The Risk of Bioterrorism & BioWarfare

Dr. Bob Kadlec
The Dr. Strangelove Moment: “General Turgidson--For All The Hype—Did They Work?”

“Biological Weapons in the hands of hostile countries posed a potential strategic threat to the U.S.”
USG Assessment November 1969

“If the pilot's good, see, I mean if he's reeeally sharp, he can barrel that baby in so low... oh you oughta see it sometime. It's a sight. A big plane like a '52... varrooom! Its jet exhaust... frying chickens in the barnyard!”
Who Said This?

• Development of agents for BW is possible... without vast expenditures of money or the construction of huge facilities...
• Development of BW may proceed under the guise of legitimate medical research.
• BW agents may be produced that are more virulent, overwhelming existing defenses.
• Expenditures should be viewed in light of the harm that might come to an unprepared America through a sneak attack
• Until proven (or disproven), BW will remain real possibility and cannot be discounted
World War II: Biological Warfare’s Dr. Robert Oppenheimer:

George W. Merck
Circa 1946
Difference Between Merck and Oppenheimer
What Did Not Happen with BW at the End of World War II
The 1960’s: The “Golden Era” of U.S. BW

- 1950’s was slow incremental progress
- 1962: SecDef and JCS approved validating tests looking for non-nuclear alternatives
  - 46 field trials with live agents and simulants
- 1962: Cuban Missile Crisis and “Marshall Plan”
  - SEB, VEE and Q Fever cocktail
- 1963-1968: 7 Large Area Coverage (LAC) Atmospheric tests
  - 1963 Nuclear Test Ban Treaty
- 1965: Shady Grove: liquid tularemia
- 1966: Red Cloud: Dry powdered tularemia
- 1968: Speckled Start: Dry SEB
- 1960’s Vulnerability (Covert) 69 BW tests
- 1969: Nixon renounces BW and terminates U.S. offensive BW program
  - DoD destroyed 71,696 M-2 Dual agent filled munitions (Sec Def Memorandum July 6, 1970)
1970’s-1980’s: Offensive Biological Warfare Activities of the Former Soviet Union

- U.S. Intelligence: 1989
  - Musings of Former Director of NSA Lieutenant General William Odom
    - Trying to make sense of the Soviet Union’s intense interest in biology
- Defections of Paschenik & Alibekoff
  - Initially discounted because of the scope and scale
  - Bill Patrick key to validate their claims
1990’s: Near Miss in the Middle East
Coalition Force Disposition: January 1991
Prevailing Seasonal Atmospheric Conditions
January 1991
Jan 1991 Gulf War Threat: Aerial Dispersion of Anthrax Simulant
Downwind Hazard Secondary to Line Source Release

Coalition Forces
January, 1991

Effects on Downwind Personnel

- > 90% Lethality
- > 50% Lethality
- > 10% Lethality

Number US Personnel
320,000

Kilometers
50 0 50 100 150 200

Kuwait City
Al Jubayl NAF
King Abdul Aziz NB
King Fahd Intl
Dhahran
Shaikh Isa AB
Doha
Quatar

+ Riyadh
+ Al Kharj
+ KKMC
+ Doha
“Terrorism is coming. I told the Americans a long time before August 2nd (1990) and told the British as well, I think Hamed was there keeping the meeting minutes with one of them, that in the future there will be terrorism with weapons of mass destruction. What prevents this technology from developing and people from smuggling it? All of this, before the stories of smuggling, before that, in 1989. I told them “in the future, what would prevent that we see a booby trapped car causing a nuclear explosion in Washington or a germ or a chemical one?”
1995: Risk of Bioterrorism from Radicalized Groups
Aum Shinrikyo Foreshadowed the Future

- As early as 1990 began producing biological agents and conducting attacks
  - Botulinum toxin
  - Cholera
  - Anthrax
  - Q Fever
- Efforts to genetically confer virulence to anthrax vaccine strain
  - Several attempts to disseminate anthrax, unsuccessfully
- Sent team to Zaire to collect ebola virus in 1993
- After failing in several attempts to disseminate biological agents shifted to the development and use of nerve agents (Sarin) in attacks on March 20, 1995
Perspectives on the Risk from Bioterrorism from a Terrorist

"Acquiring Weapons of Mass Destruction (nuclear and strategic biological weapons) for the defense of Muslims is a religious duty"

Osama Bin Laden

Leader of Al Qaeda

1998
What is the Risk of Bioterrorism from Radicalized Groups?
Al Qaeda and Others: History Foreshadows the Future

Al Qaeda creates bioterrorism program 1999: Prior to 9-11-2001

- Unknown to U.S. Intelligence
  - Decision by Al Qaeda leadership to acquire strategic biological weapons
    - Effort overseen by Dr Zawahiri Egyptian physician and Bin Laden Deputy
    - Inspiration came from TV appearance by U.S. Secretary of Defense
  - Construction of bioterrorism laboratory in Kandahar Afghanistan
  - Al Qaeda was planning another 9-11 like plot using anthrax for a mass casualty attack against the U.S.
  - Late 2002, early 2003 attack on New York subway with cyanide cancelled by Zawahiri for “something better”

No indication that Al Qaeda has changed their strategic intent

- Others may be pursuing similar course

Key Finding: Al Qaeda took part in joint development of WMD with Jemaah Islamiyah
Mr. Rolf Mowatt-Larssen is the former Director of Intelligence and Counterintelligence at the U.S. Department of Energy and served for 23 years as a CIA operations officer and chief of the WMD Department in the Counter-terrorism Center.

