

Summary Minutes of the
U.S. Environmental Protection Agency (EPA)
Science Advisory Board (SAB)
Environmental Economics Advisory Committee (EEAC)
Augmented for Valuing Mortality Risk Reduction
Public Meeting
January 20 – 21, 2011

Committee Members

present:

Dr. Cathy Kling, Chair
Dr. Peter J. Wilcoxon
Dr. George Parsons
Dr. Madhu Khanna
Dr. James K. Hammitt
Dr. Maureen Cropper
Dr. Nicholas Flores
Dr. F. Reed Johnson
Dr. Karen Palmer
Dr. Laura Taylor

Date and Time:

January 20, 2011, 8:30am – 5:00pm
January 21, 2011, 8:30am – 12:00pm

Purpose:

The SAB EEAC reviewed EPA's draft White Paper, *Valuing Mortality Risk Reductions for Environmental Policy (December 2010)*.

SAB Staff:

Dr. Holly Stallworth, Designated Federal Officer

Other EPA Staff:

Nathalie Simon, Chris Dockins, Kelly Maguire, Steve Newbold, Keith Sargent, Chris Moore, Ken Davidson, Al McGartland

Other:

Jason Schwartz, NYU Institute for Public Integrity
Will Ollison, American Petroleum Institute
Eliza Mojduszka, U.S. Department of Agriculture
David Dunlap, Koch Companies Public Sector
Steve Cook, Bureau of National Affairs
Jonathon Gledhill, Policy Navigation Group
Gabe Nelson, E & E Publishing
Seth Borenstein, Associated Press
Cheryl Hogue, Chemical and Engineering News
Lisa Robinson, Independent
Amanda Lee, Office of Management and Budget
Maria Hegstad, Inside Washington Publishers

Meeting Summary

The discussion followed the issues and general timing as presented in the meeting agenda posted at

<http://yosemite.epa.gov/sab/sabproduct.nsf/a84bfee16cc358ad85256ccd006b0b4b/a36589d46f1d2c8f852577c7004d376e!OpenDocument&Date=2011-01-20>

THURSDAY, JANUARY 20, 2011

Opening of Public Meeting

Dr. Holly Stallworth, Designated Federal Officer (DFO), opened the meeting with a statement that the Environmental Economics Advisory Committee (EEAC) is a standing committee of the chartered Science Advisory Board. As such, EEAC is a federal advisory committee whose meetings and deliberations meet the requirements of the Federal Advisory Committee Act.

Dr. Kling reviewed the agenda and purpose of the meeting and invited introductions by each member. Dr. Nathalie Simon of EPA's National Center for Environmental Economics (NCEE) presented NCEE's slides on *Valuing Mortality Risk Reductions for Environmental Policy*, posted at the meeting webpage (URL given above), covering the history of EPA's guidelines on mortality risk valuation and current EPA guidance on the "value of statistical life" (VSL). Following Dr. Simon, Mr. Michael Schwartz of New York University's Institute for Public Integrity presented public comments, endorsing EPA's proposed change in terminology from "value of statistical life" (VSL) to "value of mortality risk." Mr. Schwartz urged EPA to design studies to capture the elements of altruism that may be most relevant for equity concerns and expressed support for the temporary adoption of a 50% cancer differential. Mr. Schwartz' written public comments, along with those of the American Petroleum Institute and the Oil Companies' European Organization for Environment, Health and Safety, are posted at the meeting webpage (URL above).

In discussing charge question 1 (on finding a new term for the marginal rate of substitution between health risk and income), panelists expressed support for such a change in terminology to reflect dollars per micro[10^{-6}]-risk per person per year. Panelists generally agreed that using a phrase like the "value of risk reduction" would better communicate this marginal rate of substitution but that a simple terminology change cannot substitute for clarity about the concept being measured. Suggestions were made that the EPA conduct focus groups to determine the most appropriate term to use.

With respect to charge question 2 (EPA's proposed "cancer differential" of up to 50% over valuation for accidental death), panelists agreed that the evidence indicated the existence of a cancer differential but debated whether the 50% premium was too high and whether the "cancer differential" conflated the valuation of morbidity with mortality.

On charge question 3 (whether EPA should rely on willingness to pay for both public and private risk reduction and whether WTP for public risk reductions better captures altruism), panelists generally agreed that non-paternalistic altruism should not be included in cost-benefit analysis. Conversation then extended to the treatment of paternalistic altruism and general agreement was voiced for including altruism where there is clear evidence of paternalistic altruism. One panelist suggested that people have strong preferences about the distribution of costs (who pays) and those preferences may dominate the existence of paternalistic altruism. Another panelist pointed out that people may provide lower valuations for government programs as compared to the private provision of goods. On the issue of whether it is necessary to control for the difference between public and private risk reductions, panelists recognized the lack of empirical studies that would enable EPA to do this appropriately.

