

Bioterrorism Preparedness for Malaysian Environment

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Abstract

The threat of bioterrorism focuses attention on overall preparedness to address the challenges posed by new and reemerging infectious diseases. Bioterrorism scenarios illustrate the diversity of disciplines and perspectives required to confront these threats, whether naturally occurring or purposely caused. Response to bioterrorism has become a vital agenda for Malaysian. As a Malaysian citizen we should be prepared and know how to respond when bioterrorism attack occurs. The study was conducted to discover the possible threat and evaluate the readiness plans that are possible for the Malaysian environment. The responding plan were identified and recommended in this study. The study was conducted mainly through literature survey which was referred to main official documents as primary source, journals and books as secondary source. The study had some limitation in accessing to some of the classified documents especially from the government officials. In conclusion, there is a need to implement research and development that comes together with the involvement of various relevant agencies that are feasible in this process. Prevention needs to be impart right from the first stage. This is so important in terms of counter measure and control of bioterrorism activity.

Keywords: Bioterrorism; Readiness; Environment; Threats

Background

What is bioterrorism? As defined by the Centers for Disease Control, it is the “intentional or threatened use of bacteria, fungi, or toxins from living organisms to produce death or disease in humans, animals, and plants,” and involves “intimidation of nations or people to accomplish political or social ends [1].

As part of CBRNe threat the biological warfare became more complex and dangerous in recent centuries. Countries began to build up weapons which were much more efficient and less likely to cause virus to the incorrect or wrong party such as in bioterrorism. Centering on the bioterrorism matter, the use of strange and little recognized germ for causing disaster is usually selected by the bioterrorist [2].

The amount of literature available on Bioterrorism and the problem of alertness are huge and vast. Two excessive points of view on biological weapons were identifying and quantifying. One view underestimates them and regards them as weapon whose effects and potential danger to humanity cannot be compared with those of nuclear weapons. The other stresses not only their danger, but their relative ease of production and use (compared to nuclear weapons), especially in local wars. Such a view also stresses the difficulty of controlling the production and use of biological weapons which enhancing their potential danger [2].

Biological weapon in use are viruses and bacteria. The 1972 Biological Weapons Convention is weaker than the Chemical Weapon Convention in respect of verification procedures. Chemical and biological weapon are now group together with fission/fusion weapons under the broad rubric of weapon of mass destruction (WMD) [3].

Biological Agents which have been declared by the U.S Government to have the “potential to pose a severe threat to public health and safety” are officially defined as “select agent” under the current United States Law.

Innocent civilian have often been the victims of the terrorist attacks. Again, terrorist have been successful in creating fear among people. As such, countries from around the world must act to counter this fear and protect people from being victims.

Objectives of Paper

Response to a bioterrorism is become the vital agenda for Malaysian. All Malaysian citizen should be prepared and know how to respond when bioterrorism attack occurs. Lacking in biological knowledge, biological agents handling and poor understanding on biological treatment can harm the whole population in the country. In knowledge preparedness the Malaysian should enhance to handle all types of risk that were possible from bioterrorism. Therefore, in preparing a knowledge base defense personnel all agencies involved in this undertakings shall prepare in term of command and control, coordination and intelligence gathering, policies, law enforcement, infrastructure and biodefence research must be continue to provide improved drugs and protective measures to deal with normal illness, as well as to prepare us to face a bioterrorist attack.

This paper focuses at three major objectives. The first one is to study the possible bioterrorism threat and its impact to the national security of Malaysia and the second objective is to evaluate the readiness plan of the current practices. Finally, the responding plan were identified and recommended in this study. Mainly the comparison study has been engaged to disseminate the ways and means of other few countries coping with bioterrorism in term of their policies, infrastructure and training.

Research Methodology

The study was conducted by using both primary and secondary sources of literatures. The primary sources included unpublished official documents from the governments’ office, from civil and military

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sources. Secondary sources included books, official government publications, working papers presentations and speeches and academic journals. Due to the current and latest topics such as biological weapon is being discussed the Internet, newspaper and periodicals have provided a wealth of useful information. The research centers used to prepare this paper including the Library of National Defense University of Malaysia and University Of Malaya, the Institute of Strategic and International Studies (ISIS), the Library of Malaysian Armed Forces Defense College (MAFSC), Malaysian National Library and MINDEF Camp Library, all in Kuala Lumpur.

