

Free Executive Summary

Toward Environmental Justice: Research, Education, and Health Policy Needs

Committee on Environmental Justice, Institute of
Medicine

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Driven by community-based organizations and supported by a growing body of literature, the environmental justice movement contends that poor and minority populations are burdened with more than their share of toxic waste, pesticide runoff, and other hazardous byproducts of our modern economic life. Is environmental degradation worse in poor and minority communities? Do these communities suffer more adverse health effects as a result? The committee addresses these questions and explores how current fragmentation in health policy could be replaced with greater coordination among federal, state, and local parties. The book is highlighted with case studies from five locations where the committee traveled to hear citizen and researcher testimony. It offers detailed examinations in these areas: Identifying environmental hazards and assessing risk for populations of varying ethnic, social, and economic backgrounds, and the need for methodologies that uniquely suit the populations at risk. Identifying basic, clinical, and occupational research needs and meeting challenges to research on minorities. Expanding environmental education from an ecological focus to a public health focus for all levels of health professionals. Legal and ethical aspects of environmental health issues. The book makes recommendations to decisionmakers in the areas of public health, research, and education of health professionals and outlines health policy considerations.

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1

Introduction and Executive Summary

Each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.

President William Jefferson Clinton, 1994

As an industrialized nation, the United States produces a broad range of goods and technologies that make modern life more convenient and more efficient. The same processes that generate the nation's power, manufacture its goods, and provide its transportation, however, also produce by-products that can pollute the environment and that can be hazardous to human health. The amelioration of environmental degradation in general, as well as environmental health hazards in particular, has been a prominent national concern for at least three decades. Within the last several years, an increasingly vocal concern has also been expressed: that the broad array of environmental burdens and hazards are being borne disproportionately by lower-income communities and by racial and ethnic minorities. Efforts to address this concern have been given the label *environmental justice*.

CONCEPTS AND DEFINITIONS

As defined by the Environmental Protection Agency (EPA), *environmental justice* is

the fair treatment and meaningful involvement of all people regardless of race, ethnicity, income, national origin or educational level with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no population, due to policy or economic disempowerment, is forced to bear a disproportionate burden of the negative human health or environmental impacts of pollution or other environmental consequences resulting from industrial, municipal, and commercial operations or the exroad f24.ore

Environmental justice is a concept that addresses in a cross-cutting and integrative manner the physical and social health issues related to the distribution of environmental benefits and burdens among populations, particularly in degraded and hazardous physical environments occupied by minority or disadvantaged populations.

The definition of *health* adopted by the committee is that of the Constitution of the World Health Organization (1986), which defines health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." Although the health of the individual is important, much of the attention in this report focuses on what is referred to as *communities of concern*. Communities in this sense consist of groups of individuals who live, and often work, in specific neighborhoods or regions. In this report, the phrase communities of concern refers to communities that have or that are suspected of having disproportionately high levels of exposure to environmental stressors. The committee uses the term *stressors* to describe a broad range of factors that can influence human health, such as chemicals, biologics, allergens, and traditional toxicants, but it also includes light, noise, odors, and particulate matter, among others. The populations of communities of concern may also be characterized as having limited access to health care and education, being politically disenfranchised, being of low socioeconomic status, and belonging to a racial or ethnic minority group. A focus on the health of communities involves a public health perspective, defined in a 1988 report by the Institute of Medicine's (IOM's) Committee on the Future of Public Health as "organized community efforts aimed at the prevention of disease and promotion of health" (Institute of Medicine, 1988a, p. 41).

The committee defined the *environment* to include all places where people live, work, and play. This definition highlights the often-overlooked relationshipU8 0 Tscuses

THE COMMITTEE'S ORIGIN AND TASK

the U.S. Department of Energy, and EPA—asked IOM to conduct a study that would provide an independent assessment of three general issues:

1. the specific medical and health issues that are raised by the concept of environmental justice and that require attention, for example, medical education, clinical practice and research, medical surveillance, and public health;
2. the suitable roles of basic research and medicine in addressing these issues; and
3. the appropriate priorities for medical research that would facilitate improvements in the current situation.

