Bio Terror Bible

EXPOSING THE COMING BIO-TERROR PANDEMIC

BIOTERRORBIBLE.COM: Boston, Massachusetts, is home to the NIH (National Institute of Health), Harvard Medical School, and a BSL 4 lab of the National Emerging Infectious Diseases Laboratory (NEIDL). The city of Boston has recently conducted numerous bio-terror related drills and exercises, and has been home to a number of bio-terror related incidents since 2005. Boston is also one of 21 cities NOT at risk for elimination from the Cities Readiness Initiative (meaning that Boston is "ready" for bio-terrorism).

Title: TOPOFF 3
Date: April 4-8, 2005
Source: Global Security

Abstract: Top Officials 3 (TOPOFF 3) was the most comprehensive terrorism response exercise ever conducted in the United States. Sponsored by the U.S. Department of Homeland Security's Office of State and Local Government Coordination and Preparedness, TOPOFF 3 was the third exercise in the TOPOFF Exercise Series, a congressionally mandated exercise program. The exercise was designed to strengthen the nation's capacity to prevent, protect against, respond to, and recover from terrorist attacks involving weapons of mass destruction. Joining the Department of Homeland Security and other federal agencies in that important effort are the states of Connecticut and New Jersey, as well as two international partners, the United Kingdom and Canada. These countries conducted simultaneous, related exercises.

The TOPOFF 3 Full-Scale Exercise (T3 FSE), which took place from April 4-8, 2005, is the culmination of a two-year cycle of seminars, planning events, and exercises. The exercise involved more than 10,000 participants representing more than 200 federal, state, local, tribal, private sector, and international agencies and organizations, as well as volunteer groups.

In the United States, participants responded to attacks in Connecticut and New Jersey. Simulated terrorist incidents originated in New London, Connecticut (chemical incident) and Union and Middlesex Counties in New Jersey (biological incident). Real weapons were not used, yet the response was mounted as if they had been. Numerous federal departments and agencies actively participated, providing a first opportunity to validate the recently released National Response Plan, and to exercise protocols of the National Incident Management System. As the full international dimensions of the simulated crisis were revealed, related exercises took place in the United Kingdom (ATLANTIC BLUE) and Canada (TRIPLE PLAY). Planners from all three countries have collaborated in the exercise design to achieve shared objectives.

To meet these shared objectives, the T3 FSE focused on four critical areas:

1. Incident management: To test the full range of existing procedures for domestic incident management of a terrorist event and improve, through practice, top officials' capabilities in affected countries to respond in partnership.
2. Intelligence/investigation: To test the handling and flow of operational and time-critical intelligence.
3. Public information: To practice strategic coordination of media relations and public information issues in response to linked terrorist incidents.
4. Evaluation: To identify lessons learned and promote best practices.

Exercises such as TOPOFF are an important component of national preparedness, helping to build an integrated federal, state, local, tribal, and private sector capability to prevent terrorist attacks on the homeland, and rapidly and effectively respond to and recover from any terrorist attack or major disaster that does occur.

The Scenario
T3 FSE begins as terrorists, planning attacks in the New York and Boston metropolitan areas, suspect their plans are compromised. They react by accelerating their original schedule, deploying a vehicle-based biological agent dispersal device in New Jersey. Seriously ill patients begin to overwhelm local hospitals. As the scenario unfolds, every county in New Jersey will need a Point of Dispensing (POD) for antibiotics. Meanwhile, the chemical weapon attack originally planned for Boston is also accelerated and executed in New London, Connecticut, augmented with a vehicle-based improvised explosive device.

Issues to be addressed include public health and safety, contamination, criminal investigation, and patient care. As the events continue, federal agencies implement the National Response Plan, and international aspects of play emerge.

The TOPOFF 3 Full-Scale Exercise extends the learning derived from earlier TOPOFF exercises and 9-11 in several ways:

1. Increases international and private sector participation in prevention and investigation.
2. Emphasizes terrorism prevention - an opportunity to piece together an intelligence puzzle and "capture" the enemy before the attack occurs.
3. Emphasizes risk communication and public information - participants will explore approaches to public communications in times of high public anxiety and confusion.
4. Focuses on long-term recovery and remediation issues (Global Security, 2005).

Title: Unknowing Residents To Take Part In Terror Drill
Date: September 7, 2007
Source: WCVB TV

Abstract: About 23,000 Boston residents are weeks away from taking part in a bioterror drill, and many probably don't even know it.

