Recent incidents have proven the danger of being unknowledgeable. For example, the attack on the Moscow Theatre resulted in many unnecessary victims due to poorly informed prehospital medical teams.
Conclusion: More education and information regarding such hazards should be available for medical rescue teams.
Keywords: ammunition; education; nuclear, biological, chemical (NBC); weapons; World War I (WWI)
Prehosp Disast Med 2005;20(2):s91-s92

The Bhopal Saga—Causes and Consequences of the World's Largest Industrial Disaster

I. Eckerman
Swedish Doctors for the Environment, Sweden

Introduction: The Bhopal Gas Leak in India, 1984 is the largest chemical, industrial event ever. A total of 520,000 persons were exposed to the gases, and up to 8,000 died during the first several weeks following the event. A total of 100,000 persons now suffer from permanent injuries. The catastrophe has become the symbol of negligence to human beings from transnational corporations. Industrial disasters still happen in India as well as in the rest of the industrialized part of the world. Although more recent events are far smaller than that of the event in Bhopal, they are so numerous that chemical hazards could easily be considered a public health problem. The companies involved usually dispute their own roll in the events, and often deny the health effects of the incident. The companies also have been reluctant to compensate the victims financially.
Methods: This report is based on a thorough review of material already published from India and its surroundings, as well as the author's experiences while visiting Bhopal. The Logical Framework Approach (LFA), a tool for project planning and management, was tested on this major event, in order to analyze its causes and consequences.
Results: The Logical Framework Approach (LFA) provided one main message: Irrespectively of the direct cause of the leakage, only two parties are responsible for the magnitude of the disaster: (1) the Union Carbide Corporation; and (2) the Governments of India and Madhya Pradesh. Models developed for analysis of injuries can be used for analyzing a complicated, major incident, such as the Bhopal gas leak, though different models might stress different aspects. Visualizing causes and consequences in tree models might provide a new understanding. When visualizing causes and consequences of this kind of event, it is obvious that "chain" and "tree" are not the right words—"net" is more appropriate. Analysis according to the LFA problem tree demonstrates that to create such a major gas leak, water entering the tank alone was not enough. The most important factors were the design of the plant and the recent cut in expenses because of economic pressure. The same analysis shows that the most important factor for the outcome of the leakage is the negligence of the Union Carbide Corporation and the Governments of India and Madhya Pradesh.
Conclusion: To reduce the influence of chemical industries on public health, there is a great need for actions from many areas. The governments have a responsibility to protect their inhabitants from the negative effects of "development". As a result of globalization, coordination between governments and national organizations is necessary.
Keywords: Bhopal; chemical; consequences; health effects; India; Logical Framework Approach (LFA); Union Carbide Corporation
Prehosp Disast Med 2005;20(2):s92

Nerve Agent Poisoning of Children: Medical and Operational Considerations for Emergency Medical Services (EMS) in a Large American City

A. Cooper;[1] G. Foltin;[2] M. Tunik;[2] J. Pyun;[2] L. Marshall;[3] J. Bove;[3] M. Guttenberg;[3] A. Cherson;[3] Y. Langsam;[3] B. Kaufman;[4] G. Asaeda;[4] D. Gonzalez;[4] J. Clair[4]
1. Columbia University/Harlem Hospital, New York, New York USA
2. New York University/Bellevue Hospital, New York, New York USA
3. Regional Emergency Medical Advisory Committee of New York City, Utica, New York USA
4. Fire Department, City of New York, New York, New York USA

Most published recommendations for the treatment of nerve agent poisoning of children rely on standard resuscitation doses of atropine. However, certain medical and operational concerns suggest an alternative approach may be warranted for treatment of children following nerve agent exposure by emergency medical services (EMS) personnel: (1) there is evidence that supra-pharmacologic doses may be needed and that side effects can be tolerated; and (2) there is concern that many EMS personnel will have difficulty determining the age of the child and the severity of the symptoms. Thus, the Fire Department of the City of New York (FDNY), the Regional Emergency Medical Advisory Committee (REMAC) of New York City, and the Center for Pediatric Emergency Medicine (CPEM) have developed a pediatric, nerve agent antidote-dosing schedule to address these concerns (Table 1).

These doses are similar to those being administered to adults with severe symptoms and within limits shown tolerable by accidental nerve agent overdose in children. The doses in Table 1 likely are a safe and effective alternative to weight-based doses, which nearly would be impossible to attain under field conditions.

Tag Color	Exposure/ Symptoms	Atropine/ 2-PAM	Dose/ Intervals
Red (Pediatric)	Yes (Age <1 year)	1 Pediatric Atropen No 2-PAM	0.5 mg q3m PRN
	Yes (Age 1–8 years)	1 Standard Atropen 1 2-PAM Autoinjector	2.0 mg q3m PRN 600 mg
Green (Pediatric)	No	None	Check q10m for symptoms/signs

Table 1—Dosing schedule for patients <9 years of age (m = minutes)

Keywords: atropine; children; dose; nerve agent; poisoning; treatment
Prehosp Disast Med 2005;20(2):s92