

**WMD TERRORISM: ASSESSING THE CONTINUED
HOMELAND THREAT**

HEARING

BEFORE THE

**SUBCOMMITTEE ON
COUNTERTERRORISM
AND INTELLIGENCE**

OF THE

**COMMITTEE ON HOMELAND SECURITY
HOUSE OF REPRESENTATIVES**

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WMD TERRORISM: ASSESSING THE CONTINUED HOMELAND THREAT

Thursday, November 15, 2012

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON HOMELAND SECURITY,
SUBCOMMITTEE ON COUNTERTERRORISM AND INTELLIGENCE,
Washington, DC.

The subcommittee met, pursuant to call, at 10:06 a.m., in Room 210, Cannon House Office Building, Hon. Patrick Meehan [Chairman of the subcommittee] presiding.

Present: Representatives Meehan, Long, Higgins, Hochul, and Hahn.

Also present: Representatives Pascrell and Green.

Mr. MEEHAN. The Committee on Homeland Security on Counterterrorism and Intelligence will come to order. The subcommittee is meeting today to hear testimony regarding the on-going threat of terrorism using weapons of mass destruction.

I would like to welcome everyone to today's hearing on the Subcommittee on Counterterrorism and Intelligence. I look forward to hearing from today's expert witnesses from the Aspen Institute Homeland Security Group, who are here to update the committee on the recommendations of the Commission on Prevention of Weapons of Mass Destruction Proliferation and Terrorism. It is also known as the WMD Commission.

I particularly appreciate the witnesses being here today. I have my own personal recollections of having been a United States attorney just a few days after September 11, appointed and being in eastern Pennsylvania, remembering that it was my agencies that responded to the threats in New Jersey initially, when they were dealing with the first threats of anthrax, an appreciation of how significant the impact was on our communities all across that region, all across the United States.

It is easy to forget that just 1 week after the terror attacks, a bioterrorist mailed those letters containing anthrax spores to the offices of several news media and to two United States Senators.

The toxic material infected 22 people and it took 5 lives. Dozens of buildings were contaminated with anthrax as a result of the attack. The decontamination of one postal facility took 26 months and cost \$130 million. The United States Environmental Protection Agency spent some \$40 million to clean up Government buildings in Washington, DC.

In all, at least 17 Post Offices and public offices were contaminated. According to the FBI, damage from the anthrax attacks alone cost \$1 billion. Despite the loss of life, this was a relatively

unsuccessful attack. Had the bio-agent been stronger, had the dispersal of the toxin been more widespread, or had this been a sustained campaign by a terror group or hostile nation state, hundreds of thousands could have possibly been killed, and there would have been untold billions in economic and infrastructure damage.

In 2008, the Congressionally-mandated Commission on Prevention of WMD Proliferation and Terrorism concluded that unless the world community acted decisively and with great urgency, it is likely that a weapon of mass destruction would be used in a terrorist attack somewhere in the world by the end of 2013.

Today that is a big part of what we want to do, is to go back and assess where we are today in light of those predictions.

We know that former al-Qaeda leader Osama bin Laden had called for the development of a deployment of biological weapons upon his death. We also know that al-Qaeda's strategy against us and the West is one of death by 1,000 cuts.

Al-Qaeda would love nothing more than to severely hamper the American economy with a bioterror attack. For instance, just before his death in 2011, American cleric Anwar al-Awlaki was publicly calling for such action, saying that the use of chemical and biological weapons against population centers is allowed and is strongly recommended.

In addition to the al-Qaeda threat, we know of active WMD programs in Syria, Iran, and Pakistan, which could easily be used by hostile governments or passed to allied terrorist organizations in order to threaten the United States.

Considering the political volatility in the Middle East, particularly in Syria, the ability of these nations to properly secure their chemical and biological weapon capabilities for hostile terror groups should also be of paramount concern to us.

The threat of rogue regimes such as North Korea using such dangerous weapons or selling them on the black market to the highest bidder are both security concerns as well.

WMD terrorism is a continuing serious threat to the homeland. Four years after the WMD Commission released its sobering assessment, the time is right for re-analysis to ensure that resources are being targeted wisely.

The Aspen Institute's WMD Working Group has assessed that WMD terrorism is a continuing serious threat to the U.S. homeland. Today's hearing would hear from the institute about where we are and where we need to go.

The report reminds us that some of the building blocks of weapons of mass destruction are appropriately and legitimately used in the United States for medical and other peaceful purposes. So we must also ensure that certain biological, radiological, nuclear, and chemical materials never fall into the hands of domestic terrorists or others who would do us harm.

A host of Government agencies are already working diligently on numerous aspects related to international proliferation and security, as well as security of biological agents here at home.

The intelligence community continues to engage friendly countries in intelligence gathering and sharing regarding bioterrorism, and the Department of Justice performs background checks on peo-

ple who seek to possess certain dangerous pathogens, such as researchers and hazardous material drivers.

The Department of Homeland Security has already played a large role in ramping up the preparedness apparatuses, and since 2004 has spent at least \$70 million building some of the 20 CBRN Risk Assessments.

In March of this year, this committee marked up legislation. I want to particularly recognize Congressman Pascrell for his leadership on this issue in previous Congresses.

That legislation was proposed in order to establish weapons of mass destruction intelligence and information-sharing functions at the Office of Intelligence Analysis at DHS, and to require dissemination of information analyzed by the Department to entities with responsibilities relating to homeland security.

This is a threat that I take seriously, and I know this committee takes seriously as result of a successful CBRN attack and how catastrophic that would be for the homeland if that were to occur.

I look forward to hearing from the distinguished panel.

[The statement of Chairman Meehan follows:]

STATEMENT OF CHAIRMAN PATRICK MEEHAN

NOVEMBER 15, 2012

I'd like to welcome everyone to today's hearing of the Subcommittee on Counterterrorism and Intelligence.

I look forward to hearing from today's expert witnesses from the Aspen Institute Homeland Security Group who are here to update the committee on the Recommendations of the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, also known as the WMD Commission.

THE ANTHRAX ATTACKS OF 2001 AND ITS IMPLICATIONS

It's easy to forget that just 1 week after the terror attacks of September 11, 2001, a bioterrorist mailed letters containing anthrax spores to the offices of several news media and two United States Senators. The toxic material infected 22 people and took 5 lives.

Dozens of buildings were contaminated with anthrax as a result of the attack. The decontamination of one postal facility took 26 months and cost \$130 million. The United States Environmental Protection Agency spent some \$40 million to clean up Government buildings in Washington, DC. In all, at least 17 Post Offices and public office buildings were contaminated. According to the FBI, the damage from the anthrax attacks cost \$1 billion.

Despite the loss of life, this was a relatively unsuccessful attack. Had the bio-agent been stronger, had the dispersal of the toxin been more widespread, or had this been a sustained campaign by a terror group or hostile nation state, hundreds of thousands could have been killed and there would have been untold billions in economic and infrastructure damage.

THE THREAT

In 2008, the Congressionally-mandated Commission on the Prevention of WMD Proliferation and Terrorism concluded that unless the world community acts decisively and with great urgency, it is likely that a weapon of mass destruction will be used in a terrorist attack somewhere in the world by the end of 2013.

We know that former al-Qaeda leader Osama bin Laden had called for the development and deployment of biological weapons before his death. We know that al-Qaeda's strategy against us and the West is one of "death by a thousand cuts," and al-Qaeda would love nothing more than to severely hamper the American economy with a bio-terror attack.

For instance, just before his death in 2011 American cleric Anwar Awlaki was publicly calling for such action, saying, "the use of chemical and biological weapons against population centers is allowed and is strongly recommended."

In addition to the al-Qaeda threat, we know of active WMD programs in Syria, Iran, and Pakistan, which could easily be used by hostile governments or passed to

allied terrorist organizations in order to threaten the United States. Considering the political volatility in the Middle East, particularly in Syria, the ability of these nations to properly secure their chemical and biological weapon capabilities from hostile terror groups should also be of paramount concern for us.

The threat of rogue regimes such as North Korea using such dangerous weapons or selling them on a black market to the highest bidder are both security concerns as well.

TODAY'S HEARING

WMD terrorism is a continuing and serious threat to the homeland. Four years after the WMD Commission released its sobering assessment, the time is ripe for re-analysis to ensure that resources are being targeted wisely.

The Aspen Institute's WMD Working Group has assessed that WMD terrorism is a continuing and serious threat to the U.S. homeland. At today's hearing, we will hear from the Institute on where we are and where we need to go.

This report reminds us that some of the building blocks for weapons of mass destruction are appropriately and legitimately used in the United States for medical and other peaceful purposes. So we must also ensure that certain biological, radiological, nuclear, and chemical materials never fall into the hands of domestic terrorists or others who would do us harm.

DHS WORK

A host of Government agencies are already working diligently on numerous aspects related to international proliferation and security, as well as the security of biological agents here at home.

For instance, the intelligence community continues to engage friendly countries in intelligence gathering and sharing regarding bioterrorism and the Department of Justice performs background checks on people who seek to possess certain dangerous pathogens, such as researchers and hazardous material drivers.

The Department of Homeland Security (DHS) has also played a large role on ramping up the preparedness apparatus and since 2004 has spent at least \$70 million developing more than 20 CBRN risk assessments.

LEGISLATION & CONCLUSION

In March of this year, this committee marked up legislation I proposed in order to establish weapons of mass destruction intelligence and information-sharing functions of the Office of Intelligence and Analysis at DHS and to require dissemination of information analyzed by the Department to entities with responsibilities relating to homeland security.

This is a threat that I take very seriously, as the results of a successful CBRN attack on the homeland would be catastrophic.

I look forward to hearing from this distinguished panel and I now recognize the Ranking Member of the subcommittee Mr. Higgins for any opening remarks he would like to make.

Mr. MEEHAN. I now recognize the Ranking Member of the subcommittee, Mr. Higgins, for any opening remarks that he would like to make.

Mr. HIGGINS. Thank you, Mr. Chairman. Before I provide an opening statement, I would ask unanimous consent for Mr. Pascrell from New Jersey to sit for questioning on this subcommittee hearing.

Mr. MEEHAN. Without objection, so ordered.

Mr. HIGGINS. Thank you, Mr. Chairman, for holding this important hearing. I would also like to thank the witnesses for appearing to testify on our efforts to counter the threat of weapons of mass destruction.

We have been fortunate that a weapons of mass destruction attack has never come to fruition in the United States. The threat from weapons of mass destruction is not limited to any particular organization or nation.

Consequently, we have to be prepared for an adequate response to an attack on all fronts. In 2008, the Commission on Prevention

of Weapons of Mass Destruction Proliferation and Terrorism, the WMD Commission, produced a report entitled "World at Risk."

According to this report, the commission told us that they believe that a terrorist attack would occur somewhere in the world by 2013, and that it is more likely to be an act of biological terrorism. The commission found that American needs to move more aggressively to address our vulnerability to a bioterror attack and it concluded that the best strategy for bio-defense was improving the ability to respond. A potential WMD attack requires that we alter policy and ensure that first responders have the resources that are necessary to be effective on our behalf.

Investments in emergency communications, planning, and response equipment saves lives. The first responder grant programs, important to WMD preparedness, should not be understated and must be provided at adequate funding levels.

Mr. Chairman, as you know, I represent western New York. The first responders of western New York have repeatedly answered the call. They have faced the man-made horrors of Ground Zero and are currently facing the wrath of Mother Nature with assistance with Hurricane Sandy.

To know that the actions of first responders will be critical to preventing a catastrophe in the wake of a potential WMD attack, we should give the Department of Homeland Security incentive to properly fund these programs.

In July, representatives of first responders in western New York testified before this subcommittee. Their testimony indicated that funding for response is crucial to their efforts.

I believe that the WMD Commission and the testimony our witnesses will provide today will underscore that point.

Earlier, this Congress and this committee voted favorably to report H.R. 2356, the WMD Prevention and Preparedness Act of 2012, to the House. This comprehensive legislation addressed the major actions recommended by the WMD Commission and included a range of provisions related to prevention, deterrence, detection, preparedness, response, and recovery.

Along with readiness, information sharing among Federal, State, and local agencies must be strong when it comes to WMD intelligence.

This Congress and you, Mr. Chairman, introduced legislation that strengthened WMD intelligence and information sharing. This legislation, too, was voted favorably by this committee.

Though these two bills are steps in the right direction, there is still more work to be done. First responders need to be fully capable and equipped to handle a WMD attack. This means full funding of State and local grant programs by the Federal Government.

Additionally, coordination needs to be improved among Federal, State, and local and private entities to have a WMD response that is expedient and efficient.

I look forward to the witnesses' testimony today and to hearing how we can work more closely to close the gaps that may exist by providing more resources that we need in order to be prepared for this eventuality.

With that, I will yield back.

Mr. MEEHAN. I want to thank the distinguished Ranking Member for his opening comments.

Mr. HIGGINS. Yes, Mr. Chairman. I would ask unanimous consent to allow Mr. Green from Texas to sit in for questioning as well.

Mr. MEEHAN. Without objection, so ordered.

Welcome, Mr. Green. Thank you for joining us today.

The other Members of the committee are reminded that opening statements may be submitted the record.