An Insight of Bioterrorism

Bioterrorism remains a justifiable threat both from domestic and international terrorist groups. Fears of mass panic and social disorder underlie this bias. Although it is not known how the population will react to an extraordinary act of bioterrorism, experience with natural and technological disasters and disease outbreaks indicates a pattern of generally effective and adaptive collective action. From a general public health perspective, timely surveillance, alertness of syndromes resulting from bioterrorism, epidemiologic research capability, laboratory diagnostic capability and the ability to rapidly communicate critical information on a need to know basis to manage public communication through the media are vital. Failure to involve the public as a key partner in the medical and public-health response could hamper effective management of an epidemic and increase the likelihood of social disruption. Ultimately, actions taken by non-professional individuals and groups could have the greatest influence on the outcome of a bioterrorism event. Formulating and putting into practice standard operating procedures (SOPs)/drills at all levels of health care will go a long way in minimizing mortality and morbidity in case of a bioterrorist attack.

The biological agents are become vital in bioterrorism as it can be disseminated easily and effectively. They are easily concealed, and thus difficult to detect before an attack. They are also difficult to detect when released, so a biowarfare or bioterror attack would be difficult to ascertain, especially due to the usually nondescript initial signs and symptoms expected in casualties from such an attack. The biological agents are not as controllable or predictable in their effects and are even more dependent than chemical agents upon temperature, weather and topographical conditions. Therefore the risk of contaminating the wrong area is always there.

Most biological agents also degrade very fast, even though dry agents such as anthrax spores and some toxins, are importunate. The agents can make such areas to be contaminated for long, necessitating the use of protective equipment and / or decontamination for attacking forces. The storage and delivery of biological agents also is not easy and it poses lots of complexity.

The scientific researches such as biotechnology including genetic engineering are used to improve or modify plants, animals, and microorganisms. This can help in improvisation of the particular agent to be more relevant and viable for the terrorist.

The objectives of the terrorist attack become the main agenda for selecting the biological agents. This may lead to selection of unusual agents not associated with any other plan or decision made particular countries on bioterrorism. Fortunately, many of the alternative agents are unlikely to result in mass fatalities, even if they affect large numbers of people. As a result, a terrorist group might use biological agents

that could inflict mass casualties, such as anthrax, is at the heart of the concern about bioterrorism.

The Malaysian national civilian has liability to the deliberate use of biological agents of substantial biological weapons, attempts to acquire or possess biological agents by militants, and high-profile terrorist attacks. Evaluation of this vulnerability need to be focused on the role of public health in detecting and managing the probable covert biological terrorist incident. This is due to the realization that the district, state, and federal infrastructure is already strained as a result of other important public health problems. The representatives such as local and state health departments, other federal agencies, medical and public health professional associations, National Security Division and the Prime Minister Department has developed a strategic plan to address the deliberate dissemination of biological or chemical agents. The plan contains strategies to reduce Malaysia vulnerability to biological and chemical terrorism preparedness planning, detection and surveillance, laboratory analysis, emergency response, and communication systems.

Training and Research

Training and research are integral components for achieving these recommendations. Success of the plan hinges on strengthening the relationships between medical and public health professionals and on building new partnerships with emergency management, the military, and law enforcement professionals. The public health infrastructure must be prepared to prevent illness and injury that would result from biological and chemical terrorism, especially a covert terrorist attack. As with emerging infectious diseases, early detection and control of biological or chemical attacks depends on a strong and flexible public health system at the local, state, and federal levels. Several international treaties and conventions have tried to regulate the conduct of warfare, with varying results. The Hague Conferences in 1899 and 1907 started the modern age of international arms control. More recent arms control agreements seek to regulate, and in some cases eliminate, certain classes of weapons [4].

Preparedness activities in bioterrorism and public health emergencies fall into the broad categories of prevention, detection, and response. Examples of core capacities in these areas include [5].

