WMD Terrorism

An Update on the Recommendations of the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism

The Aspen Institute Homeland Security Group's WMD Working Group

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The bipartisan Congressional Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism (WMD Commission) determined in December 2008 that WMD terrorism is a continuing and serious threat. The Commission further concluded that it is more likely that terrorists would obtain and use a biological rather than a nuclear weapon. At the request of Homeland Security Secretary Janet Napolitano, the Aspen Homeland Security Group's WMD Working Group (AWG) has considered the current terrorist threat associated with these weapons, U.S. readiness to address the threat, and proposals to strengthen preparedness.

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THE TERRORIST THREATS

The Biological Threat

Assessing the Biological Threat

Biological weapons—pathogens used for hostile purposes—are different from any other category of weapons. Bioweapons are perhaps the ultimate asymmetric weapon. A briefcase filled with high-quality dry-powdered agent, such as powdered anthrax spores, could contain a sufficient quantity to attack a large city.

The consequences of such an attack were described in a 2009 National Security Council document:

> The effective dissemination of a lethal biological agent within an unprotected population could place at risk the lives of hundreds of thousands of people. The unmitigated consequences of such an event could overwhelm our public health capabilities, potentially causing an untold number of deaths. The economic cost could exceed one trillion dollars for each such incident. In addition, there could be significant societal and political consequences that would derive from the incident's direct impact on our way of life and the public's trust in government.[1]

Any nation with a developed pharmaceutical industry has the capability to produce potent "military-grade" bioweapons. While non-state actors may not be able to produce weapons of this sophistication, there is considerable evidence they can produce bioweapons that could approach the standard of a WMD. Thus an act of bioterrorism could produce enormous economic and social-psychological consequences while falling short of the WMD threshold.

Beginning a week after the jetliner attacks in 2001, about a half-dozen letters containing anthrax spores were mailed to journalists and politicians. Four letters with spores and threat messages eventually were recovered and all were postmarked Trenton, NJ. At least 22 people had become infected, five of whom died. But scores of buildings had also become contaminated with spores and more than 30,000 people who were deemed at risk required prophylactic antibiotics.[2]

While the number of infected victims was minimal, millions of other citizens were fearful, many of them anxious about opening their own mail. Tens of thousands of specimens of white powder were processed; numbers of buildings were evacuated in cities throughout the country on the suspicion that powder found on the premises might

be anthrax. Moreover, the casualty count could have been far greater if the bio-agent had been resistant to antibiotics or if instead of six letters, 600 had been sent.

A prime lesson learned from the anthrax letters incident is that a single individual, using standard laboratory equipment and procedures, can terrorize an entire nation.

The Growing Threat of Bioterrorism

The AWG recognizes that the bio-threat remains undiminished:

- Al Qaeda's efforts to develop an anthrax weapon were unsuccessful, but neither is there evidence that the organization's bio-weapons ambitions have diminished. Ayman al Zawahiri, who led the biological program, is currently head of al Qaeda.
- The threat of bioterrorism is not limited to any particular nation or terrorist organization. Thus, the elimination of any regime or terrorist organization will not eliminate the threat.
- The risk of bioterrorism is a function of intent, capability, and vulnerability.
- The procedures and equipment required to develop bioweapons are dual-use and readily available.
- The availability of pathogens for use as bioweapons is ubiquitous, as effectively demonstrated in a recent study.[3]
- The US government has limited ability to reduce intent of hostile actors and virtually no ability to reduce the capability of our enemies to produce such weapons.
- Therefore, our primary defense is the ability to respond.
- In its final report, the WMD Commission concluded that the best strategy for biodefense was improving the ability to respond. Rapid detection and diagnosis, adequate supplies of medical countermeasures and the means to rapidly dispense them, and surge medical capacity are among the critical elements required for effective response.
- While bioattacks cannot be entirely prevented, proper response can prevent an attack from becoming a catastrophe.
- The long-range strategy is to develop protective and response capabilities that would minimize the effect of a bioattack and thus remove bioweapons from the category of WMD.

Although spending on biodefense was ramped up after the anthrax letters of 2001, the sense of urgency has receded and bio-preparedness has suffered. Many experts worry that complacency and shrinking budgets have left the nation under-prepared.

