



## **Biological Warfare and the Coronavirus**

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An outbreak of virus was first detected in December 2019 (and maybe even earlier) in Wuhan city of China. The cause of the outbreak was identified as a virus from the Corona family (SARS-Cov-2), Which belongs to a family of respiratory viruses that usually cause mild respiratory morbidity. However, viruses from this family have also caused epidemics of severe respiratory infections and death on a wide scale.

From the first Chinese report of its outbreak, the virus began spreading worldwide, across continents and countries, and as of this writing, the outbreak has been reported in 168 countries, and over 600,000 people have been infected and more than 25,000 people who died as a result of the infection (At the same time, about 125,000 people were reported to have been cured).

On various websites and news, allegations have been made that the Coronavirus was developed in China's biological warfare laboratories in Wuhan city, and that its worldwide spread was the result of a malfunction or safety incident.

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Whether or not the allegations are true, this article examines some of the insights that can be learned from the Coronavirus spread and its impact on the future use of biological weapons.

### **On biological warfare**

Biological warfare is a series of deliberate warfare efforts, which use pro-dispersed biological materials to disable or cause mortality through clinical disease infection, which spreads in humans, soldiers and civilians. The infection is carried out through effective adhesion mechanisms, which enable the rapid progression of the disease and relatively high mortality rates.

Like chemical weapons and unlike kinetic weapons, biological weapons do not destroy sites, infrastructure and territories, but neutralize people over time, either in the home front or on the front.

Biological warfare brings with it the ability to not only disable or kill rivals, but also brings with it the ability to produce psychological warfare capabilities, the purpose of which is to create mass panic, severely affect the economy, commerce and adversely affect the adversary state in all ways of life and governance.

Since the days of the Cold War, a new branch of biological warfare has developed, aimed at the destruction of fields and crops, as part of the perception that the destruction of the rival state's agriculture will bring it into a state of famine and hence its submission.

The use of biological warfare and disease dissemination as an effective means of neutralizing rivals to sow panic is not new in human history.

In the centuries before BC, the Scythians used to smear their arrows with the droppings and blood of animals to infect their rivals with disease. The Persians, Greeks, and Romans, to achieve more killings of their rivals, used to poison water sources and wells through the corpses of animals that died from infectious diseases or through snake venom.

In the centuries following, the Prussians, French, Spanish, and Italians used to dump the bodies of soldiers, horses, and other animals into wells to poison them.

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In the 14th century, the bodies of infected soldiers were thrown by the Mongols into rivers and reservoirs, during a siege on cities near the Black Sea coast. The Mongol attacks resulted in the death of about one-third of Europe's population three years later.

Years later, the Russians infected their rivals with plague, the English sold to American Indians blankets with smallpox, the Germans transmitted disease-infected horses during the first World War, and the Japanese airplanes sprayed viruses on their rivals in China and Manchuria.

Although not used during the Cold War between the Communist bloc and the Western bloc, biological warfare materials were incorporated into the Soviet Union and United States weapons stockpiles. France and England have also developed and retained considerable quantities of biological weapons.

By 1960, more than a dozen countries sought to obtain or possess biological weapons, including Western democracies such as Australia, West Germany, and Sweden and Eastern bloc countries such as Czechoslovakia and Yugoslavia, as well as other countries such as Egypt, Libya, Iran, and China.

In 1973, the Biological and Toxins Convention (BTWC), which banned the development, production and storage of biological weapons for mass destruction, came into force (163 states sign the treaty and 20 countries did not sign it).

The treaty did not stop states and terrorist organizations from developing biological weapons and means for carrying them and dispersing them. For example, Iraq which made efforts to produce biological weapons and to integrate them into the Scud surface-to-surface missile warheads during the pre-Gulf War period (1991-1992).

A few years later, al-Qaeda, Osama bin Laden's terror organization, was equipped with biological weapons, which led to a series of biological terrorist attacks on US soil from 2001 to 1997, known as Anthrax terror or "envelope terror".

