

**OVERVIEW OF THE EPA/NIEHS/ATSDR WORKSHOP —
“EQUITY IN ENVIRONMENTAL HEALTH: RESEARCH ISSUES
AND NEEDS”**

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In recent years, there has been increasing concern that minority (nonwhite) and economically disadvantaged communities bear a disproportionate share of the risks of exposure and of exposure-related health effects from environmental pollutants. These concerns have been brought to the forefront by the Conference on Race and the Incidence of Environmental Hazards (Bryant and Mohai, 1992), the National Minority Health Conference: Focus on Environmental Contamination (ATSDR, 1992), and the First National People of Color Environmental Leadership Summit (Lee, 1992). Major publications that have discussed the nature of the problem include *Toxic Wastes and Race in the United States* (UCC, 1987), *Dumping in Dixie: Race, Class and Environmental Quality* (Bullard, 1990), *The Truth About Where You Live* (Goldman, 1991) and *Environmental Equity: Reducing Risk for All Communities* (EPA, 1992). These activities and publications have explored a wide array of issues that are relevant to achieving the goal of equity in environmental health. The issues range from those dealing with policy and enforcement to those that are strictly rooted in science.

One outcome of the numerous dialogues about various aspects of the environmental equity/justice issue is the realization that there is evidence suggesting that disadvantaged groups, i.e., people of color and low-income communities, face a greater risk of potential exposure to

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3. Key Words: environmental equity, environmental justice, workshop overview.

4. Abbreviations: ATSDR, Agency for Toxic Substances and Disease Registry; EPA, U.S. Environmental Protection Agency; NIEHS, National Institute of Environmental Health Sciences; UCC, United Church of Christ.

environmental contaminants than do nonminority and middle- or upper-class communities. However, no clear linkage has been established between potential exposure to environmental pollutants and observed health outcomes. Data are lacking that would enable us to distinguish the environmental component of many diseases in the general population; there are even fewer data that would enable us to examine the role of the environment in diseases and disorders that may be more prevalent in disadvantaged populations (EPA, 1992).

Accordingly, the Office of Health Research of the Environmental Protection Agency (EPA), the National Institute of Environmental Health Sciences (NIEHS), and the Agency for Toxic Substances and Disease Registry (ATSDR) sponsored a two-day workshop entitled "Equity in Environmental Health: Research Issues and Needs." The goal of the workshop was to examine the available scientific evidence of disparities in environmental health by ethnicity and socioeconomic status, to identify research needs and opportunities, and to recommend future directions.

Environmental health scientists, social scientists, toxicologists, epidemiologists, public health officials, educators, and engineers were invited. Representatives from the sponsoring agencies served as observers for workshop deliberations. Some participants were well-versed in the equity issues surrounding environmental health, having served as early and active forces to galvanize efforts to make this a central issue on environmental agendas. Others participating in the workshop, respected researchers with backgrounds in basic and applied science, were not as familiar with environmental equity concerns, yet their scientific expertise contributed to framing the scientific discussion of equity issues.

The time-frame between initiating workshop planning and implementing workshop deliberations was extremely short. To facilitate workshop discussions, co-chairs were asked to develop draft papers describing the current state of knowledge about exposure to environmental pollutants and pollution-related health effects in minority and low-income communities with specific reference to air pollution, hazardous wastes, pesticides, and water contamination. Papers also were prepared to engender discussion of environmental health equity concerns from viewpoints not specific to environmental media or environmental pollutants: biological susceptibility, community perspectives on health and research needs for environmental justice, data collection and evaluation issues, and health status by class and/or race. These cross-cutting papers ranged from discussing nonenvironmental factors that might interact with environmental factors to produce an undesirable health outcome to presenting case studies of specific situations where communities were placed at greater risk of exposure to environmental contaminants. Each paper was discussed during the workshop and subsequently revised on the basis of the workshop deliberations. The papers are presented in the chapters that follow.