- Prevention: regulating environmental and agricultural conditions to minimize threats, limiting access to certain biological agents, and improving intelligence to uncover plans for biological or chemical attacks
- Detection: health care provider training and education to improve diagnosis, enhanced surveillance and epidemiology to detect outbreaks, and improved laboratory capabilities
- Response: establishment of response plans, regular drills or exercises of those plans, regional and interagency coordination and communication, medical capacity for decontamination, immunization, and treatment

Most of these capacities are dual use, preparing for both bioterrorist attacks and naturally occurring disease outbreaks.

Another important activity that can be highlighted here is identification of agents. Identification is the unique determination of the chemical structure or the biological identity of a particular compound (agent). In some cases it can be only a partial identification within it only determination of a group of compound (agents) can be found up.

The front line in response for local will be given by public health agencies on public health or bioterrorism crises. In response capacities, they typically facilitate coordination between traditional first responders, medical providers, and state services. Localities also often lead communicable disease control and sometimes directly provide treatment services. Responsibilities sometimes extend into detection capacities such as surveillance, epidemiology, and basic laboratory services [5].

Almost all the developing countries are virtually and totally unprepared against bioterrorism. There is a lack of scientific awareness, preparedness and funding. Stocks of antibiotics and vaccines against known pathogens that are essentially needed are inadequate to meet with even the periodical natural high incidence, let alone in the event of a bioterrorist attack. The situation is worse in the developing countries.

Bioterrorism Preparedness

In Malaysia, the management of disaster is governed by the National Security Council (NSC) Directive No. 20: Policy and Mechanism of Disaster Management and Relief Committee [6] (National Security Council Directive). This policy is an executive order from the Honourable Prime Minister was issued on 11th May 1997. The Directive interpreted "Disaster" and "Non-disastrous incidents" [7].

The Prime Minister Department in Putrajaya is the highest national administration level in term of decision and policy making related to the national security. The National Security Council (NSC) under the Prime Minister's Department was established in 1971 with the responsibility of coordinating policies relating to the security of the country and the overall direction of security matters. National Security Division (NSD) which comes under the Prime Minister's Department is the leading agency for the security matters in the country. This security structure was extended to the state, district and village levels parallel to the development structure.

The Malaysian government's instrument for maintaining Law and Order in the country is the Royal Malaysian Police (RMP). The main role of the Malaysian Armed Forces (MAF) is to defend the country against military incursions or infiltration. Circumstances may arise, however, in which the Police require aid in discharging their task and those occasions the MAF will be called upon (AF Code T 1025 / Police 15). The Public Order Manual (POMAN) [8]; is one of the documented policies for the police and military commanders at all levels to the plan and executes their duties in maintaining Public Order including to prevent terrorism activities.

Should, however, a civil disturbance become a threat of, or develop into, armed insurrection, then it ceases to be a Public Order (PO) situation and becomes a problem of internal security. The threat to PO may originate from any of the following sources (Ibid):

- a. Racial / Communal Issues.
- b. Religious Issue.
- c. Political Agitation.
- d. Economic Issues.
- e. Educational Issues.
- f. Industrial Disputes.

Any of these situations may be exploited or inspired by terrorist, extremist or subversive elements to serve their own purposes, which may be to embarrass or discredit the Government or to antagonise

the population or a section against both the Special Force (SF) and the government by forcing or coercing the imposition of unpopular or repressive measures to restore PO. Prevention is better than cure, and with this spirit Malaysian government always believe in preventive measure rather than combating the terrorist activities. Listed here are some of the various legislations for the maintenance and restoring of PO is available in the country:

- a. Penal Code S. 141 (FMS CAP. 45) (3).
- b. Police Act (2), 1967, S. 27 (5).
- c. PO (P) O 1958 (12).
- d. Industrial Act, 1967 (15).
- e. Education (School Discipline) Regulations, 1959 (2).
- f. The Explosive Ordinance, 1957.
- g. The Protected Areas and Protected Place Ordinance, 1959 (20).
- h. The Arms Act, 1960 (22).
- i. The Fisheries Act, 1963, S. 10 (1).
- j. The Internal Security Act, 1960, etc.

