

# Deprescribing in Advanced Illness: Aligning Patient, Clinician, and Health Plan Goals

Natasha Parekh, MD, MS<sup>1,2,3</sup>, Yael Schenker, MD, MAS<sup>2,4</sup>, Chester B. Good, MD, MPH<sup>1,2,3</sup>, Lynn Neilson, PhD<sup>1,3</sup>, and William H. Shrank, MD, MSHS<sup>1,3</sup>

<sup>1</sup>Center for Value-Based Pharmacy Initiatives, UPMC Insurance Services Division, Pittsburgh, PA, USA; <sup>2</sup>Division of General Internal Medicine, University of Pittsburgh, Pittsburgh, PA, USA; <sup>3</sup>UPMC Insurance Services Division, Pittsburgh, PA, USA; <sup>4</sup>Section of Palliative Care and Medical Ethics, Division of General Internal Medicine, University of Pittsburgh, Pittsburgh, PA, USA.

Polypharmacy has been linked to adverse outcomes including increased risk of hospitalization, falls, and death and contributes to unnecessary healthcare spending. Deprescribing efforts aim to reduce medication burden while improving or maintaining patients' quality of life. While the practice of deprescribing is gaining momentum, quality measurement and provider reimbursement are barriers that must be addressed for deprescribing to achieve widespread adoption. Because many quality measures are focused on medication use and adherence, deprescribing efforts may negatively impact primary care provider and health plan quality ratings and value-based reimbursement. In addressing this conflict, there are opportunities to proactively align the priorities and incentives of patients, providers, and plans to promote deprescribing. In this report, we propose several actionable steps to address quality and reimbursement-based barriers such as facilitating the exclusion of those engaged in deprescribing efforts from quality measures and the development of deprescribing-based quality measures.

**KEY WORDS:** deprescribing; polypharmacy; pharmaceuticals; quality measures.

J Gen Intern Med 34(4):631–3

DOI: 10.1007/s11606-019-04845-7

© Society of General Internal Medicine 2019

## INTRODUCTION

There is tension regarding how to optimize and quantify best practices in medication prescribing, especially in older, fragile, and complex adults. On the one hand, the management of chronic disease is fundamental to health, and use of and adherence to essential chronic medications should be a central focus of therapeutic plans. However, polypharmacy is common, especially among those with advanced disease.<sup>1–3</sup> More than one-third of community-dwelling adults 65 years and older regularly take five or more medications,<sup>4, 5</sup> and of those who are hospitalized,

nearly half take seven or more medications.<sup>6</sup> Polypharmacy has been linked to adverse outcomes including increased risk of hospitalization, falls, fractures, and death and contributes to unnecessary healthcare spending.<sup>1, 7–14</sup>

Prescribing physicians must be cognizant of which patients should initiate, which patients should continue, and, increasingly, which patients should stop treatment with chronic medications. Deprescribing is defined as the clinically supervised intentional cessation or dose reduction of medications that may be harmful or no longer needed.<sup>15</sup> The overarching goal is to reduce medication burden and improve or maintain quality of life in the context of an individual patient's goals, prognosis, function, and values. As deprescribing requires holistic and comprehensive medication review, care coordination, and effective communication with patients and providers, primary care physicians have been involved with efforts to reduce their patients' medication burden for decades. In recent years, however, the practice of deprescribing has formally been given a name and has gained momentum, with the development of programs and funding streams (such as the upcoming National Institutes of Health/National Institute on Aging Collaborative Network to Advance Deprescribing Research)<sup>16</sup> to better define optimal deprescribing practices and support their implementation. For those who are frail, older, or nearing end of life, deprescribing could be particularly valuable in improving quality of life and reducing adverse events while also reducing exposure to out-of-pocket costs for medications.<sup>17, 18</sup>

## CLINICAL BARRIERS TO DEPRESCRIBING

Existing literature highlights a variety of clinical barriers that must be overcome for successful implementation of deprescribing practices. First, patients with advanced illness tend to see multiple physicians, each of whom may prescribe medications independently and may be reluctant to discontinue medications started by others.<sup>19, 20</sup> Second, the resources and time required for implementation and communication with other providers can impede deprescribing efforts. Third, deprescribing might have unintended consequences on

---

*Aligning Goals in Deprescribing*

Received November 11, 2018

Revised December 20, 2018

Accepted January 11, 2019

Published online February 4, 2019

patient/family satisfaction, especially if potential benefits and risks are not clearly conveyed.<sup>21, 22</sup> Finally, for many medication classes, it is unclear how to select patients who might benefit most from deprescribing, how to initiate the process, and how to monitor patients afterwards.

