

valuable experience in crisis management. We were able to compare and visualize these results with those from the next major crisis that occurred two weeks later in Ho Chi Minh City, Vietnam. This presentation will use both Powerpoint and video discussions, and a "walk through" of events as they unfolded from the moment the blast took place to the successful evacuation of casualties.

**Keywords:** aircraft; Bali; capabilities, Ho Chi Minh, Vietnam; medical; casualties; culture; evacuation; private; standards; transportation

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### Secondary Aeromedical Evacuations Post-Bali Bombings

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The Bali Bombings in 2002 resulted in severely injured patients being repatriated to Australia using five Hercules military transport aircraft. These flights transported 65 patients to the Royal Darwin Hospital (RDH) for stabilization and initial surgery. Of these patients, 53 were listed in "serious" or "critical" condition. The Royal Adelaide Hospital (RAH) provided 10 staff to complement the existing resources of the RDH, including a Burns Surgical Team, a Critical Care Medical Team, and Critical Care Retrieval Nurses.

Arriving patients from Bali were retriaged at the Darwin airport by a four-person medical team. Although only three patients on the first two C-130 aircraft were intubated, within a few hours of arriving at RDH, there were many others who required intubation and/or other critical-care support. The RAH staff were involved in ongoing resuscitation, and more than 100 burns surgical procedures. The RAH contribution also was made at the civilian and military liaison level with the benefit of two high-ranking Australian Defence Force (ADF) personnel in the RAH team, who were performing dual military and civilian duties.

As the RDH does not have a burns unit or the capability to provide ongoing management for the majority of patients, decanting from RDH followed. There were 17 Critical Care Aeromedical evacuations from Darwin to capital cities in other Australian states: 14 were transported by civilian critical care teams using business jets; three were transported by ADF C-130 Hercules with specialist reserve staff. The timing and destination of patients was made largely on the basis of patient stability at the time of available critical care transport. Another 34 patients in "serious" condition were transported from Darwin to other capital cities with the use of a total of four Hercules aircraft.

The use of civilian and military assets to move the critically and seriously ill patients over vast distances across the country was crucial to the success of the medical response.

**Keywords:** aircraft; Bali; burn injuries; organizing; stabilization; surgery; teams; transfer; transportation; triage

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### The Bali Bombing – A State Response to a National Disaster

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**Introduction:** Survival from burn injury requires a focused, experienced, multi-disciplinary team. To optimize the outcome, treatment must be timely. All intervention from the time of injury to the discharge from the rehabilitation program influences the scar the victim wears for life.

In Australasia, we are living with the increasing threat of fire. In West Australia (WA), statistics demonstrate a 280% increase in the incidence of fires. Coupled with industry and an increase in global terrorist activity, it is vital to understand the capability of a burn unit to treat massive numbers of patients. In Australasia, the focused burn teams are situated in Brisbane, Auckland, Melbourne, Adelaide, Tasmania, and Perth. It is vital to develop a coordinated response in the event that one or other of these regions/countries is overwhelmed.

**Results:** This presentation outlines the West Australian response to the Bali tragedy. Of the 54 patients treated in Perth, 30 required admission to the extended burn unit facility. All primary surgery was completed by Day 7. Nineteen patients required one surgical procedure. One patient underwent five procedures, but died at nine weeks post surgery. Three patients died.

How the facility was extended and supported is discussed. Specific problems arose due to: time from injury to admission and infection. These issues are discussed with ideas for improvement.

**Keywords:** Bali; burn injuries; burn unit; coordination; extension; facilities; fire; outcome; support

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### Operation Bali Assist: Australian Defence Force Response to the Bali Bombing on 12 October 2002

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Operation Bali Assist was the Australian Defence Force's (ADF) evacuation of injured Australians and other victims after the Bali terrorist bombing. This mission was the largest Australian overseas Aeromedical Evacuation (AME) since the Vietnam War, and was the largest disaster response since the tsunami in PNG in 1998. It relied on military and civilian cooperation to move critically injured patients from Denpasar to Darwin initially, and then onto specialist units around Australia.

This mission involved the triage, stabilisation, and evacuation of 66 critically ill patients from Bali to Darwin over 21 hours using 34 medical staff from the permanent and specialist reserve ADF personnel. The patients were stabilised in Royal Darwin Hospital (RDH), and then, under direction of Emergency Management Australia (EMA), they were transferred to definitive care in various centres around the country. The RAAF transported 35 patients in four separate missions during this second phase (phase one and phase two involved a total of 50 medical staff).