In October 2011, the Bipartisan WMD Terrorism Research Center, led by former Senators Graham and Talent, released a report card on America's bio-response

capabilities. This comprehensive report was guided by a dozen of the nation's top biodefense, public health, and medical experts. The report assessed seven critical categories of response across six levels of attack—ranging from small-scale (such as the anthrax letters of 2001) to a full-blown global crisis with the potential for millions of illnesses and/or deaths. Weakness in preparedness for a large-scale bio-event was evident by deficiencies in a range of capabilities including diagnosis, attribution of cause, availability of medical countermeasures, and medical management. (Each of these categories received a grade of D or F, meaning they met few or none of the analysts' prescribed expectations.)[4]

The Nuclear Threat

Assessing the Nuclear Threat

Assessing the threat posed by terrorist acquisition of a nuclear bomb is not easy. Unlike chemical, biological, or radiological weapons, which can be used in either small-scale or large-scale attacks (with small-scale attacks being more likely), a nuclear bomb can only be a weapon of mass destruction.

Acquisition of a nuclear weapon through fabrication of an improvised device or theft of an existing weapon and circumvention of security measures is far more challenging than the acquisition of other unconventional weapons. But if terrorists could obtain the necessary quantity of fissile material and detonate a nuclear device, the consequences would be catastrophic in terms of lives lost, structural damage, and psychological effects. Although a targeted nation could survive a single nuclear explosion, the attack would set off a terrible chain of events. A post-nuclear-terrorism world would be a dismal and very different place.

Thus far only three non-state groups appear to have engaged in serious efforts to acquire a nuclear capability—Aum Shinrikyo in Japan, Chechen rebels in Russia, and al Qaeda. The fact that these three groups all emerged in the 1990s allows an inference that contemporary terrorist groups may be more likely to go nuclear.

Al Qaeda's Nuclear Project

Of the three groups, al Qaeda seemed the most determined to acquire nuclear weapons. Al Qaeda terrorists attempted to purchase fissile material or what they believed were nuclear weapons on at least two occasions, once in Sudan and later in Afghanistan. Osama bin Laden persuaded several Pakistani nuclear scientists to come to Afghanistan to discuss how an improvised nuclear device might be fabricated. Numerous news stories after 9/11 suggested that al Qaeda already had nuclear weapons, and al Qaeda's leaders apparently claimed to have acquired them, although all such claims have proved to be

without substance. But al Qaeda did obtain religious rulings allowing it to kill millions of Americans, which some analysts interpret as justifying its eventual use of nuclear weapons.

At some point in the last decade, the organization's nuclear weapons project turned from an actual—albeit unsuccessful—acquisition effort to a propaganda program calculated to excite its followers and frighten its foes. And that effort was successful, although that does not negate the likelihood of a continuing ambition to acquire a nuclear device.

In intelligence and policy circles, worries about al Qaeda's nuclear efforts, especially from late 2001 to 2003, tended to be exaggerated. In retrospect, assumptions at that time revealed a lack of good intelligence regarding al Qaeda's capabilities.

There are no indications that al Qaeda's leadership or any of its regional affiliates are currently pursuing acquisition of a nuclear capability. Its leaders must devote their attention to survival. However, al Qaeda is historically opportunistic. A weapon or fissile material on offer, perhaps in Russia, or, more likely, a chaotic situation in Pakistan could create a new opportunity.

The widespread public alarm created by al Qaeda's nuclear efforts suggests that the idea of nuclear terrorism will almost certainly be on the minds of tomorrow's terrorists. At the same time, the relentless pursuit of al Qaeda could provide a disincentive for others who might be considering similar efforts.

Nations of Concern

If terrorists are unlikely to fabricate or steal nuclear weapons, might hostile nations secretly provide terrorists with such weapons to carry out deniable attacks against their foes? Many analysts see this as one of the dangers posed by Iran's nuclear program.

Iran's suspected efforts to acquire nuclear weapons does increase the danger of nuclear terrorism, although perhaps not directly. It is difficult to foresee Iran relinquishing operational control by turning a nuclear weapon over to Hezbollah or any other terrorist protégé. Al Quds remains Iran's operational arm and almost certainly would never hand over a nuclear device to another party.

If Iran had nuclear weapons, its arsenal would pose a more insidious threat. Even perceived possession could increase Iran's strategic influence. But it could also become a strategic liability by making Iran a likely target if, for example, an incident of nuclear terrorism were to occur. Because elements of Iran's nuclear program are clandestine, it is not possible for the outside world to have confidence in its security measures. Also, while Iran's government has been stable for the past three decades, internal rivalries and political divisions remain.