Now we are pleased to have two distinguished witnesses before us today at this very important topic. First, I will do each of their biographies.

First, Colonel Randall J. Larsen is the chief executive officer of the WMD Center and also serves as a senior fellow at the George Washington University's Homeland Security Policy Institute.

Colonel Larsen previously served as the executive director of the Congressional Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism.

He created the Nation's first graduate course in homeland security in 1999—you were a little ahead of your time—while chairman of the Department of Military Strategy and Operations at the National War College.

He was one of the first witnesses to testify before the 9/11 Commission. He served as an expert witness before this and other Congressional committees. He retired from the Air Force in 2000, after serving in both the Air Force and Army for a combined 32 years.

His decorations include the Distinguished Flying and Bronze Star.

Dr. Leonard A. Cole is the director of the Program on Terror Medicine and Security at the University of Medicine and Dentistry of New Jersey's Center for Bio-defense. He is also an adjunct professor in the school's Department of Emergency Medicine and the Department of Political Science at Rutgers University, Newark.

Dr. Cole is a noted bioterrorism expert and has written numerous books and articles appearing in professional journals and other media publications. He has testified before Congress on multiple occasions and made presentations to various Federal agencies.

He holds degrees from the University of California, Berkeley, Columbia University, and the University of Pennsylvania's School of Dental Medicine.

Before I begin, I ask unanimous consent to insert in the record the WMD Center's Bio-response Report Card* and the Aspen Institute Homeland Security Group update on the recommendations of the Commission on the Prevention of Mass Destruction Proliferation and Terrorism.

Without objection, so ordered.

[The information follows:]

*The information has been retained in committee files.

STATEMENT OF THE ASPEN INSTITUTE HOMELAND SECURITY GROUP

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, 11/15/2012

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.

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, 5 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 6 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.

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

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

- 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 U.S. 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 fab-

³Kunal 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.

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

ricated. 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 dis-incentive 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 U.S. 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 nec-

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

⁶Homeland Security Act of 2002 and related Presidential directives.

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

⁸U.S. Department of Defense, Quadrennial Defense Review Report (February 2010), 19.

essary 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 5,200 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 on-site 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).

Mr. MEEHAN. So with both witnesses, I appreciate your being here today, the great work that you did on the preparation for the report. We look forward to your testimony.

We always try to appreciate that you will be getting a series of questions. So the extent to which you can try and keep it within the 5-minute time frame; it helps us move the hearing along.

So let me now recognize Colonel Larsen for his testimony.

Mr. COLE. [Off mike.]

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

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

¹¹U.S. 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).

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

Mr. MEEHAN. I am happy to do that. You never tell Gherig that Ruth should bat first.

STATEMENT OF LEONARD A. COLE, DIRECTOR, PROGRAM ON TERROR MEDICINE AND SECURITY, UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY, TESTIFYING ON BEHALF OF THE ASPEN INSTITUTE

Mr. COLE. Thank you so much. Chairman Meehan, thank you so much.

Ranking Member Higgins, distinguished Members of the subcommittee, and if I may add Congressman Pascrell for multi reasons, not least of which are that we are from the same State where, in some manner, this was the central beginning point of the anthrax episodes.

He happens to be a representative of the district right next to mine. So I can just look over the fence and see what you are doing. And doing well. Thank you.

I much appreciate the opportunity to discuss with all of you the new paper entitled "WMD Terrorism," which is being put forth by the Aspen Homeland Security Group's WMD Working Group.

Produced at the request of Homeland Security Secretary Janet Napolitano, it offers an update on recommendations made in December 2008 by the Bipartisan Commission on the Prevention of Weapons Mass Destruction Proliferation and Terrorism, which you have referred to properly as the WMD Commission.

This commission has determined that WMD terrorism is a continuing and serious threat. It further concluded that terrorists were more likely to obtain and use a biological than a nuclear weapon.

The Aspen Working Group paper surveys the current biological and nuclear threats. It reviews our Nation's readiness to address the threat. It lists proposed actions.

As a member of the working group and a co-editor of the paper with Randy Larsen, I am pleased to share with you some of the paper's key determinations.

First, as to the biological threat. The release of a briefcase full of high-quality biological agents, such as powdered anthrax, could place many thousands of people at risk.

The physical, psychological, and economic consequences could be monumental. Any nation with a developed pharmaceutical industry has the capability to produce potent military grade bio-weapons. But as the 2001 anthrax attacks demonstrated, even a few letters containing spores could cause illness and death and terrorize the Nation.

The availability of pathogens for use as bio-weapons is ubiquitous. Although spending on bio-defense was ramped up after 2001 and the anthrax attacks, the sense of urgency has receded. Bio-preparedness has suffered.

Many experts worry that complacency and shrinking budgets, especially for State and local public health departments, has left the Nation under-prepared.

As for the nuclear threat, acquisition of a nuclear weapon through fabrication of an improvised device or theft of an existing weapon 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.

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.

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.

The widespread public alarm created by al-Qaeda and its nuclear efforts suggests that the idea of nuclear terrorism will almost certainly be on the minds of tomorrow's, and I might say today's, terrorists.

The Aspen Working Group underscored the importance of preventing the spread of these weapons and the bipartisan imperative that Iran must be prevented from acquiring nuclear arms.

Finally, the third section of what I will be discussing with you, readiness. Response resources in some areas have diminished in recent years. One example, the 2010 Quadrennial Defense Review canceled most of NORTHCOM's WMD response capabilities.

NORTHCOM, the U.S. Northern Command, is the military's homeland defense command.

Another example, funding through the Department of Health and Human Services for State and local public health and medical response capabilities, has been substantially reduced. Response plans and exercises also fall short of optimal levels.

Planning that realistically incorporates Federal, State, local, and private-sector resources into a unified WMD response is largely absent. Similarly, the consequence management exercises remain insufficiently rigorous and challenging.

NORTHCOM has never held an exercise that employs a full Defense WMD Response Force.

Now all of the comments that I just offered to you are more detailed and elaborated on in the full report, which I believe has been distributed to the committee.

There is a list of proposed actions. I will just offer four of them. The others are spelled out in the larger report. The four that I think are near the top, if not at the top of our concerns, the working group's concerns.

First, regarding WMD, place a premium on assessing capabilities and intent both of state and terrorist organizations. Second, emphasize that despite the weakening of al-Qaeda's structure, terrorist interest in WMD remains undiminished.

Third, underscore the importance of public/private collaboration and the need to augment resources for public health and medical response capabilities. Fourth, Congress should reauthorize the Pandemic and All Hazards Preparedness Act, which I understand versions of have been passed by each house and is due and should be done by way of conference committee, to present as the final act for passage and signature of the President.

Finally, I would like to thank Clark Ervin, who is the director of the Aspen Institute's Homeland Security Group, as well as his

very able staff, and Dr. Randy Larsen, who did a marvelous job in helping to prepare and edit the report which he and I worked carefully with, but absolutely with the major input of virtually every member of our working group.

So thank you, sir.

[The statement of Mr. Cole follows:]

PREPARED STATEMENT OF LEONARD A. COLE

NOVEMBER 15, 2012

Chairman Meehan, Ranking Member Higgins, distinguished Members of the subcommittee, I much appreciate the opportunity to discuss with you the new paper titled *WMD Terrorism* by the Aspen Homeland Security Group's WMD Working Group. Produced at the request of Homeland Security Secretary Janet Napolitano, it offers an update on recommendations made in December 2008 by the bipartisan Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism (WMD Commission).

The WMD Commission had determined that WMD terrorism is a continuing and serious threat. It further concluded that terrorists were more likely to obtain and use a biological than a nuclear weapon. The Aspen Working Group paper surveys the current biological and nuclear threats, reviews our Nation's readiness to address the threats, and lists proposed actions. As a member of the Working Group and co-editor of the paper, I am pleased to share with you some of the paper's key determinations.

Biological Threat.—The release of a briefcase-full of high-quality biological agent, such as powdered anthrax spores, could place many thousands of people at risk. The physical, psychological, and economic consequences could be monumental. Any nation with a developed pharmaceutical industry has the capability to produce potent "military-grade" bioweapons. But as the 2001 anthrax attacks demonstrated, even a few letters containing spores could cause illness and death and terrorize the Nation.

The availability of pathogens for use as bioweapons is ubiquitous. Although spending on biodefense was ramped up after 2001, the sense of urgency has receded and bio-preparedness has suffered. Many experts worry that complacency and shrinking budgets, especially for State and local public health departments, have left the Nation under-prepared.

Nuclear Threat.—Acquisition of a nuclear weapon through fabrication of an improvised device or theft of an existing weapon 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.

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. 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. 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.

The Aspen Working Group underscored the importance of preventing the spread of these weapons and the bi-partisan imperative that Iran must be prevented from acquiring nuclear arms.

Readiness.—Response resources in some areas have diminished in recent years. One example: The 2010 Quadrennial Defense Review canceled most of NORTHCOM's WMD response capabilities. (NORTHCOM, the U.S. Northern Command, is the military's homeland defense command.) Another example: Funding through the Department of Health and Human Services for State and local public health and medical response capabilities has been substantially reduced.

Response plans and exercises also fall short of optimal levels. Planning that realistically incorporates Federal, State, local, and private-sector resources into a unified WMD response is largely absent. Similarly, consequence management exercises remain insufficiently rigorous and challenging. NORTHCOM has never held an exercise that employs a full defense WMD response force.

PROPOSED ACTIONS (SELECTED)

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. Congress should reauthorize the Pandemic and All-Hazards Preparedness ACT (PAHPA).

Mr. MEEHAN. Well, thank you, Dr. Cole, for your testimony. I appreciate that.

I will now recognize Colonel Larsen for your testimony. Colonel Larsen.

**STATEMENT OF RANDALL J. LARSEN, CHIEF EXECUTIVE
OFFICER, THE WMD CENTER**

Colonel LARSEN. Thank you, Mr. Chairman, distinguished Members.

I, too, would like to thank the Aspen Institute, particularly Clark Ervin and his staff, for leading this effort that was in a response to a request from Secretary Napolitano to look at this issue.

My remarks today, however, do not necessarily reflect those of the entire research team convened by the Aspen Institute.

In a recent press conference, Governor Chris Christie described the destruction of the New Jersey shore as unthinkable. Now I am a big fan of Governor Christie, but I think he was wrong. I need to point out his error.

He could have stated the destruction was catastrophic or calamitous. But it was not unthinkable.

Since 2005, the Department of Homeland Security has had a list of 15 events in the National Planning Scenario. It talks about one of a hurricane scenario, of a category four, hitting a major metropolitan area, much like we saw here a few weeks ago, that will kill 1,000 and hospitalize 5,000.

There will be major metropolitan areas that will be severely flooded. There will be structure damage and collapse of buildings, and significant infrastructure damage.

Thankfully, Sandy was only a category one. Because of swift action by governors, and we did evacuate people from those danger zones, we limited death and serious injury.

In other words, Sandy was far from unthinkable. It was far less severe than the National Planning Scenario has told us for 7 years.

My concern, Mr. Chairman and Members of this committee, is that we once again have fallen into that mindset best described by the 9/11 Commission of a failure of imagination.

Most of our homeland security personnel, public health, disaster response, Federal, State, and local level, and I think the Members of this committee understand what is thinkable. You describe it in your opening statements, both the Chairman and the Ranking Member.

I cannot say the same, however, for many other senior leaders on the Hill and some in the administration. As you said in 2008, the WMD Commission concluded an act of bioterrorism was more likely than act of nuclear terrorism.

Senator Graham, Senator Talent, and I stand behind that today. By the way, when that World at Risk said in December 2008 that it was more likely than not there would be a WMD attack somewhere in the world before the end of 2013, that was not just the WMD Commission.

A week later, the director of national intelligence, in response to a question in a speech at the Kennedy School at Harvard, completely agreed with that assessment from the intelligence community.

So in 2001, Senator Graham, Talent, and I and Ms. Lynne Kidder, who is the president of the WMD Center, put together a report card that you submitted this morning.

Mr. Chairman, I tell you, you know, we brought together an incredible team of two dozen of the country's top experts. We had a former deputy commissioner of FDA.

We had the director of disaster medicine at the American Medical Association. We had the former special assistant to the President for bio-defense in both the Clinton and Bush administrations, and many others that worked with us on this.

That is why we thought it was important to introduce that today. We think it is of great value. I will tell you, when you look on page 9 at that report card, that is not a report card that you would want to take home to mom.

We looked at this and we looked at a wide range of attacks, all the way from something small, like you mentioned, of the anthrax, all the way up to pandemic of near-Biblical proportions.

But what we tried to tell the press and what I will tell you today is don't try to do a GPA of all these 70 grades. Don't focus over here in the dark red area because that is the most catastrophic thing, that we could just waste lots of money on.

We said focus our efforts on World at Risk talked about in 2008. Let us go back to those 15 planning scenarios in Department of Homeland Security. The one they all agree is our biggest threat and most likely threat is aerosolized anthrax.

I will tell you, Mr. Chairman, today we still don't have a National plan to respond to an anthrax attack.

I agree and the WMD Center completely agrees with the nine recommendations from the Aspen report. I will add one to it, though, that I think is quite important from our report that we issued at the WMD Center last year.

