



NOVEMBER 3, 2015

DEFENDING AGAINST BIOTERRORISM: HOW VULNERABLE IS AMERICA?

U.S. HOUSE OF REPRESENTATIVES FULL COMMITTEE ON HOMELAND SECURITY

ONE HUNDRED FOURTEENTH CONGRESS, FIRST SESSION

HEARING CONTENTS:

MEMBER STATEMENTS:

Rep. Michael McCaul (R-TX) [\[view pdf\]](#)
Chairman, Committee on Homeland Security

Rep. Bennie Thompson (D-MS) *[no pdf available, see [7:17 of webcast](#)]*
Ranking Member, Committee on Homeland Security

WITNESSES:

Hon. Thomas J. Ridge *[joint testimony submitted on behalf of both Blue Ribbon co-Chairs]*
Co-Chair, Blue Ribbon Study Panel on Biodefense

Hon. Joseph I. Lieberman
Co-Chair, Blue Ribbon Study Panel on Biodefense

Dr. Leonard A. Cole [\[view pdf\]](#)
Director, Terror Medicine and Security Program, Department of Emergency Medicine
Rutgers New Jersey Medical School

AVAILABLE WEBCAST(S):

Full Hearing: <https://www.youtube.com/watch?v=qkXMTnM4Z70>

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OPENING STATEMENT

November 3, 2015

MEDIA CONTACTS

Susan Phalen, Matthew Ballard

**Statement of Chairman Michael McCaul (R-TX)
House Homeland Security Committee**

Defending Against Bioterrorism: How Vulnerable is America?

Remarks as Prepared

I want to welcome Senator Lieberman and Governor Ridge back to the Committee. I commend you both for your continuing public service and your efforts to protect our Nation—particularly on the issue of biodefense.

The threat from weapons of mass destruction may have faded from public view since 9/11, but the dangers have not diminished.

Terrorists and rogue states are as committed as ever to obtaining WMD capabilities to intimidate our people and to inflict unspeakable harm. Unfortunately, our level of readiness has not kept pace with the growing risk.

Last year the Ebola crisis showed us that we are not fully prepared to confront biological threats. We learned that the federal government did not have the systems in place to address the situation and lacked clear lines of authority. We learned that many frontline healthcare workers did not have the skills or basic training needed.

And we learned that officials lacked a plan for communicating the government's response to the public, including reassuring the American people that it could keep the contagion from spreading through international air travel. Fortunately, we kept the virus from spreading, but there were important lessons to be learned.

We know that terrorists are still dead set on obtaining WMD devices to use in their attacks. We have seen groups like ISIS use makeshift chemical weapons on the battlefield and boast about plans to smuggle radiological material into the United States. And with recent FBI stings in places like Moldova, we know that there are sellers ready to supply the ingredients for these tools of terror. Bioterrorism is especially alarming. Technological advances have put dangerous biological agents within reach of extremist groups—capabilities that were previously available only to nation-states.

We also know there is no shortage of enemies who would seek to bring WMD devices into our country if they had the opportunity.

At our recent worldwide threats hearing, FBI Director James Comey indicated that the potential smuggling of a weapon of mass destruction into the Western Hemisphere is, in his opinion, a “very serious threat.”

That is why we must take the recommendations of Senator Lieberman and Governor Ridge very seriously.

Over the course of the past year, their Study Panel hosted a number of meetings to address the full spectrum of the bioterror threat, and their final report provides a thorough review of the challenges we face on that front. It makes 33 recommendations on a number of topics including leadership, strategy, intelligence gathering and dissemination, medical countermeasures, and response.

It comes as no surprise to me that one of your main findings is the lack of federal leadership and coordination at the highest level of the executive branch. With a dozen agencies playing a role in the biodefense space, we must have a senior individual coordinating these efforts. Indeed, one of the main questions I asked during the Ebola response was “Who is in charge?” Unfortunately, that would still be an open question today.

That is why I have advocated for the reinstatement of the Special Assistant to the President for Biodefense. Your report calls for the designation of the Vice President as the responsible official, along with the development of a White House Biodefense Coordination Council.

I look forward to discussing this recommendation and why you believe the Vice President would be in the best position to address this threat.

We are also particularly interested in your assessment of the responsibilities of the Department of Homeland Security in this space.

The report highlights shortcomings of the Department’s biological surveillance and detection efforts through the National Biosurveillance Integration System (NBIS) and the BioWatch Program. The Committee shares your concerns and has a long history of conducting oversight of NBIS and BioWatch.