Health officials plan to have mail carriers deliver tiny white cardboard boxes to the doorsteps and mailboxes of thousands of residents in the city's West Roxbury and South End neighborhoods on Sunday, Sept. 23.

"Anytime you are talking about a release of anthrax in the city, you are talking about pretty much a worst case scenario where you need to get medications to people as quickly as possible," said John Jacob of the Boston Public Health Commission.

The empty boxes will be used to simulate how quickly antibiotics could be delivered to residents in the event of a bioterror attack.

"No one knows the streets, knows the deliveries, knows where the houses are and the sequence they are set up in better than letter carriers do," said Bob Cannon of the U.S. Postal Service.

In the event of a real emergency when the antibiotics are highly coveted, the mail carriers will have a police escort.

"There is no emergency whatsoever. This is just a test, and this is a way for us to figure out if this particular delivery option is a good fit for Boston," Jacob said.

If it were a real emergency, each box would hold 20 pills (WCVB TV, 2007).

Title: For Bioterror Lab, A Long Road Seen
Date: March 14, 2008
Source: Boston.com

Abstract: The director of the National Institutes of Health offered yesterday the clearest sign so far that a controversial laboratory being built by Boston University won't open anytime soon.

Dr. Elias A. Zerhouni, the NIH chief, told a panel of scientists convened to review the project that he has no expectation they will rubber-stamp his agency's earlier finding that the lab does not pose a safety or environmental threat to the surrounding South End neighborhood. The centerpiece of the nearly $200 million project is a Biosafety Level-4 lab intended to allow scientists to work with the world's deadliest germs, including Ebola, plague, and anthrax.

"We are not here because we want you to rubber-stamp what we have done," Zerhouni told the scientists at the start of a six-hour public session at NIH headquarters in Bethesda, Md. "We need to do this right, even if it takes a long time.

"Basically, you should be tough," the NIH director said. "I can't say it in any other way. There are no foregone conclusions here."

The BU project, known as the National Emerging Infectious Diseases Laboratories, is one of the cornerstones of the Bush administration's campaign to prepare for potential acts of bioterrorism. The federal government is underwriting most of the cost of building the Albany Street facility, which is 77 percent complete. BU had originally intended to open the lab by this fall.

Conservation Law Foundation attorney Eloise P. Lawrence, whose organization sued to block the facility, said the exhaustive review that Zerhouni now promises should have happened before the first shovel of dirt was turned.

"They should have taken the time before they spent a dime of the taxpayers' money," Lawrence said.

Residents from the South End and Roxbury took to the streets and the courts in an attempt to stymie the project, winning partial victories before state and federal judges. While those courts allowed construction to proceed, they also mandated further environmental reviews.

In November, an independent agency issued a sharply critical analysis of NIH's latest environmental review, branding it "not sound and credible." In response, the federal agency established the panel of scientists, which includes prominent researchers from Harvard, Princeton, and Columbia universities, as well as the former president of Ohio State University.

The panel is charged with addressing safety concerns about the project, a process certain to delay the opening of the facility until at least 2009 or longer.

It remains unclear whether lower-security labs and other parts of the project might open before the Biosafety Level-4 lab gets final clearance. In an interview yesterday, Ellen Berlin, a BU spokeswoman, said that such a scenario is possible, but that the university is committed to opening the project as designed, with the Level-4 lab fully functional (Boston.com, 2008).

Title: In Attics And Closets, 'Biohackers' Discover Their Inner Frankenstein
Date: May 12, 2009
Source: Wall Street Journal

Abstract: In Massachusetts, a young woman makes genetically modified E. coli in a closet she converted into a home lab. A part-time DJ in Berkeley, Calif., works in his attic to cultivate viruses extracted from sewage. In Seattle, a grad-school dropout wants to breed algae in a personal biology lab.

These hobbyists represent a growing strain of geekdom known as biohacking, in which do-it-yourselfers tinker with the building blocks of life in the comfort of their own homes. Some of them buy DNA online, then fiddle with it in hopes of curing diseases or finding new biofuels.

But are biohackers a threat to national security?

That was the question lurking behind a phone call that Katherine Aull got earlier this year. Ms. Aull, 23 years old, is designing a customized E. coli in the closet of her Cambridge, Mass., apartment, hoping to help with cancer research.

She's got a DNA "thermocycler" bought on eBay for $59, and an incubator made by combining a styrofoam box with a heating device meant for an iguana cage. A few months ago, she talked about her hobby on DIY Bio, a Web site frequented by biohackers, and her work was noted in New Scientist magazine.