I know you talked about all these different things. There is intelligence. There is getting our first responders prepared. All important, but got a tough fiscal climate coming up.

It is going to be your job to set priorities. Where do we put the highest priority? I will read you one sentence from this report signed by Senator Graham and Senator Talent: "A bio-response enterprise without adequate medical countermeasures is like an army without bullets. It may look good on the parade ground, but has minimal value for National security."

We are very concerned about the reauthorization of PAHPA, Pandemic and All Hazards Preparedness. If we don't reappropriate the money that we need to that bio-shield program that will get the pharmaceutical industry involved in this, we have very little chance of making progress in bio-response capability.

Once again, I would like to thank Clark Kent Ervin and the staff at Aspen. Once again, it is another great bipartisan thing. Secretary Chertoff and Jane Harman lead that effort over there for the Homeland Security Group.

I like working on bipartisan stuff. I love working with Len. He has done a great job. We are ready for your questions.

Thank you, Mr. Chairman.

[The statement of Mr. Larsen follows:]

PREPARED STATEMENT OF RANDALL J. LARSEN

NOVEMBER 15, 2012

Mr. Chairman . . . I would like to thank you for convening this hearing, and to express my appreciation to the Aspen Institute, in particular, Mr. Clark Kent Ervin, for leading the research and analysis for the report submitted to the subcommittee.

As one of the founding directors of the Bipartisan WMD Terrorism Research Center, my opening statement and responses to your questions will reflect my own opinions and not necessarily those of the entire research team convened by the Aspen Institute.

Mr. Chairman . . . in a recent press conference, Governor Chris Christie described the destruction of the New Jersey shore as “unthinkable.” I like the Governor, but I will nevertheless point out his error. He could have stated the destruction was catastrophic or calamitous, but it was most certainly not “unthinkable.”

Since 2005, the Department of Homeland Security has provided Federal, State, and local government officials with descriptions of 15 disaster scenarios. The hurricane scenario describes a Category IV hitting a major metropolitan area, killing 1,000 and hospitalizing 5,000. It portends major portions of the metropolitan area would be flooded, with structural collapse in many buildings and homes, and significant infrastructure damage.

Thankfully, Sandy was only a Category I storm, and evacuations significantly limited the number of deaths and serious injuries. In other words, the effects of Sandy were far from “unthinkable.” They were far less severe than our National Planning Scenario described.

My concern, Mr. Chairman, is that we have once again fallen into a mindset best described by the 9/11 Commission as “a failure of imagination.” Most of our homeland security, public health, and disaster response personnel at the Federal, State, and local levels understand what is “thinkable”, including the Members of this committee. I cannot, however, say the same for many other appointed and elected officials. I base this assessment on the actions—or should I say, lack of action—of these officials.

In December 2008 the WMD Commission concluded that an act of bioterrorism was more likely than an act of nuclear terrorism. Additionally, the National planning scenarios list only one weather-related disaster, but four biological disaster scenarios. Nevertheless, our preparedness to respond to a major biological event is far less today than for a major hurricane.

In October 2011, former Senators Bob Graham and Jim Talent released the WMD Center’s report card on the Nation’s bio-response preparedness.

Mr. Chairman, the WMD Center assembled an extraordinary team of more than two dozen advisors to guide this assessment. It included a former deputy commissioner of the Food and Drug Administration, the director of disaster medicine at the American Medical Association, and a former special assistant for biodefense to both Presidents Clinton and Bush. We identified a wide spectrum of possible attacks—ranging from small-scale, such as the anthrax letters of 2001, to a global event of near-Biblical proportions.

In its recommendations, the WMD Center’s report suggested the Congress and administration should focus on improving response capabilities to the type of attack described in both the 2008 WMD Commission report and the National Planning Scenarios: Aerosolized anthrax.

The grades were merely a snapshot of a point in time, but the most valuable aspect of the report card is the fundamental expectations developed by our team of experts that served as metrics for the assessment. Additionally, the report provided a series of questions to assess capabilities in achieving these expectations.

This committee and other Congressional committees should be using these metrics and questions in 2013 to determine if we are making progress in strengthening bio-preparedness and response capabilities.

With respect to the Aspen Institute WMD Working Group paper submitted to your committee, the WMD Center fully supports all nine recommendations, and in particular, reauthorization of the Pandemic and All-Hazards Preparedness Act.

Mr. Chairman, I will close by thanking the other members of the Aspen Institute's WMD Working Group, and in particular Dr. Lenny Cole. It was a pleasure working with the group and a great learning experience.

Mr. MEEHAN. Thank you, colonel. Thank you for your report and your continuing work.

I will that echo one of the characteristics I think that this committee has been, it is genuine bipartisan interest and collaboration that has taken place looking at these issues. I am proud of the work of the entire committee in that end.

So thank you for you testimony. Allow me to recognize myself for 5 minutes of questioning.

I want to start off with where we left off with the last 4-year bipartisan WMD Commission Report assessment that the most likely attack was a biological weapon. It said somewhere in 2013. It is right around the corner from where they assessed 4 years ago.

We have had the ability now to have 4 years of time, changing world circumstances. In some way, things have gotten better in the form of the way those who have been threats to use—we would never say neutralized, but dispersed in some capacity.

We have also seen massive sort of metastesization of the threat to numerous quarters. Of course we have state-sponsored issues as well in which there is potential threat.

So looking at where we were 4 years ago and where we are today, has the threat assessment changed in those 4 years? Is there something that we need to be particularly concerned about today, as we look at what may be the most likely threat that we could face that would cause the greatest amount of damage?

Mr. Cole, let me begin with you.

Colonel LARSEN. Sir, 4 years ago, bin Laden was in charge of al-Qaeda. Now it is Zawahiri, who is a medical doctor. He was the guy who began their anthrax weapons program. They had development programs both in Afghanistan and Malaysia.

So the new leader understands I think better where they are going. One of my great concerns is, since 2008, we have lost 40,000 public health workers at the State and local level due to budget cut-backs. Forty thousand, that is the front lines. That is the people that are up there in New York and New Jersey trying to make sure the people got safe drinking water and health care and all those sort.

We cut them 40,000. The technology moves on. Since 2008, it has only gotten easier to make bio-weapons because of this incredible bio-technical revolution. I have briefed over 4,000 senior military officers in the last few years about the threat of bioterrorism. I show them slides that for \$1,000 you can go out and buy equipment at Home Depot and Lowe's and do a lot of the work you need.

Now that won't make it as sophisticated as a weapon as we saw that was mailed to Congress, Senator Daschle and Senator Leahy. But it would be a liquid slurry that would be significant for a terrorist attack.

So I think since 2008, our readiness has gone down. The threat has gone up.

Mr. MEEHAN. That could be an individual acting, almost a lone wolf type-of situation, using materials that are obtainable?

Colonel LARSEN. If the FBI is right about the former scientist at USAMRIID, Dr. Bruce Ivins—if the FBI is right, and there is still some controversy about that, then one individual, using a pathogen that you could acquire out in Montana—Ted Turner lost nearly 300 buffalo a few years ago just because they ate in the wrong pasture and got anthrax. It is in the soil.

The pathogens, with the equipment he used, you could buy on the internet today. So a single individual is capable of doing it, yes.

Mr. MEEHAN. I will be interested—I want to hear Dr. Cole's commentary. But one of the points is intent. In your own report, we looked at the issue of intent and other kinds of things and how do you prepare to prevent every single individual, if a lone wolf?

But I thought one of the conclusions was the ability to be immediately responsive to that kind of an attack.

Colonel LARSEN. Senator Graham and Talent have written several op eds on that issue. We define prevention—

Mr. MEEHAN. Could I allow Dr. Cole to jump in on that while my time is expiring? Thank you, doctor.

Mr. COLE. I have a feeling that what I am about to say might have been what Randy would be saying in any case, because we do agree on much of the assessments.

In a sense, biological is both the best and the worst kind of a confrontation to have to deal with. Worst because, in worst-case scenarios, it can be absolutely devastating.

Get a micro-organism that is resistant to antibiotics and other drug therapy, that is contagious, that is highly lethal, and you will have a catastrophe.

Fortunately, a lot of moving parts would have to come together and work just right, especially if this is going to be airborne, starting with the right environmental conditions, no wind, no rain, no other variables that could affect the attack.

But it could be terrible. On the other hand, best because probably more than any of the potential other weapons of mass destruction, CBRN, that there are potential defenses by way of vaccines, antidotes, antibiotics, that can deal with a variety of agents.

Mr. MEEHAN. Do we have sufficient stockpiles of those? Are we prepared?

Mr. COLE. Yes. Yes, we do have a strategic National stockpile, which is tied to one of the bills that we both refer to the PAHPA bill, Pandemic and All Hazards Act. That provides funding for the strategic National stockpile.

Now the vaccines and the other drugs have shelf lives. So, unfortunately, they have to be replaced every few years. But the capability for defense and response is there at some level, with a little more comfort than virtually any of the other potential weapons that could be used against us.

Mr. MEEHAN. Thank you. My time has expired. I am sure there will be follow-up questions on that.

Let me now turn to the Ranking Member, my good friend Mr. Higgins.

Mr. HIGGINS. Thank you, Mr. Chairman. Just on this issue of preparedness, there is a book written by Lawrence Wright called

“The Looming Tower.” In it, he recounts how an FBI agent physically got sick when the second plane hit the tower in New York City, because he knew that between the FBI and the CIA and various Federal and State law enforcement officials, they had the intelligence to stop, to thwart that attack on New York City.

Because these barriers existed between Federal law enforcement agencies, that information was never shared. We all know what happened in the end.

So, you know, the ability to thwart attack is based on having the resources and the information. That information has to be shared most effectively, so as to provide a coordinated response.

As you may know, the Department of Homeland Security downsized the Urban Area Security Initiative Program, which provided funding to local and State law enforcement agencies in high-probability areas relative to a terrorist attack.

I represent Buffalo, New York. We are situated on an international border, by the second-busiest border crossing between the United States and Canada at the Peace Bridge, high-impact target.

We are very close to Niagara Falls, a destination of some 14 million people from all over the world, high-impact target.

Close proximity to the Niagara Power Project, which produces the cleanest, cheapest electricity in all of New York State, high-impact target.

We are close to Toronto, about 90 miles away, which is an international city, a high-impact target.

Can you just comment on the importance of the Department of Homeland Security continuing these programs to ensure that these high-impact places—high-impact target places are properly funded?

Because the last thing Buffalo wants to do is be on that list. But they are put on that list because they are in close proximity to these high-impact targets.

So just the importance of these programs relative to the coordinated response of local law enforcement agencies.

Mr. COLE. I will, in the sense that I get there is a bit of a competition here. Because the 2-mile stretch near Newark Airport, either way, is somehow in competition, I guess, for concerns about being the most likely target, since in that short span of a few miles, major New Jersey port, airport, rail system, oil tankers, and storage of chemicals.

So we won't want to win that competition. But there are several locations in the United States that would be seen as prime targets. But let me slightly confuse the issue, because if you are going to be talking about biological weapons, there were critically injured people who were not initially recognized as having been infected with anthrax, even though they had symptoms, for various reasons, either misdiagnosed or the test didn't come through. But one of the victims lived in Mount Holly, New Jersey, not a great central concern for bio or any other kind of attack. Another lived in Oxford, Connecticut, a small, rural community, an hour's drive away from New York City.

So in terms of the dangers, the targets, the worries, one has to be discrete about the kind of weapon and the kind of threat that you are dealing with.

So I am very much concerned about urban and focused areas, as you suggest. But we can't let our guard down, especially the public health guard down, wherever there are citizens of the United States living.

Colonel LARSEN. That is a serious problem we have been dealing with. I got involved in this business back in 1994. It has always been, where do we spend the money? Where do we get the best return on investment?

I agree, wherever we have U.S. citizens, we have to worry about them. Obviously there are targets that are much more likely that we have seen, where we were attacked on 9/11, New York and Washington, DC. The other airplane that crashed in Pennsylvania was headed this way also.

The problem is: How do we get our best return on investment? We spent a lot of money after 9/11. We bought a lot of equipment for small fire departments that had no clue how to use it. There was no money provided by Congress for continuation training, which is a big deal to somebody in the military.

You know, you have got to shoot that M-16 every year or you are not very good. So we wasted a lot of money, frankly. I don't like to see that as a taxpayer or as a National security expert.

I will tell you, some the best investments I have seen DHS do, this study about how cities would respond if there were an improvised nuclear device that was detected. They spent a lot of money at Lawrence Livermore Labs. They did the research. They looked at this.

Then they put it in a book that came out earlier this year. I am sorry I don't have a copy with me. But it is absolutely fabulous for first responders. That is the way I see DHS being a great help to State and local folks.

State and local, they don't have the scientific knowledge. But the knowledge was put together about what you do. If you were the mayor of Buffalo and an IED went off in your city, you know what one of the first things you are going to need in July? Snow plow.

Why would you need snow plows? Who would have thought of that? Because you have got to clear the streets because there is debris everywhere. You can't do stuff.

First responders want to rush in and help people, right? But it may be too radioactive to go in there. So what do they say? If there is a big building there and half the glass is missing, don't go there because it is too radioactive.