Modern technology has brought new capabilities for the development and production of more effective, more durable, and more complex biological weapons. Advanced capabilities have been developed for transporting and the spread of biological weapons.

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All these new developments in biological weapons are imposing difficulties in detecting them and defending from them.

### **Characteristics and capabilities of biological warfare materials**

The biological agents cause the spread of disease in the form of bacteria, viruses or toxins. Examples of such biological materials are the smallpox virus, Anthrax bacteria, and the Ebola virus.

The materials selected for biological warfare (neutralizing or causing death) will be those whose duration of incubation and proliferation will allow their operator to disappear before they are activated.

Another parameter is that the biological materials will guarantee maximum operating time and damage without being identified as biological warfare agents.

The longer the detection and realization that biological fighting material has been activated or dispensed, the longer and more difficult it will be to respond and defend against it.

The biological warfare agents are characterized by being relatively simple and inexpensive to manufacture, especially using modern production technologies.

Another feature that characterizes biological warfare materials is the ease and efficiency of transporting them to the desired destination and dispersing them by simple logistical measures over wide areas. For example, biological materials can be dispersed through spray bottles or postal envelopes (as was the case with the anthrax attack in the United States).

It should be noted that the environmental and climatic conditions, such as the thermal stability of the air, the intensity and the wind direction, the rain, and the soil structure, have a crucial effect on the efficiency of the dispersal of biological warfare material.

Another characteristic that characterizes the biological material is that it is challenging to detect throughout its life stages - from the development stage in laboratories, production, transport and operation.

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The bright spot of using biological warfare is that there is a vaccine for most biological warfare agents and others for which there is no vaccine, the technology, and human knowledge are capable of providing an immune solution, even if it lasts for several months.

### **The Coronavirus and the Biological Warfare**

Whether the Coronavirus was released and burst from the Wuhan City Biological Research Laboratory as a result of a mistake or a safety incident, or whether the virus started innocently as a result of an animal infection, insights into modern biological warfare can be derived.

**The first insight** is that the outbreak of the Coronavirus demonstrates the effectiveness of biological warfare in neutralizing and killing people. On the other hand, the Coronavirus reflects the ability of biological warfare materials to neutralize states, not only military but also economic and political.

The Coronavirus outbreak proves that beyond the contagion rate, the most significant effects came out are in the political, economic, social, political and even psychological aspects, and the fear created in the world population.

Obtaining such effects by cheap, easy-to-manufacture biological weapons makes it an attractive weapon to be used by terrorist organizations.

**The second insight** is that in the age of globalization in which goods and people move across the sea, air and land, the ability to control and contain an eruption into a certain defined space is impossible.

**The third insight** is that the varieties of the biological warfare material dispersed may evolve from it (such as the strain discovered in Italy), and have different properties, thereby developing an inappropriate response or delaying the development of the optimal response against the biological warfare material.

**Fourth**, the development of biological warfare materials requires the simultaneous development of safeguards against it, to vaccinate the local population. The spread of the

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Coronavirus proves that there is no resilience to biological warfare, even in a country where biological weapons are being developed.

**Another insight** is that, together with the development of safeguards, the various international institutions obliged to oversee, control and enforce the use of biological warfare, so that a similar case of the outbreak of the Coronavirus will not happen proactively.

Beyond that, it is necessary to emphasize the supervision of substances that are defined as dual-use and allow those who wish to produce biological weapons to bypass the Biological and Toxins Convention.

Together with international control and enforcement efforts, ***a comprehensive intelligence campaign should be developed***, in which intelligence will be regularly collected on the development and production of biological weapons by states and terrorists. This intelligence campaign is recommended to include operative counterterrorism activities.

**The last insight** from the outbreak of the Coronavirus underscores the need to invest in research and development of biotechnology infrastructure and solutions, which will provide a quick and effective response to humanity in the event that further epidemics develop, even as a result of accidental or deliberate activation of biological weapons.