

open dipping facilities with acids also have caused reports of whole fingers being burned. Fast-paced machines that could not be regulated by the workers has led to amputation of the palms of five workers. Therefore, the study resulted in the development of surveillance and monitoring systems that should be adopted by concerned agencies, and which also can be used by the Department of Labor and Employment. It consisted of the following procedures:

1. Identification of hazardous materials, processes, and chemicals.
2. Risk and hazard assessment through the review of the material safety data sheet, and an investigation of the risk factors such as concentration of chemicals in the workplace, contact to the human body (respiratory, absorption, or dermal), the effect of combined use of chemicals at the same time (e.g., trichloroethylene together with lead), and the impact of changes in temperature and duration of exposure.
3. Surveillance and monitoring using ambient air monitoring, biological monitoring of blood (for lead) and urine (for toluene), and medical surveillance. All illnesses and unusual medical cases were noted. Among them include anemia at 92%, abortion at 35%, respiratory problems (99%) among the 500 workers interviewed.
4. Implementation of control measures including engineering as well as the use of personal protective equipments.

Conclusion: The study is relevant to help to prevent disasters on health and safety among workers who are the foundation of the Philippine economy.

Keywords: amputations; chemicals; economy; exposure; hazards, technological; industry; lead; personal protective equipment; semiconductors; surveillance; toluene; The Philippines

Prehosp Disast Med 2002;17:s5-6.

"Staffordshire" System for Nuclear, Chemical, and Biological Decontamination

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Objective: To discuss the use of Personal Protection Equipment (PPE), and how clinical care of casualties is maintained during decontamination.

Methods: An outline was provided of the roles of Police, Fire and Acute Hospitals and Public Health specialists together with the Local Authority role in protecting the public.

Discussion: Following the events of 11 September at the World Trade Center (WTC), the UK has revised its plans to deal with nuclear, biological, and chemical (NBC) events caused by terrorist actions. More emphasis has been placed on dealing with mass casualty situations. The presentation discussed how the UK emergency and medical services will deal with such a contaminated mass casualty situation. Also, the importance of thorough training and familiarization with protocols and equipment was stressed.

Keywords: biological; chemical; contamination; decontamination; mass casualties; nuclear; personal protective equipment (PPE); Staffordshire

Prehosp Disast Med 2002;17:s6.

Hazardous Materials Emergencies: Decontamination

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Hazardous materials (HazMat) represent a complex and significant hazard for emergency healthcare workers. Events involving exposures to hazardous materials represent a relatively rare event, but still are one of the most common events that occur in a community setting. Unless the emergency department is prepared to deal with the complications arising from the management of the injuries related to such an event, a single patient exposed to a hazardous material may overwhelm even a modern, high volume facility. Victims of hazardous materials incidents often seek medical assessment and care in the emergency department. In order to evaluate and treat these victims safely, policies and procedures must be developed that govern patient care assessment and management. Although every emergency department has the capacity to offer medical care to these victims, the risk of personal injury due to secondary contamination mandates specific policies and personal protective equipment (PPE) to prevent unprotected contact with the victim. Protecting hospital employees and staff from injury due to hazardous materials is a worker safety issue and, in the US, is covered by federal and state regulations.

It is essential that every emergency department has the capacity to safely assess, decontaminate, and treat victims exposed to hazardous materials. Health care facilities (HCFs) and their administrative staff have the responsibility to provide a safe environment in which to deliver this care. Making this capacity universal will be one of the great challenges for emergency departments in this decade.

Keywords: capacity; contamination; decontamination; emergency department; hazardous materials; hospitals; policies; preparedness; procedures; safety

Prehosp Disast Med 2002;17:s6.

Decontamination in the Field and in Emergency Departments in Hazardous Material (CBR) Incidents

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Objectives:

1. To consider the planning required for decontamination of casualties and responders affected by a hazardous, toxic material incident, in the prehospital phase and in-hospital emergency departments.
2. To demonstrate that an all-agency response (police, fire, ambulance, rescue, and medical,) is required to contain, rescue, and treat affected persons and those who suffer minor and major traumatic injuries.
3. To show that all agencies must have training programmes to highlight the dangers that exist with unprotected

responses, and to clarify roles and responsibilities of the agencies involved.