When come to the large scale of national disaster or emergency, the Civil Defense Department are responsible to reduce the loss or damage of lives or property before, during, and after disaster. Such different dangers demand that in future civil defense places two tasks into the foreground. The assignment, to protect the population as efficiently as possible in case of an armed conflict, remains unchanged [9]. The other mandate of Civil Defense Department has become more important; to render aid and assistance in case of disaster and / or other emergencies. Civil Defense is not the only agency for rescue and aid authorities dispose of. It completes the engagement of other organizations and cooperates with them under the authority's guidance. Main partners are the fire-brigades, the technical public utilities, the services of public health and the security forces rescue troops.

In term of protective measures in case of disasters and emergencies especially biological attack, the most importance is an individual protective and the civil defense will do the indoor protection, protection in the cellar or unprepared shelter, protection in the prepared shelter and evacuation on a small scale. Under the Laws of Malaysia Act 221 [10], Civil Defence Act 1951 (Revised 1979), Civil Defense forces may be ordered to perform relief and rehabilitation work.

The Director General for Civil Defence for Civil Defence may with the concurrence of the minister order the Civil Defence Forces or services or any part there to be employed for performance of any relief work or giving protection to, or taking measures for ensuring the safety of the lives, the event of any disaster or impending disaster or of affecting of facilitating their rehabilitation after such disaster (Laws of Malaysia Act 221) [10].

The familiar motto "Preventing is better than healing" is of special value in population protection in Malaysia from any kind of emergency including terrorist activities. In view of this, it is in Malaysia's interest to ensure that not only peace for the country but also the global peace is well maintained. Taking cognisance of its strategic and competing interests, Malaysia's defence policy revolves around the fundamental principles of Self-Reliance, Regional Co-operation and External Assistance [11]. With the continued increase in terrorist activities and the establishment of terrorist networks in different parts of the world,

a multilateral response to terrorism would seem to be the appropriate approach to combat terrorism. As noted, the co-operation of different countries is, indeed, necessary to suppress terrorism, as terrorist attacks have been caused tremendous psychological and economic effects worldwide. Bioterrorism can be encountered by eight types of response;

- a. Awareness
- b. Laboratory preparedness
- c. Plan in place
- d. Individual and collective protection
- e. Detection and characterization
- f. Emergency response.
- g. Measures to protect the public's health and safety,
- h. Treatment and safe practices.

Recently the concern for potential bioterrorist attacks causing mass casualties has increased. Particular attention need to be given to scenarios in which a biological agent capable of person-to-person transmission, such as smallpox, is intentionally released among civilians. Various drastic changes shall be implemented to contain the possible impact of particular agent and its source.

The first step is the multiple public health interventions which are possible to effect disease containment in this context. There is a requisition of imposition of large-scale or geographic quarantine on the potentially exposed population. Although large-scale quarantine has not been implemented in Malaysia, it has been used on a small scale in bioterrorism exercises. The public health also has to be strong and can counter all the impact from the particular biological agents attack.

The second step could be prevention step which need to be impart right from the first stage. This is so important in term of counter measure and control the bioterrorism activity. Several strategy and planning documents direct the federal government's biodefense efforts. Many different agencies have a role. These agencies have implemented numerous disparate actions and programs in their statutory areas to address the threat. Despite these efforts, many experts, including congressional commissions, non-governmental organizations, and industry representatives, have highlighted weaknesses or flaws in the federal government's biodefense activities. In this process there is a need of implementing the research and development process that comes together with the involvements of various agencies such as Prime Minister Department, Ministry of Defense, Ministry of Health and all other relevant agencies that are viable in these processes.

All concerned agencies and Government instrumentalities are carrying out their respective functions to ensure that the following measures shall be implemented:

- a. Comprehensive security plans for critical infrastructure.
- b. Internal focus against terrorism.
- c. Vigilance against the movement of terrorist and their supporter's equipment, weapons and funds.
- d. Intelligence co-ordination.
- e. Accountability of public and Private Corporation and personalities.
- f. Synchronization of internal efforts with a global outlook.

