Reviewer's report

Title: Potentially inappropriate prescribing among older people in three neighboring regions: a comparative study.

Version: 2 Date: 25 February 2014

Reviewer: Brian Lund

Reviewer's report:

Major Compulsory Revisions

1. Concerning the cross-regional comparison of PIP (objectives and methods). It’s not currently clear to me why this is an objective of the study and then written into the methods section. Rather, it seems like this is just something that should go in the discussion section. The purpose of a discussion section is to compare the findings of a given study to prior studies – this is not typically presented as a study objective. I am guessing that some of the data presented in Table 2 concerning the NI and ROI sites is novel to this paper, and has not previously been reported, which is then the justification for the way this paper is structured. But I have to make that inference based on looking at the overlapping authors of the current study and the prior referenced studies in the bibliography (#16 and 17). If it’s the case that this truly is new data being presented in Table 2 for these other sites, then this should be more plainly stated in the methods. Conversely, if this is just comparing the findings from the UK to previously reported data from other studies, then this paper should be restructured so that these comparisons are made (more appropriately) in the discussion section only.

2. Results, Main Outcomes, final paragraph. This type of analysis is generally presented in a table, first with unadjusted associations in one column and then the adjusted associations in a second column. First, it’s far more efficient. Second, the text is missing vital information. For example, an OR was only reported for the 70-74 age group, but not the others. Also, the lack of any unadjusted/bivariate findings makes the adjusted results difficult to interpret.

3. Related to the prior comment, it would make much more sense to create multiple categories for number of drugs rather than a simple dichotomy for “polypharmacy”. Where to put the cut-point with a simple dichotomy is subject to debate and is not consistently agreed upon in the literature. Based on the chosen analysis strategy, there is no reason not to include at least 4 groups as was used for age. It would be more informative and less subject to criticism.

4. Discussion, p16, para 3. In discussing the potential explanations for differences between the UK and NI/ROI findings, I was surprised that there was no mention of potential differences in how patients were selected to constitute the denominators. How do we know that the criteria used to select patients into the denominator across all studies were similar? I don’t recall seeing a discussion of the selection criteria used to generate the NI/ROI data. Such selection criteria can have a major impact on measured rates of drug use. The
differences across populations in this study could be due to differences in how
the denominator populations were selected and not the nominator prescribing
rates, per se.

Minor Essential Revisions
1. Please be consistent in the use of significant figures – this was very
distracting. Sometimes there were no decimal points used (e.g. 28%) and then
two decimals (e.g. 28.14%) used – even in the same sentence. Two decimal
places is overkill. There is no need for that level of precision.

2. Introduction. I did not see any justification for why looking at correlates of PIP
is interesting. Moreover, any theoretical basis/model for why certain variables
were selected to examine. As the authors stated, most of the relationships with
these variables have been previously reported (and in my mind, ad nauseam),
and the authors have not made an argument for why it was important they do this
analysis. How does this fill a vital gap in the literature?

3. Discussion, p14 (cross-regional comparisons). Were any of the cross-regional
comparisons adjusted for age, sex and other factors presented in the correlates
analysis? If no, then why not? What was the point of looking at correlates if they
were going to be used as adjustment variables? If the authors have hands-on
access to these other populations they should do similar analyses and make
adjustments if they think this is meaningful.

4. Consider combining Tables 1 and 2 for brevity – or shortening them both to
present only pertinent differences or combined across the major category
groupings (e.g. cardiovascular system). Having 2 massive tables is cumbersome
and the way they are organized seems to distract the reader from the major
important findings.

Discretionary Revisions
1. Introduction, final paragraph. Consider writing more clear objective statements.
For example, what do the authors mean by “to ‘investigate’ PIP in older people”?
This statement doesn’t really say anything and these sentences are really
important to the overall framing of the paper. For example, I suspect the authors
really meant to say something like “to estimate the prevalence of PIP in older
people” or something along those lines.

2. Consider adding a typical “Table 1” which provides the demographic/clinical
characteristics of the study sample/population. And if this study truly has novel
data from the NI/ROI samples, this data should really be presented for all 3
patient groups.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:

I declare that I have no competing interests.