

**Understanding the Healthcare Impacts of Attacks on Infrastructure**

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**Introduction:** Healthcare provision depends on reliable infrastructure to power equipment, and provide water for medication and sanitation. Attacks on infrastructure limiting such functions can have a profound and prolonged influence on the delivery of care.

**Method:** A retrospective analysis of the Global Terrorism Database (GTD) was performed of all attacks occurring between 1970-2020. Data was filtered using the internal database search function for all events where the primary target was “Utilities”, “Food or Water Supply” and “Telecommunications.” For the purposes of this study the sub-type “Food Supply” was excluded. Events were collated based on year, country, region, numbers killed and wounded.

**Results:** The GTD listed 7,813 attacks on infrastructure with 6,280 attacks targeting utilities leading to 1,917 persons directly killed and 1,377 wounded. In total there were 1,265 attacks targeting telecommunications causing 205 direct deaths and 510 wounded. Lastly, 268 attacks targeted the water supply with 318 directly killed and 261 wounded. Regionally, South America had the most attacks with 2,236, followed by Central America and the Caribbean with 1,390. Based on infrastructure type, the most attacks on utilities occurred in El Salvador (1,061), the most attacks on telecommunications were in India (140) and Peru (46) had the most attacks on its water supply.

**Conclusion:** The regions with the highest number of total attacks targeting infrastructure have historically been in South America, with more attacks against power and utilities than other infrastructure. The numbers of persons directly killed and wounded in these attacks were lower than those with other target types. However, the true impacts these attacks have on lack of health care delivery are not accounted for in these numbers. By understanding the pattern and scope of these attacks, Counter-Terrorism Medicine initiatives can be created to target harden healthcare-related infrastructure.

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**Terrorism-Related Attacks in East Asia from 1970 to 2020**

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**Introduction:** This study aims to analyze and describe terrorism-related attacks in East Asia from 1970 to 2020. This descriptive analysis of terrorist attacks in East Asia will help first responders, emergency medical services (EMS), hospital-based medical providers, and policymakers establish a more refined hazard vulnerability assessment framework and develop a counter-terrorism medicine (CTM) mitigation, preparedness, response, and recovery plan.

**Method:** This descriptive observational study draws data from the Global Terrorism Database (GTD) from January 1, 1970, to December 31, 2020. Epidemiology outcomes included primary weapon type, primary target type, the country where the incident occurred, and the number of total deaths and injuries collected. Data from 2021 was not yet available at the time of this study. Results were exported into an Excel spreadsheet (Microsoft Corp.; Redmond, Washington USA) for analysis.

**Results:** There were 779 terrorism-related events in East Asia from 1970 to 2020. In total, the attacks resulted in 1,123 deaths and 9,061 persons injured. The greatest number of attacks (371; 47.63%) occurred in Japan and the second most occurred in China (268; 34.4%). Explosives were the most used primary weapon type (308; 39.54%) in the region, followed by incendiary devices (260; 33.38%). Terrorist attacks drastically diminished from their peak of 92 in 1990, but there were additional peaks of 88 in 1996, 18 in 2000, 20 in 2008, and 36 attacks in 2014.

**Conclusion:** A total of 779 terrorist attacks occurred from 1970 to 2020 in East Asia, resulting in 1,123 deaths and 9,061 injuries. Of those, 82.03% of attacks occurred in Japan and China. Terrorist attacks drastically diminished since their peak in 1996, but there is an overall uptrend in attacks since 1999.

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**IBERO Protocol: A Multi-agency Coordination Framework for the Tactical Emergency Casualty Care Spanish System**

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**Introduction:** Despite Spanish experience in counterterrorism, jihadism means new modus operandi, based on active mass casualty incidents, involving new injury patterns as mass bleeding ones. Therefore, the environment is completely different to first responders' structure. This change forced the revision of the tactical response model, led by the Spanish Association for Emergency Medicine's Tactical Care Secretary, who provides

