Reviewer's report

Title: Of Disease Proportions Attributable To The Environment

Version: 1 Date: 22 October 2007

Reviewer: Jørn Olsen

Reviewer's report:

General comments + Minor essential revisions:

Estimating attributable fractions for given exposures has become an occupational hazard for retired professors in epidemiology. It has provided us with a debate that in general has brought us nowhere - fast.

Much of this confusion is rooted in lack of clear definitions of the exposures under study and the nature of the exposure contract that was used to make the effect measure estimates. The environment can for example be anything from non-genetic determinants to specific well-defined environmental exposures. A failure to make it clear which part of the stream of causation we talk about tends to make comparisons meaningless. Lung cancer can be claimed to be a 100% environmental disease given you have to drink, breathe and eat to survive long enough to get lung cancer. In like manner, you can claim that lung cancer is a 100% genetic disorder, given you need the genes that code for lung cancer. All a bit silly but not far from the arguments you hear in the discussions of how much can be contributed to specific exposures, especially if you do not take into consideration that causes act together, and for that reason attributable fractions sum up to more than 100%. Surprisingly, that was not taken into consideration in the Doll and Peto estimates.

In addition there are a number of technical problems in estimating these fractions, and all interpretations come with a number of reservations and conditions that have to be fulfilled. Furthermore, attributable fractions are not identical to etiologic fractions. In fact, they could be quite different.

The authors address some of these issues, albeit not in debt. They do recognize the problems of generalizing results from one areaa to the next, given that measures of effect depend upon the frequency of other components causes that act together with the exposure under study. It is an interesting revisit to an old debate that could have been sharper and gone more in depth.

What next?: Accept after discretionary revisions

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

Quality of written English: Acceptable