Reviewer’s report

Title: Diet and toenail arsenic concentrations in a New Hampshire population with arsenic-containing water

Version: 1 Date: 20 August 2013

Reviewer: Ángel A. Carbonell-Barrachina

Reviewer's report:

The manuscript by Cottingham et al. is of interest and deserves publication but after major revision; there are some key issues that should be addressed before publication can be recommended. Here are some comments that, in my opinion, can help in improving the quality of the manuscript:

ABSTRACT
• Try to avoid the use of personal expressions, such as “we” or “our”.

BACKGROUND
• Ok.

METHODS
• Basic information on the analytical methods used to quantify total arsenic in toenails and drinking water are needed. Data generated by these methods is the core of the study and need to be evaluated.
• Besides, it is important to indicate in this section, that most of the arsenic detected by these methods is under inorganic forms.
• I would like to see the approximate weight of the toenails clippings.
• The high number of subjects, 852, is remarkable and deserves my applause.

RESULTS AND DISCUSSION
• For me it is difficult to understand the relationship between dark meat fish and As in toenails, because of the different speciation of the arsenic in these two materials. Authors should make an effort in justifying it. It would have been much simpler to justify if the authors have also analyzed a few samples of the most important foods, for instance dark meat fish; otherwise comments or discussion is just speculative.
• The same comment is valid for alcoholic beverages. Authors cannot conclude whether it is the effect of alcohol impairing the arsenic detoxification processes in the body or that these products have high arsenic content; again speculation.

TABLES AND FIGURES
• Table 1: use the same number of decimal figures in the values and SE; for instance, 0.27 (0.009) should be 0.27 (0.01). Also in this table, values such as 1919.6 should be left as 1920.
Quality of written English: Acceptable

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

Declaration of competing interests:
I do not have any type of competing interests regarding this manuscript.