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.

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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.

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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

outdoor activities and gatherings in a post-COVID-19 world will further expose large numbers of people to the potential vulnerabilities of vehicle-based terrorism. The scale of the casualties from a vehicle-based terror attack can overwhelm traditional resources and strain the abilities of the healthcare sector. Counterterrorism and disaster medicine specialists are crucial players in educating first responders and emergency medicine providers, allowing them to adequately prepare for an evolving threat in a world devastated by COVID-19.

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Terrorism-Related Attacks in Sub-Saharan Africa from 1970-2020: Analysis and Impact from a Counter-Terrorism Medicine Perspective

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Introduction: Sub-Saharan Africa (SSA) has become a hotspot for global terrorism, with nearly 50% of global terror-related deaths occurring in SSA in 2021. To address growing terrorism-related health implications the field of counter-terrorism medicine (CTM) seeks to study the impacts of terrorism and implement healthcare initiatives. This study is a semi-quantitative analysis of terrorist-related activity in SSA from 1970-2020.
Method: A retrospective analysis of the Global Terrorism Database (GTD) was performed for the region of SSA between 1970-2020. The number of attacks, deaths, and injuries, as well as primary weapons types, country where attacks occurred, and primary target types, were collated into a Microsoft Excel™ spreadsheet (Microsoft, Redmond Washington, USA) and analyzed.
Results: A total of 19,320 attacks were recorded, resulting in 77,565 deaths and 52,986 injuries. Nigeria had the greatest number of attacks. Firearms were the most frequent weapons used, followed by explosives, unknown, and incendiary, with all others making up the remainder. Private citizens and property were the most frequently targeted entities, followed by general government facilities, police, business, military, diplomatic government facilities, and religious figures/institutions, with all other targets making up the remainder.
Conclusion: The majority of deaths from terrorism in SSA are the result of firearm attacks. Nigeria had the largest number of attacks and the highest number of killed and wounded. Private citizens and property are the most frequently targeted. Terrorism poses unique challenges to governments, populations, healthcare systems, and aid organizations. By understanding the impact and scope of terrorist activity in SSA, Counter-Terrorism Medicine (CTM) initiatives can be employed to improve healthcare outcomes.

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Terrorist Attacks on Refugees, Internally Displaced Peoples, and Asylum Seekers

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Introduction: The United Nations High Commissioner of Refugees (UNHCR) estimates that there were over 100 million displaced people as of May, 2022, which has left many people without adequate healthcare and strained local healthcare systems. While there is concern about violence that may be brought as a result of these large influxes of people, few are focused on attacks that are perpetrated on these displaced peoples. This study is a semi-quantitative analysis of terrorist attacks on refugees, refugee camps, internally-displaced peoples, and asylum seekers.
Method: A retrospective search of the Global Terrorism Database (GTD) was performed for all terrorist-related events from 1970 to 2020 that targeted refugees, refugee camps, internally displaced peoples (IDPs), and asylum seekers. The number of attacks, country of attacks, weapon types, numbers wounded, and numbers killed were collated into a Microsoft Excel™ spreadsheet (Microsoft, Redmond Washington, USA) and analyzed.
Results: There were a total of 683 attacks which resulted in a total of 3148 deaths and 4374 injuries from 1970-2020. These occurred in 56 countries, with Sudan having the largest number of attacks at 113, followed by Germany (71), Iraq (61), Nigeria (51), and Sweden (43). The most frequent weapons used were explosives (213), followed by firearms (210), incendiary (140), unknown (74), melee (45), and chemical (1).
Conclusion: Terrorist attacks against refugees/IDPs/asylum seekers resulted in 3148 deaths and 4374 injuries in 683 attacks. Sudan had the highest number of terrorist attacks, and the most frequent weapon used was explosives. Attacks against refugees pose unique challenges to government, NGO's, and other stakeholders due to the lack of healthcare access and transient nature of this population. By understanding the scope and impact of terrorist-related attacks against this vulnerable population counter-terrorism medicine initiatives can be employed to improve healthcare access and outcomes.

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Prehospital Whole Blood Transfusion Training in Ukraine: A Case Study Highlighting the Efficacy of Collaboration and Advocacy

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