

The Threat of Bioterrorism

By: Seraj Omar B. Elfigih 1221
Libyan International Medical University
2016-2017

What is Bioterrorism?

A bioterrorism attack is the deliberate release of viruses, bacteria, or other germs to cause illness or death. These germs are often found in nature. But they can sometimes be made more harmful by increasing their ability to cause disease, spread, or resist medical treatment.¹



A Brief History:

Infectious diseases were recognized for their potential impact on people and armies as early as 600 BC. The crude use of filth and cadavers, animal carcasses, and contagion had devastating effects and weakened the enemy. Polluting wells and other sources of water of the opposing army was a common strategy that continued to be used through the many European wars, during the American Civil War, and even into the 20th century.²

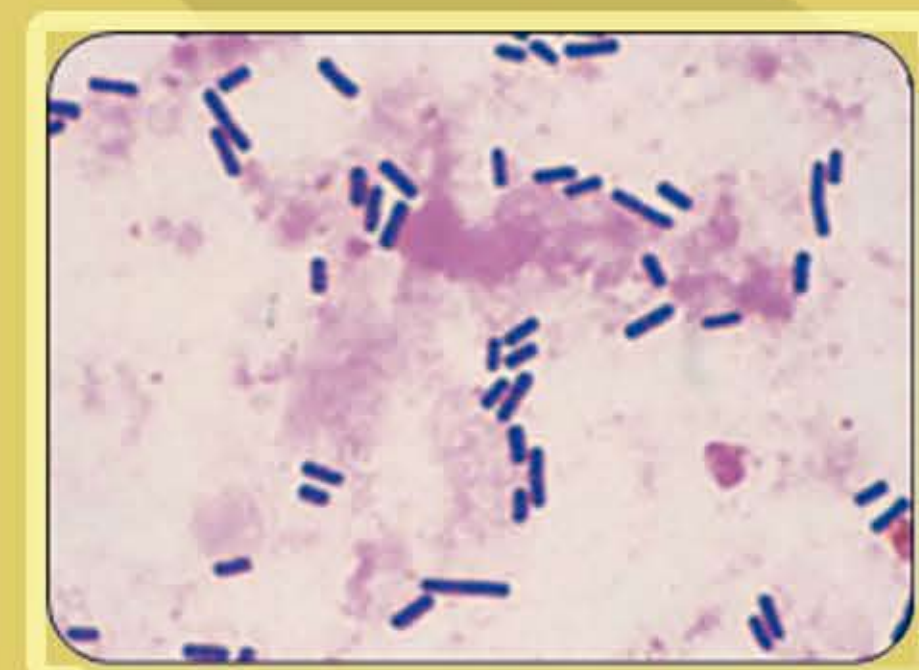


Types of Agents

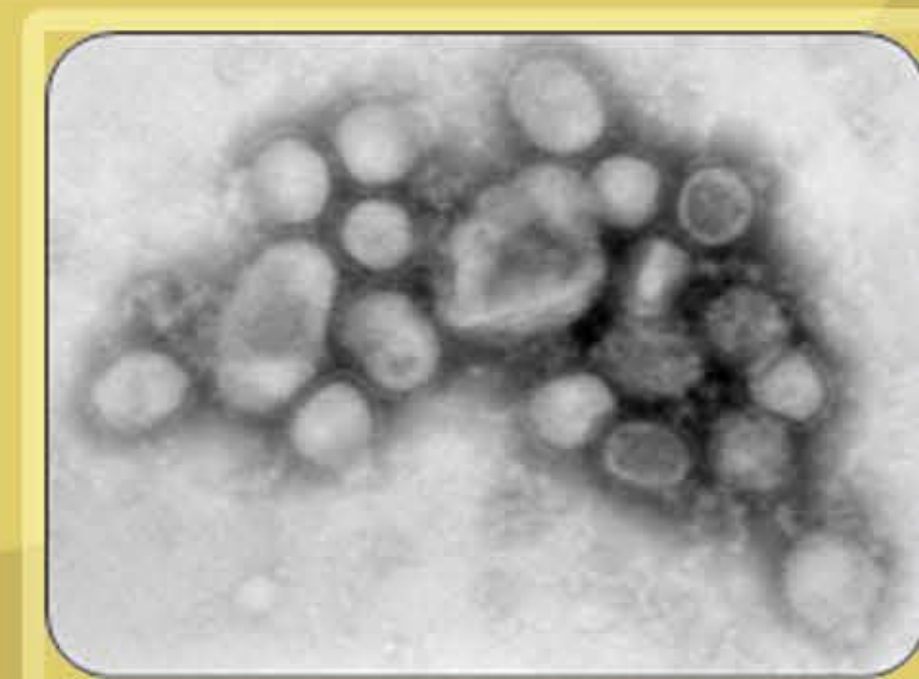
Category A	Category B	Category C
<ul style="list-style-type: none"> High-priority & risk to national security. Easily transmitted and disseminated. High mortality. Potential major public health impact. Causes public panic. Requires special action for public health preparedness. <p>Example: <i>Bacillus anthracis</i> (Anthrax)</p>	<ul style="list-style-type: none"> Moderately easy to disseminate. Have low mortality rates. Require specific enhancements of lab capacity & enhanced disease monitoring. <p>Example: Epsilon toxin of <i>Clostridium perfringens</i></p>	<ul style="list-style-type: none"> Emerging pathogens. Engineered for mass dissemination Easily available, produced and disseminated. High mortality rate, Have ability to cause a major health impact. <p>Example: H1N1 (a strain of influenza)</p>



Bacillus anthracis is the etiologic agent of anthrax, a common disease of livestock and, occasionally, of humans. (Category A biological agent)



Clostridium perfringens is a Gram-positive, rod-shaped, anaerobic, spore-forming pathogenic bacterium of the genus *Clostridium*. (Category B biological agent)



H1N1 virus is the subtype of influenza A virus that was the most common cause of human influenza (flu) in 2009. (Category C biological agent)¹

Prevention:

Primary prevention rests on creating a strong global norm that rejects development of such weapons. Secondary prevention implies early detection and prompt treatment of disease. The medical community plays an important role in secondary prevention by participating in disease surveillance and reporting and thus providing the first indication of biological weapons use. In addition, continued research to improve surveillance and the search for improved diagnostic capabilities, therapeutic agents, and effective response plans will further strengthen secondary prevention measures.²



Conclusion:

Biological weapons are unique in their invisibility and their delayed effects. Biological agents are classified into three categories according to various factors. Prevention mainly includes awareness of these pathogens and rely heavily on early detection and treatment of these agents.

References:

1. CDC | Bioterrorism Overview. *Emergency.cdc.gov*. 2017. Available at: <https://emergency.cdc.gov/bioterrorism/overview.asp>. Accessed February 10, 2017.
2. Riedel S. *Biological warfare and bioterrorism: a historical review. Proceedings (Baylor University Medical Center)*. 2004;17(4):400-406.