In fact, the Emergency Preparedness Subcommittee, after holding a hearing on the bioterrorism threat earlier this year, is planning additional hearings on biosurveillance and detection later this year.

The Committee is currently considering the Department’s proposal to consolidate a number of its WMD functions into a new, CBRNE Office.

Your argument about the need for leadership and coordination for biodefense also rings true for chemical, radiological, nuclear, and explosives activities. This is a priority for Secretary Johnson, and I believe that by consolidating the various offices within the Department with responsibility for CBRNE, we will elevate the mission and fix a broken bureaucracy so that we can keep our Nation safe.

Finally, I'd be remiss if I didn't highlight your discussion of the fragmented congressional jurisdiction for homeland security oversight. Ranking Member Thompson and I, and Chairman King before me, have repeatedly called for the consolidation of congressional jurisdiction.

I will continue to work on this issue with the new Speaker to ensure Congress can address some of the oversight challenges you discuss in the report.

Hearings like this give us a better sense of what we're up against—and how we can make sure our agencies are prepared to keep WMD threats from reaching our shores and respond to them decisively if they do.

We appreciate the work of your panel, and you have my commitment that this Committee will do its part to address these challenges through further oversight and legislation.

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**The Honorable Joseph I. Lieberman
The Honorable Thomas J. Ridge
Co-Chairs, Blue Ribbon Study Panel on Biodefense**

November 3, 2015

**Full Committee Hearing of the
House Committee on Homeland Security
"Defending Against Bioterrorism: How Vulnerable is America?"**

Statement for the Record

Chairman McCaul, Ranking Member Thompson, and Members of the Committee: Thank you for inviting us here to provide the perspective and recommendations of the bipartisan Blue Ribbon Study Panel on Biodefense. On behalf of our colleagues on the Panel – former Secretary Donna Shalala, former Senate Majority Leader Tom Daschle, former Representative Jim Greenwood, and former Homeland Security Advisor Ken Wainstein – we present the findings, concerns, and determined optimism of our group.

As you know, we both have addressed homeland security in various capacities for many years. Senator Lieberman served 24 years in the United States Senate, where he spent six years as Chairman of the Senate Committee on Homeland Security and Governmental Affairs. Governor Ridge was the Nation's first Secretary of Homeland Security and served six terms in the United States House of Representatives. Although we have left government, we remain committed to public service and concerned about the challenges our homeland faces. The biological threat is among our greatest concerns. We know that many have undertaken good work to address this threat, but that we have still not achieved what we potentially could in this regard.

The federal government and its public and private sector partners began strengthening national biodefense before the anthrax attacks of 2001 (fourteen years ago this month), they redoubled their efforts thereafter. As we are sure you recall, letters containing anthrax spores were sent to the Hart Senate Office building (shutting it down for three months) and elsewhere throughout the East Coast. Anthrax killed 5 Americans, sickened 17 more, reduced business productivity, and cost the Nation a great deal in terms of money, time, impact on government operations, and our sense of security.

Yet today, the United States is not taking the biological threat seriously enough and therefore, the Nation is not ready to deal with a biological event. Most recently, the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism (WMD Commission) raised the issue seven years ago, but others preceded them – the Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction raised it ten years ago, the National Commission on Terrorist Attacks upon the United States raised it eleven years ago, and the U.S. Commission on National Security/21st Century raised fourteen years ago.

In 2008, Senators Bob Graham and Jim Talent presented the findings of the WMD Commission to the Senate. Senator Talent also testified to this Committee as to the seriousness of the biological threat in 2010 and again in 2011 as you considered legislation to implement the Commission's recommendations. They believed that by the end of 2013, it was more likely than not that terrorists would use a weapon of mass destruction in a terrorist attack. They were proven correct when Bashar al-Assad deployed chemical weapons on the Syrian people in 2013. Their grave concerns regarding the biological threat were also well founded and we should assume that they could come to fruition.

With this in mind, we began our work with the Panel by posing two questions: (1) is the United States still vulnerable to the same weaknesses in biodefense that Senators Graham and Talent found in 2008; and (2) what are we doing to heed their advice – and that of the esteemed panels before them – to take decisive action to strengthen our national biodefense?

Beginning last year, we held four public meetings to help answer these questions. At these meetings, we spoke with more than sixty experts, including current and former lawmakers and federal officials, local health department representatives, emergency service providers, academicians, business leaders, and thought leaders. Their input, along with significant additional research, enabled us to scrutinize the status of those activities deemed necessary for biodefense by both Republican and Democratic administrations, and many policy experts – prevention, deterrence, preparedness, detection, response, attribution, recovery, and mitigation.