Very practical stuff that was provided; that is how I like to see DHS spend money. This other thing is a very difficult thing about where it goes in the big areas. I know that people in rural counties in Mississippi think they are in threat areas too.

So that is why we let our political leaders make those final decisions. But I think you do need to understand the wisdom of Dr. Cole, the way he described it.

Mr. HIGGINS. Thank you, Mr. Chairman.

Mr. MEEHAN. Thank you, doctor.

The Chairman now recognizes the gentleman from Missouri, Mr. Long.

Mr. LONG. Thank you, Chairman.

Dr. Cole, as a physician, can you explain to the subcommittee what type of harm could be inflicted by a terrorist using a dirty bomb or even worse, an improvised nuclear device?

Mr. COLE. Yes. Well, I am not a physician. Actually, my degree is in dental medicine. But it is close enough for the purposes that we are dealing with.

An improvised device on the order of a radiological or dirty bomb, unless the radiation released were highly intense and highly widespread, would be unlikely to cause the kind of imminent danger and damage that we tend to think of when we are concerned about a weapon of mass destruction.

So the more likely released material would be Cesium or Cobalt, which are in medical instruments, machinery, and equipment. But the psychological effect—and when you speak of terrorism, you don't necessarily need to have fatalities as the end result for assessing success or failure.

You could scare an awful lot of people if a radiation release occurred in a highly-populated area. Downtown Manhattan, there would be a fear and then an evacuation, for sure, a very quick evacuation.

So we don't consider it an issue of concern for casualties. We do consider it a great concern for disruption and social disruption, particularly.

Mr. LONG. With Iran working towards—what we think is trying to build a bomb, what type of delivery device would be required to—if they did have the capability, what does it take to deliver that?

Mr. COLE. Well, unfortunately, the kind of kilo-tonnage that was available with the bombs that were dropped in Japan, 1945, were then very large and bulky. But you could get a suitcase-sized nuclear device, if it could be smuggled in somehow or brought to a center—

Mr. LONG. Detonated how?

Mr. COLE. How would they do it? Carrying the weapon in a suitcase, if it were acquired someplace.

Where could it be acquired? If not from a National—

Mr. LONG. You can carry a suitcase bomb—

Mr. COLE. Yes.

Mr. LONG [continuing]. That you would have the ability to then detonate?

Mr. COLE. That is correct. But if Iran were to do this—we tend to think of Iran not being so interested in suitcase bombing. Who knows how they would act? It is a very irrational, it seems to me, a very unpredictable regime.

But our larger concern, from a large theater operation, would be their missile capabilities, as they would be probably their primary form of a delivery system.

Mr. LONG. From what you understand, are they close to that, as far as the delivery system?

Mr. COLE. I am not qualified to say, except that I read what other, probably more, supposedly more experts have to say. You can get a variety of opinions. There are those who think that Iran is 4 to 6 months away from having a definite nuclear capability.

There are others, some in the administration have spoken so, that think that Iran may be 1 year or 2 away.

Nobody that I know, that I know personally or by way of my looking at the issues—nobody I know is comfortable with the notion that Iran is developing its nuclear capability only for peaceful purposes.

Mr. LONG. Well, that is why I am trying to learn as we go, because I have talked to everyone that I can about their capability, whether they can deliver the device, how they would deliver it. Because you hear all things all over the spectrum of what actually could be produced by Iran.

Let me switch topics for just a second. Do you have any concerns that the way that we are securing commercial radiological materials could be vulnerable to domestic radicals or lone wolf actors?

Mr. COLE. About 2, 3 months ago, an 82-year-old I think former nun, who was a peace activist, penetrated several degrees of security and had gotten to a nuclear facility.

Now she and the people she was with did not actually get hold of or come in contact with the most dangerous portion of a nuclear energy plant, or wherever it was that she penetrated.

So we certainly do have vulnerabilities. We also do have terrific security systems. But no security system is infallible. No one can ever be 100 percent comfortable.

The evidence that we had, a U.S. citizen, as recently as a few months ago, got further into a network of apparatus than she should ever have been able to has to be a cause of concern.

Mr. LONG. Okay. Thank you both for your testimony today.

I yield back.

Mr. MEEHAN. Thank you, Mr. Long.

The Chairman now recognizes the gentleman from Arizona, Mr. Barber.

Mr. BARBER. Thank you, Mr. Chairman. As you know, the district I represent is right on the border with Mexico. It is, I would suggest, the most porous section of our border, north and south, particularly south.

It represents 50 percent of the drug seizures in the entire country, and nearly 50 percent of the illegal immigration in our entire country.

So as a representative of that community, I am concerned about the safety of that community. But my question really pertains to the ability of bad actors to come through that most porous section of our border with weapons of mass destruction.

My question is: What can we do to better train and equip the members of the Department of Homeland Security who are there to secure our borders, both the Customs Inspectors on the ports of entry, and the Border Patrol, who are typically back from the border in checkpoint kinds of places?

What can we better do to equip and train them not just to look for drugs and people coming in here illegally, but people who might bring weapons of mass destruction or the mechanism to construct those weapons of mass destruction?

What would you recommend we do?

Colonel LARSEN. I have been writing about that for a long time, sir. First of all—and I began by reading the al-Qaeda manual. It

is available on the DNI website. They say make your weapons inside the countries you are going to use them.

If you look over the last decade of attacks, whether you are talking about Spain or London or Indonesia or Turkey, they make their weapons there. The bomb that first blew up the World Trade Center in 1993 was made in New Jersey. It wasn't made in Afghanistan.

The only exception to that is probably a nuclear weapon. Even the radiological dispersal device that Mr. Long asked about—you know, I am reasonably comfortable with our enriched uranium, our bombs and stuff are reasonably secure. We can always improve.

But all the hospitals that have Cesium 137 and Cobalt 60 in their cancer treatment facilities, that is very easily accessible. You wouldn't need to sneak a dirty bomb into the United States. Just go to a hospital and steal it, because they are not very well guarded.

Biological weapons for pathogens are here inside the United States. So I don't think we should spend hardly any time trying to detect biological weapons coming into the United States because, I didn't do it today, but normally when I come to Congressional hearings, I carry my test tube of weaponized vaccilis, the VGI, the same one I carried into Vice President Cheney's office 9 days after 9/11 to demonstrate how easy it is to get it in.

Mr. BARBER. I am glad you don't have one.

Mr. MEEHAN. For the record, we appreciate that you did not bring it today.

Colonel LARSEN. I did not bring it today, Mr. Chairman. But the serious one is the improvised nuclear device, a highly enriched uranium, gun-type bomb. I am not sure it would fit in a suitcase. I know it will fit in a small family van, easily.

The problem is if you shield it, our detectors won't find it. So putting more detectors on the border—I think I would go back to what the Chairman and senior Ranking Member talked about, is that intelligence information. It is finding that information.

Some people want to scan every container that comes into the country. I think that is a waste of time. I am more interested in the information that is on the outside the container than trying to look inside, because there is so much information the private sector has about where did that container come from, who stuffed it? What companies were involved in that?

Bringing that information together in a fusion system, so then we can tell those people on the border, don't worry about those 99 trucks over there, but this one you should really spend some time looking at. I think using intelligence to tell us where to look is the best way to go on that, sir.

Mr. BARBER. Thank you.

Dr. Cole, do you have anything to add?

Mr. COLE. Not really. In fact, as I listened to you, I would think that you may know, you should know, if I may, a lot more about the border area down there than some of us who do not focus on the cross-border issues. I don't say that in any way being critical.

But from what I read as an interested citizen, we still have porous borders. Individuals can come over with whatever they care to bring with them. If they get away with it and they are here, they

have brought something with them which they ought not to, whether it is in the form of a weapon of mass destruction or not.

But Randy is certainly correct. You do not have to bring in exotic materials, with the exception of fissile material for a nuclear weapons, to have a threat issue here. We have plenty of opportunities domestically already in place, as he said, hospitals, research institutions. They have pathogens galore for honorable research purposes. For medical purposes and health purposes, we have radiological materials.

Mr. BARBER. Thank you, Dr. Cole, Mr. Larsen.

I yield back.

Mr. MEEHAN. Thank you, Mr. Barber.

The Chairman now recognizes the gentle lady from California, Ms. Hahn.

These don't work as well as ours do.

Ms. HAHN. Thank you, Mr. Chairman.

Well, you just kind of touched on what I was going to pay attention to. I come from a community that is right next to the Port of Los Angeles and Long Beach, which combined are the largest port complex in this country.

We account for close to 45 percent of all the trade that comes into this country, comes those port complexes. We like to refer to them as America's Port. As the co-founder, along with my friend Ted Poe of Texas, we have started the Port's Caucus here in Congress. It is bipartisan.

We are trying to raise the awareness of the importance of our ports as it relates to our economy, to jobs, but certainly to National security. I am still very concerned about what is coming and going through our Nation's ports. Apparently this Congress passed a law after 9/11 that was to require that 100 percent of all containers are scanned.

This administration and Secretary Napolitano has made it very clear to our committee that they have no intention of doing that. At this point, we only scan about 3 to 4 percent of our containers.

I know a lot of it is about the point of origin. We want to know where it comes from. We kind of have now adopted sort of a level risk assessment approach of what we think might be dangerous.

Sounds like from what you said, Mr. Larsen, I sort of agree with that.

I want to know how vulnerable you do think our ports are, having these containers. You know, in Los Angeles, Long Beach, it is like 14 million annually. I am worried about weapons of mass destruction getting in through one of those containers.

I am worried about a dirty bomb. I just want to go on record saying I don't think we are protecting the homeland when we are thinking that it is acceptable to scan just 3 to 4 percent of these containers.

I think technology is evolving. I think technology exists that is going to make it easier to scan without sacrificing, you know, commerce or jobs.

I would like to hear a little just comment on where you think we are in terms of security with our ports. I feel like we have much more focused on airports and other areas which we felt were more at risk.

But I will go on record saying I think our ports are our most vulnerable entryway into this country. What do you think?

Colonel LARSEN. I have sat here many times and had this discussion. I agree with you. A good return on investment for a terrorist would be to hit a sea port.

Ms. HAHN. Yes.

Colonel LARSEN. I mean, look what happens if we have a strike, what that does to the gross domestic product.

But my problem is yes, technology is improving, but physics is not changing. Highly enriched uranium, which they would most likely use to make an improvised nuclear device—plutonium is too hard.

Improvised nuclear device, simple gun-type bomb, is a very low emitter of radiation. With the current technology we have, I think it is just a waste of our resources to try to do it.

Trucks have to take such a long time to go through there. Then there is the operational issue. If you were a terrorist and wanted to bring a nuclear weapon into the United States, would you really put it inside a container and put a good padlock on it and then turn it loose in an international system where about 10 different countries would touch it before it got where it goes?

I would never take my hand off of it. I would rent a corporate jet and fly it in here. So I just think it is—and then if you talk to—I don't know if Beth Ann Rooney is still the chief of security at the Port Authority of New York and New Jersey. Perhaps Mr. Pascrell knows it.

But she used to say, okay, well, Congress wants us down at this end of the port scan 100 percent of those containers coming in. But that end of the port up there, we have 300,000 automobiles that come off of railroad ships every year. Congress hasn't said to do anything about them.

By the way, that highly-enriched uranium for a Hiroshima-sized bomb would fit in the trunk of the smallest car that comes in here. We don't scan grain ships and ships carrying oil, petroleum products, or concrete or whatever.

So I understand your concern. But if you are concerned about a dirty bomb going off on a port, then we should probably be scanning the trucks coming in from the land side also.

Ms. HAHN. I couldn't agree more.

Colonel LARSEN. Okay, well, good. I am glad to hear that.

Ms. HAHN. I am with you on that one.

Colonel LARSEN. If you are doing that one. It is a tough challenge. I understand it.

But my concern now, in the new fiscal environment, is I want to spend the money where we get the best return on investment. That is my concern.

Ms. HAHN. Thank you. But I think you made the point, if the best return on investment for a terrorist is to disrupt our economy, and by the way, it is not just the National economy. In the 2002 West Coast labor contract dispute, where the ports were shut down just for 10 days, where we knew, by the way, that we were going to have problems and cargo began to be diverted anyway, it was a \$2 billion a day hit to this economy. The global economy was severely damaged just by the trade being stopped for 10 days.

So I think it is still a target for terrorists, particularly because I don't believe our ports in this country are ready to recover as quickly as they should, which is something I am pushing for across the country, that we have a better recovery. Because I think that would lessen the attractiveness of disrupting our ports, if we knew how to get back up and running quickly.

Colonel LARSEN. Okay, we can say we are in 100 percent agreement on that. Beth Ann Rooney I think would go with us.

How quickly can we get the port back open?

Ms. HAHN. Right.

Colonel LARSEN. Or a water system in a major city?

Ms. HAHN. Correct.

Colonel LARSEN. Whatever.

Ms. HAHN. Now I am nervous about Los Angeles not having snow plows.

Colonel LARSEN. Los Angeles was detailed in that report. I can get you a copy of that. It is very good.

By the way, sheltering in place will save 500,000 lives in Manhattan, 270,000 lives in Los Angeles county. Simple as that, shelter in place.

Ms. HAHN. Thank you.

Mr. MEEHAN. Thank you, Ms. Hahn.

