Author's response to reviews

Title: Bone mineral density measurement and osteoporosis treatment after a fragility fracture in older adults: regional variation and determinants of use in Quebec

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Submission of the revised manuscript: « Bone mineral density measurement and osteoporosis treatment: regional variation and determinants of use in Quebec ».

To the editor,

On behalf of my colleagues, I am pleased to submit this revised draft, which I am confident will meet with your highest publishing standards. I want to thank Dr Cadarette for her comments. Below, you will find a detailed list of the changes made in response to each the reviewer’s comments.

Should you have any further questions, please feel free to e-mail me at the address below. I look forward to hearing from you.

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RESPONSES TO THE REVIEWER SUZANNE CADARETTE:

Minor Essential Revisions
1. Rather than detailing what drugs were available in the US, indicate what was available in Canada and in particular under Quebec pharmacare.

   During our study period, from January 1999 to December 2000, the province of Quebec Health Insurance Plan was offering unrestricted coverage for the following osteoporosis treatments: hormone replacement therapy (HRT), the bisphosphonates etidronate and alendronate, the selective modulator of estrogen receptors raloxifene and calcitonine nasal spray. This has been modified in the text.

2. Clarify that DXA was the only type of bone densitometry included.

   Individuals were considered to have undergone BMD testing if there was a physician claim for a dual-energy x-ray absorptiometry (DXA) procedure for them within two years after the index date. During the study period, DXA was the only procedure covered by the RAMQ. This is now clarified in the text.

3. In reference to Solomon et al paper (p15), clarify that investigation means BMD testing. As pointed out on page 5, they found old age AND young age. Last sentence may not be appropriate as it appears that Solomon et al found similar predictors when examining BMD and OP medication use separately.

   The paragraph regarding the study of Solomon et al has been rewritten as:
   Old age and young age as opposed to middle age, male sex, black race, and having more than one comorbid condition were associated with a decreased likelihood of undergoing a BMD testing or receiving an OP medication (Solomon et al). Our results are concordant with these reported findings concerning old age and gender but not regarding comorbidity. Comorbidity, as defined by the number of distinct medications taken in the year preceding the fracture, was negatively correlated with BMD testing for women, but was positively correlated with future OP treatment. In Solomon et al, these two outcomes were merged, although the authors argued that they had observed similar results when they were examined separately. With regards to comorbidity, the difference between our results and those reported by Solomon et al are likely due to differences in the methodology used and populations studied. For instance, comorbidity was defined differently in the two studies. Moreover, our analysis was population-based whereas Solomon et al studied patients seen in primary care practices affiliated with an academic medical center. Health care provided in academic centers may not be representative of the care provided to the general population.

Discretionary Revisions
1. Changing your BDM acronym to BMD (bone mineral density) testing or DXA specifically.

   As suggested, we changed the acronym BDM to BMD testing (bone mineral density) throughout the text.

Quality of written English: Needs some language corrections before being published.

   This new version of the manuscript has been revised for language quality.