The development of formalized deprescribing programs—in which multidisciplinary deprescribing teams coordinate communication with patients and providers about medication value in the context of patient prognosis and goals of care—can help overcome many of these clinical barriers.<sup>23</sup> Furthermore, Farrell and colleagues have established a handful of evidence-based, medication-specific deprescribing algorithms to serve as guidelines for physicians. Although these materials cover just a small fraction of drugs that might be considered for deprescribing, evidence-based efforts to expand their deprescribing portfolio are underway.<sup>15</sup>

### EFFECTS OF DEPRESCRIBING ON QUALITY MEASURES AND PROVIDER REIMBURSEMENT

While deprescribing is building momentum through the development of formal deprescribing programs and research mechanisms focused on deprescribing best practices, quality measurement and provider reimbursement pose a separate set of barriers that must be addressed for deprescribing to successfully achieve widespread adoption. There are several Healthcare Effectiveness Data and Information Set (HEDIS) and Centers for Medicare and Medicaid Services (CMS) star rating quality measures related to medication adherence and medication use, including adherence to statins, renin-angiotensin system antagonists, and oral antidiabetics; statin use among persons with diabetes and cardiovascular disease; beta blocker use 6 months after myocardial infarction; antidepressant use among those with depression; and antirheumatic treatment for persons with rheumatoid arthritis.<sup>24</sup> High performance in these measures is essential for plans and providers to obtain high quality ratings.<sup>25</sup>

However, medications linked to quality measures have notable side effects such as myalgias, cough, hypoglycemia, dehydration, and yeast infections, and therefore may be appropriate targets of deprescribing campaigns. Furthermore, clinical benefits associated with these measures can take years to be seen and are thus irrelevant when life span is limited. For instance, many antihyperglycemics have limited or no evidence for prolonging life and frequently are associated with significant side effects; antihyperglycemics are thus one of the specific medication classes targeted in the deprescribing guidelines developed by Farrell and colleagues.<sup>15</sup>

Importantly, although these quality measures exclude patients enrolled in hospice programs, they do not account for non-hospice patients whose providers have initiated deprescribing for them. As a result, patients with advanced disease whose quality measure-linked medications are deprescribed would adversely impact quality metrics for

providers and plans, which has important implications in terms of provider and payer reimbursement, reputation, and rank. For example, a patient with diabetes and advanced cancer on chemotherapy is unlikely to receive benefit from continuing her statin and may even experience improvement in her quality of life from deprescribing.<sup>26</sup> However, for that patient's primary care physician and health plan, her lack of statin use may poorly reflect on her "quality of care" as defined by HEDIS and CMS criteria. Additionally, since patients engaged in deprescribing are not excluded from these quality measures, providers may preferentially deprescribe medications that are not linked to quality measures rather than comprehensively reviewing all of a patient's medications.

This discrepancy represents a conflict for providers—a clinical decision that may optimize a patient's quality of life may adversely affect the provider's performance on specific quality measures, and therefore, his/her reimbursement. Similarly, health plan programs aimed at improving performance on quality measures may unintentionally promote medication use in patients who are unlikely to realize a clinical benefit, or may even be harmed.

### ALIGNING PATIENT, PROVIDER, AND HEALTH PLAN GOALS IN DEPRESCRIBING

In addressing this conflict, there are opportunities to proactively align the priorities of patients, providers, and plans through deprescribing. We propose that patients enrolled in deprescribing efforts be excluded from medication-related quality measures (similar to patients enrolled in hospice). To operationalize this exclusion, providers could be given the ability to selectively remove patients engaged in deprescribing efforts from their denominators, or engagement in deprescribing could be assigned its own diagnosis or modifier code so that plans could similarly exclude these patients from medication-related metrics. To further incentivize providers, deprescribing-based measures could additionally be incorporated in quality initiatives. For example, practices with value-based payment models could receive additional reimbursements related to successful deprescribing in a targeted patient population, such as those with advanced illness or nearing end of life. Benchmark metrics might include a specific percentage of targeted patients engaged in deprescribing, or perhaps a specific percent reduction in the number of class-specific medications prescribed to a targeted patient population. For instance, quality measures could be developed that are based on the percentage of patients over 65 years old with metastatic cancer who are engaged in deprescribing activities, or alternatively, whose statins have been deprescribed.

### CONCLUSIONS

Given the impetus to reward providers for delivering better care rather than more care, and with the growing importance of

quality metrics in value-based payment models, we must identify ways to better align the goals and incentives of patients, providers, and plans to promote high-quality healthcare outcomes. We believe that the benefits of deprescribing merit the time, effort, and expense associated with these programs, and that addressing the challenges of deprescribing creates an important opportunity to lower prescription drug burden and resultant harms among older, fragile, and complex adults.

