

AN EDITORIAL INTRODUCTION TO THE ISSUE

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On July 14-15, 1980, a National Invitational Conference on Planning for and Response to Acute Chemical Emergencies was held by the Disaster Research Center (DRC) at The Ohio State University. The six articles which follow are either extended versions of papers orally presented at the conference or elaborations of DRC findings introduced during the course of the meeting. Thus, this special issue can be seen as a product of this conference and, in one sense, serves as the proceedings of the meeting.

Chemicals provide considerable benefit to society but do pose some risk for the human race. Our modern lifestyle, including much of our food, clothing, and housing, would be impossible without the chemical innovations of recent times. The contributions which chemicals have made to our high standard of living, especially in urbanized and industrialized societies, seems incontestable. Yet, the production, distribution, and usage of certain chemicals also create varying degrees of risk to life, property, and well-being. Some risks are of a chronic or long-term nature as witnessed in the Love Canal situation and other chemical dump areas. Still other threats of a chemical nature tend to be more acute or sudden, creating emergencies which have to be prepared for or responded to when they occur.

The conference focused on questions and issues related to such emergencies. It particularly dealt with the situation at the local community level, at least as manifested in American society. Two general questions were especially addressed: in what ways are local communities prepared for acute chemical emergencies, and how do local communities respond to such emergencies?

Given these interests, the first paper by Fawcett attempts to put the problem of acute chemical hazards in a historical perspective. In very general terms, it notes that the problem has changed from obvious situations of fire and explosion of relatively short duration to ones in which threats may manifest themselves in many ways. However, it is noted that the danger is not intrinsic in chemicals, themselves, but in the ways in which they are handled.

The four articles that follow report findings taken directly from the DRC research effort. During a three-year study sponsored by the National Science Foundation, DRC conducted 19 separate studies of local community preparedness for disasters, especially acute chemical emergencies. In addition, DRC undertook 20 additional field studies of actual chemical disasters or emergencies. The research focused on the socio-behavioral aspects of community and organizational preparedness and on the organized responses to actual hazardous chemical incidents. This included both in-plant and transportation-related accidents. As reported elsewhere, the methodology involved obtaining hundreds of interviews with key officials as well as rating scales of perceived probabilities of chemical and other emergencies, dozens of disaster plans and after-action reports, and a large quantity of other documentary and statistical data (1,2).

The article by Helms reports on the perception of 300 key community and organizational officials in regard to their assessment of the probability of their locality being struck by one of 36 different kinds of disaster agents, including three of a chemical nature. The relatively high probability assigned to chemical-type disasters, the higher probability given to such disasters by local emergency organizations when compared to chemical companies, and the lower expectations of all kinds of disasters in smaller-size communities are among the more notable findings. In addition, the data show that chemical threat perception is not a function of any systematic efforts to actually assess community hazards.

In her article, Tierney discusses the degree and kind of disaster preparedness at the local community level. Among other things, she notes that the social climate in most localities is not conducive to planning and that existing community and organizational conflicts and differences make work on preparedness measures difficult. Tierney points out that a sharp separation between the private and public sectors and a narrow approach toward planning which tends to equate preparedness with the development of disaster plans result in a very weak state of chemical disaster preparedness in most localities.

Gabor's article focuses on the different kinds of mutual aid systems which have been developed in order to cope with acute chemical emergencies. To some extent, such systems have been established in an attempt to counterbalance generally poor community level disaster preparedness. However, the more elaborate and technically sophisticated ones usually cannot be among the first responders in acute chemical emergencies.

Gray shows that many problems encountered during response to a chemical-type disaster stem from difficulties in initially identifying the threat and determining the procedures which should be followed in reference to the observed hazard. In particular, she notes the distinctive patterns of responses in chemical emergencies associated with transportation accidents, the unique role of local fire

departments in such emergencies, the general lack of coordination in most evacuations of threatened populations, the difficulties involved in administering medical treatment to casualties, and the various problems which local organizations have in dealing with sudden chemical disasters.

While DRC research and the subsequent conference primarily centered on preparedness and response at the local community level, the influence of extracommunity factors upon chemical emergencies was always recognized. Whittaker's paper calls attention to state governments' involvement in acute chemical emergencies at the local level. She notes some of the public policy implications of the attempted management of hazardous materials by state level agencies in the United States.

In addition to the six substantive articles, the concluding article provides a selected annotated bibliography and lists other sources of information about disasters and planning for acute chemical emergencies. Because research consistently indicates that principles of preparedness and management applicable to one kind of disaster can be relevant to other types of disasters, the annotated bibliography does not distinguish between references primarily dealing with dangerous chemical incidents and those discussing other mass emergencies. Wilson, the compiler of information in this article, also includes some references and sources from countries other than the United States.

These articles do not exhaust all the research findings on the socio-behavioral aspects of acute chemical emergencies. However, the research work reported in this volume does present a good picture of the current state of socio-behavioral research in this area, especially at the level of local community preparedness and response. These articles emphasize the importance of recognizing the socio-behavioral aspects of hazardous materials incidents. Until we understand the social issues and problems as well as the more technical ones, we cannot insure that the benefits derived from chemical and other hazardous substances such as those involved in nuclear power will balance the risks and dangers encountered in the production, transportation and usage of such materials.

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