The Chairman now recognizes Mr. Pascrell. But before doing so, once again, I want to reiterate our great appreciation for his ongoing interest and leadership in this area.

The gentleman from New Jersey, Mr. Pascrell.

Mr. PASCRELL. Thank you, Mr. Chairman. Thank you, Colonel Larsen, Dr. Cole, thank you for all of your work in this area.

We have made some progress. You know, we now base our grants, our money on risk assessment, which we didn't do in the very beginning.

Thanks to Chairman King and I being real pains to both administrations, I think we are there in assessing what is the greatest risk, both the risk in New Jersey, which the FBI claims is the risk, really, and the toxins that are on the turnpike in Elizabeth, with those tanks.

Since you brought it up, it is estimated that if someone detonated something in the center of where most of those tanks are, and knowing the toxins that are in there—of course, people need to know. They have a right to know. We went through that in this committee many years ago.

It could kill a lot of people. Or at least a million people would be in danger. I am not exaggerating this. It is not hyperbole. Then we have the big debate as to how, well, how do we protect these tankers?

The chemical industry got its back up. We got its back up. They got good laws, by the way, in New Jersey. Probably passed those laws about 10 years ago—15 years ago. They make a lot of sense. They make a lot of sense.

Here is my question, the legislation that Peter King and I introduced on weapons of mass destruction, which is really the last part of the 9/11 Report that we haven't done anything about—we still haven't.

We got it past committee in a bipartisan fashion. It is sticking out there like a sore thumb. I mean, it is either needed or it is not needed. Since we have really a lot of things to attend to, an attempt to plug the holes that exist there.

So both of you: What is your opinion of the legislation? Is it adequate? It is in an adequate response to the problems that we have identified? Or must more be done?

If you will, on the legislation's call for—we ask for a special assistant for bio-defense that reports directly to the President. Now we have made many mistakes, this committee, a long time ago, before this present Congress, on adding to the bureaucracy. That is the last thing we want to do.

We have now got about 85,000 employees. I know the Secretary is reviewing their interactions with each other. So maybe something will come out of it.

Do you think we need a special assistant for bio-defense, colonel?

Colonel LARSEN. Absolutely. We said it at the WMD Commission. We said it at the WMD Center. Today, we have more than 2 dozen Presidentially-appointed, Senate-confirmed individuals working on bio-defense. Not one has it for a full-time job and no one is in charge.

It is like having a football team without a head coach.

Mr. PASCARELL. That doesn't make sense to me.

Colonel LARSEN. It doesn't. The Clinton administration had one and the Bush 43 administration had one. So 100 percent agree with that.

At the WMD Center, we work very closely on the WMD bill. We strongly support virtually every part of it. I think your biggest challenge is to get it through Congress and all of the overlapping jurisdictions.

Mr. PASCARELL. That was my next question.

Colonel LARSEN. Well, okay, when the World of Risk came out, you had 88 committees and subcommittees doing homeland security. They said you have got to fix that.

So then when the second year of the WMD Commission and we did our report card, you had 104. That is why we gave you an F.

There were three Fs in that report card: Being prepared to respond to a bio-attack, retaining the top scientists and engineers we need in Government, and No. 3, Congressional reorganization.

Now I know that I am talking to the choir here. But if we don't fix that, we will have a problem. But we fully support that piece of legislation, along with PAHPA. We need those together.

Mr. PASCARELL. Dr. Cole.

Mr. COLE. Yes, of course, I do support it. But just let me inject a sympathetic matter of realism. We tend to respond, we all know, as human beings, to the most recent incidents.

When something doesn't happen and we are told that it is likely to happen, and then we get past it, it is the boy who cried wolf, which is one of the concerns that I have about how the initial WMD Commission Report has been interpreted, that if we don't have an attack by the end of 2013, it is going to seem as if these guys were all wet and they really didn't have the right juice when they were making their decisions.

I would say, first, the wording was very cautious. There is a more likely chance than not, they said, that there will be an attack by the end of 5 years from the issuing of the report. Of course, that leaves them a window to walk through and say, well, we didn't say definitely.

Furthermore, they said, it is more likely that it will be a biological than a nuclear agent, which cannot discount the strong possibility that it would be a nuclear rather than biological. So we can't get caught up in our own reinterpretation of what was tentative, and make it sound as if it was an absolute prediction.

It was not. It was a way of getting attention. I think it was an appropriate way to get attention. People aren't going to listen to you if I just said to you, hey, you know, we ought to start worrying about X, Y, Z. You have got to know why. You want to know the details. If I still am not convinced, if you say "if you don't listen to me by December 31 of such and such a date, you are going to be sorry," then I might pay a little more attention.

We did get attention for this. It is human nature. I have heard the argument that, well, maybe it isn't so bad for us to reduce considerable spending—and it would cost money, the bill that you are suggesting—because we haven't had an attack in 11 years. Look how far back it is.

Well, my response to that always is: Should we stop being concerned about hostile use of nuclear weapons, since the last time that took place was 70 years ago?

So we have got to be realistic. A biological threat is real, by any decent measure. I do believe that what your bill proposed—and I haven't read the bill recently. But certainly having a single individual at the top, the manager in chief, who can advise the President directly, would be a major step forward.

Mr. PASCRELL. Mr. Chairman, I want to thank you for your work. Thank you for allowing me to sit on this panel.

Dates, they move. Chronology doesn't. We have not done a good enough job, in my estimation, of informing the public, because we do not want to relate to critical issues that may expose confidence and expose intel. But there is no question in my mind that having seen enough, generally we can say, our enemies, internal and external, troll the system every day. Every day.

If Americans knew that and believed it—maybe they don't believe it. I am not sure. If Americans knew that, then they would put pressure on us, say, what are you fools doing? Let us make a move here. Let us do something to put things into perspective, that this is serious business.

We needed a hurricane. You know, we needed this hurricane to wake us up on one level. We have an economic hurricane that we are—I am surprised that both sides are almost saying, well, let it happen, we will recover, just look at it the other way.

This is serious business. Again, this is not reality TV. This is serious business. So I hope, Mr. Chairman, in your influence is that we get some movement on this, because I think these gentlemen are here not to spin wheels. They are here to see some action.

Thank you very much.

Mr. MEEHAN. Thank you for your kind comments, Mr. Pascrell, but also, as you said, your continuing efforts. That is one of the

reasons that we wanted to make sure that we held this kind of a hearing, to keep the awareness and the scrutiny there.

So thank you for your interest.

The Chairman now recognizes the gentleman from Texas, Mr. Green. Thank you as well for your continuing interest in this issue and in the activities of the committee.

Mr. GREEN. Thank you, Mr. Chairman. I would like to add my commentary to those which indicate that you have been more than amenable to working with us to come to some sort of a consensus on questions of this kind. It is, indeed, absolutely necessary that we come to some sort of a consensus as quickly as possible.

I have never had my car stolen, but I do lock my doors. I do buy insurance in the event that some professional decides that locked doors are not enough to deter the taking of my vehicle. I see a need for more insurance as we go through this process, to make sure that we are prepared not only for the professionals, but also for the opportunists.

Right within our confines, within our country, we have persons who are mal-adjusted, who would do us harm. I think we have be prepared for both.

Is there a definitive piece of work on the economic consequences of a WMD attack? I ask not because I in any way diminish the value of human life. I understand the consequences associated with persons being harmed, people being harmed.

By the way, if one person is harmed, that is one too many. But economic consequences have a way of impacting a broader spectrum of personalities. Is there a definitive work on the consequences of a WMD attack at some strategic point within the United States?

Colonel LARSEN. Yes, sir. One of the best ones was the Council of Economic Advisers, in the last year of the Bush administration, looked at what 2 pounds of dry powdered anthrax would, economic—I mean, they listed everything in there.

Secretary Chertoff used it in his briefings all the time. I can get you that information. It is shocking, the things we are talking about.

For instance, we don't know how to clean up a city. If you took 2 pounds of dry powdered anthrax and released it in New York City, the EPA does not know how to clean that up.

By the way, the budget for EPA this year to do research on that is half of the budget for Marine Corps marching bands. Now you have got to ask: Do we have the right priorities?

I am a big fan of Marine Corps marching bands. But I can tell you, you know, that is one of the big economic costs. Because if you don't clean it up, you can't go back in there.

Same for a dirty bomb. It is not going to kill many people. It is an area denial weapon. That is how we refer to it as the military.

So I can get you that study. I would also say, at the University of Southern California, they have a center out there that is funded by DHS that specifically looks at economic impacts of all sorts of terrorism. That I think will answer your questions, because the economic impact is sometimes greater than the people that would actually be killed, in some attacks.

Mr. GREEN. Dr. Cole.

Mr. COLE. Yes, I think I can add to this, because I did a study on the economic effects of the anthrax attacks, the anthrax letters. Let me start by saying that the total estimated volume of all of the anthrax powder that went into perhaps a half-dozen letters would have been less than a handful of Aspirin tablets. That is how small the total volume was.

We talk about, "only 22 people became sick, five of whom died." The fact is that more than 30,000 people were seen at risk of exposure and they had to have—they had to take antibiotics, prophylactic antibiotics.

Chairman Meehan, in your introductory remarks, you mentioned the FBI estimated that the cost of the anthrax attacks was over \$1 billion. I produce figures that come closer to well over \$6 billion just for those letters.

My finding was, unlike I guess the FBI, because I don't know what was behind their figures, that lost revenue to the Postal Service alone amounted to more than \$2 billion, based on revenue that the U.S. postal system had taken in the year before and the year after.

So during that 1-year period following the anthrax events, people stopped using the Postal Service, dropping it by 10 percent. That alone was \$2 billion.

Then the countless imponderables, from man/woman hours spent by FBI personnel, by the CDC personnel, by local law enforcement people, by the public health authority.

I would say that \$1 billion is an extremely conservative and, in my judgement, under-estimation of what the total dollar cost was.

Now all these other assessments about what would happen if there were something have to be taken with a grain of salt, knowing that they are still theoretical.

What I looked at was real. We did have that minimal event. We did have major financial consequences.

As Randy mentioned before, the total cost, even if we take the most expensive machinery and equipment, couldn't have been more than \$50,000 for all the equipment that would be necessary to process those spores.

The total delivery system, I think it was, whoever of you distinguished Congresspeople mentioned the question about delivery system. The deliver system was the U.S. Postal Service mail, between \$5 and \$10 in postage and mail and stationary. That was the delivery system.

So you talk about extreme variability and shocking differences between the minimal cost for creating a lot of havoc, that cost at the very least several billion dollars in consequences.

Mr. GREEN. Mr. Chairman, if I may, just a final comment. I want to comment on Mr. Clark Ervin, who does an outstanding job. You have complimented him.

Sometimes we find that super men don't always wear a disguise. He truly has been super at performing this task.

Thank you, Mr. Chairman. I yield back.

Mr. MEEHAN. Thank you, Mr. Green.

I just have one concluding question myself for the two panelists. As you discussed modible sort of platforms and issues that we have to be concerned with, the one thing you focused on, that I would

like to sort of get some concluding responses, is the vulnerability of not weapons-grade, but the radiological materials that are used in everyday medicine and other kinds of things, and the extent to which there is a genuine threat that could be realized by access to those kinds of materials.

What can we do to better secure that, if in fact you think it is a genuine threat?

Colonel LARSEN. Sir, I am not fully up-to-date. I know that DHS had a program at one time, that they were going out to hospitals. The Government, Federal Government, was paying to do things that would far better secure it.

Because at one time a few years ago, you could get that material out of a hospital in 10 minutes. What this system that DHS was doing—I don't know the current state of it. You could certainly ask them.

But it doesn't fool proof it. But it means that like or 30 or 40 minutes and it sets off an alarm.

That is what you really need. We can't afford fool-proof systems, but something that you just can't walk out with it in your pocket. So hopefully that is the kind of program that would be funded that would be very helpful, because, I tell you what, that is one of the more likely scenarios.

There is so much of it out there. You go to any major hospital, it is there.

Mr. MEEHAN. Dr. Cole, any thoughts?

Mr. COLE. My quick thought is I cannot count the number of times, and any of you who have been to a hospital lately will recognize that all you have to do is walk in for the most part. Yes, some of them have security desks and you will be asked why you are there. You can say that I want to visit a patient in room 417 and you will get a card, almost always.

I don't favor metal detectors and super security at these institutions. But as we stand now, if you need more things to worry about, it would seem to me that that is one of the soft targets that we have got in the United States, hospitals, as an individual can walk in. Whether or not they can get to a radiological material—and presumably they should they should if they know their way about there—they presumably could get to some.

But that concerns me. Thank you.

Mr. MEEHAN. Thank you for your observations. Anybody else have any other?

Well, in lieu of that, I want to thank the witnesses for your very valuable testimony and the Members for your questions. The Members of the committee may have some additional questions for witnesses. I will ask if they do, that you respond in writing within the—because the record will remain open for 10 days.

Thank you, again, for not only your presence here today, but for your continuing work on the vanguard of this important issue.

So without objection, the committee stands adjourned.

[Whereupon, at 11:20 a.m., the subcommittee was adjourned.]