That's when the phone rang. A man saying he was doing research for the U.S. government called with a few polite, pointed questions: How did she build that lab? Did she know other people creating new life forms at home?

The caller said the agency he represented is "used to thinking about rogue states and threats from that," recalls Ms. Aull, a recent Massachusetts Institute of Technology graduate.

The man on the other end of the line was Nils Gilman, a researcher with Monitor 360, a San Francisco company that provides "geo-strategic" research. Mr. Gilman declined to identify his client, saying only that it's a branch of the U.S. government involved in biosecurity. "I think they want to know, is this something we need to worry about?" he said -- particularly, could the biohackers' gadgets and methods, in the wrong hands, create dangerous pathogens?

Mr. Gilman's claim that he is working for the U.S. government couldn't be verified. A Department of Homeland Security official said "it does not appear that we contract with Monitor 360." A spokesman for the Federal Bureau of Investigation declined to comment, and a Department of Defense official said he couldn't find any record of the department hiring Monitor 360 or its parent company, Monitor Group. But he said another arm of Monitor Group has done work for the department in recent years.

Previously, some researchers and law-enforcement officials have raised red flags. In a paper published in Nature Biotechnology in 2007, a group of scientists and FBI officials called for better oversight of so-called synthetic DNA, an ingredient widely used by professional biologists and hobbyists, saying it could theoretically lead to the creation of harmful viruses like Ebola or smallpox, since their genomes are available online. "Current government oversight of the DNA-synthesis industry falls short of addressing this unfortunate reality," the paper said.

Ms. Aull, who lives with a cat and three roommates who are "a little bit weirded out" by her experiments, says the worries are overblown. DIY biologists are trying to "build a slingshot," she says, "and there are people out there talking about, oh, no, what happens if they move on to nuclear weapons?"

Other biohackers argue that Mother Nature is more likely than any home hobbyist to create dangerous new pathogens. They cite the current A/H1N1 "swine flu" virus, which is a made-in-the-wild brew of human, bird and pig influenzas. Mackenzie Cowell, a founder of DIY Bio, says members aim to do good and are committed to working safely.

The movement has made big strides recently thanks to the commercial availability of synthetic DNA. This genetic material, normally found inside the nucleus of cells, can now easily be purchased online. That provides any amateur with the ingredients for constructing an organism.

Dan Heidel, a 32-year-old aerospace employee and former molecular biology student in Seattle, has rented a 300-square-foot space in an old warehouse to make genetically modified algae that he thinks might be useful in producing cheap biofuels. The space is stuffed with $20,000 worth of secondhand lab equipment he bought on eBay, including, he says, centrifuges, a liquid-nitrogen storage unit and "a bunch of stuff for water purification."

"It's frankly a run-down, piece-of-crap warehouse, half falling apart," says Mr. Heidel. But "the landlord basically stays out of everyone's hair as long as they don't burn the building down, which is really pretty ideal."

The easy availability of synthetic DNA is at the heart of some scientists' concerns. The National Science Advisory Board for Biosecurity, a government body, has recommended that companies selling DNA be required to screen all orders for signs that the buyers might have nefarious intent. Some biologists argue that anyone wishing to custom-make new organisms, even if it's just glow-in-the-dark bacteria (a popular trick among biohackers), should have to get a license first.

Currently, regulation of labs like these is murky. It's unclear what agency, if any, is responsible.

So far, most garage biologists playing around with synthetic DNA are simply adding a gene or two to an existing organism, a fairly standard scientific practice involving some test-tube mixing, and not something biosecurity experts are very worried about. But technology promises to allow the creation of entire organisms from scratch -- something academics are aiming to do in university labs -- and that has some experts worried.

A senior official in the FBI's Weapons of Mass Destruction Directorate says the bureau is working with academia and industry to raise awareness about biosecurity, "particularly in light of the expansion of affordable molecular biology equipment" and genetic databases.

George Church, a professor of genetics at Harvard Medical School, says anyone using synthetic DNA should have to have a license, including garage biologists. But he says he's not too concerned by the current home hobbyists. "The younger generation need something they feel they can do, in the same sense that my generation was inspired by NASA and home chemistry kits," he said.

Phil Holtzman, a college student and part-time DJ at dance parties in Berkeley, Calif., is growing viruses in his attic that he thinks could be useful in medicine someday. Using pipettes and other equipment borrowed from his community college, he extracts viruses called bacteriophage from sewage and grows them in petri dishes. Mr. Holtzman's goal: Breed them to survive the high temperatures of the human body, where he thinks they might be useful in killing bad bacteria.