Variability in the format of the papers reflects several factors: 1) the available information on environmental exposures and environmental health effects in disadvantaged communities; 2) perspectives and backgrounds of those preparing the papers, e.g., public health versus basic

research; and in general, data on hazardous waste available data

For the purpose of this paper was to be a source of knowledge. The policy proposals others they have. Similarities in the recognition of examples of the

- Data that provide evidence of socioeconomic
- Data on environmental health incorporated
- The studies included these types
- Multiple class/social outcomes
- The effectiveness of investigations
- There are occupational effects
- Biomarkers
- There are demographic patterns

research; and 3) viewpoints and perspectives about how to identify and address inequities. In general, data and other information on exposures and health effects related to air pollution, hazardous wastes, and pesticides were relatively abundant when compared with the quantity of available data and other information on water contamination.

For the purposes of the agencies sponsoring the workshop, a most valuable section of each paper was to be the recommendations for additional research to fill in gaps in the current state of knowledge. However, final recommendations ranged from basic research needs to public policy proposals. In some papers, the recommendations for research were extremely general; in others they were highly specific, designed to generate answers to specific questions. Similarities in the nature of the recommendations presented in individual papers indicated recognition of the same types of research needs. For these reasons, this overview presents only examples of the recommendations:

- Data that have been collected through existing mechanisms should be re-analyzed for evidence of differences in exposure and environmental health effects by race/ethnicity and socioeconomic status.
- Data on economic status/class, in addition to data on race/ethnicity, should be incorporated into future efforts to collect environmental health data.
- The study population of epidemiological and clinical studies should be diversified to include more ethnic groups, especially groups that have not routinely been included in these types of studies.
- Multiple indicators should be used when investigating the potentially confounding role of class/socioeconomic status on variability in environmental exposures and health outcomes.
- The effect of childhood social class on environmental health outcome should be investigated.
- There should be more extensive investigation of factors (e.g., susceptibility traits, occupational exposure, existing health status) that might increase susceptibility to the effects of exposure to environmental agents.
- Biomarkers for genetic susceptibility to environmental agents should be developed.
- There should be improved documentation of potential and actual exposures (e.g., detailed demographic studies of proximity to pollutant sources, water and dietary consumption patterns, race/ethnicity- and class-based modification of exposure) and of health effects

(e.g., biomarkers, epidemiologic studies, responses to environmental agents) in potentially high-risk populations.

- Risks resulting from exposure to multiple contaminants and multiple pathway exposure to the same pollutant should be assessed.
- Variability in time-activity patterns and the implication(s) for exposure to environmental contaminants should be studied.
- Multigenerational effects of exposure to environmental pollutants should be investigated.

Recommendations that were not specifically related to conduct of research fit into two general categories—community involvement and training. The following are examples:

- A dialogue should be established between researchers and communities/community groups, and there should be greater communication about the design and implementation of environmental health research and the reporting of research results.
- Special efforts should be made to increase the number of minority scientists trained to conduct environmental health research.
- Training of health care providers should be improved to enhance recognition of health outcomes that might be linked to exposure to environmental pollutants.

The broad range of recommendations reflects the observation that the environmental equity issue is not just a question of science. There also are important social, ethical, and moral questions to be answered.

The EPA/NIEHS/ATSDR workshop, "Equity in Environmental Health: Research Issues and Needs," was one of the first attempts to convene a diverse group of individuals interested in addressing the issue of equity in environmental health, with the goal of reaching a consensus on crucial aspects of the issue. While these papers may not allow a research planner to prioritize or rank items for inclusion on a research agenda, the documents do contribute a significant amount of collective information for further investigation and research into the problem. The papers do not present an exhaustive review of what is known about environmental exposures and environmental health effects. In fact, they emphasize that these kinds of data are lacking for racial/ethnic minorities and low-income groups/communities. However, the papers are a first step toward defining research that would serve as a basis for making meaningful decisions to ensure all segments of the population are protected from the adverse effects of environmental contamination.

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