="list-style-type: none"> <li>Improved cognition</li> <li>Improved verbal fluency</li> <li>Low-risk for withdrawal<sup>34</sup></li> </ul>	<ul style="list-style-type: none"> <li>Taper slowly over 3-6 months in patients with dementia<sup>34</sup></li> <li>Monitor for return of neuropsychiatric symptoms</li> <li>Attempt behavioral interventions if symptoms return</li> <li>Reinitiate if needed</li> </ul>
Statins	<ul style="list-style-type: none"> <li>Not well studied in patients &gt;80 years (data from younger patients simply extrapolated)</li> <li>Low total cholesterol associated with higher mortality in patients &gt;80 years<sup>35</sup></li> <li>High risk for myopathy and cognitive impairment<sup>36</sup></li> </ul>	<ul style="list-style-type: none"> <li>Improved quality of life in patients with limited life expectancy<sup>37</sup></li> <li>Not associated with increased risk of cardiovascular events, mortality, etc. in adults &gt;75 years<sup>38</sup></li> <li>Likely to provide benefit for 5+ years after cessation<sup>39</sup></li> </ul>	<ul style="list-style-type: none"> <li>Consider stopping statin drugs in patients who: <ul style="list-style-type: none"> <li>- are &gt;80 years</li> <li>- have been on the medication for &gt;5 years (for primary prophylaxis)</li> <li>- may have a life expectancy &lt;5 years</li> <li>- are experiencing significant myopathy</li> </ul> </li> </ul>
Antihypertensives	<ul style="list-style-type: none"> <li>Target blood pressures for adults &gt;80 years are debated</li> <li>Systolic BP &lt;140 mm Hg may increase morbidity/mortality in patients &gt;80 years<sup>40</sup></li> <li>Diuretics are associated with hypotension and incontinence</li> </ul>	<ul style="list-style-type: none"> <li>Lower mortality</li> <li>Lower risk of cardiovascular events<sup>41</sup></li> <li>Deprescribing diuretics is associated with a decrease in adverse drug effects<sup>42</sup></li> </ul>	<ul style="list-style-type: none"> <li>Reduce dose or number of antihypertensives for patients with BPs below their targets</li> <li>Monitor closely and reinitiate if needed</li> </ul>
Benzodiazepines	<ul style="list-style-type: none"> <li>Associated with confusion, increased risk for falls</li> <li>Not indicated as treatment for primary insomnia</li> </ul>	<ul style="list-style-type: none"> <li>Decreased risk for falls (more than an exercise program)<sup>43</sup></li> <li>Improved cognition and psychomotor abilities<sup>42</sup></li> </ul>	<ul style="list-style-type: none"> <li>Gradually taper 25% every 2 weeks, in partnership with patient<sup>44</sup></li> <li>Engage in education and behavior change strategies, including talk therapy, to improve success<sup>44</sup></li> </ul>
Proton pump inhibitors	<ul style="list-style-type: none"> <li>Few indications for long-term use (Barrett's esophagus, history of bleeding ulcers, severe esophagitis)</li> <li>Significant drug-drug interactions with other commonly used medications</li> </ul>	<ul style="list-style-type: none"> <li>Decreased risk for bone fractures, pneumonia, <i>Clostridium difficile</i> infection<sup>45</sup></li> <li>Improved resorption of vitamin B12, iron, magnesium<sup>45</sup></li> </ul>	<ul style="list-style-type: none"> <li>Decrease to a lower dose/less frequent dosing interval or stop</li> <li>Follow-up closely to monitor for rebound symptoms</li> <li>Use nonpharmacologic approaches (diet change, weight loss) or intermittent dosing<sup>45</sup></li> </ul>
NSAIDs/aspirin (>325 mg/d)/COX-2 inhibitors <sup>5</sup>	<ul style="list-style-type: none"> <li>Can create or exacerbate multiple conditions including CKD and CHF</li> <li>Exacerbate existing ulcers or cause new/additional ulcers</li> </ul>	<ul style="list-style-type: none"> <li>Decreased risk for fluid retention in patients with heart failure</li> <li>Decreased BP</li> <li>Decreased risk of acute kidney injury/progression of CKD</li> </ul>	<ul style="list-style-type: none"> <li>Switch from NSAID to acetaminophen</li> <li>Consider steroid joint injection if medication is taken for osteoarthritis</li> <li>Monitor pain symptoms</li> </ul>

BP, blood pressure; CHF, congestive heart failure; CKD, chronic kidney disease; COX, cyclooxygenase; NSAIDs, nonsteroidal anti-inflammatory drugs.

patients and their families. Working to overcome these barriers will help maximize the benefits of deprescribing and help to build trust with patients.

