World Health Organization

Environmental Health in Emergencies and Disasters
A Practical Guide

This volume distills what is known about environmental health during an emergency or disaster. It draws on results from the International Decade for Natural Disaster Reduction, and on experience with sustainable development between the two Earth Summits, in Rio de Janeiro and Johannesburg. It is intended for practitioners, as well as for policy makers and researchers, and thus covers both general and technical aspects of environmental health.

In Part I of this volume, a conceptual framework is presented for understanding environmental health issues in the context of disaster management. The framework covers the entire disaster-management cycle, from preparedness and warning, to recovery and prevention. Guidelines are also suggested for planning and reducing the effects of extreme events on public health, and practical guidance is given in organizational and logistical matters. Throughout, the need for flexibility and innovation at the local level is emphasized, combined with solid advance planning. There is also a focus on the vulnerability of populations during an emergency or disaster, with the implication that such people have capacities and local knowledge that should be integrated into efforts to secure both environment and development against extreme events. The creative potential of balancing “top-down” and “bottom-up” approaches is emphasized in chapters on health promotion and community participation, and on human resources.

Part II of this book is a detailed compendium of best practices and strategies for risk reduction and response in the fields of:

- Shelter and emergency settlements;
- Water supply;
- Sanitation;
- Food safety;
- Vector and pest control;
- Control of communicable diseases and prevention of epidemics;
- Chemical incidents;
- Radiation emergencies;
- Mortuary service and handling of the dead;
- Health promotion and community participation; and
- Human resources.

This book will be useful in planning for, responding to, and recovering from the movements of displaced persons and refugees in humanitarian crises, as well as the floods, storms, earthquakes and other extreme events that could confront health workers in the first decade of the 21st century. Given trends in the 1990s, it is unlikely that humanity has seen the last of these challenges.

by B. Wisner and J. Adams
2003, 280 pages [E]
ISBN 92 4 154541 0
Swiss francs 60.–/US $54.00
In developing countries: Sw. fr. 42.–
Order no. 1150487
Emergency response

Emergency response is the phase of the disaster-management cycle that often attracts the most attention and resources. Emergency response is sometimes a cyclical process, involving repeated assessment, planning, action and review, to respond appropriately to needs and capacities as they evolve. Rapid and effective mobilization is facilitated by proper disaster preparedness.

Water supply, sanitation and hygiene

Water-supply problems arise in all phases of the disaster-management cycle. As with all other elements of emergency management, water supplies can be designed and maintained in ways that help to reduce the health impacts of disasters. The links between sanitation, water supply, and health are directly affected by hygiene behaviour. It is important to bear this in mind when considering technical options, so that facilities provided in emergencies are acceptable to the users and can be used and maintained hygienically.

Control of communicable diseases and prevention of epidemics

Disaster-affected people are particularly vulnerable to communicable diseases when the disaster and its immediate consequences reduce resistance to disease because of malnutrition, stress, fatigue, etc. and when post-disaster living conditions are unsanitary. The prolonged mass settlement of refugees in temporary shelters with only minimal provision for essential personal hygiene is typical of a situation that may cause epidemic outbreaks of infectious diseases.

Chemical incidents

The occurrence of major chemical incidents has shaped the way members of the public perceive exposure to chemical substances. Such incidents are fear-inducing because they have the potential to cause large numbers of deaths and illness and because they raise questions about the fragility of technologies over which the public may have little or no control. As with responses to all types of disaster, careful planning and thorough preparedness are prerequisites for an effective response to a chemical incident.

Radiation emergencies

Major exposures to radiation can have health effects which can be divided into deterministic, or acute effects, and stochastic, or late effects. Deterministic effects include skin burns, radiation sickness and death. Stochastic effects, on the other hand, include cancers and inheritable defects, which result from damage to the genetic material in cells. Radiation emergencies can have severe psychological effects on the victims, as the fear of an unfamiliar, invisible and potentially terrible danger causes acute stress. Such stress and its associated problems can arise even when radiation exposure is low or insignificant.

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