Title

Beyond Titles: The Need to Reduce Prescribing Variation of Potentially Inappropriate Medications Among All Clinicians.

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Title: Beyond Titles: The Need to Reduce Prescribing Variation of Potentially Inappropriate Medications Among All Clinicians

Primary care physician shortages across the country, particularly in medically underserved areas, have led policymakers to increase the scope of practice for non-physician clinicians such as nurse practitioners (NPs). In many states this includes the ability to prescribe medications. In their paper in this issue of *Annals*, Huynh *et al* (1) address concerns around the quality of care for older adults by asking the question: compared to primary care physicians, do NPs have worse rates of potentially inappropriate prescribing in older adults?

The short answer is no, NPs are no worse than primary care physicians when it comes to inappropriate prescribing for older adults. Using Medicare Part D claims data from 29 states where NPs have independent prescribing authority, Huynh et al measured prescribing rates of potentially inappropriate medications (PIMs) as defined by the American Geriatrics Society Beers Criteria among 50,000 NPs and primary care physicians. In this large, well-designed study, the authors found nearly identical prescribing rates of PIMs for NPs and physicians after adjusting for year, state, and clinician factors such as years of experience, practice setting, patient volume.

While this is to some extent reassuring, the longer answer is that Huynh *et al* provide further concerning evidence that there remains not only persistently unacceptably high rates, but also substantial variation in potentially inappropriate prescribing among clinicians of all stripes. Whether the prescriber is an NP or a primary care physician matters far less in shaping prescribing behavior than numerous other factors. Huynh *et al* found substantial variation in prescribing behavior among NPs and primary care physicians, with wider distributions for NPs. These findings mirror those of numerous studies which have identified wide variation in prescribing and have identified “high intensity” prescribers across practice settings, regions, and clinician background who have a greater likelihood of prescribing PIMs such as benzodiazepines, opioids, proton pump inhibitors, and antibiotics (2, 3).

To provide a structure to help us better understand and address the wide variation in prescribing, the Consolidated Framework for Implementation Research (CFIR) (4), a synthesis of psychological, dissemination, organizational, and knowledge translation theories, can serve as a useful starting point. Although the CFIR is typically used as a determinant framework aimed at understanding barriers and facilitators to the implementation of evidence-based practices, the framework can be used to examine both the contextual factors associated with PIM prescribing variation and to identify barriers to de-implementation of PIMs. The CFIR includes domains both at policy and economic, organizational, and individual levels that may shape prescribing behavior and adherence to clinical guidelines about PIMs. For example, individual-level factors such as attitudes about the relevance of clinical guidelines to individual patients, ability to overcome prescribing inertia, and perceptions of whether guidelines apply to individual patients have all been found to shape clinicians’ uptake of clinical guidelines (5). Additionally, larger macro-level factors such as rurality, having few primary care providers or fewer psychiatrists, or regions with greater proportions of patients of more advanced are or with worse

health status have been found to be associated with higher PIM prescribing, suggesting that there are also larger economic-level dynamics driving prescribing behavior (6). This new paper builds upon this important literature regarding prescribing variation, underscoring the fact that that some clinicians – including NPs – are simply more likely to prescribe inappropriate medications to older adults. Reducing the number or scope of practice of NPs would be unlikely to reduce inappropriate prescribing. Instead, we need evidence-based interventions to identify and intervene on the highest intensity prescribers across disciplines.

There are several limitations in the analyses done by Huyhn et al. First – which they appropriately note - is their inability to distinguish between refills and new prescriptions. Many of the PIMs in the authors' analysis may have been started by a clinician other than the prescriber identified in the analysis, and continuing to prescribe PIMs is often easier than initiating discussions about deprescribing. Deprescribing conversations are complex, time-intensive, and can be uncomfortable. Moreover, deprescribing of certain medications such as some antidepressants and sedative hypnotics requires knowledge of and comfort with using tapering schedules. Interestingly, research using Medicare claims data found that NPs were less likely to refill PIMs compared to physicians (7), but the reasons for this variation in deprescribing are not well understood, highlighting an interesting area for further research.

Another limitation is the lack of patient-specific data, a limitation of many studies examining variation in prescribing behavior, in some cases due to the limitations of the administrative data source. As noted above, individual-level factors can impact prescribing; whether these varied by provider type was not measured. While the authors controlled for facility, patient risk, and other aggregate factors, they did not examine the race or ethnicity of the patient populations. It is not well understood whether and in what situations certain patient populations are more likely to experience high intensity prescribing or prescribers. For example, studies have found that Latino patients are 50% more likely to receive antipsychotics for behavioral symptoms of dementia (8), while other studies have found that that white patients are more likely to receive benzodiazepines (9). In the interest of ensuring equity in prescribing quality, these studies point to important gaps in our understanding and direction for future study about how race and ethnicity may shape variation in PIM prescribing behavior.

The authors' findings add to a long list of empiric work demonstrating that NPs provide equal or better quality of care when compared to their physician colleagues in primary care. As scope of practice debates continue to rage, Huynh *et al*'s analyses find that NPs are providing a greater proportion of care to older adults outside of large metropolitan areas, many of whom would likely have no other source of primary care. There are nearly 100 million people living in 8,267 Health Professional Shortage Areas in the U.S., where there are insufficient primary care providers to meet healthcare needs (10). NPs will continue to serve critical roles in ensuring that older adults in areas with inadequate numbers of healthcare providers receive primary care. Our goal should be to reduce variation and improve prescribing quality among all clinicians who care for older adults.

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