

in immediate structural collapse, occurred within a confined space, or occurred in open air were reviewed.

Methods: Eligible reports were identified via a MEDLINE search of articles on terrorist bombings published between 1966 and August 2002 and a manual search of published references. Pooled mortality, immediately injured survival, emergency department (ED) utilization, hospitalization rates, and pooled injury frequencies in injured survivors were determined for each bombing type. Results: There were 33 eligible reports concerning 30 terrorist bombings that collectively produced 8,542 casualties, including 903 immediate deaths and 7,639 immediately surviving injured. Pooled immediate mortality rates were: structural collapse 12% (95% CI = 11–13%); confined space 8% (95% CI = 7–10%); and open air 4% (95% CI = 3–5%). Bimodal distributions of mortality were identified in all bombing types. Pooled hospitalization rates were: structural collapse 15% (95% CI = 14–16%); confined space 40% (95% CI = 36–45%); and open air 17% (95% CI = 15–20%). Unique patterns of injury frequency were identified in all bombing types.

Conclusion: Understanding the epidemiologic patterns of mass casualty, terrorist bombings may assist ED and hospital disaster response to such events.

Keywords: bombing; collapse, structural; distribution; epidemiology; mass casualties; mortality; terrorism

Prehosp Disast Med 2002;17(s2):s47-48.

Bioterrorism-Related Beliefs, Attitudes and Behaviors of Community-Based Clinicians

Robyn R.M. Gershon, MHS, DrPH; Kristine A. Qureshi, RN, DNS [C]; Stephen S. Morse, PhD; Marissa A. Berrera; Catherine B. Dela Cruz

Columbia University Center for Public Health Preparedness at the Mailman School of Public Health, New York, New York USA

Introduction: In order to properly assess the readiness of the healthcare workforce to respond appropriately to the threats posed by bioterrorism, we assessed the beliefs, attitudes, and behaviors of community-based clinicians, including nurses, nurse practitioners, physicians, and physician assistants.

Methods: Anonymous responses to a two-page questionnaire were obtained from 310 clinicians (85% response rate) that surveyed respondents about the following: (1) Beliefs about the risks of bioterrorism; (2) Attitudes about their ability and willingness to treat victims of bioterrorism agents; (3) Fear of contagion; and (4) Intentions regarding infection control practices and their efficacy.

Results: Of the clinicians surveyed, 86% felt that their patients were concerned about bioterrorism diseases, and 61% were concerned personally as well. A majority (77%) of clinicians believed that the U.S. likely would be subject to future attacks, while only 14% felt that the nation was well-prepared for such attacks. While few were concerned about contracting cutaneous anthrax from patients, many were unaware of the correct infection control procedures that should be followed. Nearly half of the clinicians (49%) stated that they would recommend the smallpox vaccine to their patients.

(The Centers for Public Health Preparedness are funded through a cooperative agreement with the CDC and ASPH #A1013-21/21).

Keywords: attitudes; behaviors; beliefs; bioterrorism; contagion; fear; infection control; preparedness; professionals; readiness; response; smallpox; threats; vaccination; workers, healthcare

Prehosp Disast Med 2002;17(s2):s48.

Prehospital Management of 1,392 Victims of Blast Injuries Caused by Terrorist Explosions in Israel (August 2001 to January 2003)

Zvi Feigenberg, MD; Doron Kotler EMT-P, MA

Medical and Operational Divisions, Magen David Adom in Israel

Maged David Adom (MDA), the Israeli emergency medical services (EMS) system teams provided prehospital management to 1,392 victims of 22 multi-casualty incidents (average 63 injured per incident) caused by explosions of suicide bombers. Of these, 175 (13%) were killed at the scene, and 281 casualties (21%) were categorized as "urgent".

Mechanism of injury: The explosion of powerful charges (in 3 incidents more than one charge) resulted in: (1) inside six buses with an 18% mortality rate; (2) in seven confined places with a 14.3% mortality rate; (3) and nine in open spaces with a 7.9% mortality rate. In most instances, metal objects were inserted inside the explosive charges (nails, screws, screw nuts): these devices increased the damage associated with the explosions significantly.

MDA Forces amassed (average per incident): 42 emergency vehicles (22% ALS); 116 team members (12% ALS). **Timetable:** From time of the explosion (average per incident) to arrival of the first ambulance = 4.6 minutes. Evacuation of first urgently injured = 11.5 minutes. Evacuation of last urgent injured = 28.3 minutes.

Triage: At the ALS level, 281 (61.5%) were triaged as urgent casualties of whom 32 were DOA (11.4%); 176 (62.5%) had sustained severe injuries (ISS >16), and 73 (26.1%) sustained less severe injuries (medium).

Life Saving Procedures: 68 life saving procedures were performed in the field (32.7% of severely injured): 48 were intubated; seven had chest drainage performed; and arterial hemorrhage was controlled in 13: 45 of the casualties on whom these procedures were performed (62.2%) survived.

Evacuation to Hospitals: 116 urgent cases were evacuated at the ALS level (42%); six incidents occurred in areas without trauma centers, 49 severely injured were evacuated to nearby hospitals (63% were referral secondarily to trauma centers), and 16 incidents occurred where trauma centers were available. A total of 127 severely injured were evacuated. 90 (71%) were diverted directly to the trauma centers. 37 were conveyed to nearby hospitals and of these, 40% underwent secondary referral by MDA-ALS vehicles to trauma centers.

Conclusion: An active national EMS system treating 50,000 trauma cases per year according to PHTLS guidelines operates equally well in emergency situations. The deployment of 450 ambulances (100 ALS level) staffed with 1,200 employees and 7,500 volunteers dispersed throughout the country enabled MDA to provide professional prehospital response to 22 multicaseualty incidents (MCI) and to save the lives of many of the victims.

Keywords: blast; evacuations; explosions; injuries; prehospital; management;