More specifically, IOM was asked to address the following:

- *Characterization of the medical issues related to environmental health and justice.* This would include a multiethnic focus with an emphasis on socioeconomic status, the diversity of potential environmental and occupational health hazards and conditions, and an assessment and evaluation of current health surveillance systems.
- *Cost-benefit and risk-benefit analyses of environmental health and justice issues.* For this aspect of the project, case studies or proposals for study methods could be reviewed to evaluate the different types of analyses with an accent on producing new research approaches and strategies.
- *Role of emerging scientific research.* An assessment of the status and development of biomarkers of susceptibility, exposure, and effect as they pertain to characterization of the health effects associated with environmental hazards. A target could be the development of new molecular biology-based technologies and tools. Ethical and legal issues related to clinical research would also be considered, as would epidemiologic research strategies.
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identifying hazards to human health, evaluating the adverse health effects, and developing interventions to reduce or prevent risks for all members of society. Environmental justice research bears a special relationship to the communities being studied, requiring unusual degrees of collaboration if it is to be scientifically valid as well as policy relevant and if the findings are to be effectively implemented.

The Data and Site Visits

The published literature on environmental justice and the related health effects is not abundant. Indeed, very little environmental and occupational medicine research specifically includes data for communities of concern and poor or minority workers. Adequate data are not available in most instances to examine the relationships among the environmental, racial, ethnic, and other socioeconomic determinants of adverse health outcomes. More research is needed to clarify these relationships. Still, there is a fair amount of published literature on the siting of toxic waste facilities, and workplace injuries, exposures, and fatalities are the best-documented environmental effects on health. Despite the inadequacy of the information to date, it seems clear that inequities related to environmental and occupational hazards do exist.

To explore these issues in greater depth beyond what could be learned from the literature, the committee visited a number of low-income and minority communities with known environmental problems and also heard presentations from stakeholders, citizens, and other concerned parties. During these visits, committee members participated in dialogues with the residents of communities in which known putative environmental hazards existed and environmental justice issues were at the forefront. When possible, the committee also heard from local, state, and federal officials, as well as industry representatives. In each instance, the committee met with local grassroots leaders, visited the neighborhoods of people affected by environmental concerns, and heard firsthand the myriad interrelated concerns.

Some of the communities visited were highly industrialized and located in close proximity to major urban centers (Chicago and New Orleans). Other communities were located near industrialized facilities without an urban infrastructure (Nogales, Arizona) but with similar concerns about exposure. Some were in agricultural communities in which the exposures of concern were agricultural chemicals (El Paso, Texas), and some were in regions with past major federal activities (Hanford, Washington). The committee recognizes that the issues and areas of concern of the communities visited are only samples but believes that these experiences provided insightful examples that helped to shape

CONCLUSIONS AND RECOMMENDATIONS

On the basis of a review of the available scientific literature and the information obtained from the various site visits, the committee concludes that there are identifiable communities of concern that experience a certain type of

goals for improving the health of the U.S. population. To adequately address the

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Toward Environmental Justice

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NOTICE: The project that is the subject of this report was approved by the Governing Board of the National Research Council, whose members are drawn from the councils of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. The members of the committee responsible for the report were chosen for their special competences and with regard for appropriate balance.

The Institute of Medicine was chartered in 1970 by the National Academy of Sciences to enlist distinguished members of the appropriate professions in the examination of policy matters pertaining to the health of the public. In this, the Institute acts under both the Academy's 1863 congressional charter responsibility to be an adviser to the federal government and its own initiative in identifying issues of medical care, research, and education. Dr. Kenneth I. Shine is president of the Institute of Medicine.

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The serpent has been a symbol of long life, healing, and knowledge among almost all cultures and religions since the beginning of recorded history. The image adopted as a logo-type by the Institute of Medicine is based on a relief carving from ancient Greece, now held by the Staatliche Museen in Berlin.

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This report has been reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise, in accordance with procedures approved by the National Research Council's Report Review Committee. The purpose of this independent review is to provide candid and critical comments that will assist the Institute of Medicine in making the published report as sound as possible and to ensure that the report meets institutional standards for objectivity, evidence, and responsiveness to the study charge. The review comments and draft manuscript remain confidential to protect the integrity of the deliberative process. The committee wishes to thank the following individuals for their participation in the review of this report:

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While the individuals listed above have provided constructive comments and suggestions, it must be emphasized that responsibility for the final content of this report rests entirely with the authoring committee and the Institute of Medicine.

