

10640- A Decade of Ethics and Philosophy in Environmental Epidemiology

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Background: In 1991, ISEE established its Ethics and Philosophy Committee. It was the first epidemiology sub-specialty to adopt the core values of maintaining, enhancing and promoting health in communities worldwide by identifying or evaluating environmental hazards. Further, ISEE was first to recognize that beneficence, non-maleficence, distributive justice, and respect for autonomy are the principles of bioethics and that they also govern epidemiology. What will a review of the past 10 years of activity show of the impact of ISEE in promoting these values and principles?

Objective: To examine the role of ISEE in promoting and advancing an ethics program in environmental epidemiology.

Method: We review the process by which ISEE defined, developed and implemented its ethics program, and compare this experience with other epidemiological sub-specialties, based on a review of position papers, publications, workshops, conference sessions, website reference materials, incentive programs, and specific interventions.

Findings: After the Industrial Epidemiology Forum hosted the first Workshop on ethics in epidemiology in Alabama in 1989, ISEE was the first sub-specialty epidemiology society to host major workshops, publish peer-reviewed papers, books and conference proceedings on ethical conduct and integrity in the profession, conduct surveys among its members, and adopt guidelines for the ethical conduct of epidemiologists. ISEE then was first to recognize the unique risks to environmental messengers ("whistleblowers"), set up a service for providing support to such individuals (URL: <http://www.iseepi.org/index1.htm>), intervene and publish case reports in such episodes, develop a definition of suppression and repression bias, and state the case for codes of institutional conduct that spell out their obligation to protect such messengers from harassment. These activities drew substantial attention inside and outside of our sub-specialty. Review suggests that ISEE's efforts have led to new agendas that have begun to have substantial international impact.

Future directions: In 2001, ISEE began to explore the concept of an international epidemiological whistle blower service for mass killing and democide. ISEE has begun to re-examine the ethical context and implications of environment-gene interactions and its potential for diverting attention from prevention based on reduction of exposures for the entire population. It is addressing the problems of environmental epidemiology in Africa. It proposes to address the need to ensure protection of the independence of research from pressures implicit in funding by industrial interests. Future plans also include discussion about new challenges in understanding the direct and indirect influence of global and local environmental changes on human health. Elaboration of the related issues in philosophy of science will be part of this discussion. Efforts to evaluate the impacts of this work on ISEE members and the broader community also must be undertaken.

Conclusions: The record suggests that ISEE, through its Ethics and Philosophy Committee, has drawn attention to the core ethical and philosophical values and principles that guide our work. The challenge is to ensure the growth, spread and sustainability of this work.

10994- Reporting Strategy for Environmental Analytes of the National Health and Nutrition Examination Survey (NHANES).

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The NHANES biological testing addresses a critical need to understand the level of population exposure to a broad range of contaminants, and provide an important first step to understanding the potential public health implications. As human subjects are involved, a reporting protocol is an essential component of the NHANES program. The primary goal of subject notification is the protection of the health of participants. As such, notification should be guided by evidence of exposure-disease association or the likelihood of benefit to participants from knowing their results. However, characterization of health risks to individual participants is beyond the scope of NHANES. Furthermore, exposure to common environmental pollutants can occur through multiple pathways, biological sampling alone is not sufficient to determine the most significant contributors to participant exposures. Thus, without knowledge concerning the pathways of exposure, it is not possible to provide participants with exposure mitigation guidance. In light of these limitations, a more pragmatic 3-phase reporting approach is necessary. Phase 1, guideline based notification -- participants would be notified when values exceed established or extrapolated health based guidance levels. Re-sampling of extremely high values would be recommended to validate findings, and available health effects information are reviewed to characterize potential risks. Phase 2, distribution based notification – overtime, as more data are collected and compiled, findings would be analyzed to better understand exposure distribution and a statistical strategy would be developed for flagging high values for appropriate notification, validation, and follow-up recommendation. Phase 3, risk based notification -- the goal of phase three is to develop risk based information to provide a public health context for interpretation and reporting of findings. Phase 1 approach was applied the reporting of uranium and cobalt.

11078- Why the Final Report on Lethal Smog in Donora Was Never Issued
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From October 25-30, 1948, an inversion of industrial fumes in this Monongahela Valley town of Donora, Pennsylvania, killed 20 people and sickened half the town. Methods: Using newly discovered records from public health and other sources, along with archival film from the episode of pollution itself, and industrial chemistry calculations, this presentation offers a retrospective assessment of the public health impact of this lethal smog. Other towns in the valley also experienced this inversion, but did not experience the same mortality or morbidity. Results: In Donora, autopsies and health surveys were conducted, along with meteorological measurements, and limited environmental sampling. No final report was ever issued on the episode. A weather inversion was officially blamed for the phenomenon, although a number of health scientists at the time raised doubts about the underlying role of acid aerosols, carbon monoxide and particles. The unique properties of emissions from the zinc plant, including the possible role of highly toxic fluoride gas, were not examined. Conclusion: Based on these records and on the known chemistry of industrial processes then widely occurring throughout the region, there is evidence that reactive fluoride gas may have been responsible for the unusual number of deaths that occurred in Donora. Efforts should be made to identify whether the same processes used in this town are also being relied on in some rapidly developing industrial towns in other locales today.