

Statement from John L. Adgate, MSPH, PhD, Professor, Colorado School of Public Health, University of Colorado.

Date: February 6, 2012

I have been told today that the committee had questions about the range of exposures represented by modeling work on from emissions dispersion and activity-based exposures (Adgate et al. 2011). Since I am not available to call in to the meeting on February 7 to answer questions, I am submitting this short summary of our results.

The objective of our modeling analysis was to estimate potential cumulative asbestos exposure for all non-occupationally exposed members of this community. These include a limited number of measurements used to represent a range of activities, recall of the frequency and duration of activities and uncertainties associated with dispersion modeling of plant emissions. The upshot of these limitations are that the numerical estimates in our paper have uncertainties due to changes in measurement methods over time as well as those associated with the models and modeling process. As our paper notes, “the cumulative exposure estimates presented here have uncertainties that are likely to range by an order of magnitude or more, and thus should be interpreted with consideration of these limitations and are not strictly comparable to other locations.” With additional work it would be possible to perform a more rigorous uncertainty analysis to compare these results to other studies, but that work was beyond the scope of our manuscript.

With these caveats what follows is a summary of the range of estimated exposures in our study. As noted in Table 4 of our paper, we estimated total cumulative asbestos exposures for 2179 subjects with background and/or any applicable activity-based exposure scenarios. The median exposure for this population was 0.04 and 0.03 f/cc*month for males and females, respectively. The paper reports on the 10th and 90th percentiles of exposure in Table 4. I can add that the minimum estimated exposure was 3.6×10^{-6} f/cc*month, and the maximum estimated exposure was 16 f/cc*month, i.e., the estimated exposures ranged over more than 6 orders of magnitude.

Reference

Adgate, JL, SJ Cho, BH Alexander, G Ramachandran, KK Raleigh, J Johnson, RB Messing, A Williams, J Kelly and GC Pratt. 2011. Modeling community asbestos exposure near a vermiculate processing facility: impact of human activities on cumulative exposure. *J Expo Sci Environ Epidemiol* 21:529-535, [Online February 23, 2011; DOI:10.1038/jes.2011.8].