Bioterrorism and Combating Strategies-Select Readings, Editor: Anila V Menon, Amicus Book, the Icfai University Press (2007)

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## Summary

This book deals with various issues associated with biological terrorism and the strategies that are useful for combating it. It assesses the extent of vulnerability against such attacks and makes an attempt to throw light on how various countries have made efforts to deal with biological warfare. This book is a good source of information on this subject.



## **Book Review**

The book "Bioterrorism and Combating L Strategies-Select Readings is an edited volume by Anila V Menon. As the very title suggests, this book basically deals with various aspects of bioterrorism and ways to combat them. Unfortunately, at a time when technological advancement has been treated as a blessing to the world, it has also been used as a tool to unleash massive destruction on humankind. The usage of biological warfare as a tool of violence by terrorist groups has made humankind highly vulnerable to such weapons. While highlighting the need for public health preparedness to deal with bioterrorism, this book also makes an attempt to offer therapeutic countermeasures against bioterrorism. At the same time, it also tries to analyse how challenges like the concerns of the public, infrastructure cost, retaining of skilled personnel etc can be met with adequate methods and procedures in place.

The first chapter "assessing the Unconventional Modes of Unconventional Terrorism: Cyber, Chemical, Biological and Nuclear" offers an in depth analysis of those four modes of unconventional terrorism. While assessing the problems associated with each one of them, three fundamental factors are taken into account: the national infrastructure, the potential deliverability of weapons systems and the assessment of national and transnational adversaries. At present, eight infrastructure systems remain valid: electrical power, gas and oil production, storage and delivery; telecommunications; banking and finances; water supply systems; transportation; emergency services; governmental operations. Weapon deliverability which depends on weapon type and device size, can be of two kinds: low tech delivery and high tech delivery. While low tech delivery systems can be of various kinds (e.g. by foot, bicycle, car, etc), basic tool for high tech delivery is missile system.

As far as transnational terrorist organizations such as Al Qaeda are concerned, they owe no allegiance to any nation state and may use bioterrorism as a strategy to gain power. In this chapter, strategy of various countries to use a larger part of its own national logistical and administrative data to attack and cripple other nation's information and economic infrastructure has been discussed briefly. The release of technology in the construction of weapons of mass destruction (WMD) and missile capability to antagonize states (Iraq, Iran, North Korea) clearly validate such thesis.

In the same chapter, biological warfare has been defined as the utilization of living organisms (plants, fungi, bacteria, etc) and their toxins to harm, incapacitate or exterminate an adversary's military forces, civilian population, flora and fauna, including livestock. Tools of biological warfare can be delivered by increasingly proliferating conventional warheads as well as civilian delivery means (e.g. anthrax through mail system).

In order to spur the development and procurement of the next generation of medical bio-measures such as vaccines, as well as basic research in micro biological geonomics, a biodefence BioShield programme has been adopted. To achieve similar goal, two additional counterterrorism projects (Bay Watch and Bio Sensor) have also been formed.

While analyzing the factors why biological weapons have become an attractive tool for the terrorist groups, the chapter "Biological Warfare Defence" offers that it is due to their low cost effectiveness and the power to cause massive destruction. They can be easily spread out into the atmosphere with relatively lower possibility of detection.

In history, attempted warfare with biological weapons has occurred many times, dating back to antiquity. This became more sophisticated during the 1900s when the goal of such warfare was to select agents and delivery methods that could produce desired effects without harming the proliferators. Events during and following the World War II were particularly clouded by charges and countercharges of experimentation with biological warfare agents. In this context, the use of biological agents on a large scale by Japan on China in October 1940 is offered as an example. During that incident, a Japanese plane allegedly scattered contaminated rice and fleas over the Chuhsien city of Chekiang Province in China which led to an outbreak of bubonic plague there.

Since the signing of the Biological Weapons Convention in 1972, many significant events and emerging threats in the area of offensive biological warfare have been identified. The number of state sponsored programmes of such type has increased significantly.

