

a discussion forum to its members, reaching a joint framework document, IBERO, adapted to Spanish tactical emergency capabilities.

Method: Methodology was based on three parameters:

1) Literature revision, selecting three sources: Books and academic papers, TCCC and TECC guidelines, and Hartford Consensus, and AARs from the main active incidents with similarities to jihadist ones.

2) Formation of discussion groups: Threat definition, tactile response, and prehospital care, triage and evacuation systems.

3) A final group formed by representatives of each discussion group wrote the final document.

Results: The protocol defines a staged plan of action, adapted to Spanish legislation and institutions, following the acronym IBERO:

1) Information: threat intelligence and information transmitted to responders from the incident location and dispatchers.

2) Block the threat by perimeter, zonification and suppression of the threat.

3) Escalation of resources. Definition of areas of action according to direct threat, indirect threat and safe areas of action.

4) Response and Rescue. Extrication to safe areas, including different stages of triage and protection against secondary attacks.

5) Order and evacuation. Access to other emergency services, and psychological first aid.

Conclusion: The document proves the need for a coordinating framework of the Spanish emergency system to be fully adapted to these new threats. The discussion groups have identified the need for regular training on threat identification, zonification setting, mass bleeding control, extrication, and evacuation techniques during hostile situations. To achieve this goal, realistic training is mandatory.

Prehosp. Disaster Med. 2023;38(Suppl. S1):s5–s6

doi:10.1017/S1049023X23000626

Injury Outcomes of the 2017 Charlottesville TARMAC Attack

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Introduction: Targeted Automobile Ramming Mass Casualty attacks (TARMAC) have occurred worldwide since 2010. The dramatic increase in incidence warrants special attention to the unique pattern of injury associated with such attacks as they are unlike any other type of intentional trauma. This study characterizes the resulting injuries from the 2017 Charlottesville, Virginia TARMAC attack.

Method: Patient records of victims were identified and analyzed for injuries, demographics, and surgical needs. The data were evaluated for patterns.

Results: Nineteen TARMAC victims were treated in the UVAHS Emergency Department. Most were female (68%). Average age was 29.4 years (range 13 – 72 years). Data showed seven ICU admissions, four standard admissions, and seven discharges. There was one fatality and the specific injury data was

unavailable. Most injuries were orthopedic: lower extremity fractures (n=7) [2 open], upper extremity fractures (n=7), axial skeleton fractures (n=6), and a facial fracture (n=1). Arterial injuries required interventional radiology (n=1) or observation (n=2). Organ injuries included a Grade 1 spleen laceration (n=1) and pneumomediastinum (n=1). Six victims required one or more operative interventions during admission: emergent procedures (n=6) and delayed procedures (n=4). In the Emergency Department, two bony reductions were performed, five lacerations were repaired, and one thoracotomy was performed. Injury Severity Scores were calculated (mean=11.5; median 6; range 1–75).

Conclusion: Due to the mechanism of injury, TARMAC attacks inflict a unique wounding pattern. Intentional mass blunt trauma is previously unknown to emergency medicine. Vehicle variables including weight, speed, and bumper height affect the injury location and severity. This vehicle, a low-height sports car, inflicted primarily lower extremity injuries. Mortality rates have been higher in attacks involving taller, heavier vehicles, as seen in France, Germany, and Sweden. Analysis of victim data from TARMAC attacks will help emergency medicine physicians, surgeons, and disaster medicine specialists to prepare, train, and mitigate against this increasingly frequent tactic.

Prehosp. Disaster Med. 2023;38(Suppl. S1):s6

doi:10.1017/S1049023X23000638

Democratization of Terrorism: An Analysis of Vehicle-based Terrorist Events

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Introduction: The COVID-19 pandemic inspired social changes that promote outdoor activities including eating at restaurants, which may linger in a world hyperfocused on disease transmission prevention, increasing the vulnerabilities to vehicle-based terrorism. Vehicle ramming attacks started to transition from a relatively rare method of attack to one of the most lethal forms of terrorism prior to the emergence of COVID-19.

Method: This study aims to provide a historical analysis of the terrorism-based attacks using vehicles between 1970 and 2019 by retrospectively searching the Global Terrorism Database for terror events that used a vehicle as a means of attack—a methodology suggested by Tin et al.

Results: 257 recorded terror attacks involved some type of vehicle between 1970 and 2019. The attacks resulted in 808 fatalities and 1715 injuries when excluding the September 11 attacks. 76 events occurred in the West Bank and Gaza Strip, 25 in the USA, 16 in Israel, and 14 in the UK. Of the 257 terror incidents, 71% (183) occurred within the last 6-year span of inquiry.

Conclusion: By 2016, vehicle attacks were the most lethal form of attack comprising just over half of all terrorism-related deaths in that year. Large gatherings such as festivals, sporting events, and now outdoor seating at restaurants, leave a number of people highly vulnerable to vehicle ramming attacks depending on established countermeasures. The increased prevalence of