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Title	**A population profile of older adults with prescription encounters by nurse practitioners compared to family physicians in Ontario: a descriptive retrospective cohort study**
Authors	Dana S. Edge RN PhD, Joan E. Tranmer RN PhD, Xuejiao Wei MSc, Elizabeth G. VanDenKerkhof RN DrPH
Reviewer 1	Raisa Deber
Institution	University of Toronto, Institute of Health Policy, Management and Evaluation, Toronto, Ont.
General comments (author response in bold)	Reviewer 1: The paper includes some interesting data, but the interpretation could be more nuanced. In particular, the paper attempts to classify which patients over age 65 are "cared for" by nurse practitioners (NPs) and family physicians (FPs) between 2000 and 2015. However, it is not clear that that is the population being captured. Their study uses ICES data, but includes only those patients who had at least one outpatient prescription dispensed in each year over the study period. This may seriously underestimate the care being given by NPs, particularly in different care models where the encounter may not lead to a prescription being written by the NP. **(R): The reviewer is correct in highlighting the potential confusing phrase "cared for". Throughout the revised manuscript, prescription encounter has been substituted for "cared for" to prevent misunderstanding about the captured encounters, and the potential for underestimation is addressed in the limitations section.** In that connection, it might be helpful to give a bit more background on Nurse Practitioners in Ontario and the models of care they work within. For example, the NPAO website, which is cited by the authors, has some useful material about the variety of settings within which NPs work in Ontario. The website notes that there are 25 NP-led clinics, but these tend to be located in rural/remote areas. Other NPs work in long term care, but most work in shared models – e.g., the NPAO website says that approximately 500 work in FHTs, 425 in Community Health Centres, 117 in Community Care Access Centres, and 145 in other community settings. Since most NPs in Ontario are salaried, it is not uncommon for physicians to work with them, including billing OHIP for services provided by NPs in their practice. NPs perform many services that are not billed to OHIP, and hence may not be captured by the ICES database. Accordingly, it is not clear that the data really captures who was being cared for by NPs, as opposed to who were receiving prescriptions from them. If possible, it would be helpful to clarify which type of practice these patients were being seen by, since their data may largely be capturing those who are being seen in the NP-led clinics (who are indeed more likely to be living outside of central Ontario) as opposed to seeing who are being cared for by NPs, possibly in a team-based setting. Similarly, were hypertension and diabetes the most prevalent conditions, or the conditions most likely to lead to a drug being prescribed? The findings that "NP encounters consistently were highest in the remote, northeast region of Ontario" does suggest that they are largely capturing the NP-led clinics. The findings may accordingly understate the care being given by NPs.The authors do note these caveats, but a more careful interpretation would be helpful. **(R): The first paragraph of the introduction has been re-worked to include more context on the NP practice environment in Ontario, including OHIP billing (p. 3). The re-working throughout the manuscript to ensure to clarify for the reader that the patient encounters are prescription encounters of NPs and FPs, and do not reflect other types of services rendered. As the co-morbidity data was gathered from OHIP diagnosis codes, not the OBD database, the results for hypertension and diabetes reflect the patient conditions, irrespective of the prescriptions given. The Interpretation section has been re-worked to expand upon the findings from North East Ontario – there are 6 NP-led clinics there: 3 urban and 3 rural. We hope that the re-working of the manuscript has led to a more nuanced and careful interpretation.**
Reviewer 2	Erin Wilson
Institution	
General comments (author response in bold)	p. 3 line 12 consider changing "... at an advanced level ..." as it is unclear: compared to what? Instead - delete or phrase to speak to scope of practice. (R): Wording has been changed. (p. 3) p. 3 line 35 consider change "on Ontario" to "regarding Ontario" or similar. **(R): Wording has been changed (p.3)** p. 3 last line consider insert "patients with" before acute - NPs see people not conditions. (R):Wording has been changed (p. 3) p. 4 line 6 acknowledge to acknowledged. **(R): Wording has been changed (p. 4)** p. 5 line 6 - is the ICES key number what is described on the previous page or something different? A bit vague. **(R): The ICES key number is identical to the "unique identifier" described in the previous paragraph. Wording was changed from "key number" to "unique Identifier" to avoid confusion. (p.5)** p. 9 line 36 - what is the assumption behind saying it is reassuring that patients primarily cared for by NPs had

	relatively low comorbidity scores? Is this in relation to education or scope of practice or restrictions on prescribing? **(R): Have re-worked to address possible reasons for the low co-morbidity index among patients who had a prescription primarily from a NP. Our initial assumption is based on educational differences between NPs and FPs, but the wording is now neutral.** In ON, does the scope of practice for NPs continue to be restricted in any way? What else could help explain why the older adult patients NPs are prescribing to are of a lower complexity compared to older adult patients of FPs? For example, NPs are new providers, they initially had a restricted scope of practice. This may have restricted they type of patients they initially accepted into their panel. Perhaps NPs were more likely to accept patients who were at an age where they'd been healthy all their lives and were just beginning to require regular screening etc compared to sicker, more complex patients who needed access to a FP with (initially) broader prescribing privileges and thus a higher index of complexity? Also (perhaps unlikely but maybe cannot be ruled out) - are NPs providing more preventive services that may have some upstream effect? **(R): As the patients seen predominantly by NPs were younger, this may partially account for the lower co-morbidity scores. This has been added to the manuscript. While the possible hypotheses by the reviewer are thought-provoking, given the limitations of the administrative data, we don't believe we have firm evidence to suggest these possibilities.** Looking at the mean number of patient encounters per patient per year by provider groups (Figure 3), have NP encounter numbers remained lower than FP (e.g. in 2015) because patients have lower complexity scores, or is it because most FPs remain in FFS (fee for service) and might recall patients more frequently for refills based in part on remuneration factors? **(R): This is an interesting hypothesis; as the CAPE database only captures capitation models of care (e.g., FHT, FHO, FHGs) and all other models (e.g., FFS, NP led clinics and CHCs) are lumped into "other", we cannot ascertain FPs in fee-for-service from the database analysis.** The marginalization index findings are very interesting. One recommendation from your work might be that measures could be better aligned or examination of which provinces / territories use the same measures or indexes to allow comparison across provinces. **(R): The Ontario Marginalization Index (OnMarg) was based on the Canadian Marginalization Index (CanMarg) developed in 2006 that uses census tract data. To our knowledge, Ontario is the only province that has tailored the original tool to census tracts in its jurisdiction. The development of the index is described in: MATHESON, Flora I. et al. Development of the Canadian Marginalization Index: A New Tool for the Study of Inequality.Can J Public Health, [S.l.], v. 103, n. 8, p. eS12-eS16, apr. 2012. ISSN 1920-7476.** The Canadian Deprivation Index (CDI) is available for all provinces but is based on 3 factors instead of 4 -home ownership, education and food security- and was developed in 2015 by the Alberta Health Interactive Health Data Team (https://open.alberta.ca/dataset/canadian-deprivation-index-cdi-alberta#detailed). The OnMarg is captured in the Ontario provincial databases and captures marginalization rather than deprivation. We did not add this to the Interpretation section given space limitations. A stronger recommendation/wording to discourage shadow billing might be timely for this paper. **(R): We appreciate the importance of discouraging shadow billing; we hope that through the contextual additions to the background, methods and interpretation sections that our statement regarding shadow billing is strengthened.**