The threat of a battlefield or terrorist attack with a biological agent is real. In fact, several potential adversaries of the US have worked to explore the offensive use of biological weapons. The second chapter tries to throw light on the various aftereffects of these biological agents, medical countermeasures. According to the authors, all military medical personnel should have a solid understanding of the biological threat, how to recognize an attack and medical options for defending against that attack. With appropriate use of medical countermeasures either already developed or under development, the number of casualties can be either reduced or halted entirely.

After 9/11, concerns about agro-terrorism increased. It is a well known fact that bioterroriam infrastructure can be hidden away under the garb of legitimate health infrastructure. Food chain is highly vulnerable as it consists of many players, both food and food products. There is a need for balance to be struck between the border security and trade openness. Public Health Security and Bioterrorism Preparedness Response Act or BTA was enacted by the US to address many questions regarding the sanitary measures. In this book, the third article "The Bioterrorism Act of the USA and the International Food Trade: Evaluating WTO, Conformity Effects on Biological Imports" discusses about the various intricacies attached to the enforcement of the BTA and international trade.

In the current global scenario, health and security go hand in hand. The chapter "Discourses on the Securitisation of Public Health: A Survey of Four Countries" analyses the various measures taken by four countries-Australia, Canada, Germany and South Africa to control bioterrorism. According to the authors, although on a general level, in none of the four countries had the spectre of a bioterrorist threat led to a successful drafting of public health to fight bioterrorism, in all national discourses the changed international environment is acknowledged to some degree. Still, most of these countries are not yet very much concerned about bioterrorism.

In order to reduce the prevailing fear regarding bioterrorism, the Project BioShield was enacted by the US in 2004. This act aims to disperse funds for the stockpiling of vaccines by streamlining the Food and Drug Administration (FDA) approval of new drugs/medical products. The article "Project BioShield, More than Meets the Eye: A Critique of the US's proposed Silver Bullet for Responding to Bio-Terrorism" explores the meaning, purpose, objectives and actual working of the act and whether this is sufficient to counter any bioterrorist attack in the future. The author concludes that the project BioShield is just a realistic premature answer to the ongoing threat of biological and chemical attacks.

The chapter on "The Evolving Field of Biodefence: Therapeutic Developments and Diagnostics" offers an in depth analysis on how biowarfare agents such as anthrax and plague are used as a tool by terrorists. Inspite of all efforts made by the scientific community to counter bioterrorism, there is a serious lack of organization in how biodefence is currently addressed. According to the author, our existing response measures are not adequate to meet the challenges of bioterrorism due to lack of cooperation and coordination, ineffective detection networks, lack of timeeffective diagnostic methods, etc. These issues however can be easily mitigated with a unified plan of action, orchestrated by a central entity overseeing a comprehensive and organized approach to biodefence.

The biological warfare can be veiled under naturally occurring infectious diseases. In fact, it becomes tricky for the healthcare system across the world to embark upon such kind of infection. India is no exception. Given the fact that the healthcare system and the infrastructure is generally involved in resolving the naturally occurring infections, a biological terrorist attack cannot be shouldered by it. The article titled "Biological Weapons, Infectious Disease and India's Security imperatives" takes into account the existing public health infrastructures in India and the vulnerability of its food and livestock to such attack and tries to find out a viable solution to resolve these issues. According to the author, in India, a focused threat analysis needs to be carried out to appreciate the dangers of bioterrorism.

The last chapter "Administrative Issues related to Infectious Disease Research in the age of Bioterorism" offers an in depth analysis of how performing infectious disease research poses serious challenge to the humankind. Still, the threat of bioterrorism has stimulated a reorder of research priorities by the federal government that has resulted in a substantial investment in new ID facilities, research and compliance oversight. New research programmes will hopefully provide the countermeasures needed to overcome challenges of public health and biodefence.

Overall, this book is a valuable addition to the publications on biological warfare. It seems to be quite useful for comparatively new readers of bioterrorism. The book not only analyses the aftereffects of such terrorism, it also makes an attempt to throw light on how countries like the US, Australia, South Africa etc. have made efforts to deal with biological warfare. The book is particularly useful to Indian scholars as it offers an in depth analysis of the challenges faced by our own country in dealing with such terrorism.