A P P E N D I X

QUESTIONS FROM CHAIRMAN PATRICK MEEHAN FOR LEONARD A. COLE

Question 1. In your report, you rightly focus on the unstable security situation in Pakistan, a country teeming with violent extremists, including Taliban, the Haqqani network, and Lashkar-e-Taiba, as well as the remnants of al-Qaeda's central command.

How confident are you that in a situation of prolonged militant violence and chaos that the Pakistani military would have the capability to safeguard the country's nuclear arsenal from terror groups?

Answer. On this question I conferred with Charlie Allen, a fellow-member of the Aspen working group, who has considerable knowledge about this subject. He observed that the United States has worked closely with Pakistan's military commanders, who themselves are very concerned about maintaining security of their nuclear facilities. The commanders by and large are careful to prevent extremists from serving in the military, and he has "moderate confidence" that Pakistan has a good capability to safeguard its nuclear arsenal under present circumstances. He is less confident about security, however, when weapons or even small quantities of fissile material are moved from one location to another.

This assessment would change for the worse if Pakistan were to face heightened political violence and instability. If, for example, Pakistan were to experience the kind of upheaval that has embroiled Syria, the ensuing chaos would likely enhance opportunities for terrorists to acquire fissile material as well as ready-made bombs.

Question 2. In testimony before the Homeland Security Full Committee, Senator Jim Talent said he believed that we have an opportunity to remove bioterrorism from the category of weapons of mass destruction. I think most people probably think of WMDs as something we can prevent or respond to, but not actually take off the table entirely.

Do you believe it is possible to completely eliminate bioterrorism as a threat? If so, how?

Answer. It is no more possible to completely eliminate bioterrorism as a threat than to completely eliminate infectious disease. That said, bio-threats can certainly be reduced and become less appealing to would-be perpetrators. I see four distinct approaches to reducing the bioterrorism threat. First: Further develop medical countermeasures (antibiotics, antivirals, vaccines, etc.), as underscored in the Aspen Working Group report. Second: Establish uniform security requirements for laboratories and institutions that work on select agents (i.e., pathogens deemed to be the most consequential threat agents). The CDC's recently-revised select agent list includes steps in this direction. Third: Severely punish groups or states that take steps to develop such weapons. Fourth: Strengthen the Biological Weapons Convention (BWC). This international agreement bans bioweapons and describes their use as "repugnant to the conscience of mankind." Highlighting this moral norm is of value. Even those without moral qualms about using bioweapons could be deterred by the realization that such behavior could lessen support for their cause.

Question 3. The President has stated that his administration will focus more on prevention of biological threats than has been done in the past, and robust intelligence will be key to such an effort.

Do you think that the Nation's stockpile of medical countermeasures offers sufficient deterrent to actors considering using a biological weapon? If not, what more must be added to it?

Answer. Knowing that the United States maintains stockpiles of medical countermeasures might lessen the inclination by some to use bioweapons, but countermeasures alone are an insufficient deterrent, as suggested above. An enterprising terrorist could seek a bio-agent that is not now susceptible to treatment, such as the Ebola virus or a drug-resistant strain of anthrax or plague bacteria. While it is important to maintain stocks of countermeasures for susceptible agents, efforts

should also be directed at developing defenses against currently unsusceptible agents.

Question 4. Securing high-containment biological laboratories was a key recommendation of your report.

How key is the international component of this—how much should we be helping other nations secure their labs and build their public health capacity, given that pathogens simply do not respect borders?

Answer. Helping other countries to secure their labs and build their public health capacity deserves high priority. We also need more of this at home. At present, there are no uniform standards for security at high-containment laboratories in the United States. (I develop this point further in an article at this link: <http://www.ctc.usma.edu/posts/bioterrorism-still-a-threat-to-the-united-states>.) Similarly, the public health infrastructure in the United States needs revitalization. In recent years, reduced funding has resulted in the loss of thousands of local and State public health employees. Apart from bioterrorist threats, strengthening public health capacity at home and abroad should be appreciated as important for the general well-being of society.

Question 5. According to Bob Graham and Jim Talent, there may be a time period after an attack when a prepared, efficient response could limit the size and scope of the attack by orders of magnitude. For instance, a well-prepared nation can use the incubation period of a disease-causing agent to its people's advantage.

What are some practical steps that can be taken by the Government to ensure that a prompt response with effective medical countermeasures, such as antibiotics and vaccination, can be improved and effectively deployed in the instance of such an attack?

Answer. This fact should be underscored: Unlike for other forms of terrorism, a window of time (perhaps several days) exists after exposure to a bio-agent during which medical countermeasures could markedly reduce ill effects. Ideally, local authorities should have pre-identified locations for receiving antibiotic and vaccine deliveries from existing stockpiles, and then for dispensing them to a population. I observed a week-long exercise in New Jersey involving a rehearsal for the aftermath of a bio-attack. Mock medicines were dispensed at schools, social halls, and other designated locations throughout the State. Similar exercises in Israel have much to teach about orderly preventive care for large numbers of people.

Question 6. At least half-a-dozen Federal agencies are engaged in "biomonitoring," meaning they look for signs of infectious disease in air, water, or other media. The Department of Homeland Security is most known for its BioWatch program, a series of detectors in over 30 major U.S. cities that seeks to reduce the time to detection if a terrorist or naturally-occurring infectious agent were to be released into the air.

If the biodefense budget were yours, how would you prioritize expenditures on biomonitoring in the context of all of the many other needs in the spectrum of dealing with the biological threat?

Answer. Current BioWatch detector systems, which can take 36 hours before indicating the presence of a dangerous agent, have at times signaled false positives. Development of a quicker and more accurate version is behind schedule and burdened with cost overruns. This has prompted criticism of biomonitoring and questions about whether the BioWatch program has been worth the cost. Still, the concept is alluring and to abandon the program entirely seems unwise. As I have indicated elsewhere, before BioWatch we were all canaries in the coal mine. Only after people died or became ill did we become aware that a bio-agent had been unleashed. (<http://www.hstoday.us/focused-topics/public-health/single-article-page/front-lines-biowatch-beyond-canaries-in-the-coal-mine.html>) Despite its shortcomings, I think the program is worth continuing, certainly at the research and development level. At the same time, other biosecurity needs, such as enhanced lab security, could be deemed a higher priority. Scarcity of resources may require that funding levels for BioWatch be reduced.

Question 7a. A new field of bioforensics emerged after the anthrax attacks of 2001. The Department of Homeland Security now operates a major bioforensics laboratory, the National Bioforensic Analysis Center, used extensively by the Federal Bureau of Investigation.

Do you think our National capability for bioforensics has grown sufficiently to meet the need?

Answer. Microbial forensics, also called bioforensics, was established in the mid-1990s in FBI laboratories under the leadership of then-FBI scientist Randall Murch. The field was further developed during the anthrax investigation and was key to the FBI's contention that the spores mailed in 2001 were generated from spores found in the flask of a Government scientist. Microbial forensics (bioforensics) unquestionably has advanced the capability to identify pathogens and their sources

through genetic analysis. But critics have also questioned the validity of claims made about the accuracy of some techniques.

The Department of Homeland Security and the FBI are now lead agencies in the field, though other Government agencies have also participated at some levels. Our National capability has grown reasonably well. Still, some have expressed concern that funding for R&D be directed to the most knowledgeable in the principal agencies and not be dispensed via a sprawling bureaucracy to less experienced claimants.

Question 7b. Do we need to be doing more than what we're doing, such as building a capable bioforensics workforce for the future?

Answer. The potential workforce in this area seems to be sufficient. As Murch has observed, many young people are being trained in relevant fields. It does not appear necessary to create a special program for training in this field.

Question 8. The interest among al-Qaeda and its affiliates in chemical, biological, radiological, and nuclear weapons remains a concern. Although they have not been successful in developing such weapons, active research programs or activities could be leveraged into weapons programs in light of instability in countries like Syria, Iran, and Pakistan.

Do you view such possibilities as threats to overseas allies and American interests, or do you foresee a real possibility that this is a threat to the homeland itself?

Answer. I don't discount the concerns raised in this question, though I doubt that a country's instability in itself makes it more likely to harbor a WMD program. In fact, al-Qaeda's efforts to develop a bioweapon and acquire a nuclear weapon were underway in Afghanistan when that country was relatively stable albeit under Taliban governance. If such weapons become available to a group like al-Qaeda, the threat, whether to the U.S. homeland or to overseas allies, would be intolerable.

Question 9. Your report states that "the U.S. 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."

Tell me about our lack of capability to reduce terrorists' capability—are sanctions and export control measures insufficient? Where is the weak link here?

Answer. The quoted passage refers to biological weapons, which can be produced at low cost (for readily available equipment) and in a space the size of a small kitchen. Thus development activity is quite easy to conceal. Further, select agents can be acquired from a variety of sources: Research facilities, hospital laboratories, natural habitats. Sanctions and export controls may somewhat impede acquisition efforts, but a determined individual could be expected to seek other pathways to acquisition.

Question 10. Only weeks after the terrorist attacks of September 11, 2001, a Nation-wide anthrax attack sickened 22 people and took 5 lives. Coming on the heels of 9/11, this hit us like a ton of bricks. The effects were significant, and yet could have been much worse.

In what ways did these anthrax attacks increase activities toward prevention and response? You have alluded to a complacency—has complacency set in about the biological threat after 11 years of quiet on this front?

Answer. The anthrax attacks prompted a surge of bio-security efforts, some of them wasteful. A prime example was the hasty Government award in 2004 of an \$877 million contract for production of a new anthrax vaccine. The recipient company, VaxGen, had never previously made a successful vaccine or drug. After repeated failures in production the contract was terminated, resulting in lost time, money, and public confidence. But biodefense spending has also brought benefits deriving from basic research as well as on-the-ground protection. Biodefense spending on research, for example, has advanced the understanding of immune system responses. Maintaining the Strategic National Stockpile enables quick availability of supplies to a site of terrorism or disaster anywhere in the United States.

The passage of 11 years since the attacks has reduced the sense of urgency and cut into preparedness efforts. Most striking has been the weakening of the Nation's public health infrastructure. This affects not only response capabilities for terrorism, but for all disasters—most recently Hurricane Sandy. Per the observation in 4a (above), budget cuts have resulted in a loss of 40,000 public health workers since 2008. (Prior to these job losses, the local public health workforce throughout the Nation numbered 250,000.)

Question 11. In October 2011, once we became aware that we were dealing with an anthrax attack, as many as 32,000 people who may have been exposed initiated preventive measures in the form of antibiotics. Administration of antibiotics on such a large scale had never before been attempted by the public health system. Some things worked, others did not. Today, mass administration forms a cornerstone of our National strategy to mitigate the effects of a bioattack, because they are so difficult to prevent in the first place.

Eleven years later, how would we do if this happened tomorrow? Would distribution and dispensing be as efficient, or more efficient, and would patient compliance be improved?

Answer. During the 2001 anthrax attacks, appropriate antibiotics were in short supply in some areas because pharmacy inventories had been depleted by demanding customers. Presumably this issue would now be addressed by rapid deliveries from the Strategic National Stockpile. Moreover, in May 2012, in response to a mock anthrax attack, postal workers distributed “antibiotics” to 37,000 residents in the Milwaukee area. The exercise was deemed a success, as have been similar exercises in other cities. These rehearsals allow for guarded optimism that drugs could be quickly dispensed in a discrete region after a real attack. Still, most areas of the country have not engaged in such exercises, and like much else concerning preparedness, capabilities for distribution vary from one community to another.

Question 12a. I noticed in reviewing your report that it makes very little mention of chemical terrorism. Chemical agents such as sarin, mustard gas, and other noxious materials have long been of interest to terrorists. We are all aware of the chemical weapon stockpiles in Syria, and the possibility that some of these could fall into the hands of terrorists.

Regardless of the semantics over whether chemical weapons should be considered “weapons of mass destruction,” is there, or is there not, a continued threat of terrorism with chemical agents?

Answer. There is indeed a continued threat of terrorism with chemical weapons, especially if terrorism is broadly understood to include fear, hysteria, and social disruption. This is playing out now with huge worries that the Syrian government might unleash sarin and mustard on its own people, or that Syria’s chemical weapons could fall into the hands of terrorists. Memories of the tortured deaths resulting from past chemical attacks underscore these concerns: For example, Saddam Hussein’s 1988 chemical attack on Iraqi Kurds or the 1995 release of sarin in the Tokyo subway by the cult Aum Shinrikyo. Our report’s focus on the biological and nuclear threats reflects the WMD Commission’s determination in 2008 that they are the more likely heavily consequential forms of terrorism to occur.

Question 12b. Are we taking the necessary measures to prevent the proliferation of chemical weapons and are we preparing our first responders and others to deal with the possibility of a chemical attack against our Nation?

Answer. As with biological weapons, the development, stockpiling, or use of chemical weapons is prohibited by international agreement (Chemical Weapons Convention). Unlike the BWC, the CWC includes elaborate protocols for inspections, verification of compliance, and penalties for violations. Thus the CWC helps lessen the likelihood of chemical use both in its allowance for pragmatic measures and its reassertion of the moral norm. Still, some countries might try to cheat, and Syria remains one of few countries that are not party to the CWC. Moreover, several terrorist groups have asserted their wish to acquire chemical and other weapons of mass destruction. Thus vigilance and protective measures are also necessary. In this regard, hundreds of designated chemicals (and biological agents) are subject to export controls, which buttresses efforts to prevent proliferation.