Further, a presumed Iranian nuclear capability would encourage other countries in the region to follow suit, leading to nuclear proliferation in a turbulent part of the world. Countries could seek shortcuts to acquisition, using clandestine networks or attempting to purchase weapons from those with existing arsenals. Intelligence operations may not be geared to look for novel nuclear acquisition routes other than "mini-Manhattan Projects" or new AQ Khan networks.

It also seems unlikely that North Korea would turn over its nuclear weapons to foreign terrorists. In past terrorist attacks, North Korea has relied on its own operatives. The government's record of exporting advanced weapons and nuclear technology for commercial reasons, however, is a reason for serious concern. A collapse of the North Korean state would prompt alarm about the disposition and control of its nuclear arsenal.

Current trends in Pakistan are worrisome. Its political situation borders on chaos, and the country is infested with violent extremists, including Taliban, the Haqqani network, and Lashkar-e-Taiba, as well as the remnants of al Qaeda's central command. Some of these groups operate under the influence of Pakistan's intelligence services. In addition, religious radicalization seems to be spreading throughout the country, affecting even the officer corps of the army and raising questions about Pakistan's long-term stability.

Despite Pakistan's military commanders' assurances that the country's nuclear arsenal remains secure, political turmoil and attacks on major military targets fuel continued concern. One can easily envision scenarios in which terrorists, rogue elements in the military, or combinations of the two seize a nuclear weapon or some component, such as a fissile core. Under such circumstances, the situation would be unclear and loyalties uncertain.

Further, it is unlikely that Pakistani commanders' first action would be to summon foreign intervention to secure their nuclear arsenal. In any case, how confident can anyone be that the United States could do anything effective in time?

The Threat of a "Dirty Bomb"

Like a chemical or biological weapon, a radiological dispersal device (RDD) can be used in either a small-scale or large-scale attack, though the former is more likely. Unless widespread and at high levels, radiation exposure is unlikely to cause extensive and imminent illness or death. Thus, a radiation release is more likely to result in anxiety and disruption than numerous casualties. The acquisition and dispersal of small quantities of radioactive materials such as cesium and cobalt, which are regularly used in medical and industrial activities, are far less technologically challenging than building and detonating a nuclear bomb.

It is, therefore, somewhat surprising that terrorists have not taken this path. Only the Chechens have used a radiological weapon, and they did not detonate it to disperse radioactive material. Rather, they announced its presence to the news media simply to foster terror. While not capable of producing large numbers of casualties, an RDD would be capable of producing major economic, social, and psychological disruptions.

READINESS

The Biological and Nuclear Weapons Challenges

The nation is better prepared in several areas for a bio-event than before 2001. Methods of detecting potential bio-agents have improved, as has awareness of the bio-threat among health and security agencies. But levels of bio-preparedness vary widely from community to community.

Preparedness for a medium- or large-scale nuclear attack is even more daunting. Such an event would result in massive death and destruction and prompt depressing psychological effects throughout the population. Some of these consequences could be mitigated with response planning, though preparedness explicitly for a nuclear detonation is currently minimal.[5] Meanwhile, it is necessary to restate the danger of nuclear proliferation and fully to endorse efforts to prevent the spread of these weapons. In this regard, the AWG notes the bi-partisan imperative that Iran must be prevented from acquiring nuclear arms.

Overall Assessment

An assessment of readiness to address any large-scale WMD incident—whether chemical, biological, radiological, or nuclear—suggests deficiencies in three main areas:

1. Response Resources

In the event of a domestic catastrophic event, such as the detonation of a nuclear weapon, the Department of Homeland Security would be the lead federal agency for consequence management.[6] However, in a severely degraded or contaminated environment where many local responders might be among the casualties, the Department of Defense (NORTHCOM and the National Guard operating in either Title 32 or Title 10 status) would likely be called upon to provide most of the personnel for the initial response.[7] But the 2010 Quadrennial Defense Review canceled most of NORTHCOM's WMD response capabilities.[8]

In addition, current DOD planning calls for the termination of the US Marine Corps' Chemical Biological Incident Response Force (CBIRF)—a core NORTHCOM capability—no later than 2017.

Accordingly, DHS, and state and local authorities, may be expecting more help from DOD than could be delivered in a timely manner. Thus, DOD may have far less WMD response capability (fewer resources with slower delivery) than some might have assumed.

