Is Bioterrorism Really on the Horizon?

By

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A January 2025 article published by the American Council on Science and Health detailed the results of a recent red-team activity (simulated security exercise) where a professor and two graduate students were able to manipulate their way through safety regulations and recreate the deadly 1918 Spanish flu virus.

The conclusion of the scenario is that terrorists could easily do the same, and that the American security apparatus needs to take action to prevent a possible wave of bioterrorism before it is too late. But given the knowledge starting point of the scientists, and ease of more proven violent methods, is this a really legitimate concern?

The simulated test was overseen by the Federal Bureau of Investigation (FBI), and saw the players involved, two Massachusetts Institute of Technology (MIT) graduate students, successfully place orders for DNA fragments of the virus from 36 of 38 providers, despite obvious red flags, like the organization not being one that does lab experiments or the address for delivery not being a laboratory facility. According to MIT Professor Kevin Esvelt, who oversaw the students, they then were able to employ "standard biochemical techniques" to create the deadly virus.

That these graduate students were able to successfully complete such a purchase 36 out of 38 times is alarming, but consider how these MIT students compare to an aspiring terrorist; is there perhaps a knowledge and capability gap? MIT is among the top-ranked schools in the world and, according to EduRank, number 1 in biomedical engineering. Hardly a representation of the average knowledge base. Even knowing how to go about purchasing viral DNA fragments is highly specialized knowledge, let alone having the expertise to successfully engineer those fragments to a level needed for weaponization.

According to research out of the University of Maryland's National Consortium for the Study of Terrorism and Responses to Terrorism (START), chemical-biological-radiological-nuclear (CBRN) attacks are seldom in the wheelhouse of terrorist groups. In fact, the use of weapons in this category has been in an overall downward trend since 2000. Terrorists "generally lack significant chemical or biological skills or experience."

However, there is a first time for everything, which is why such red-team events occur. While many believed the idea of al-Qaeda using hijacked planes as missiles after the September 11, 2001, attacks to be anathema, it was presented as a possibility in a red-team event after the 1993 World Trade Center bombing—following a series of terrorist hijackings in 1994 and 1995, indicating a growing trend.

What are current trends in terrorism showing? Another START report focused on terrorism and targeted violence between January 2, 2023–September 26, 2024. The report analyzed 1,509 reported incidents in the US. Filtering out categories such as hate crimes and school and workplace violence, and focusing on just terrorism, there were 366 domestic incidents.

The START data offers further filters by weapon type, showing 196 firearm incidents, 80 incendiary device attacks, 60 explosives used, 16 sharp objects used, 10 chemical attacks, eight melee attacks, six vehicles, three sabotage efforts, and two blunt objects used. There were also 15

noted under "other" and "unknown" weapon types. Zero radiological incidents were found during the time period.

While no biological category exists, looking at chemical incidents could offer an example comparable to a biological terror attack. The events break down into one pepper spray incident, an unknown noxious aerosol attack, a novelty stink spray use, an attempted ricin poisoning, and six fentanyl-laced letter attacks.

The multiple fentanyl-laced letters could possibly indicate a terrorism trend related to scientific know-how. The Drug Enforcement Agency (DEA) reports the majority of domestic fentanyl is "manufactured in foreign clandestine labs and smuggled into the United States through Mexico, [and] is being distributed across the country and sold on the illegal drug market."

While a clandestine lab could certainly hire itself out to a terrorist organization, no arrests were made for such incidents. It is impossible to know if the fentanyl was purchased domestically in illegal drug transactions, purchased directly from a lab, or manufactured by the perpetrators themselves.

Reporting from Reuters confirms that fentanyl is actually relatively simple for scientists to manufacture, and virtually all fentanyl in the US is produced in Mexican labs, many affiliated with Mexican drug cartels, which were recently designated as terrorist groups by President Donald Trump. These labs are able to skirt chemical regulations by switching from one method to another using different ingredients to produce the same result. The cartels have financial motivations, rather than ideological ones, as with terror groups.

The manipulation of regulations by these labs in Mexico is eerily similar to the MIT red-team concerns—a security gap worth addressing. It is still too limited to call it a trend in terrorism attack types. Historic outliers (such as the 1995 sarin gas attack in Tokyo) are just that, outliers.

Over 90 percent of START's analyzed terrorist incidents use firearms, incendiary devices, or bombs. Only 2.7 percent are chemical in nature (with 1.6 percent fentanyl). It is clear where counterterror resources should be directed. Concerns over technological or scientifically advanced terrorist attacks are closer to fear mongering than reality.

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