The availability for first responder groups of special outerwear, masks, antidotes, and other protective measures is essential. Nerve agents are of particular concern since they can quickly pass through normal clothing and cause death after skin contact or inhalation. My impression is that Nation-wide, numerous responders have drilled while wearing protective outfits. I do not know how many in any group of responders have rapid access to such gear.

Question 13. My understanding is that one of the challenges the intelligence community faces when it comes to assessing the very existence of bioweapons programs is the “dual-use” issue. All of the beakers and test tubes and PCR machines that would be needed to develop a biological weapon are in use for legitimate purposes every day in laboratories and hospitals in almost every nation in the world.

How serious a problem does the dual-use issue pose both for understanding the extent of the threat, and for preventing it?

Answer. Dual-use concerns are extremely challenging and sensitive. Procedures to grow and manipulate microorganisms for legitimate research parallel procedures to grow and manipulate agents for hostile purposes. Deciphering the conundrum depends on establishing the intent of the operator. This may require inquiring into a laboratory worker’s private affairs, which might be viewed by some as inappropriately intrusive. Yet in 2008 when the FBI named Dr. Bruce Ivins as the perpetrator of the 2001 anthrax attacks, it indicated he had a history of mental health issues. Years earlier, while developing an anthrax vaccine at the army laboratory in Fort Detrick, he emailed a coworker that he had paranoid, delusional thoughts. Apparently his superiors were unaware of this. Whether or not he was guilty of the an-

thrax crime, Ivins's self-acknowledged problems should have disqualified him from contact with a select agent.

Oversight of research involving select agents should include scrutiny of behavioral characteristics of operators. Uniform standards for lab safety, which are now lacking, should include protocols for inquiring into personal lives when necessary.

Question 14. The Aspen report indicated that shrinking budgets for biodefense have left the Nation underprepared. While that may be true, I have to point out that we spend half-a-billion dollars each year on civilian biodefense, and that figure is more like \$5 billion when you include other related programs that benefit biodefense. That's a lot of money, and I haven't seen an argument that convinces me that more money is needed; but rather, that the money we are spending needs to be spent more wisely.

What are your recommendations for this?

Answer. I doubt that more money is needed for biodefense programs and I agree of course that funds for biodefense should be spent wisely. In assessing how funding might better be apportioned, I suggest the following:

1. Assess whether a program's benefits are aimed exclusively at biodefense and unlikely to be of value in other spheres.
2. Unless an exclusively biodefense project is extremely compelling, it should not be deemed a funding priority. For example, I do not think more highest-level containment laboratories (expensive to build and maintain) are a priority need. Of far greater value would be to broaden the medical community's knowledge of the field of terror medicine, which also overlaps into disaster medicine.
3. Favor research that is applicable not only to biodefense but that also promises to enhance overall health and safety, such as the development of antibiotics, antivirals, and vaccines.
4. In seeking to reduce waste and duplication, heed the 2011 GAO report's observation that "there is no broad, integrated National strategy that encompasses all stakeholders with biodefense responsibilities that can be used to guide the systematic identification of risk, assessment of resources needed to address those risks, and the prioritization and allocation of investment across the entire biodefense enterprise." (<http://www.gao.gov/new.items/d11318sp.pdf>) (Also see the WMD Center's Report Card, http://www.wmdcenter.org/?page_id=183.) Addressing these deficiencies should include establishment of a National strategy on biodefense; streamlining decision making on biodefense issues, which is now fractured among a multitude of agencies; appointment of a special assistant to the President for biodefense.

QUESTIONS FROM CHAIRMAN PATRICK MEEHAN FOR RANDALL J. LARSEN

[NOTE.—The responses herein are solely those of Randall Larsen and do not necessarily reflect the opinions of the Aspen WMD Study Group or the Bipartisan WMD Terrorism Research Center.]

Question 1. In your report, you rightly focus on the unstable security situation in Pakistan, a country teeming with violent extremists, including Taliban, the Haqqani network, and Lashkar-e-Taiba, as well as the remnants of al-Qaeda's central command.

How confident are you that in a situation of prolonged militant violence and chaos that the Pakistani military would have the capability to safeguard the country's nuclear arsenal from terror groups?

Answer. As WORLD AT RISK notes: ". . . 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."

Planning for such situations is prudent.

Question 2. In testimony before the Homeland Security Full Committee, Senator Jim Talent said he believed that we have an opportunity to remove bioterrorism from the category of weapons of mass destruction. I think most people probably think of WMDs as something we can prevent or respond to, but not actually take off the table entirely.

Do you believe it is possible to completely eliminate bioterrorism as a threat? If so, how?

Answer. Unfortunately, the on-going revolution in biotechnology will make bioterrorism more likely. In the coming decade it will become the ultimate asymmetric weapon—available to all nation states, many terrorist organizations, and on a

smaller scale, even some lone wolf terrorists. (See atch No. 1 for WMD Center's risk assessment).*

We cannot remove bioterrorism as a threat, but as Senators Talent and Graham described in a 2010 article in *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*, Volume 7, Number 2, 2009 (atch No. 2),* a rapid and effective response could possibly remove bioterrorism from the category of WMD.

We call it moving the decimal point to the left—diminishing the number of projected casualties. A rapid, effective response to a bio-attack can reduce casualty figures from hundreds of thousands or tens of thousands, to thousands or perhaps hundreds. At that point, a bio-attack would be more like a large truck bomb—certainly a tragedy, but not an event that will challenge governance and change the course of history. This effective response capability may also become a deterrent factor for a group who would seek to perpetrate an attack.

We will never remove nuclear weapons from the category of WMD given the nature of such an attack, but may have the opportunity to do so with bio-weapons. It will be neither fast nor inexpensive, but it is possible, and it provides America with the best long-term biodefense strategy.

Question 3. The President has stated that his administration will focus more on prevention of biological threats than has been done in the past, and robust intelligence will be key to such an effort.

Do you think that the Nation's stockpile of medical countermeasures offers sufficient deterrent to actors considering using a biological weapon? If not, what more must be added to it?

Answer. Any nation-state or non-state actor capable of producing a sophisticated biological weapon is also capable of producing a strain that would be resistant to the antibiotics currently maintained in the Strategic National Stockpile.¹ This committee should be asking administration officials what plans they have to respond to attacks that use a strain of anthrax that has been made resistant to Cipro and Doxycycline—not what they are planning for in 2020, but what their plan is for 2013.

It is foolhardy to believe that anyone contemplating a bio-attack on the United States would not go the extra step and attempt to make their agent resistant to the antibiotics in the Strategic National Stockpile. According to senior scientists at NIH, BARDA, DARPA, and the academic community, that extra step does not require Nobel Prize-winning expertise—Mother Nature does it all the time. Furthermore, even if bioterrorists did not take the extra step of making their weapon resistant to our stockpiled antibiotics, there is great concern about the amount of medical countermeasures in the Strategic National Stockpile, and even more troubling, the capability to rapidly dispense them.

As stated in the WMD Center's 2001 Report Card: "A bio-response enterprise without adequate medical countermeasures is like an Army without bullets—it may look good on a parade ground, but has minimal value for National security."

Question 4. Securing high-containment biological laboratories was a key recommendation of your report.

How key is the international component of this—how much should we be helping other nations secure their labs and build their public health capacity, given that pathogens simply do not respect borders?

Answer. Pathogens don't respect borders, and people who are sick or are about to become sick can travel great distances before needing medical care. A small outbreak of disease can therefore quickly become a problem around the globe. Given this reality, it is helpful when a disease is diagnosed as close to the source of the outbreak as possible, and as early as possible in the outbreak. For example, the H1N1 pandemic of 2009 was definitively diagnosed in a military laboratory in San Diego, weeks after the outbreak had been going on in Mexico. If those weeks weren't wasted, and if the disease had been identified earlier, it could have made a great difference in vaccine availability in the United States and around the world. While some people have called that pandemic "mild" it was anything but for young people and for pregnant women.

As far as security of public health laboratories around the world, it is not always the case that it is necessary or even possible to have the same levels of security as could be afforded in the United States—such as laboratories in remote locations

*The information has been retained in committee files.

¹My definition of a "sophisticated biological weapon" is one capable of producing the effects described in *National Strategy for Countering Biological Threats*, National Security Council, November 2009, page 1. ". . . 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."

of third-world countries where extended electrical power disruptions are common. In addition, many of the diseases that are studied or cultured in public health laboratories are endemic in those countries. (See atch No. 3)*

However, U.S. efforts to provide best practices and support for biosafety practices, for common-sense security, and for disease detection can only yield benefits to the United States because it will yield earlier detection of disease, less disease burden in that country, and the protection of U.S. contacts in those laboratories—skilled laboratory workers who might otherwise be at needless risk of disease.

Question 5. According to Bob Graham and Jim Talent, there may be a time period after an attack when a prepared, efficient response could limit the size and scope of the attack by orders of magnitude. For instance, a well-prepared nation can use the incubation period of a disease-causing agent to its people's advantage.

What are some practical steps that can be taken by the Government to ensure that a prompt response with effective medical countermeasures, such as antibiotics and vaccination, can be improved and effectively deployed in the instance of such an attack?

Answer. I recommend a focus on three methods for rapid dispensing of life-saving medical countermeasures (MCMs):

1. Using pharmacies to dispense MCMs once the Federal Government has provided them to States. (See atch No. 4)* More than 90 percent of Americans live within 5 miles of a pharmacy. The incubation period of bioagents means that most people would be able to drive (or walk) to their local pharmacies. These facilities are designed for wholesale in the back door and retail out the front. Plans would be needed to deliver MCMs to shut-ins.

2. Point-of-Dispensing (PODs). Open PODs (open to all), operated by local public health offices have been tested in several cities, and closed PODS (for select groups—such as employees of major corporations) have also been tested in several locations.

3. Several tests in major cities, including Philadelphia and Minneapolis, have demonstrated that the U.S. Postal Service could provide a rapid means for dispensing MCMs during a crisis. However, if law enforcement officials are required to escort each letter carrier, this method may be the least desirable option currently being considered. Most law enforcement officials I have talked with, see this as an improper use of law enforcement assets during a crisis. Others have recommended use of National Guard troops to escort the letter carriers, which in my opinion, is a better option than using law enforcement personnel.

In addition, I recommend supporting the Federal Government's effort to develop a National capability for the collection of data on medical countermeasures used during public health emergencies. Collecting data on the safety and clinical benefit of medical countermeasures used during the response to a public health emergency is essential to guide response activities.

Question 6a. Colonel Larson, the report notes that if we had 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. But the Department of Defense would likely need to play a major support role in responding to such a catastrophic event.

As retired military, do you believe the DoD has adequate capabilities now, and in the future, to respond to a significant WMD attack within a major city?

Answer. No. See attach No. 5,* an article by the Honorable Paul McHale, former Assistant Secretary of Defense for Homeland Defense. Secretary McHale was a member of the Aspen WMD Study Group, and I know of no one better qualified to respond to this question.

Question 6b. How well are the DHS, DoD, local, and State entities, prepared to work together and coordinate the response to such a catastrophic event?

Answer. I am not qualified to answer this question, but 14 years' work in the field of homeland security leads me to believe that response capabilities vary widely across America's 3,000+ counties.

Question 7. At least half-a-dozen Federal agencies are engaged in "biomonitoring," meaning they look for signs of infectious disease in air, water, or other media. The Department of Homeland Security is most known for its BioWatch program, a series of detectors in over 30 major U.S. cities that seeks to reduce the time to detection if a terrorist or naturally-occurring infectious agent were to be released into the air.

If the biodefense budget were yours, how would you prioritize expenditures on biomonitoring in the context of all of the many other needs in the spectrum of dealing with the biological threat?

*The information has been retained in committee files.

Answer. There is no silver bullet for rapid detection/diagnosis, but both are critical components of any biodefense strategy. An effective and cost-efficient bio-monitoring system for the United States requires a combination of three elements: Well-trained infectious disease specialists working on the front line of emergency medicine; technologies that enable rapid detection/diagnosis at the point-of-medical-care; and environmental sensing.

Of those three, I would give highest priority to educating and training those most likely to encounter the first seriously ill patients following an attack. The earliest possible detection and diagnosis are vital if medical countermeasures are to be successfully deployed. Many of those who are very ill will be sent to hospital emergency rooms, and yet few physicians are quick to recognize symptoms and signs of either anthrax or smallpox, let alone other rare diseases that could result from an attack. The challenge is to ensure that such patients are diagnosed as early as possible in an outbreak.

One remedy would be for hospitals in large cities to contract to ensure that a specially-trained physician, knowledgeable about threat agents and containment policies, was immediately available to evaluate all suspect cases.

The creation of a network of expertise such as this could result in a timely early deployment of countermeasures, isolation of patients and contacts, notification of public health authorities, vaccination, antibiotic distribution, etc. It could mean a difference of days or weeks from current passive methods and would be far less expensive and useful than uncertain automated detection devices.