Federal funding through the Department of Health and Human Services (HHS) for state and local public health and medical response capabilities has been substantially reduced. The result has been negation of much of the progress made since 9/11 and degradation of capabilities through the National Disaster Medical System. Additionally, Congress's failure to reauthorize the Pandemic and All-Hazards Preparedness ACT (PAHPA) threatens efforts to develop, produce, and stockpile necessary medical countermeasures. It should be noted, however, that another recent HHS initiative does seek to hasten the development of medical countermeasures. [9]

2. Response Plans

Several federal agencies have developed initiatives to address potentially catastrophic domestic WMD events. To the extent that such plans exist, they are not yet integrated into a coordinated federal whole. Moreover, there is almost no planning that realistically incorporates federal, state, local and private sector resources into a unified WMD response. Readiness varies from department to department and from state to state. As a result, we are strategy rich and plan poor. Effective readiness requires that detailed planning be brought to a level of integrated and timely tactical execution.

3. Exercises

Although consequence management exercises have improved in recent years, they remain insufficiently rigorous and challenging. In fact, NORTHCOM has never held an exercise that employs a full defense WMD response force (DCRF,[10] with all 5200 personnel). The DOD has produced a summary of 19 missions that it might be expected to perform in response to a pandemic outbreak (or other domestic WMD event). Among them are intelligence, force protection, surge medical capability, patient transport, communications support, mortuary affairs, and continuity of operations.[11]

But few of these missions have been tested in a realistic training environment. For DOD and the entire federal interagency structure, exercises should involve a larger number of personnel, deployed in a challenging field environment. Remediation of identified deficiencies should be an essential goal of rigorous After Action Reviews.

SOME PROPOSED ACTIONS

1. Regarding WMD, place a premium on assessing capabilities and intent both of states and terrorist organizations.
2. Emphasize that despite the weakening of al Qaeda's structure, terrorist interest in WMD remains undiminished.
3. Underscore the importance of public-private collaboration and the need to augment resources for public health and medical response capabilities.
4. Need to develop and test operational plans.
5. Recommend onsite presence at large hospitals of a reference person with knowledge about select agents.
6. Need to fill the current void in planning, preparedness, and response regarding the effects of a nuclear detonation.
7. Need to keep leaders and opinion makers attentive to these issues.
8. Consider highlighting the "black swan"—impact of the highly improbable—as a symbolic means to spotlight WMD terrorism concerns. Black swan theory is already salient in several disciplines (financial markets, psychology, mathematics, meteorology).[12]
9. Congress should reauthorize the Pandemic and All-Hazards Preparedness ACT (PAHPA).

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[1] *National Strategy for Countering Bioterrorism*, National Security Council, November 2009: 1.

[2] Daniel B. Jernigan, et al. "Investigation of Bioterrorism-Related Anthrax, United States, 2001: Epidemiologic Findings." *Emerging Infectious* Diseases. 2002; 8(10): 1019-28.

[3] Kunal J. Rambhia, Abigail S. Ribner, and Gigi Kwik Gronvall, "Everywhere You Look: Select Agent Pathogens**,"** *Biosecurity and Bioterrorism*. 2011; 9 (1). www.upmc-biosecurity.org/website/resources/publications/2011/2011-03-03-select_agent_pathogens.html

[4] The Bipartisan WMD Terrorism Research Center's Report Card. WMD Center: Washington DC, October 2011. http://www.wmdcenter.org

[5] Rad Resilient City, Fallout Preparedness Checklist. Center for Biosecurity of UPMC, 2011. http://www.radresilientcity.org/checklist/index.html

[6] Homeland Security Act of 2002 and related presidential directives.

[7] As provided for in the Stafford Act of 1988, these forces would be deployed in support of FEMA.

[8] US Department of Defense, Quadrennial Defense Review Report (February 2010), 19.

[9] HHS Creates New Centers to Develop, Manufacture Medical Countermeasures. News Release, June 18, 2012. http://www.hhs.gov/news/press/2012pres/06/20120618a.html.

[10] DCRF refers to the US Army's Defense Chemical, Biological, Radiological, and High-Yield Explosive Response Force.

[11] US Department of Defense, "19 DoD Pandemic Planning Tasks," (unpublished document, Office of the Assistant Secretary of Defense for Homeland Defense & America's Security Affairs, 2006).

[12] Nassim Nicholas Taleb, *The Black Swan: The Impact of the Highly Improbable*. 2nd ed. NY: Random House, 2010.