“Terrorists are more likely to be able to obtain and use a biological weapon that a nuclear weapon. The acquisition of deadly pathogens and their weaponization and dissemination in aerosol form, would entail fewer technical hurdles that the theft or production of weapons-grade uranium or plutonium and its assembly into an improvised nuclear device.
2001: Bioterrorism is No Longer Domain of Groups Individuals Now Can Conduct Attacks: BioCrimes

2001 Anthrax letters was the work of one man

- Capable researcher with access to technology
- Motivated not by ideology but by mental illness
  “Attacks” intended to scare not kill
- Had contents of one envelop been dispersed
  in subway system hundreds maybe thousands could have died

Little stands in the way of a homicidal scientist with skills in microbiology or virology

Promoting bio-responsibility central to lower but not eliminate risk

- Bio-responsibility : Ethical conduct, safe and secure practices
2008: WMD Commission Assessment

“Only a thin wall of terrorist ignorance and inexperience now protects us.

“The Commission believes that unless the world community acts decisively and with great urgency, it is more likely than not that a weapon of mass destruction will be used in a terrorist attack somewhere in the world by the end of 2013.

The Commission further believes that terrorists are more likely to be able to obtain and use a biological weapon than a nuclear weapon. The Commission believes that the U.S. government needs to move more aggressively to limit the proliferation of biological weapons and reduce the prospect of a bioterror attack.”
“The Intelligence Community judges that lone actors abroad or in the United States—including criminals and homegrown violent extremists (HVEs) inspired by terrorist leaders or literature advocating use of CBR materials—are capable of conducting at least limited attacks in the next year, but we assess the anthrax threat to the United States by lone actors is low.”

General James Clapper, Director National Intelligence Testimony before Congress January 31, 2012

“Only a veil of arrogance protects from a catastrophic incident”
State department quietly warning region about Syrian WMDs
By Josh Rogin, Foreign Policy
Posted Feb. 24, 2012, at 10:29 p.m.

WASHINGTON — The State Department has begun coordinating with Syria’s neighbors to prepare for the handling of President Bashar Assad’s extensive weapons of mass destruction if and when his regime collapses.

“This week, the State Department sent a diplomatic demarche to Syria’s neighbors Iraq, Jordan, Lebanon and Saudi Arabia, warning them about the possibility of Syria’s WMDs crossing their borders and offering U.S. government help in dealing with the problem, three Obama administration officials confirmed. For concerned parties both inside and outside the U.S. government, the demarche signifies that the United States is increasingly developing plans to deal with the dangers of a post-Assad Syria, while simultaneously highlighting the lack of planning for how to directly bring about Assad’s downfall…….

In addition to the danger of proliferation, there is a concern that Assad could actually use his WMDs if his situation becomes desperate.”
Panetta, Dempsey warn of Syria’s bioweapons
Published on March 9, 2012 by Bryan Cohen

WASHINGTON — Top U.S. military officials spoke on Wednesday about Syria’s extensive biological and chemical weapons stockpile and its sophisticated air defenses as a strategic reality check to the demand for U.S. military action.

Panetta said that the situation is dissimilar to what the U.S. faced in Libya because Syria’s air defenses are five times more sophisticated and its biological and chemical weapons stockpile is 100 times larger. In addition, attacks could lead to many unintended deaths.

“We also need to be alert to extremists,” Dempsey said, according to Associated Press. “(In addition to other hostile actors, including Iran which) has been exploiting the situation and expanding its support to the regime. And we need to be especially alert to the fate of Syria’s chemical and biological weapons. They need to stay exactly where they are.”
February 2, 2009

Al-Jazeera: Kuwaiti Professor Praises bioattack on White House

“9-11 will be small change in comparison”

Dr. Abdallah al-Nafisi a Leader in the Islamic Movement
Earned his Doctorate from Oxford University

“Four pounds of anthrax… carried by a single fighter through the tunnels from Mexico… can kill 330,000 Americans.”

Google: Kuwaiti Professor Anthrax
few nonstate actors with a history of acting against U.S. interests have developed armed drones.

Among the few groups that have used drones, the leader is Hezbollah, which has flown the Iranian-supplied Abibil that reportedly boasts an eighty-eight-pound explosive triggered by crashing the drone into a target.

Given that Hezbollah reportedly has over sixty thousand rockets and missiles of varying degrees of accuracy, drones would provide little additional attack capability.
Other nonstate actors could easily carry out similar terrorist attacks with explosives-laden drones, but that would inflict little damage.

In July 2012, a U.S. citizen plotted to attack the Pentagon and U.S. Capitol with three remotely piloted aircraft, ranging from sixty to eighty inches in length, with a wingspan between forty-four and sixty-three inches. Each of the drones would have been directed to their targets via Global Positioning System (GPS) coordinates laden with five pounds of homemade explosives...

Given their size, weight, and power limitations, primitive drones like those sought in July 2012 could become more prevalent in domestic terror attacks and against U.S. bases or diplomatic outposts abroad.

Moreover, the United States does not face a plausible or imminent threat of armed drone attack on the U.S. homeland.

| Number that will need antibiotic treatment | 1.9-3.4 M |
| Number of illnesses                      | ~450,000  |
| Number of deaths                         | ~380,000  |
| Decontamination                          | City wide |
| Projected Economic Cost                   | >$1.8 T   |
Today one man can make war. A lucky bio buffoon could kill 400,000 people.

Dr. Joshua Lederberg

Nobel Laureate
Comparison of Casualty Producing Potential

Nuclear, Chemical and Biological Agents

USG Assessment: Biological Agents represent a serious & distinct class of weapons
## 1971 Smallpox Epidemic in Aralsk, Kazakhstan & the Soviet Union Biological Warfare Program

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### The Challenge of Catastrophic Bioterrorism

#### Past Experience: 2001 Anthrax Attacks

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#### Current Concern: Aerosol Release

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1 gm via letters

1-2 kg via cropduster