- g. Supervision and implementation of policies and actions of the government against terrorism.
- h. Political, social and economic measures.
- i. Contingency plans.
- j. Legal measures.
- k. Promotion of religious solidarity.
- l. Support of overseas Malaysian worker or students.
- m. Modernization of the Malaysian Armed Forces (MAF) and the Royal Malaysian Police (RMP), and also other Government agencies involved directly to the counter terrorism roles.
- m. Media support.

The following measures also should be taken in connection with the Government's commitment to co-operate in the international struggle against terrorist:

- a. Prevent the flow of funds to terrorist groups.
- b. Make available Malaysian airspace and facilities if the latter are required as transit or staging points.
- c. Subject to the concurrence of the Malaysian cabinet, provide combat troops.
- d. Work closely with the other countries on intelligence and security matters concerning terrorism.
- e. Join the international counter-terrorist coalition and work with the United Nation (UN).
- f. Contribute logistical support in the form of food supplies, medicine and medical personnel.

Basic key questions face governmental policymakers in the decision making process in bioterrorism:

- How sufficiently do the efforts already underway address the threat of bioterrorism?
- Have the federal investments to date met the expectations of government or other stakeholders?
- Should government alter, augment, or terminate these existing programs in the current environment of fiscal challenge?
- What is the appropriate federal government role in response to the threat of bioterrorism, and what mechanisms are most appropriate for involving other stakeholders, including state and local jurisdictions, industry, and others?

The entire question above will make the federal government to have a proper strategic planning; risk assessment; surveillance; and the development, procurement, and distribution of medical countermeasures.

Summary

Recently various types of crisis or emergency due to biological outbreak occur in Malaysia which causes loss of life. The internal security agencies, armed forces and other agencies need to work together to ensure safety arising out of the problem. It is also the responsibility of the individual to know the safety measure and aware of such incident. At this juncture, if any biological outbreak involving

biological agents were to occur, the main concern is to avert or contain such emergency situations.

Planning and preparation in advance for biological terrorism can help to minimize potential public health and environmental threats if and when an actual emergency occurs. During the planning process, emergency response organizations think through how they would respond to each type of incident and the resources that will be needed. In Malaysia, planning, preparation for and response to biological terrorism involve many parties. In the event of a biological terrorism and if it is considered a disaster, the National Security Council, the Malaysian Armed Forces, Internal Security Force and the Ministry of Health will work together with other federal agencies, state and local governments, first responders and international organisations to monitor the situation, contain the release, and prepare the quarantine facility if needed. Throughout the response, these agencies use their protective action guidelines.

The essential first step in developing any disease containment strategy is to determine if the disease at issue is communicable. In an outbreak of a contagious disease, disease containment may be more effectively achieved using methods that do not attempt to contain large groups of people. During large-scale contagious disease outbreaks, decision makers would be critically dependent on the availability of timely, accurate information about what is happening and what interventions are desirable and feasible. Effective information dissemination would work to suppress rumors and anxiety and enlist community support.

Total defence concept involves all the governments' machinery; asset and effort are suitable to face the terrorist challenge that can jeopardise the national security. Proper structured organization chart, clear term of reference and well-coordinated amongst all the relevance agencies in preparedness of Bioterrorism attack or any emergency situation, can reduce large casualties and damage to the nation.

Recommendations

The bioterrorism is very unique and need to be handled carefully and precisely. Bioterrorism impacts impose heavy demands on the strength of the government, security forces, public health care system and also the research and development strategies of a country. This is basically will be demanded by the general public handle the

consequences. An effective preparation and responding process shall be introduced to counter measure bioterrorism activity during emergencies. This is can be supported by strong prevention, detection and response strategy which will be required to counter any act of covert or overt bioterrorist attack. Defencelessness and capability, two prerequisites of bioterrorism, are in place.

Enhancing preparation and responding process will help us deter and defeat deliberate the targeted biological agent's impact, as well as increase the general health and well-being of the population. The intention of potential attackers is difficult to manage. Therefore, limiting our vulnerability is the most promising way to prevent or mitigate biological attacks that the country is confronting.

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