Methods: To demonstrate that planning and training for a disaster such as a chemical, biological, or radiological incident with an all-agencies approach provides an effective, integrated response for major and serious releases of toxic substances. The provision of decontamination facilities outside of hospital emergency departments will assist in keeping staff, patients, and treatment facilities free from contamination.

Results: Outcomes in combating hazardous material incidents are improved when all agencies integrate and respond synchronously, especially when these agencies are used to working together on a daily basis. "Those who work together on a daily basis, tend to work well together in disasters"

Conclusion: An integrated, all-agency field response to hazardous material incidents in which each agency is familiar with the dangers of unprotected responses improves outcomes in the acute phase of disaster management.

Keywords: agencies; containment; decontamination; hazardous material incidents; hospital emergency department; integration; outcomes; planning; roles; responsibilities; training; training responder awareness
Prehosp Disast Med 2002;17:s6-7.

A Pragmatic Approach to Effective Pre-clinical Mass Decontamination

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The proposed UK approach to the At Scene Mass Decontamination Procedures for Contaminated Casualties that have been developed since 11 September for Chemical, Radiological, and Biological incidents was described. The procedures to be adopted, methodology of decontamination, key areas of responsibility, and equipment requirements were outlined. The outlined procedure is not the current UK position, but builds upon the existing planning arrangements.

Events can be foreseen that traverse state boundaries, and therefore, it is recognized that the eventual methodology must satisfy international protocols. Therefore, the presenter encouraged searching questions and debate, to assist in testing the research that has been carried out, and to identify any areas of similarity or difference between national procedures.

Keywords: biological; chemical; contamination; decontamination; planning; protocols; radiological; terrorism; UK
Prehosp Disast Med 2002;17:s6.

Preparedness for NBC Disaster in Norway

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Through the experience of disasters, especially by Chernobyl nuclear plant incident in the USSR,

Scandinavia has developed its preparedness plan and equipped shelters at public institutions including hospitals. By the time of the terrorism attacks in New York and Washington, DC in September 2001, the Norwegian government and the Civil Defense prepared additionally for biological and chemical disasters with the provisions of personal protection equipment and development of a decontamination system.

Keywords: bioterrorism; chemical; decontamination; disasters; personal protection equipment; plan; preparedness; shelters; terrorism
Prehosp Disast Med 2002;17:s7.

Planning to Reduce the Risk of Mass Casualties in Large-Crowd Events

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Objectives:

1. To outline the need for planning guidelines for event organizers and event approving authorities.
2. To address the health implications associated with the staging of mass-crowd events.
3. To ensure Public Health requirements for safe food, water and toileting are in place to reduce the risk of toxic contamination and infections.
4. To provide an effective medical response organization to cope with a disaster impact in large crowds.

Methods: Legislation for regulations and guidelines to assist event organizers and approving authorities are desirable to provide a safe and healthy event, and requires wide consultation and agreement with all emergency services and agencies to reduce the risk of casualties. Integrated, all-agency, event planning that will ensure any shortfalls in the overall incident response plan are addressed.

Providing printed guidelines for approving authorities, event organizers, and the general public provides community awareness for an understanding of the issues involved.

On-site medical arrangements during events will allow for the rapid triage of casualties and first-aid treatment to be provided, thus reducing the necessity for casualty transfer to hospitals. Such arrangements will include a medical organization capable of providing mass casualty management to cope with a disaster impact in large crowds.

Results: Outcomes for staging a satisfactory event are improved greatly when an all-agency integrated planning process has been followed, and public health issues of safe food, water, toileting, and medical arrangements are adequately addressed.

Conclusion: An integrated, all-agency response to incidents included joint event planning has considered all of the on-site risk factors greatly improves the outcome for any required emergency response.

Keywords: event planning; food; guidelines; integration; mass gatherings; medical management; planning; public health implications; regulations; risk reduction; sanitation; triage; water
Prehosp Disast Med 2002;17:s7.