To assist the human element, rapid diagnosis at the point-of-medical-care-delivery (ERs) is another top priority and emerging technology is showing great promise. Much of this research has been funded by the Department of Homeland Security Directorate of Science and Technology. Additionally, the Food and Drug Administration (FDA) is actively engaged in facilitating the development of diagnostic tests. For example, FDA has recently issued draft guidance for developing multiplexed microbiological in vitro nucleic acid-based diagnostic devices and is working with the Defense Threat Reduction Agency and the National Center for Biotechnology Information to establish a publicly available reference database for validating such devices. Multiplex in vitro diagnostic tests could be used to test for multiple pathogens simultaneously providing invaluable information when responding to a public health emergency. This research (and future operational capability) has the dual benefit of providing rapid detection and diagnosis for both naturally-occurring diseases and bioterrorism.

While environmental sensing is a key element in the bio-monitoring triad, major problems that have plagued the BioWatch program—and its high cost, have raised serious questions about moving forward with Generation 3 BioWatch.

From a 2011 study, National Academy of Sciences Committee on Effectiveness of National Biosurveillance Systems: BioWatch and the Public Health System, (National Research Council, ISBN-10: 0-309-13971-6):

“The current BioWatch system needs better technical and operational testing to establish its effectiveness. It also needs better collaboration with public health systems to improve its usefulness. The proposed enhancements of the BioWatch system will be possible only if significant scientific and technical hurdles are overcome. “Given the BioWatch system’s serious technical and operational challenges and its costs, DHS should assess its effectiveness and frame program goals from a risk-management perspective; conduct systematic operational testing of current and proposed BioWatch technologies; establish an external advisory panel with technical and operational expertise; and strengthen collaboration and coordination with public health officials in BioWatch jurisdictions.”

Based on what we know today, the best return on investment for detecting a bio-attack is to strengthen point-of-medical-care-delivery capabilities: Well-trained physicians supported by rapid diagnostic tools. If and when the scientific and operational challenges of environmental sensing are overcome, then it should complete the triad.

Some of my colleagues will criticize my recommendation to focus on point-of-medical-care-delivery. They will say, “That’s too late! We need to detect an attack at the time of the attack—through environmental sampling.”

And in a perfect world, they would be right. The earlier the detection, the better the response. I support continued efforts in research and development of environmental sensing, but not at the expense of more feasible programs that provide greater capability at lower cost. America cannot afford deployment of another homeland security technology that is not ready for prime time.

Question 8a. A new field of bioforensics emerged after the anthrax attacks of 2001. The Department of Homeland Security now operates a major bioforensics lab-

oratory, the National Bioforensic Analysis Center, used extensively by the Federal Bureau of Investigation.

Do you think our National capability for bioforensics has grown sufficiently to meet the need?

Answer. First, let me state that bioforensics capability consists of three parts: Intelligence collection and analysis, law enforcement (traditional gumshoe-type post-event investigation), and microbial forensics. My answers will only address the microbial forensics issues.

The 2011 WMD Center Report Card stated: “Despite extensive research, a scientifically and legally validated attribution capability does not yet exist for anthrax or virtually any other pathogen or toxin. There is not yet a networked system of National and international repositories to support microbial forensics, and existing mechanisms to facilitate collaboration among stakeholders worldwide are insufficient.”

I am not aware of any major changes during the past 14 months. For more details, see: Pages 29–32 of WMD Center’s 2011 Bio-Response Report Card available at www.wmdcenter.org.

Question 8b. Do we need to be doing more than what we’re doing, such as building a capable bioforensics workforce for the future?

Answer. This is a very good question. I wish I had a very good answer, but I do not. As we stated in the WMD Center’s Bio-Response Report Card in 2011: “The WMD Center recommends that biological attribution be further examined by an independent organization, such as the National Academy of Sciences, to recommend where and how improvements can be made to this critical link in the bio-response chain.”

Question 9. The interest among al-Qaeda and its affiliates in chemical, biological, radiological, and nuclear weapons remains a concern. Although they have not been successful in developing such weapons, active research programs or activities could be leveraged into weapons programs in light of instability in countries like Syria, Iran, and Pakistan.

Do you view such possibilities as threats to overseas allies and American interests, or do you foresee a real possibility that this is a threat to the homeland itself?

Answer. Nuclear and biological weapons are a threat to deployed U.S. forces and U.S. citizens and interests overseas, our allies, and our homeland. The warning in WORLD AT RISK remains just as relevant today, if not more so.

“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.”

Question 10a. Colonel Larsen, the WMD report goes to great length to discuss possible connections between nation states and nuclear terrorism. The report specifically calls out the nuclear programs of Iran, Pakistan, and North Korea.

Are you concerned that nation states that have ties with terrorists groups could somehow provide these terrorists with nuclear expertise, or even worse, a fully operational nuclear device?

Question 10b. Are current international efforts, such as inspections by the International Atomic Energy Agency, adequate for preventing nuclear and radiological terrorism? Do we need to do more?

Answer. To get the materials needed to build a bomb, terrorists will not necessarily go where there is the most material; they will go where the material is most vulnerable. That makes global nuclear security only as strong as the weakest link in the chain. I agree with the assessment of the Nuclear Threat Initiative, that the best defense against catastrophic nuclear terrorism begins with securing weapons and materials in every country and at every facility where they are stored, but the work to secure the materials, does not end there. All states must accept responsibility, and all must participate in the global effort to combat this threat.

The Nuclear Security Summits have played an important role to spotlight the threat and engage a broad spectrum of countries in solutions. What’s needed for the long-term is a global system for tracking, accounting for, managing, and securing all weapons-usable nuclear materials (e.g., highly enriched uranium and separated plutonium). The current Nuclear Security Summit process is looking at how to work toward this longer-term assurance. To accomplish this, both the mandate and resources of the International Atomic Energy Agency (IAEA) would need to be strengthened, in order for the organization to play a much stronger role than it is currently able to do.

Question 11. Your report states that “the U.S. 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.”

Tell me about our lack of capability to reduce terrorists’ capability—are sanctions and export control measures insufficient? Where is the weak link here?

Answer. The weak link is the failure of many U.S. Government leaders to understand that the battle for nonproliferation of bioweapons has been lost. The ubiquity of deadly pathogens that exist in nature, combined with the global availability of dual-use equipment and knowledge required to weaponize these pathogens, means that any nation-state, many terrorist organizations, and on a smaller scale, even some lone wolf terrorists are capable of producing sophisticated bioweapons.

For details on the ubiquity of pathogens available to bioterrorists, see atch No. 4.*

Question 12. Only weeks after the terrorist attacks of September 11, 2001, a Nation-wide anthrax attack sickened 22 people and took 5 lives. Coming on the heels of 9/11, this hit us like a ton of bricks. The effects were significant, and yet could have been much worse.

In what ways did these anthrax attacks increase activities toward prevention and response? You have alluded to a complacency—has complacency set in about the biological threat after 11 years of quiet on this front?

Answer. Yes there was an increase in activities to the tune of \$80+ billion, but the strategy and implementations plans could be best be described as: Ready! Shoot! Aim!

Much of the money was wasted. For recommendations on resolving this problem, see my answer to Question 16.

Complacency has definitely set in. Since 2008 more than 40,000 State and local public health workers have been laid off.

Question 13. In October 2011, once we became aware that we were dealing with an anthrax attack, as many as 32,000 people who may have been exposed initiated preventive measures in the form of antibiotics. Administration of antibiotics on such a large scale had never before been attempted by the public health system. Some things worked, others did not. Today, mass administration forms a cornerstone of our National strategy to mitigate the effects of a bioattack, because they are so difficult to prevent in the first place.

Eleven years later, how would we do if this happened tomorrow? Would distribution and dispensing be as efficient, or more efficient, and would patient compliance be improved?

Answer. For the various means that could be used to dispense MCMs, see answer No. 5.

Regarding current capabilities to rapidly dispense MCMs during a crisis, I stand by the assessment of the WMD Center’s 2011 Bio-Response Report Card, page 45.

“The inability to dispense potentially lifesaving medical countermeasures in the event of a large-scale bio-attack presents a serious risk of needless deaths, social disorder, and loss of confidence in Government. It is highly unlikely that antibiotics could be dispensed to a large population within 48 hours. The Federal role in assisting local authorities to achieve this critical mission is growing, but has been slow and uneven. No local jurisdiction has demonstrated the ability to rapidly dispense medical countermeasures on a large scale under realistic conditions. Meeting the 48-hour standard will not be possible without multiple and redundant dispensing strategies.”

Question 14a. I noticed in reviewing your report that it makes very little mention of chemical terrorism. Chemical agents such as sarin, mustard gas, and other noxious materials have long been of interest to terrorists. We are all aware of the chemical weapon stockpiles in Syria, and the possibility that some of these could fall into the hands of terrorists.

Regardless of the semantics over whether chemical weapons should be considered “weapons of mass destruction,” is there, or is there not, a continued threat of terrorism with chemical agents?

Answer. World at Risk did not address chemical weapons. “We focused on two categories of WMD—nuclear and biological—because they pose the greatest peril.”

Most definitely, yes. An attack with chemical weapons would not be on the scale of a nuclear or sophisticated bio attack, but would be an extraordinarily effective weapon to terrorize a population. As one who personally experienced a chemical attack on Christmas Eve of 1969 in the Republic of South Vietnam, I fully appreciate

*The information has been retained in committee files.

the level of terror chemical weapons can produce. It took my unit about 15 minutes to realize the agent was only an irritant, similar to tear gas, but during that 15 minutes I was more frightened than at any time during my combat tour, including 400 missions in helicopter gunships.

One should also consider the fact that I was in a combat zone and mentally prepared for attacks, well-trained for chemical defense, and had my protective mask on within seconds. Imagine the response of untrained, unprepared civilians in a subway station with no protective equipment. One chemical attack could terrorize an entire nation, but the number of physical casualties would be nowhere close to that of nuclear or sophisticated biological attacks.

Question 14b. Are we taking the necessary measures to prevent the proliferation of chemical weapons and are we preparing our first responders and others to deal with the possibility of a chemical attack against our Nation?

Answer. I am not an expert on the Chemical Weapons Convention or other U.S. and international chemical nonproliferation efforts. However, I am more concerned about the use of industrial chemicals in a terrorist attack, which we conveniently store in our major metropolitan areas, than in terrorists smuggling in sarin or VX. (In 2003 I was asked to develop and run two simulated chemical attacks for an EPA tabletop exercise. In the *Terminal Risk* exercise, we used industrial chemicals to attack the Detroit Metropolitan Airport and the Las Vegas strip.)

In many large cities, first responders get actual training on a daily or at least weekly basis in response to industrial chemical incidents. These are generally small-scale, but are in effect good training exercises that require coordination of fire, EMS, environmental protection agencies, law enforcement, and public health from local, State, and Federal organizations. However, a large-scale event would prove far more challenging, particularly for the demands on emergency rooms.

Question 15. My understanding is that one of the challenges the intelligence community faces when it comes to assessing the very existence of bioweapons programs is the "dual-use" issue. All of the beakers and test tubes and PCR machines that would be needed to develop a biological weapon are in use for legitimate purposes every day in laboratories and hospitals in almost every nation in the world.

How serious a problem does the dual-use issue pose both for understanding the extent of the threat, and for preventing it?

Answer. *THIS IS THE MOST IMPORTANT PARAGRAPH IN THIS DOCUMENT.*

Members of Congress must understand that the battle against bioweapons proliferation has been lost. The ubiquity of deadly pathogens that exist in nature, combined with the global availability of dual-use equipment and knowledge required to weaponize these pathogens, means that any nation-state, many terrorist organizations, and on a smaller scale, even some lone wolf terrorists are capable of producing sophisticated bioweapons. These weapons "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."²

Question 16. The Aspen report indicated that shrinking budgets for biodefense have left the Nation underprepared. While that may be true, I have to point out that we spend half-a-billion dollars each year on civilian biodefense, and that figure is more like \$5 billion when you include other related programs that benefit biodefense. That's a lot of money, and I haven't seen an argument that convinces me that more money is needed; but rather, that the money we are spending needs to be spent more wisely.

What are your recommendations for this?

Answer. I completely agree with your assessment. America has wasted enormous sums of money on biodefense during the past decade.

The highest priority for biodefense must be the development of a scientifically-based, operationally-sound strategy for biodefense, complemented by National plans that are fully integrated with State, local, and private-sector capabilities.

While the National Security Council produced a biodefense strategy in November 2009, it largely focuses on international health and prevention efforts. However, no such strategy exists for bio-response capabilities. Furthermore, there is currently no National-level plan for a response to a bio-attack.

I recommend the Obama administration put someone in charge of producing a strategy along with fully-integrated plans and spending programs. This will also identify spending priorities. This individual should have the authority, responsi-

²*National Strategy for Countering Biological Threats*, National Security Council, November 2009, page 1.

bility, and accountability for America's biodefense efforts and it should be their full-time job.

Today, America has more than two-dozen Presidentially-appointed, Senate-confirmed individuals with some responsibilities for biodefense, but not one of them has it as a full-time job and no one is in charge.

Without a senior leader in charge of biodefense and without scientifically-based, operationally-sound strategy for biodefense, complimented by National plans that are fully integrated with State and local efforts plus the private sector, I see no way for Congress to effectively appropriate funds for biodefense or perform critical oversight functions.

The risk of bioterrorism is increasing while America's biodefense capabilities are significantly decreasing.

