

Beyond Risk Assessment – Incorporating Our Values and Ethics in Precautionary Assessment

"We should remember that risk assessment data can be like the captured spy: If you torture it long enough, it will tell you anything you want to know."

William Ruckelshaus (1st administrator of U.S. EPA) 1984,

Introduction to risk assessment

Risk assessment is an expression of our values and ethical decision-making. Classical risk assessment was defined in a 1983 report by the National Research Council as including four basic elements: hazard identification, dose-response assessment, exposure assessment, and finally risk characterization. Initial efforts were focused on defining a numeric probability for developing cancer, which evolved into quantitative risk assessment. This approach became highly technical and dominated by experts in risk assessment. While the initial goals of risk assessment were laudable, it has degenerated into defining how much hazard is tolerable or is necessary in any given situation. Quantitative risk assessment has a number of weaknessesⁱⁱⁱ.

Introduction to Precautionary Assessment

The goal of precautionary assessment (PA) is to move beyond risk assessment and allow communities and individual to incorporate their knowledge, values and ethics into a more comprehensive evaluation of a hazardous condition. The PA combines the philosophy and ethics of the precautionary principle with the standard scientific evaluation of the hazards. Precautionary assessment contains three basic elements: a) community and social issues, b) exposure, and c) hazard and toxicity. Each element is broken down into a series of questions that are scored numerically and summed to produce a summary score for each element. The PA is designed to help place the knowledge available within the context of the community. In contrast to the traditional risk assessment, the PA is a more comprehensive approach to evaluating the human and environmental health risks. Overall, the PA is a more reasonable, rational, and responsible approach to evaluating risk of chemicals.

Using the PA

The PA is a work in progress. Your comments and feedback are welcome. The accompanying spread sheet has the following work sheets:

- PA-defined: defined the elements, questions, and scoring.
- PA-worksheet: a sample worksheet that can be copied and edited with a compound of your choice
- PA-Lead: A precautionary assessment of lead
- PA-Water: A PA of water.

After reviewing the PA-definitions, copy the PA-worksheet and fill in with a compound of your choice. Assign a score and fill in a rational in the comment section. The PA is designed to incorporate your knowledge, values, and ethics into a score – there are no wrong answers. We will pick out a common compound and discuss in class.

References

ⁱ Montague, P. Getting Beyond Risk Assessment. Rachel's Democracy & Health News #846. March 16, 2006.

ⁱⁱ Montague, P. The Waning Days of Risk Assessment. Rachel's Environment & Health News #652. May 26, 1999