**Corresponding Author:** *Natasha Parekh, MD, MS; Division of General Internal Medicine, University of Pittsburgh, Pittsburgh, PA, USA (e-mail: parekh@upmc.edu).*

#### Compliance with Ethical Standards:

**Conflict of Interest:** *Natasha Parekh, Lynn Neilson, Chester Good, and William Shrank are employed by the UPMC Insurance Services Division.*

**Publisher's Note:** *Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.*

## REFERENCES

- Mishori R. Polypharmacy constitutes a real patient-safety issue. Recognizing that is the first step toward change. *Fam Pract Manag.* 2018;25(3):5-6.
- Prithviraj JK, Koroukian S, Margevicius S, et al. Patient characteristics associated with polypharmacy and inappropriate prescribing of medications among older adults with cancer. *J Geriatr Oncol.* 2012;3:228-237.
- Wong CY, Chaudhry SI, Desai MM, Krumholz HM. Trends in comorbidity, disability, and polypharmacy in heart failure. *Am J Med.* 2011;124(2):136-143.
- Gato DM, Wilder J, Schumm LP, et al. Changes in prescription and over-the-counter medication and dietary supplement use among older adults in the United States, 2005 vs 2011. *JAMA Intern Med.* 2016;176:473-482.
- George C, Verghese J. Polypharmacy and gait performance in community-dwelling older adults. *J Am Geriatr Soc.* 2017;65(9):2082-2087.
- Flaherty JH, Perry HM 3rd, Lynchard GS, et al. Polypharmacy and hospitalization among older home care patients. *J Gerontol A Biol Sci Med Sci.* 2000;55:554-559.
- Scott IA, Hilmer SN, Reeve E. Reducing inappropriate polypharmacy. *JAMA Intern Med.* 2015;175:827-834.
- Hajjar ER, Cafiero AC, Hanlon JT. Polypharmacy in elderly patients. *Am J Geriatr Pharmacother.* 2007;5:345-51.
- Jyrkkä J, Enlund H, Korhonen MJ, Sulkava R, Hartikainen S. Polypharmacy status as an indicator of mortality in an elderly population. *Drugs Aging.* 2009;26:1039-48.
- Olsson IN, Runnamo R, Engfeldt P. Medication quality and quality of life in the elderly: a cohort study. *Health Qual Life Outcomes.* 2011;9:95.
- Wallace E, McDowell R, Bennett K, Fahey T, Smith SM. Impact of potentially inappropriate prescribing on adverse drug events, health related quality of life and emergency hospital attendance in older people attending general practice: a prospective cohort study. *J Gerontol Ser A Biol Sci Med Sci.* 2017;72(2):271-277.
- Maher RL, Hanlon J, Hajjar ER. Clinical consequences of polypharmacy in elderly. *Expert Opin Drug Saf.* 2014;13:57-65.
- Lees J, Chan A. Polypharmacy in elderly patients with cancer: clinical implications and management. *Lancet Oncol.* 2011;12:1249-57.
- Morgan SG, Hunt J, Rioux J, et al. Frequency and cost of potentially inappropriate prescribing for older adults: a cross-sectional study. *CMAJ Open.* 2016;4(2):E346-51.
- Deprescribing.org. <https://deprescribing.org/about/>. Accessed 8 July 2018.
- Collaborative network to advance deprescribing research for older adults with multiple chronic conditions. <https://grants.nih.gov/grants/guide/rfa-files/rfa-ag-19-005.html>. Posted May 14, 2018. Accessed 31 Aug 2018.
- Reeve E, Thompson W, Farrell B. Deprescribing: a narrative review of the evidence and practical recommendations for recognizing opportunities and taking action. *Eur J Intern Med.* 2017;38:3-11.
- Page AT, Clifford RM, Potter K, Schwartz D, Etherton-Beer CD. The feasibility and effect of deprescribing in older adults on mortality and health: a systematic review and meta-analysis. *Br J Clin Pharmacol.* 2016;82(3):583-623.
- Kouladjian L, Gnjdic D, Reeve E, Chen TF, Hilmer SN. Health care practitioners' perspectives on deprescribing anticholinergic and sedative medications in older adults. *Ann Pharmacother.* 2016;50:625-36.
- Nadjaran K, Balakrishnan T, Lee MY, Soong JL. The attitude and beliefs of doctors towards deprescribing medications. *Proc Singap Healthc.* 2018;27(1):41-48.
- Anderson K, Freeman C, Stowasser D, Scott I. Prescriber barriers and enablers to minimising potentially inappropriate medications in adults: a systematic review and thematic synthesis. *BMJ Open.* 2014;4:e006544.
- Ailabouni NJ, Nishtala PS, Mangin D, Tordoff JM. Challenges and enablers of deprescribing: a general practitioner perspective. *PLoS One.* 2016;11:e0151066.
- The How and Why of Deprescribing (Presentation). Institute for healthcare improvement. Presented September 13th, 2018.
- HEDIS Measures and Technical Resources. <https://www.ncqa.org/hedis/measures/>. Accessed 31 Aug 2018.
- Academy of Managed Care Pharmacy, American Pharmacists Association. Medicare star ratings: stakeholder proceedings on community pharmacy and managed care partnerships in quality. *J Am Pharm Assoc.* 2014;54(3):228-40.
- Kutner JS, Blatchford PJ, Taylor DH, et al. Safety and benefit of discontinuing statin therapy in the setting of advanced, life-limiting illness: a randomized clinical trial. *JAMA Intern Med.* 2015;175(5):691-700.