Reviewer's report

**Title:** Prescribing patterns of glucosamine in an elderly population: A national cohort study

**Version:** 2  **Date:** 26 February 2013

**Reviewer:** Preciosa Coloma

**Reviewer's report:**

This is a well-written manuscript on a relevant topic. I do have some questions and comments that I believe should be addressed to improve the paper:

**Major Compulsory Revisions**

1. In the Methods section under the subheading ‘Definitions and inclusion criteria’ did the authors require that the patients be registered in the database for a minimum number of time (say 6 months or, more usually, a year) to ensure that the distinction between ‘long term’ users and ‘short term’ users is actually accurate? And why do the authors think it is important to make this distinction?

2. The authors are explicit in saying that this is a national cohort and I would presume (correct me if I am wrong) that this is representative of the entire Irish population, but the authors fail to mention what is the expected population (i.e. the total number of individuals above 70 years) covered by the database. They do mention the number of individuals entitled to free healthcare (as a range) during the study period. I point this out, because the secondary objective of the study us ‘to identify the cost of prescribing of glucosamine to the State’ and this cost is better described with respect to a reference (say with respect to the costs the State spends for the healthcare of the elderly population in general). An even better reference for comparison would be the cost of prescribing other medications (or other intervention) for the same presumed indication of osteoporosis.

3. It is not clear to me why the authors stratify into two age groups (70-74 years and #75 years) in what seems to be a homogeneously elderly population. While osteoarthritis incidence and severity do increase with increasing age, do the authors have reason to believe that there is a significant difference in the efficacy of glucosamine or propensity to get a glucosamine prescription in these two age groups? Their results (Results section, under the subheading ‘Gender and age differences’) show that ‘males and females in the 70-74 year age group were significantly more likely to receive a glucosamine prescription than in the #75 age group, but they do not offer an explanation for this in the Discussion.

4. It is indeed very useful to know how the prescribing patterns of glucosamine have been influenced by factors such as the NICE 2008 guidelines. It would also be important to know how these changes relate to the time when glucosamine was introduced into the market in Ireland, when glucosamine was approved for
reimbursement, or when glucosamine was not free anymore. (In the last paragraph of the Introduction the authors state that ‘Until recently, glucosamine was available free on prescription to people aged #70 years as part of the National Shared Services Primary Care Reimbursement Service of the Health Service Executive in Ireland (HSE-PCRS) general medical services scheme.’)

5. In the paragraph with the subheading ‘Future research directions’ in the Discussion section the authors state that ‘This study highlights that there is little evidence to support the cost effectiveness of glucosamine for the treatment of OA.’ While this claim may be partially true, this is certainly not something you can conclude from the paper. ‘Cost-effectiveness’ is a more complicated concept in itself and there is a gamut of methods used specifically for cost-effectiveness analysis. I would be more in favour of saying something like ‘Properly conducted cost-effectiveness analysis are in order to resolve the issue as to whether or not glucosamine is cost-effective in the management of osteoarthritis....’ if the authors want to pursue the ‘cost-effectiveness’ angle.

6. The phrasing of the Conclusion needs to be more clear about the relationship between the trends in prescribing of glucosamine and ‘current international guidelines.’ And the statement ‘It is important that healthcare professionals and patients alike are aware of the best available evidence to inform decision making relating to the prescription and consumption of glucosamine’ is not something that you would conclude based on the findings of this study (although it is an accurate statement).

Minor Essential Revisions

1. The manuscript is generally well-written, but the two-and-a-half page Introduction is too long; the authors can be more brief and concise.

2. Tables 1 and 2 give the prevalence rate (per 1000 population) of glucosamine prescribing and should be labelled as such (‘prescribing’ is omitted). Please make the necessary corrections (also for Figure 1, in the Methods section under ‘Statistical analysis,’ and in ‘Results’ section of the Abstract).

3. In the last sentence of the paragraph under the subheading ‘Strengths and weaknesses of the study’ in the Discussion, ‘received’ is misspelled.

Discretionary Revisions

1. Tables 1 and 2 might be more visually appealing and interpretable to the reader as figures (with proper data labelling, including the 95% CI).

Level of interest: An article whose findings are important to those with closely related research interests

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.