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Commentary

Health Effects of Air Pollution: Some Historical Notes

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As I understand the objectives of this symposium, they are at least 2-fold: to describe some of the advances in the environmental health sciences in the past 40 years, and to acknowledge some of the roles of the Institute of Environmental Medicine in these scientific advances. This is a pleasant task and the occasion for a happy anniversary celebration.

In my comments on air pollution, I expect to emphasize what is known to all of you—that environmental health sciences differ significantly from other health sciences in the extent to which they are intertwined with important public policy issues; in fact, the directions and progress of environmental health science research are often driven by public policy concerns and needs. The history of the Environmental Medicine Institute and the career of Norton Nelson are full of examples of these science/policy interactions.

Before 1948, which is approximately the founding date of the Institute, there was very little interest in air pollution as a cause of adverse health effects in this country. There was concern about dusts and other chemicals in the workplace, but so far as outdoor pollution was thought about, it was largely a question of pathologists speculating whether the carbonaceous appearance of postmortem lungs of city dwellers might have influenced the frequency of pneumonia or other respiratory diseases.

That picture changed rapidly after the lethal episode of air pollution in Donora, PA, and the severe episodes observed in London in 1952. By 1957 the U.S. Public Health Service had organized an air pollution division in the Bureau of State Services and started a program of health effects research, as well as training programs in universities to increase the number of people qualified to assess and regulate air pollution. The government-funded training lasted for only a few years, but the research on all aspects of community air pollution, including health effects, has expanded greatly and is still going strong.

When the Public Health Service started the health effects of air pollution research program in the mid-1950s, it understandably set up an advisory committee of experts from universities, and Norton Nelson was a founding member. I am not sure that was his first air pollution health effects committee assignment, but I know that through countless subsequent committees, commissions, task forces, and other advisory bodies, Nelson has played a key role in charting the course of health effects research ever since, in this country and internationally.

This is not the time or place to talk about alternative air pollution control strategies, but the strategy followed in this country has important implications for the quality and quantity of specific information about health effects of air pollutants. This follows from the strategy that air quality for specific chemicals must be regulated, and the standards for quality should depend primarily on adverse human health effects at low levels of exposure. All scientific information relating to standards and health effects are evaluated and published in Criteria Documents.

In the early days of Public Health Service programs, the Air Pollution Division had a tendency to overemphasize the health effects of air pollution. Their public information office once put out a booklet, the cover of which showed people choking, gasping for breath, and collapsing in the streets. Even Donora never had scenes like that. The Agency's first Criteria Document, for sulfur dioxide, seemed to have been written to alarm people, rather than to inform them. The document implied that drastic curtailment of use of high sulfur fuels would be required to save citizens from the toxic effects of sulfur dioxide. When staff members of the Bureau of the Budget (predecessor of OMB) saw the document they were staggered by the potential cost of regulating sulfur dioxide, and they asked for a review by the Office of Science and Technology. Ivan Bennett of NYU was then Deputy Director of the Office, and he presided over a meeting of consultants to review the first sulfur dioxide criteria document. After it was proudly presented by the head of the Air Pollution Program, it was thoroughly criticized by the consultants, including Nelson. Subsequently the document was withdrawn.

After that early experience, the successor agencies have progressively improved the quality of Criteria

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Documents, especially since 1979, when Congress established the Clean Air Scientific Advisory Committee as part of the EPA Science Advisory Board. Much of the credit for this vast improvement should go to Norton Nelson in the early years and to Morton Lippmann in recent years.

If there were time, one could enumerate many more examples of the influence of Nelson and his colleagues in the Institute on the scope and direction of air pollution health effects research in this country. Some of these examples can be found in the reports of research planning task forces sponsored by NIEHS in 1969 (*1*) and 1976 (*2*). I have read these Task Force reports recently and they are still comprehensive and useful in many areas of air pollution health effects research.

Other examples of NYU influence can be found in the Rall Committee (*3*) report of 1973, which, among other things, led to the establishment of the Harvard Six-Cities Study, a classic prospective study of indoor and outdoor pollution in a number of cities in eastern and midwestern U.S. Nelson and Lippmann have been influential advisers to this project since its beginning.

I have been honored to be a part of this symposium, and I look back with the greatest of pleasure to my long association with Norton Nelson and many of his associates at NYU.

REFERENCES

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