Reviewer's report

Title: Meta-analyses of the association of residential dampness and mold with respiratory tract infections and bronchitis

Version: 1 Date: 21 July 2010

Reviewer: Kathleen Kreiss

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Major Compulsory Revisions

1. A major concern is whether the respiratory outcomes examined in this paper associated with dampness are in fact infections. For some, such as pneumonia, the noninfectious causes of pneumonia (such as hypersensitivity pneumonitis) are rare enough that misclassification of the infectious nature of the outcome would be insignificant. In contrast, upper respiratory tract infections overlap in symptoms with allergy and irritation, which also occur in association with damp indoor spaces. It is clinically challenging to differentiate between mechanisms of upper respiratory tract illness in the absence of fever, which would be rare in noninfectious causes. Factors that physicians may use to differentiate infectious from noninfectious causes are time course (abrupt onset and self-limited illness, the latter not apparent to the physician being consulted), persistence apart from a particular environment, and fever. Parents and adult respondents likely use the same cues. We all know of colleagues who come to work snuffling and say that it is just their allergies, even though they don't snuffle most of the time; often we steer clear of such snuffling colleagues in case they have a respiratory infection. With respect to this concern about misclassification of building-associated symptoms with infection, I wonder if the authors should include the supplemental table that appears in Appendix 3, which gives odds ratios for specific health outcomes, so that readers can judge for themselves how compelling the primary reports are. In lumping all respiratory conditions, including colds, are the authors in fact overinterpreting their metaanalyses as supporting increased clinical infection with dampness? Perhaps the authors can acknowledge this possibility or discuss why they think that their findings stand up to such concern for misclassification of allergic or irritative symptoms as infection.

Minor Essential Revisions

2. Results, second paragraph, final sentence: Appendix 2 should be Table 2.

3. Discussion, second paragraph: The sentence starting "Building dampness itself is unlikely..." is a run-on sentence and would benefit from being separated by a period or semi-colon from the clause "...if these associations are confirmed as causal..."

4. Mechanisms of biologic plausibility, second paragraph, second sentence: Tracheobronchitis is a lower respiratory condition, occurring mainly in the chest
rather than in the extrathoracic airways. Perhaps the authors included it in the list of upper respiratory tract infections because of the agents? Elsewhere, bronchitis is considered a lower respiratory tract condition and tracheobronchitis is a subset of bronchitis.

5. Conclusions, last sentence: "causal" is misspelled as "casual".


7. Table 1, Outomes line 5: "bronchiolitis" is misspelled.

Discretionary Revisions

8. Mechanisms and biologic plausibility, fourth paragraph: The authors might consider that host defense impairment in children living in damp residences may make infections more clinically apparent or serious. In the environmental tobacco smoke literature, there is some evidence that infectious organisms are not more common in children living with smokers compared to children living in smoke-free households, but children with environmental tobacco smoke have more frequent clinical presentations/diagnoses than children in smoke-free households.

9. Implications, second paragraph, second sentence: The reference 20 given for smoking effects on respiratory infections is much less robust than the following: The health consequences of involuntary exposure to tobacco smoke: a report of the Surgeon General. – [Atlanta, Ga.] : U.S. Dept. of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, [2006]. Other references for low ventilation effects on infection transmission rates would be those of Don Milton.

Level of interest: An article of outstanding merit and interest in its field

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.