Our efforts to examine national defense against intentionally introduced, accidentally released, and naturally occurring biological threats culminated in our bipartisan report, "A National Blueprint for Biodefense: Major Reform Needed to Optimize Efforts." We thank you for the opportunity to present our findings and recommendations and discuss them with you today.

We found both substantial achievements and serious gaps in our capacity to defend against major biological events, gaps that create vulnerabilities to the homeland. We also found that our preparedness is inversely proportional to how catastrophic consequences could be. We believe that the root cause of this vulnerability is the lack of strong centralized leadership at the highest level of government. No one person has the charge and authority to take the dozen departments and agencies responsible for some aspect of biodefense and from them create a cohesive, effective, and efficient whole. The last three Presidents appointed a Special Assistant or Czar at the White House to address the issue. While their roles were important and the individuals holding these positions achieved significant accomplishments, they lacked the fundamental jurisdictional and budgetary authorities necessary to drive public and private sector efforts.

The WMD Commission shared our concern about the lack of White House leadership and governance regarding biodefense. The absence of guidance and accountability

created by this lack of centralized leadership may have been the reason why the Commission's recommendations were not implemented effectively. These recommendations included reviewing the Select Agent Program, strengthening global disease surveillance, and enhancing national rapid response. Recent events, such as Ebola and U.S. laboratory biosafety and biosecurity incidents, demonstrate that these are still not functioning as well as they should.

There are those who believe that many issues are at least as important, complicated, and in need of a centrally led whole-of-nation effort, from cyber attacks to violent extremism. We believe, however, that biodefense is unique. Biodefense is one of the federal government's most important national defense functions, falling squarely within the purview of the federal government. Biodefense affects national security, homeland security, public health security, and economic security. As such, it requires a complex and highly sophisticated enterprise approach. More than a dozen departments and agencies must work in tandem toward a common endpoint, with an understanding of intermediate and end goals and the need to eliminate duplicative expenditures in this time of fiscal constraint. We need a driven leader with policy, political, and budget authority sufficient to achieve what has never been achieved before and establish needed harmony and priorities for biodefense.

Insufficient coordination, collaboration, and innovation result from this lack of centralized leadership. The efforts of well-intentioned departments and agencies to coordinate among themselves and address some aspects of biodefense have fallen short. An overarching leader at the White House must direct and harmonize these efforts, setting priorities, goals, and objectives for biodefense and holding members of the Executive Branch accountable for meeting them.

This leader must also take charge of intergovernmental collaborative efforts because biodefense depends on the substantial participation of state, local, territorial, and tribal governments and their non-governmental partners. They – not the federal government – will immediately feel and respond to biological events. The federal government must help them become more capable, allow them greater access, and provide them far more support than they are currently getting.

Biological threats are imminent, biological vulnerabilities have existed for too long, and the complexity of the threat requires equally complex solutions. As a result, biodefense is in urgent need of much greater focus on innovation. The risk aversion generally demonstrated by the government is often prudent, but in biodefense, it inhibits the entrepreneurial thinking and technological improvements we need for radical, effective solutions.

Sufficient coordination, collaboration, and innovation in biodefense will improve the security of the American people. With effective and efficient biodefense, for example, we would have hospitals able to handle diseases like Ebola, city governments able to dispense medical countermeasures to their populations, and industry able to solve our greatest challenges in biodetection.

The 33 recommendations and more than 100 short-, medium-, and long-term programmatic, legislative, and policy actions in our report can improve our Nation's ability to prevent, deter, prepare for, detect, respond to, attribute, recovery from, and mitigate biological events. Collectively, they serve as a blueprint for biodefense. While we believe they are all important, our most important recommendations address leadership, biodefense strategy, biosurveillance, and medical countermeasures.

