a mass panic state after the perception of a nuclear threat.
Conclusions: For the adequate response to the newly emerging threat of various nuclear disasters, new concepts and a new, comprehensive disaster medical system is necessary, as well as effective utilization of pre-existing resources.
Keywords: disaster response; emergency medical services; hospitals; nuclear disaster; personal protective equipment; preparedness
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Terrorist Radiological Dispersal Devices and Improvised Devices: A New Global Threat

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The events of 11 September 2001 have increased awareness of the dangers posed by terrorists gaining access to weapons of mass destruction and radioactive and chemical materials, as well as their means of delivery. The current resurgence of terrorism is part of a complex pattern of global changes and imbalances. It is crucial to analyze, prevent, and mitigate possible terrorist attacks, such as man-made disasters.

Nuclear, non-conventional weapons and devices are particularly suited to maximizing the number of casualties, and are more attractive to terrorists than are biological and chemical weapons. Therefore, nuclear or chemical explosion might be the next step in the escalation of terrorist attacks. The medical and healthcare infrastructure, as well as all other forces engaged in emergency responses, must be able to prevent and to treat illnesses and injuries resulting from chemical, biological, radioactive, nuclear, or explosive terrorism (CBRNE). Preparing the medical community to address these threats is a great challenge, but the consequences of being unprepared could be devastating. Preparedness must be implemented at national and international levels, with tight cooperation between countries and governments, and with a public health system program and a government policy of terrorism prevention plans. The aim of this paper is to attempt to analyze and understand a non-conventional nuclear or chemical device as a possible tool for use in a future terrorist attack.
Keywords: chemical device; explosive; nuclear device; preparedness; prevention; response; terrorism
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Session 3: Burns

Chairs: R. Kreis

The United Kingdom Burn Major Incident Plan: A Historical Mapping Exercise

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The United Kingdom National Burn Care Group published its Burn Major Incident Plan in 2006. It describes the planned multi-agency response to an incident involving a large number of burn casualties.

To carry out a form of validation for this plan, a historical mapping exercise was performed using previous European major incidents involving multiple burn casualties to assess how it might have performed. A literature search for public and official inquiries, peer-reviewed medical literature, and online print media was performed to obtain information about the injured and their dispersal from the scene. A total of nine major incidents with >30 burn patients were reviewed in detail. Only reports of three incidents provided sufficient information regarding casualty care to allow for detailed examination and "testing" of the 2006 plan. These three incidents were: (1) the Bradford Football Stadium Fire in 1985; (2) the Manchester Airport Plane Fire in 1985; and (3) the Nightclub fire in Volendam, the Netherlands in 2001. If the 2006 Burn Major Incident Plan was implemented in each of these situations, the impact of each event would be reduced to a manageable level by dispersing duties across units within the country. Clinical management details from major incidents are not well recorded. This is an issue that must be addressed and rectified. A national dataset-library using an Utstein-type template is essential. If a burn incident similar to the three reported incidents of this order were to happen in the UK, the 2006 Burn Plan would significantly improve the pathways to specialist care while not overwhelming the services.
Keywords: burn patients; major incident plan; mapping exercise; multi-agency response; United Kingdom
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The United Kingdom National Burn Plan

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The United Kingdom Emergency Planning Guidance recognizes that the capacity of the National Health Service (NHS) for significantly burned patients would be challenged by a major event involving multiple burn victims.

The National Burn Care Group has devised a response system by which specific burn care triage occurs at the site of the incident and/or the primary receiving Emergency Departments. The system also calls for burn qualified personnel to guide initial resuscitation and temporizing measures, while a suitable, fully equipped burn care bed is identified through the National Burn Bed Bureau.

The plan will be activated following the recognition that an incident with multiple burn victims has occurred. The local Burn Service will stop direct transfer of all referred cases and apply a form of triage, before matching patients to appropriate definitive care facilities.

Burns Assessment Teams (BATs) will be mobilized from the primary receiving Burn Service or, by mutual-aid arrangements, from adjacent services. Personnel from the BATs will perform the initial assessments and make treatment recommendations, while providing information to the control point. Once the national burn bed status has been determined, the local ambulance service, potentially aided by the receiving services, will manage the dispersal of the patients to units across the country.