With respect to charge question 4 (the selection criteria for choosing stated preference studies and hedonic wage studies), one panelist agreed that the measurement error associated with some common sources of occupation risk information was sufficient to exclude that data, e.g. Society of Actuaries data. The suggestion was made to add “quality of risk data” as a criterion when considering studies. Panelists discussed whether to exclude studies that were not conducted in the U.S. and whether scope tests should be added to the inclusion criteria.

On the topic of income elasticities (charge question 5), Dr. F. Reed Johnson presented slides (posted at the meeting webpage) drawing largely on the recent publication of “The Income Elasticity of the Value per Statistical Life: Transferring Estimates between High and Low Income Populations,” *Journal of Benefit-Cost Analysis* (2011) by James Hammitt and Lisa Robinson. Dr. Johnson’s slides presented a range of values for η , the income elasticity, and observed that η is inversely related to income. Panelists generally agreed that there was an upward trend in the findings of η from various studies but did not resolve whether EPA should keep its current 0.5 estimate as a default.

In debating how the Agency might update its mortality risk valuation (charge question 6), panelists demurred on telling EPA what statistical approach they should use, but stressed that EPA should drop the notion of a single value for mortality risk reduction. Much of the discussion focused on how to capture the heterogeneity of risks as well as population heterogeneity. Panelists considered the possibility of constructing several prototypes for risk so that different valuations could be used for each policy context, e.g. the value of risk reduction, VRR_{ij} where i = cancer/non-cancer and j = latency. One panelist cautioned that without a better public education effort, these variations on mortality risk estimates were not going to be successful.

On the question of whether stated preference (SP) studies should be analyzed separately from revealed preference (RP) studies, panelists agreed that the most important criteria was to find studies that best matched EPA’s risk context. It was also agreed that SP studies generally address a risk context better suited to EPA’s domain as compared to RP. Various opinions were offered on the possibility of using expert elicitation to combine estimates from various studies. Panelists rejected the prohibition against overlapping

data sets and debated the merits of meta regression as a means of combining estimates from various studies, with some panelists preferring human judgment over sophisticated statistical approaches.

FRIDAY, JANUARY 21, 2011

Before launching into a discussion of the charge questions, Dr. Stallworth asked panelists to look at their calendars in order to schedule two teleconferences. Teleconferences were scheduled for March 14, 2011 and April 13, 2011, both at 12:00 p.m. Eastern Time.

In response to EPA's questions on a benefit function transfer approach (charge question 8), panelists agreed that there is not yet sufficient empirical research to support switching to a more detailed functional benefit transfer. While panelists found the structural preference approach attractive, some worried about the choice of functional form driving the results. Panelists left open the question of whether to do a meta analysis or select appropriate studies and take a distribution from that although it was generally agreed that meta-analysis (e.g., a random effects estimator) should be used to pool mortality risk reduction valuations from acceptable studies that pertain to the population affected by a regulation. According to one panelist, the disadvantage of using meta regression as a reduced-form model for benefits transfer stems from the fact that dummy variables cannot substitute for using appropriate criteria for study inclusion. Panelists agreed that parameterizing a life cycle model would be premature given the state of the literature but one panelist pointed out that EPA is already doing lifecycle modeling when it incorporates latency.

On the question of whether EPA should develop a standardized protocol for updating the Agency's mortality risk value estimates (charge question 7), panelists agreed that a standardized protocol and regular updates would be desirable. Again, one panelist warned that regular updates would be controversial without a better public education campaign. Rather than updating the risk valuation estimates every 5 years (as suggested in the charge question), panelists suggested that updates could be prompted by the emergence of new studies. Panelists then returned to the subject of income elasticities and discussed whether these estimates should also be regularly updated.

Finally, panelists revisited the issues associated with the approach for updating the Agency's mortality risk values (charge question 6). Dr. Trudy Cameron presented her written comments (posted on the meeting webpage), stressing, once again, that there is no single number for the value of mortality risk reduction. Rather, there are demands for different goods by different groups of people and that the current process involves "apples and oranges." On the issue of whether one estimate or multiple estimates should be drawn from each study, panelists agreed that this should depend on the reasons for different estimate in a study, with the most appropriate estimate being the one most closely aligned with EPA's policy context.

Before adjourning, Dr. Stallworth and Dr. Kling charged members with submitting revisions to the draft Advisory by February 3, 2011.

Respectfully Submitted:

Holly Stallworth, Ph.D. /s/
Designated Federal Officer

Certified as True:

Cathy Kling, Ph.D./s/
Chair

NOTE AND DISCLAIMER: The minutes of this public meeting reflect diverse ideas and suggestions offered by Committee member during the course of deliberations within the meeting. Such ideas, suggestions and deliberations do not necessarily reflect consensus advice from the panel members. The reader is cautioned to not rely on the minutes to represent final, approved, consensus advice and recommendations offered to the Agency. Such advice and recommendations may be found in the final advisories, commentaries, letters or reports prepared and transmitted to the EPA Administrator following the public meetings.