



**Indian Health Service**  
**National Pharmacy and Therapeutics Committee**  
**Formulary Brief: Deprescribing**  
-August 2016-



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**Background:**

Benjamin Franklin reflected that “the best doctor gives the least medicines.” Yet, trends in prescription drug use continue to rise among the U.S. population. According to data from the Centers for Disease Control and Prevention National Health and Nutrition Examination Survey, the percentage of US adults prescribed 5 or more medications rose from 8% to 15% from 2000 to 2012.<sup>1</sup> This trend is especially problematic among the elderly.

**Discussion:**

Inappropriate medication prescribing has been linked to a host of adverse health outcomes including medication non-adherence, falls in the elderly, functional decline, emergency department visits, hospitalization, and even death.<sup>2</sup> It is well-known that the risk of adverse drug events rises substantially with increasing numbers of concurrent medications.<sup>3</sup> Polypharmacy is commonly defined as the concomitant ingestion of four or more medications. Elderly patients are particularly susceptible to adverse drug effects and drug-drug interactions because of age-related changes in pharmacokinetics and pharmacodynamics. These include changes in absorption, volume of distribution, and drug clearance as well as changes to the physiologic response to medications.<sup>4</sup>

Among the many drivers of polypharmacy is the phenomenon of the “prescribing cascade.” The prescribing cascade begins when an adverse drug reaction is misinterpreted as a new medical condition.<sup>5</sup> A new drug is prescribed, and the patient is placed at risk of developing additional adverse effects relating to this potentially unnecessary treatment.

Implementation of clinical practice guidelines has been an important factor in the rise of prescription drug use. Paradoxically, clinicians may fail to prescribe appropriate medications for patients already on many medications due to clinician concerns about adverse effects.<sup>6</sup> This is not the goal of efforts to reduce polypharmacy.

Many screening tools have been developed to reduce inappropriate prescribing, particularly among the elderly. These include the Medication Appropriateness Index<sup>7</sup>, STOPP/START criteria<sup>8</sup>, and the Beers criteria. The 2015 American Geriatrics Society Beers Criteria were published online and are readily available for review.<sup>9</sup> They include a variety of comprehensive drug list tables based on the Beers categories. Prominent examples of potentially inappropriate medications include classes such as anti-cholinergics, anti-thrombotics, cardiovascular agents, anti-depressants, and benzodiazepines. Recommendations are commonly made on the basis of drug-drug interactions as well as the nexus between a particular drug and clinical syndrome or a drug and a disease state.

The appropriateness of medication prescribing needs to be considered at every step in the spectrum of the pharmacologic management of disease. More focus is needed on the indications for medication withdrawal, also known as “de-prescribing” to bring balance to the prescribing continuum in medical practice.<sup>10</sup> This process requires a collaborative effort among patients, providers, and pharmacists.

Deprescribing is the active process of reducing or stopping inappropriate medication which is supervised by a healthcare professional with the goal to manage polypharmacy and improve health outcomes.<sup>11</sup> Common barriers to deprescribing include the inaccessibility of evidence-based deprescribing guidelines, the prevalence of single-disease treatment recommendations, the complexity of care provided by multiple prescribers, fear of adverse consequences, and both communication and time constraints.<sup>12</sup> There is also the phenomenon of “prescribing inertia,” which is the tendency to automatically renew a medication even when the original indication is no longer present.<sup>13</sup>

Shared decision-making is important to the process of deprescribing. It requires an approach which engages the patient as a partner and takes into account their attitudes, beliefs, and choices following appropriate informed consent. Studies have found that up to 90% of elderly patients on 5 or more medications are willing to reduce their number of prescribed medications.<sup>14</sup>

A variety of systematic approaches to medication optimization have shown varying degrees of promise in published studies.<sup>15</sup> Provider education can address provider knowledge deficits, particularly in geriatric medicine. Computerized order entry and decision support tools can aide prescribing decisions. Pharmacist-led interventions add another layer of professional involvement to optimize care. Specialists with geriatric training, serving either as consultants or members of a multi-disciplinary care team, can enhance care planning. A combination of these approaches may be superior to a single intervention.

### Findings:

Decisions about the process of deprescribing should be guided by a careful review of the patient's clinical conditions, overall health, and the list of active medications.<sup>13</sup> Deprescribing should target drugs that are no longer indicated, no longer appropriate, or are no longer aligned with treatment goals.

A recent article published in JAMA Internal Medicine outlined a protocol for deprescribing with five steps.<sup>10</sup> The first step is to ascertain all drugs that the patient is currently taking and the reasons for each one. Second is the consideration of the overall risk of drug-induced harm in individual patients to determine the required intensity of the deprescribing intervention. Third is an assessment of each drug in regard to its current or future benefit potential compared with current or future harm or burden potential. Drugs are then prioritized for discontinuation that have the lowest benefit-harm ratio and lowest likelihood of adverse withdrawal reactions or disease rebound syndromes. A discontinuation regimen is then implemented followed by monitoring for improvement in outcomes or onset of adverse effects.

### Conclusions:

Clearly the problem of polypharmacy and the process of deprescribing are complex but there are some practical points to aid in reducing inappropriate prescribing.<sup>16</sup> First, it is essential to periodically review patient medication regimens, especially among the higher-risk elderly population. Prescribing inertia should be avoided when there is no ongoing need for treatment. To eliminate the risk of a prescribing cascade, adverse drug effects should always be considered when assessing with a new symptom. Non-pharmacologic approaches to patient management should be entertained, when appropriate. Individual agents within a drug class should be assessed relative to the risk of adverse effects. Dose titration should target the desired treatment effect, using the lowest effective dose. Finally, advanced patient age should not be considered a contraindication to potentially beneficial medication.

*If you have any questions regarding this document, please contact the NPTC at [IHSNPTC1@ihs.gov](mailto:IHSNPTC1@ihs.gov). For more information about the NPTC, please visit the [NPTC website](#).*

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