The plan has been adopted by the UK Department of Health to ensure that burn victims receive high-quality, specialist care at the earliest opportunity, and are admitted

into a fully functioning and capable Burn Unit for their resuscitation and definitive care.

Keywords: burn assessment teams(BAT); burn beds; burn victims; capacity; planning; response; triage
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Session 5: Terrorism

Chair: E.R. Muller

Terrorist Bombings on Mumbai Commuter Trains

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On 11 July 2006, >180 people were killed in the coordinated blasts on commuter trains in Mumbai, India's financial center. Trains are the main form of transportation for most people in Mumbai—one of the most congested cities in the world. Renowned for being uncomfortable, nevertheless it is described as the city's lifeline. The Mumbai line has the highest passenger density of any urban railway system in the world—every day about six million people travel on the city's Suburban Railway system, more than the entire population of Israel. In this paper, these attacks and the medical response and triage are debated and compared to other similar attacks in London and Madrid.

On Thursday, 07 July 2005, four suicide bombers struck in central London, killing 52 people and injuring >770. The 11 March 2004 Madrid attacks consisted of a series of 10 explosions that occurred on four commuter trains at the height of rush hour. Thirteen improvised explosive devices were reported to have been used by a militant group that was responsible for the bombing, all but three detonated. Terrorists are targeting civilian population as soft targets to create fear psychosis. If they succeed, they can go part-time, as their purpose is served. As ancient Chinese strategist once said, "Kill one, scare ten thousand" was quoted by an ancient Chinese strategist. Physical trauma, psychological trauma, and the social dimensions of these manmade disasters and possible solutions are discussed.

Keywords: bombing; disaster; India; psychological aspects; terrorist attacks; transportation
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Hospitals Under the Threat of Terrorist Attacks: Lessons Learned from Hospital Evacuation Experience

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Objective: The aim of this study was to present aspects of actions undertaken in hospitals under high risk of terrorist attack.

Methods: An analysis was conducted of published papers and personal experiences in situations when hospitals have been evacuated due to a military situation direct.

Results: The main problems encountered during hospital evacuation operations included: (1) no formal evacuation plans; (2) too many people in charge; (3) poor communication; and (4) no free beds in others hospitals (especially for ICU patients) for patient transfers.

A formal evacuation plan is an essential component of hospital preparedness. Knowledge of the local language, habits, culture, and religion is important particularly in war zone areas. Examples of these principals are given from our experience.

Keywords: communication; coordination; evacuation; hospitals; terrorism; terrorist attacks
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Terrorist Bombing in Croatia

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Introduction: This report describes the experience that the city of Rijeka, Croatia had following a terrorist attack. The intention of this report is to outline how emergency services were functioning during this sudden-onset situation.

Methods: The medical documentation of 27 wounded citizens in the attack was analyzed and the appearance of bodily wounds, severity of wounds, and the mechanisms of injury are described. From the forensic medical report, the wounds and damages sustained by the terrorist also were analyzed. All findings were compared with similar cases from around the world.

Results: In the 27 wounded citizens, three (11%) had head injuries. Injuries of the abdomen were found in only two cases (7%). The most common injuries sustained involved one or more extremities: 16 (59%) persons had wounds of an upper or lower extremity or a combination of multiple wounds. The main cause of death of the terrorist was explosive wounds to the chest and abdomen with destruction of multiple inner organs (primarily the kidneys, liver, abdomen, and lungs). Furthermore, the terrorist had a fracture of the base of the skull and multiple injuries to the brain.

Conclusions: When comparing these findings with data from the literature, the distribution in the percentages of the wounded almost is the same as reported in many other bomb attacks. In this case, the building walls protected many citizens, which is why so few were injured seriously. Forensic examination of the terrorist's body showed all of the characteristics of blast injuries.

Keywords: blast injuries; civilian casualties; Croatia; disasters; terrorist attack
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