Reviewer’s report

Title: The association of gout with sleep disorders: a cross-sectional study in primary care

Version: 2 Date: 2 December 2012

Reviewer: Martin Underwood

Reviewer’s report:

Thank you for asking me to review this paper that is a first exploration of a hypothesised link between sleep apnoea and gout that is independent of their common association with metabolic syndrome. The potential importance of the hypothesised link is that if it exists then identifying those with gout who also have sleep apnoea could provide a specific treatment that may reduce uric acid. I have no major concerns about the conduct of the study. It is, inevitably, limited by the nature and size of the underlying data sources. Overall the paper contributes to our understanding of the epidemiology of gout.

Major Revisions
1. The discussion does not adequately recognise that this is a negative study. The original hypothesis has not been proven. That sleep problems other than sleep apnoea are associated with gout cannot be used as supportive evidence. These other sleep problems cover a wide range of different disorders and there is no 'a priori' reason to consider that a substantial proportion of these represent undiagnosed sleep apnoea. Clearly the point estimate for the OR is sufficiently large that an association cannot be excluded; larger studies would be needed to address this. To put this into a clinical context, however, only 11/1,689 of those with gout were recorded as having sleep apnoea. This leads me to doubt whether any such association, if it exists, is of great clinical importance; unless of course there is substantial under-recognition of sleep apnoea in this population. I think the discussion needs to more accurately reflect that this is a negative study and not to speculate on what one might have suggested if the study had been positive. Negative studies are really important and we should not try to make them sound positive.

2. Can the authors provide reassurance that they have taken clustering by practice into account in their analyses; this might have increased variance and hence widened the confidence intervals. It would be really useful if they could present the intra-cluster correlation coefficients for main analyses to help inform others who wish to do work in this area.

Minor revisions
3. Would ‘non-sleep apnoea sleep problems' be better written as ‘non sleep-apnoea sleep problems’? Also need consistency between text and tables.
4. I think there is too much detail in Table 1. I do not think that practice specific data contribute to the understanding of the work. The section on year of first gout
consultation is confusing – since controls did not have a gout consultation. The number of controls is inevitably driven by number of cases and so these could be omitted

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

'I declare that I have no competing interests’