1. **Leadership:** First and foremost, we recommend the instatement of a leader at the highest level of government who recognizes the severity of the biological threat and possesses the authority and political will to defend against it. This top-level leader should be the Vice President of the United States. The Vice President can act on behalf of the President when instilled with presidential imprimatur and given authority as the President's proxy. The primary goal of centralizing leadership is to place coordination and oversight responsibility in a location that will have sufficient jurisdictional and budget authority regardless of personalities or party in power, and with a person in a position with the ability to make executive decisions. The Vice President possesses these attributes. By establishing and leading a Biodefense Coordination Council, the Vice President can also drive a federal and non-federal coalition toward solutions.
2. **Biodefense Strategy:** Solutions depend on a well-considered comprehensive strategy. The Vice President's top priority must be to develop the National Biodefense Strategy of the United States of America. This strategy should address all organizations with responsibilities for biodefense and harmonize their efforts, as well as define the Executive Branch organizational structures and requirements, modernization and realignment plans, and resource requirements necessary for implementation. The White House staff must collate existing strategies and plans, identify requirements within extant policies, assess spending history and value, and then draft a comprehensive strategy. With this strategy, policymakers will be able to assess where we are falling short of meeting the goals and objectives included therein and the President and the Congress will be able to determine where best to allocate resources. We strongly recommend that the President implement a unified biodefense budget for this purpose.
3. **Biosurveillance:** Improving our capacity for rapid detection of dispersed or circulating biological agents is one of the most important actions we can take to protect ourselves. The Department of Homeland Security (DHS) has made early detection a key goal of its biodefense efforts since the Department was established. Some limited progress has been made with the fielding of BioWatch detectors in high-risk jurisdictions around the country and the collection and integration of biosurveillance data by the National Biosurveillance Integration System. Unfortunately, we are still not reliably capable of the kind of rapid detection of the spectrum of biological threat agents envisioned a decade ago. We have two choices: either we make existing biodetection and biosurveillance programs work, or we replace them with solutions that do. We believe that the

many departments and agencies which must coordinate with DHS on detection and biosurveillance will only do so if someone above the level of the White House staff forces the issue.

4. **Medical Countermeasures (MCM):** According to Senator Talent, the development of MCM should be a high priority for policymakers because it is clear that success can be achieved in this specific area. We can surmount the technological and resource challenges to taking threats off the table with MCM. Industry is abounding with innovative ideas. We must reduce bureaucratic hurdles at the Department of Health and Human Services and increase efforts to incentivize and fund what is still a growing MCM industry for biodefense. Returning contracting authority to the Director of the Biomedical Advanced Research and Development Authority and convening industry partners to help determine which incentives will be most effective.

5. **One Health:** Animal health and environmental health are equal to human health. This approach, known as One Health, is the glue that will cohere these efforts. Zoonoses comprise the vast majority of emerging infectious disease threats faced by humans. They are also the pathogens the intelligence community is most concerned about terrorists acquiring. Zoonotic diseases interact with their environments and move between animals and people. Ebola, for example, came to humans through animals and avian influenza spread from wild birds through their environment to reach farm animals. Clearly, we were not and still are not prepared to deal with the impact of this type of disease. The DHS National Bio- and Agro-Defense Facility will provide an important laboratory capacity. Nevertheless, we must also prioritize, properly guide and fund, and fully integrate Department of Agriculture, Department of the Interior, and state level animal infectious disease surveillance, as well as state, local, territorial, and tribal planning and surveillance for zoonoses, into all biodefense efforts.

While we only described a few of our recommendations here, we submit that all thirty-three recommendations are necessary. Our other recommendations, including those to enhance intelligence collection, protect pathogen data from cyber threats, overhaul the Select Agent Program, support hospital preparedness and public health preparedness grants, and lead international efforts in public health response and biological weapons diplomacy, will lead us to a position of much greater strength.

We know that the Committee has a particular interest in DHS. You will find that in addition to biosurveillance, we recommend changes in other areas. For instance, we believe that the Federal Emergency Management Agency needs a more prominent seat at the table in discussions on how to remediate communities after a biological disaster. We believe that the Office of Intelligence and Analysis has an important role to play in information sharing with fusion centers and our state and local partners. We also submit that the Department's role in providing bioforensics services to federal partners needs to shift rather dramatically, and that the forensics laboratory that does this work should have been established at the FBI, rather than at DHS, from the beginning.

If executed efficiently, effectively, and in concert, we can advance our national defense against biological threats by implementing these recommendations.

Congress plays an extremely important role in conducting oversight and providing authorities regarding all of these recommendations. We provide a number of recommendations to amend legislation and coordinate congressional oversight. We hope you and your colleagues on other committees and in the House will consider the extensive list of suggested topics in need of oversight also contained in our report. We offer that our recommendations for a comprehensive strategy and unified budget will enable this oversight and allow Congress much greater transparency into the successes and continued challenges within the Executive Branch.