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Preface

The subject of environmental justice elicits strong emotion from many parties. Neither the serious health concerns nor the charges of biased or unfair policies that are implicit in the subject can be taken lightly. More importantly, however, the communities of concern, such as those that the committee saw firsthand, carry burdens beyond poor health. They carry the burden of frustration and feelings of helplessness and betrayal. For these reasons, environmental justice differs from most other areas of research and study. The committee therefore felt that it was important to approach our task by different methods. The clearest example of this is that the committee visited a number of communities with a variety of types of exposures and potential health effects with various political, social, and regulatory histories. These interactions allowed committee members to hear firsthand the myriad interrelated concerns and to witness the residents' feelings toward systems that the residents felt did not recognize or respond to their environmental health needs.

populations. Because the populations of these communities are small and because they also have other complex disease risks, it is frequently difficult to separate

impetus for the interdisciplinary collaboration that must be a part of effective solutions to complex environmental problems.

Environmental justice issues and concerns typically involve several types of agencies with different research and regulatory mandates. The committee heard repeatedly from participants at the site visits about the difficulties associated with the fact that there is no well-identified point of contact in the various agencies responsible for responding to their concerns. A single federal agency or coordinating committee with better authority and responsibility across all administrative barriers should be assigned to those communities where environmental justice is a concern. An excellent example of how this could work is the consortia of agencies that have supported this study. The National Institute of Environmental Health Sciences, in taking the lead with other federal agencies (the Centers for Disease Control and Prevention, the Environmental Protection Agency, and the U.S. Department of Energy), has provided a useful approach toward a research policy request. Such an approach could provide a clearinghouse and communication channel between federal agencies and state and local entities.

Much remains to be learned about environmental health and environmental justice. Great strides need to be taken in terms of the interrelated topics of research and education before society can ensure environmental justice in its broadest sense. Until then, environmental justice needs to become a higher priority in the fields of public health, research, education, and health policy. More importantly, these areas need to be approached systematically so that research directly affects policy to improve public health and education and that policy, together with public health, identifies needs that can be addressed by research. As increasing numbers of laypeople, health care professionals, and policymakers become aware of the issues and become cognizant of the problems, communities can be assisted in striving toward environmental justice.

James R. Gavin III

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Cochairs

Contents

1	Introduction and Executive Summary	1
	Concepts and Definitions	1
	The Committee's Origin and Task	3
	The Committee's Task	3
	The Data and Site Visits	5
	Conclusions and Recommendations	6
	Research	6
	Education	7
	Health Policy	8
	Organization of the Report	9
2	Establishing a Baseline	11
	Disparities in Health Status in the United States	11
	Low Birth Weight	13
	Infant Mortality	13
	Death Rates	13
	Cancer	13
	Disparities in Exposure to Environmental Hazards	14
	Examining Proximity to Environmental Health Hazards	14
	Characterizing Exposure	16
	Examining the Link Between Exposure and Health	18
	Lack of Health Status Characterization	19
	Failure of Differentiation of Populations and Differences in	20
	Outcomes	
	A Case Study: Urban Asthma	20
	Conclusions	21

3	Research	23
	Research Methodologies	24
	Documenting Excessive Exposures	24
	Assessing Susceptibility to Environmental Hazards	26
	Measuring the Health Effects of Exposure to Environmental Health Hazards	27
	Biomarkers	29
	Research Challenges	33
	Improving Epidemiologic Studies	34
	Addressing Race	35
	Participatory Research	36
	Enhancing Support for Research	40
	Conclusions and Recommendations	41
4	Education	45
	Health Professional Education	46
	Enhancing Health Professional Education	46
	Increasing the Number of Minority Health Professionals	51
	Education of the Public	52
	Educating Children	53
	Community Leadership	55
	Conducting Participatory Research	55
	Conclusions and Recommendations	57
5	Health Policy	61
	Current Science Base for Environmental Justice	61
	Expanding the Policy Process	64
	Conclusions and Recommendations	65
	References	69
	Appendixes	
A	Using Disease Cluster and Small-Area Analyses to Study Environmental Justice	79
B	Acknowledgments	103
C	Acronyms	109
D	Executive Order 12898	AnIndex6 1 Tf 0.

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