He collects partly treated sewage water from a network of underground tunnels in the Berkeley area, jumping a chain-link fence to get to the source. But Mr. Holtzman says his roommates are "really uncomfortable" with him working with sewage water, so he's trying to find another source of bacteriophage (Wall Street Journal, 2009).

Title: Mass. Co. Receives Anthrax Hoax Letters
Date: August 16, 2010
Source: Bio Prep Watch

Abstract: Raytheon last week joined a growing list of companies to receive threatening envelopes in the mail that contained a suspicious white powder and a note mentioning the terror group Al-Qaeda.

Although the Raytheon office is located in Waltham, Massachusetts, the two envelopes are believed to be connected to a series of 25 similar bioterror hoaxes that have occurred predominantly in North Texas over the last ten days, according to NECN. In the Dallas area cases, two Raytheon offices were targeted.

Other victims of the hoaxes include elementary schools, churches, mosques, and aeronautics and technology companies like Raytheon. In all of the cases, the white powder was tested by the FBI and found to be innocuous. In at least some of the cases, the powder was identified as cornstarch.

The envelopes have all had a postmark from North Texas, a similar return address and contained a single typed sentence. An FBI official told NECN that the letters, containing a single sentence, make no sense, but that they match up with over 200 letters that were sent to governor's offices and U.S. embassies in 2008.

The FBI said that the letters mentioned the terror group Al-Qaeda, but noted that they were not well-articulated, so their meaning remains undetermined.

Postal officials say that since the 2001 anthrax scare, all mail is scanned for biohazards. Suspicious packages, however, still require precautions and cause disruptions (Bio Prep Watch, 2010).

Title: Terror Drill In America's Oldest Subway To Test Odourless Gas
Date: August 20, 2010
Source: Times of India

Abstract: Non-toxic and odourless gases will be released in Boston's subway tunnels beginning today in a move aimed at determining how chemical and biological agents would spread through the metro system in a terror attack.

In order to collect data on the behaviour of airborne contaminants, scientists will releas inert, odourless gas and particle tracers into the city's MBTA (Massachusetts Bay Transportation Authority) subway system, the oldest subway system in the US.

Scientists will study the ways to minimise the impact of such an assault. Particle and gas concentrations will be sampled in more than 20 stations and in subway cars covering the entirety of the underground portion of the subway.

"While the deliberate release of chemical or biological agents is of primary concern, the study will also help researchers understand airflow characteristics for smoke or unintentional chemical spills in developing evacuation, ventilation, and other incident response strategies," the MBTA said in a statement.

The information will also help guide the design of next generation chemical and biological agent detection systems. The tests are part of the anti-terror strategies put in place since the September 11, 2001 terror attacks.

Authorities thwarted an al-Qaida-sponsored plot to attack New York City subways last September.

The study would allow the researchers to test the effectiveness of proposed countermeasure and

response strategies.

"The purpose of the study is to gather data on the behaviour of airborne contaminants if they were to be released into the subway.

This is part of the Department of Homeland Security's ongoing commitment to preparedness and the shared responsibility of protecting the nation's critical infrastructure," the MBTA added.

Researchers with electronic monitoring devices and other scientific equipment will be conducting these tests through August 20-27, while the Department of Homeland Security continues a scientific study of airflow throughout the underground portion of the subway system (Times of India, 2010).

Title: Homeland Security To Test Biological Sensors In MBTA Tunnels
Date: April 30, 2012
Source: CBS News

Abstract: The Department of Homeland Security (DHS) will be releasing bacteria into the MBTA tunnels to test the safety of the subway.

The DHS has installed sensors in the MBTA system to detect biological agents and they've been testing to see how the air moves.

Now they want to release particles in the tunnels to see how well the sensors work.

The tests will be held at stations in Cambridge and Somerville.

Federal officials say they test the subway sensors by releasing dead bacteria called B-subtilis. They say it is used in food supplements, has been rigorously tested and has no adverse health effects for low exposure in healthy people.

The tests will be held during the off hours this summer, likely overnight. As part of the legal process, a hearing will be held May 16, from 5:30-7:30pm at the Cambridge YMCA in Central Square. The public will be able to voice concerns and comments.

READ: DHS Test Summary

While the systems are being evaluated, Massachusetts public health officials will be working closely with DHS and the MBTA to monitor the results. The MBTA and DHS are coordinating these efforts with the Massachusetts Department of Public Health, the Cambridge Public Health Department, and the Somerville Health Department, with support from the Massachusetts Emergency Management Agency (CBS News, 2012).