As we close, we ask you to keep in mind the concerns of our citizenry. Ebola came to the United States and claimed lives here and abroad. Chikungunya is beginning to encroach upon Puerto Rico and the U.S. Virgin Islands, and sick travelers from abroad have presented throughout the mainland. Americans are wondering why we still do not have vaccines or treatments for these diseases. The Islamic State of Iraq and the Levant used chemical weapons in the Middle East earlier this year, and the public is worried about the proximity of our troops. Television shows and movies feature diseases and their devastating effects on society, and they know many aspects of those scenarios are realistic. They understand and are close to this issue. They want us to do something about it, before terrorists use biological weapons, laboratories release more agents accidentally, or new diseases emerge.

The biological threat is already out there. It is too late to get ahead of it, but we can still reduce our vulnerabilities and get ahead of its impact.

The Committee on Homeland Security has been one of the most active House committees on this issue. We recognize that with the introduction of authorizing legislation, you have attempted to resolve capability gaps. The Committee has, in many ways, provided substantial oversight to try to ensure that those DHS elements responsible for biodefense run efficiently and in a fiscally responsible manner, and that other agencies coordinate with them. We strongly encourage your continued work in this area and look forward to working with you to strengthen national biodefense.

Thank you again for this opportunity to provide our perspective. We would also like to thank our institutional sponsors (Hudson Institute and the Inter-University Center for Terrorism Studies at Potomac Institute for Policy Studies) and all of the organizations that provided financial and other support to our efforts.

Please see our bipartisan report, “A National Blueprint for Biodefense: Major Reform Needed to Optimize Efforts” for our 33 recommendations and associated action items.

Recommendations of the Blue Ribbon Study Panel for Biodefense:

1. Institutionalize biodefense in the Office of the Vice President of the United States.
2. Establish a Biodefense Coordination Council at the White House, led by the Vice President.
3. Develop, implement, and update a comprehensive national biodefense strategy.
4. Unify biodefense budgeting.
5. Determine and establish a clear congressional agenda to ensure national biodefense.
6. Improve management of the biological intelligence enterprise.
7. Integrate animal health and One Health approaches into biodefense strategies.
8. Prioritize and align investments in medical countermeasures among all federal stakeholders.
9. Better support and inform decisions based on biological attribution.
10. Establish a national environmental decontamination and remediation capacity.
11. Implement an integrated national biosurveillance capability.
12. Empower non-federal entities to be equal biosurveillance partners.
13. Optimize the National Biosurveillance Integration System.
14. Improve surveillance of and planning for animal and zoonotic outbreaks.
15. Provide emergency service providers with the resources they need to keep themselves and their families safe.
16. Redouble efforts to share information with state, local, territorial, and tribal partners.
17. Fund the Public Health Emergency Preparedness cooperative agreement at no less than authorized levels.
18. Establish and utilize a standard process to develop and issue clinical infection control guidance for biological events.
19. Minimize redirection of Hospital Preparedness Program funds.
20. Provide the financial incentives hospitals need to prepare for biological events.
21. Establish a biodefense hospital system.
22. Develop and implement a Medical Countermeasure Response Framework.
23. Allow for forward deployment of Strategic National Stockpile assets.
24. Harden pathogen and advanced biotechnology information from cyber attacks.
25. Renew U.S. leadership of the Biological and Toxin Weapons Convention.
26. Implement military-civilian collaboration for biodefense.
27. Prioritize innovation over incrementalism in medical countermeasure development.
28. Fully prioritize, fund, and incentivize the medical countermeasure enterprise.
29. Reform Biomedical Advanced Research and Development Authority contracting.
30. Incentivize development of rapid point-of-care diagnostics.
31. Develop a 21st Century-worthy environmental detection system.
32. Review and overhaul the Select Agent Program.
33. Lead the way toward establishing a functional and agile global public health response apparatus.

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Before the Committee on Homeland Security, U.S. House of Representatives
Hearing on Defending Against Bioterrorism: How Vulnerable Is America?
November 3, 2015

Chairman McCaul and Ranking Member Thompson, thank you for inviting me to speak on the threat posed by bioterrorism, and more importantly, for the vital work that you and the other committee members are doing to strengthen the security of our country. I feel especially privileged to be sharing a table with former Governor Tom Ridge and former Senator Joe Lieberman, two of our nation's most distinguished public servants. I congratulate them on chairing the bipartisan Blue Ribbon Study Panel whose excellent new report, *A National Blueprint for Biodefense*, is of key interest at this hearing.

