Journal of Bioterrorism & Biodefense
ISSN: 2157-2526

Commentary Open Access

Defence Tactics in Dealing with the Threat of Bioterrorism

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Commentary

The Biological Weapons Convention forbids the development and deployment of biological weapons. It was enacted in 1975 and has undergone periodic evaluations, the most recent of which was in 2016. The treaty has been signed by 180 countries so far. Terrorist groups and renegade regimes, unfortunately, are unlikely to be constrained by international agreements [1]. Bioterrorism poses a specific threat since it has the potential to cause disease, death, and fear in large proportion to the resources used.

Bioterrorism has been documented in a few instances. A religious sect in the United States deliberately poisoned restaurant salad bars with Salmonella typhimurium in 1984, with the goal of disrupting local elections. There were several hundred instances of salmonellosis and no deaths as a result of the attack. The anthrax mailings incident in the United States in 2001 there were 11 cases of anthrax inhalation, five deaths, and 11 cases of cutaneous illness. A large amount of circumstantial evidence strongly shows that the perpetrator was civilian US military personnel. However, there was no evidence of a clear motivation [2]. Thousands of workers were given preventive or post-exposure treatment, and contaminated buildings were decontaminated at a significant cost.

A cult in Japan carried out an anthrax spore attack in 1993 with no physical casualties, but victims of the attack eventually developed post-traumatic stress syndrome. The offenders were reportedly going to utilise other agents such as Q fever germs, botulinum toxin, and Ebola viruses, but they were apprehended before they could carry out their plans, according to reports. The threat of bioterrorism, prospective perpetrators, and general preparedness ideas are discussed in this Review [3]. We look at the unique properties of biological agents that could be exploited for bioterrorism, as well as improvements in bioterrorism prevention and treatment of diseases induced by these agents, as well as persisting flaws in the administration and suppression of bioterrorist epidemics. The utilisation of resources established for bioterrorism preparedness for combating naturally occurring epidemics remains a guiding principle in all areas. Material or scientific knowledge although most countries currently have legislation and safeguards in place to protect harmful diseases in research facilities, the scope of these regulations and the level of the protections differ. Rogue countries have the capabilities to carry out a bioterrorist assault, but they may be deterred by the fear of a united global reaction. Dual-use knowledge is knowledge gathered from lawful study that could be applied to bioterrorism.

As a result, the regulation of genuine infectious illness research has grown. Because the "insider threat," which often involves a single individual, will always exist, it is critical to ensure that new legislation boost security while having minimum impact on legitimate research. In terms of wasted chances for international collaboration, pathogen exchange, and sharing of novel agents, the cost of laws applied to infectious disease research is typically intangible and underestimated [4]. To improve laboratory safety and security, it is critical to develop healthy organisational cultures. Because a bioterrorist strike is a low-risk, high-impact event, effective and long-term preparedness is critical for both deterrence and control. A bioterrorist attack has a lot in common with infectious disease-related public health problems that occur naturally. There are, nevertheless, some significant variances. There are clear security concerns because it is a purposeful act to cause harm. The ensuing outbreak is distinct from naturally occurring epidemics in several respects. For example, it is more likely to be a point source outbreak triggered by widespread exposure. The infectious agent utilised is likely to be unusual and not local to the region, and it could have been genetically manipulated to become resistant to current medicines and vaccines and created in a way that facilitates its spread or virulence As a result, early clinical symptoms and indicators of a bioterrorist agent infection may be unique, complicating disease diagnosis and management. These variables may increase public anxiety. Following the disintegration of the former Soviet Union, there was concern that terrorist groups may obtain access to both weapons and scientific expertise if control of their biological weapons programme was lost.

Furthermore, recent advances in the field of microbial genetics have raised concerns about the potential misuse of new technology. It is incredibly difficult to quantify the hazards and threats of bioterrorism since there are so many unknowns. Disgruntled individuals, terrorist organisations, or rogue countries suspected of supporting international terrorism are the most likely offenders. Despite numerous similarities to naturally occurring infectious illness outbreaks, bioterrorist attack preparedness is more complicated. A bioterrorist strike resembles a mass casualty event in many ways, so preparation entails bolstering the specialised infrastructure needed to treat critically ill individuals in a short period of time [5]. To assure their accessibility when needed, new preventative and therapeutic regimens for rare diseases are needed, as well as clear rules for the handling and study of harmful microorganisms. When the proportion of resources available is Lessons learned from the Ebola virus epidemic in West Africa International readiness is lacking. Delay in declaring a public health emergency of worldwide concern by the WHO Implementation of coordinated international support is taking too long.

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Received: 03-May-2022, Manuscript No: jbtbd-22-64119, **Editor assigned:** 05-May-2022, PreQC No: jbtbd-22-64119 (PQ), **Reviewed:** 19-May-2022, QC No: jbtbd-22-64119, **Revised:** 23-May-2022, Manuscript No: jbtbd-22-64119 (R) **Published:** 30-May-2022, DOI: 10.4172/2157-2526.1000297

Citation: Cohen D (2022) Defence Tactics in Dealing with the Threat of Bioterrorism. J Bioterr Biodef, 13: 297.

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