The success of this mission relied on a rapid military

response and effective integration between military and civilian emergency services to achieve the best outcome in this disaster.

**Keywords:** aeromedical; Australia; Australian Defence Force; Bali; bombing; civilian-military cooperation; evacuation; stabilization; staffing; terrorist; triage

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## Case Study: World Trade Centre: Lessons Learnt

*Chair: Dr. Glenn Asaeda*

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### Regional Trauma System Planning after Disaster: The Ongoing New York City Experience

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The initial response to a medical disaster is a local response. In the USA, the Federal Disaster Medical Assistance Teams (DMATs) require 24–48 hours to be mobilized. Within New York City are 20 trauma centers and 60 receiving hospitals; hence, there are sufficient emergency medicine, trauma, and nursing personnel to respond to most medical disasters. Through a year-long, region-wide planning effort involving all key professional, organizational, and governmental stakeholders, the Regional Trauma Advisory Committee (RTAC) of New York City has developed a locally based Disaster Medical Instant Response System (DMIRS) to provide, on request of Medical Incident Command (MIC), assistance with secondary triage and/or patient care at deployable or existing medical facilities located near disaster scenes, until relieved by the National Disaster Medical System (NDMS). This will be accomplished via the training, mobilization, and deployment of Disaster Medical Instant Response Teams (DMIRTs), drawn from emergency medicine, trauma, and nursing personnel at trauma centers distant from the immediate vicinity of the incident, in order to minimize the potential of overwhelming medical facilities in the immediate vicinity of the incident. DMIRTs will include emergency physicians, trauma surgeons, emergency/trauma/OR/ICU nurses, and others with specific training and experience in emergency medical and trauma care whom regularly work together at the same facilities. DMIRTs will be pre-credentialed by MIC, and pre-indemnified by mutual system-wide consent, upon completion of MIC-approved training in disaster medical and trauma care. This model may be applicable to other large cities both rich in trauma resources, and prone to medical disasters.

**Keywords:** credentialing; disaster; Disaster Medical Assistance Teams (DMATs); Disaster Medical Instant Response Teams (DMIRTs); indemnification; New York; response; staffing; teams

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## Psychological Disorders Following the World Trade Center Attacks

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**Introductions:** Data on the mental health effects of disasters in the general population are scarce. This study was conducted to determine the prevalence and correlates of post-traumatic stress disorder (PTSD) in residents of the lower half of Manhattan.

**Methods:** Five to eight weeks after the World Trade Center attacks, telephone interviews were conducted of a random sample of residents, using random-digit dialing techniques, in order to assess prior life stressor events, personal characteristics, extent of exposure to the WTC attack, and psychological symptoms since the attack.

**Results:** Among 988 eligible adults that were contacted, 19.3% reported PTSD symptoms at some point in their life, and 8.8% reported symptoms consistent with a current diagnosis (i.e., occurring within the past 30 days). The most commonly reported symptoms were intrusive memories (27%) and insomnia (25%). Predictors of current PTSD included living closer to the point of attack, lack of social support, experiencing other life stressors in the previous 12 months, experiencing panic attacks during the event, loss of possessions because of the attack, and being involved in the post-event rescue effort.

**Conclusions:** These findings provide important information for disaster planners and for emergency response policy development and implementation.

**Keywords:** attacks; correlates; disasters; exposure; memories; mental health; post-traumatic predictors; stress disorder (PTSD); prevalence; World Trade Center

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## Symposium: Children in Disasters

*Chair: Professor Kim Mulholland*

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### Children's Field Hospital — New Model for Organization of Medical Assistance to Children in Extreme Situations

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Since 1995, the public system of medical services in the Chechen Republic (ChR) for the most part has been destroyed. Its main purpose since that time has been to provide medical first aid to the population. Since 1995, children have not received necessary specialized medical assistance. Therefore, a children's field hospital (CFH) was founded in Gudermes Region of ChR.

The structure of the CFH includes: (1) A diagnostic block with X-ray equipment, ultrasound scanner, endoscopes, laboratory; (2) An operational block; (3) Wards for 50 patients; (4) A reanimation department; and (5) A