■ **Patient-driven barriers** include fear of a condition worsening or returning, lack of a suitable alternative, lack of ongoing support to manage a particular condition, a previous bad experience with medication cessation, and influence from other care providers (eg, family, home caregivers, nurses, specialists, friends). Patients and family members sometimes cling to the hope of future effectiveness of a treatment, especially in the case of medications like donepezil for dementia.<sup>47</sup> Utilizing a team-based and stepwise patient approach to deprescribing aims to provide hesitant patients with appropriate amounts of education and support to begin to reduce unnecessary medicines.

■ **Provider-driven barriers** include feeling uneasy about contradicting a specialist's recommendations for initiation/continuation of specific medications, fear of causing withdrawal symptoms or disease relapse, and lack of specific data to adequately understand and assess benefits and harms in the older adult population. Primary care physicians have also acknowledged worry about discussing life expectancy and that patients will feel their care is being reduced or "downgraded."<sup>48</sup> Finally, there is limited time in which these complex shared decision-making conversations can take place. Thus, if medications are not causing a noticeable problem, it is often easier to just continue them.

One way to overcome some of these concerns is to consider working with a clinical pharmacist. By gaining information regarding medication-specific factors, such as half-life and expected withdrawal patterns, you can feel more confident deprescribing or continuing medications.

Additionally, communicating closely with specialists, ideally with the help of an integrated EHR, can allow you to discuss indications for particular medications or concerns about adverse effects, limited benefits, or difficulty with compliance, so that you can develop a collaborative, cohesive, and patient-centered plan. This, in turn, may improve patient understanding and compliance.

#### 4. Create a follow-up plan.

At the time of deprescribing a medication, develop a plan with the patient for monitoring and assessment. Ensure that the patient understands which symptoms may occur in the event of drug withdrawal and which symptoms may suggest the return of a condition. Make sure that other supports are in place if needed (eg, cognitive behavioral therapy, physical therapy, social support or assistance) to help ensure that medication cessation is successful.

**CASE ►** During the office visit, you advise the patient that her BP looks normal, her blood sugar is within an appropriate range, and she is lucky to have not sustained any injuries after her most recent fall. In addition to discussing the benefits of some outpatient physical therapy to help with her balance, you ask if she would like to discuss reducing her medications. She is agreeable and asks for your recommendations.

You are aware of several resources that can help you with your recommendations, among them the STOPP/START<sup>6</sup> and Beers criteria,<sup>5</sup> as well as the Good Geriatric-Palliative Algorithm.<sup>30</sup>

If you were to use the STOPP/START and Beers criteria, you might consider stopping:

- **lorazepam**, which increases the risk of falls and confusion.
- **ibuprofen**, since this patient has only mild osteoarthritis pain, and ibuprofen has the potential for renal, cardiac, and gastrointestinal toxicities.
- **oxybutynin**, because it could be contributing to the patient's constipation and cause confusion and falls.
- **furosemide**, since the patient has no clinical heart failure.
- **omeprazole**, since the indication is unknown and the patient has no history of ulceration, esophagitis, or symptomatic gastroesophageal reflux disease.

After reviewing the Good Geriatric-Palliative Algorithm,<sup>30</sup> you might consider stopping:

- **clopidogrel**, as there is no clear indication for this medication in combination with aspirin in this patient.
- **glipizide XL**, as this patient's A1c is be-



**Every encounter between a patient and health care provider is an opportunity to reduce unnecessary medications.**

low goal and this medication puts her at risk of hypoglycemia and its associated morbidities.

- **metformin**, as it increases her risk of lactic acidosis because her GFR is <45 units.
- **docusate**, as the evidence to show clear benefit in improving chronic constipation in older adults is lacking.

You tell your patient that there are multiple medications to consider stopping. In order to monitor any symptoms of withdrawal or return of a condition, it would be best to stop one at a time and follow-up closely. Since she has done well for the past week without the glipizide and lisinopril-HCTZ combination, she can remain off the glipizide and the HCTZ. Lisinopril, however, may provide renal protection in the setting of diabetes and will be continued at this time.

You ask her about adverse effects from her other medications. She indicates that the furosemide makes her run to the bathroom all the time, so she would like to try stopping it. You agree and make a plan for her to monitor her weight, watch for edema, and return in 4 weeks for a follow-up visit.

On follow-up, she is feeling well, has no edema on exam, and is happy to report her urinary incontinence has resolved. You therefore suggest her next deprescribing trial be discontinuation of her oxybutynin. She thanks you for your recommendations about her medications and heads off to her physical therapy appointment.

JFP

#### CORRESPONDENCE

Kathryn McGrath, MD, Department of Family and Community Medicine, Division of Geriatric Medicine and Palliative Care, Thomas Jefferson University, 2422 S Broad St, 2nd Floor, Philadelphia, PA 19145; Kathryn.mcgrath@jefferson.edu.

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➤ There have been no reported adverse drug withdrawal events or deaths associated with deprescribing.

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