As you may know, in previous testimony before subcommittees of the House Homeland Security Committee I have referenced a 2012 paper titled *WMD Terrorism*. It was produced by the Aspen Institute's Homeland Security Working Group, on which I served. While reviewing the threat of terrorism posed by various weapons of mass destruction the Aspen paper emphasized that bioterrorism remains a continuing and serious threat. A virtue of the new Lieberman-Ridge *Blueprint* is that it digs more deeply into numerous biodefense activities, details their flaws, and lists recommendations for remediation. Many of the policy deficits derive from turf issues, bureaucratic inertia, and the absence of a coherent national strategy. A casual observer might feel overwhelmed by the multiplicity of issues cited in the *Blueprint*, which includes about 100 recommendations and subsets of action items. Yet failure to absorb the importance of the report's key messages would be a disservice to our national interest.

Let me make three essential observations that are drawn from the *Blueprint* and a few other reports that preceded it:

1. The biological threat is real and in a worst case scenario could be catastrophic.
2. Biodefense activities conducted by scores of government agencies are uncoordinated and many are redundant.
3. An individual with full presidential authority should be designated to oversee and coordinate the nation's biosecurity policies and activities.

I am aware that specifics about some of the recommendations have been questioned—for example, that the Vice President be the designated leader for oversight of biodefense. This designation, according to the *Blueprint*, would assure White House authority behind efforts to promote cooperation among agencies. But it also assumes that the Vice President is conversant with biodefense issues and that a Vice President's other obligations would allow for adequate attention to a new and large responsibility. Still, the need to resolve such details should not obscure the *Blueprint's* overall importance.

In some respects, strengthening biodefense capabilities can also enhance defense against disease outbreaks in general. A deliberate bioattack, as the report notes, at some point is likely. It is also true that future naturally occurring epidemics are certain. Emphasizing the overlapping benefit of preparedness for either eventuality should be a source of support for both.

A blurring of the line between deliberate and natural causes has been evident in the Ebola epidemic, which began in mid-2014 in West Africa. The World Health Organization estimates that the outbreak has thus far resulted in more than 28,000 cases including 11,000 deaths. The Ebola virus is deemed a potential bioterrorism agent, though this recent outbreak was of natural origin. Travelers from countries with high rates of the disease are screened upon arrival in the United States. After landing at Newark International Airport a suspected Ebola patient is taken to the University Hospital in Newark and remains there for days or weeks under observation. The patient is confined to an extended treatment area in a huge open space in one of the hospital buildings. The treatment area includes elaborate plumbing and electrical systems, negative pressure containment enclosures, and special waste management systems. An official from the WHO termed the hospital's response capability a "model for other hospitals." Yet for all the praise, the facility can accommodate no more than one or two patients at a time.

At this point of understanding, the medical needs would be the same whether the genesis of the disease was deliberate or not. Either way, a few simultaneous cases could overwhelm the hospital's ability to provide adequate care. Thus biodefense expenditures to expand surge capacity, say for a dozen victims, could benefit non-defense needs as well.

The *Blueprint* offers credible pathways to improve biodefense, though its top-down emphasis barely addresses the need for education within the general medical community. The field of terror medicine, which includes aspects of disaster and emergency medicine, focuses on distinctive features of a medical response to a terrorist attack. A healthcare provider is likely to be the first professional to identify a patient's illness as potentially related to biological terrorism. This was illustrated in 2001 when victims of the anthrax letter attacks began to show up in doctors' offices and hospital emergency rooms. Yet even years after those attacks, many physicians, nurses, and others in the medical community feel unprepared to deal with biological or other forms of terrorism. **

For the past two years the Rutgers New Jersey Medical School has offered a course on terror medicine to fourth year medical students. The curriculum includes lectures, videos, and hands-on simulation exercises involving biological and other terror threats. The dozens of students and faculty who have participated have been uniformly enthusiastic about the experience. Links to relevant articles about the course are listed at the end of my written testimony.

Familiarizing the medical community throughout the country with the essentials of terror medicine would provide a bottom-up approach toward a goal shared with the authors of

the *Blueprint*: enhancement of the country's biodefense. Enrollment in courses and other instructional formats on terror medicine should be encouraged.

The co-chairs of the Blue Ribbon Panel have indicated their intention to press vigorously for enactment of the *Blueprint's* recommendations. I wish them great success. But I also suggest that support from a broad base of informed and enthusiastic healthcare providers could augment their efforts.

Thank you again for your attention to this very important matter.

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*Unless otherwise indicated the views expressed here are my own and not representative of any institution.

**Smith and Hewison. "Are Nurses Prepared to Respond to a Bioterrorist Attack: A Narrative Synthesis," *Journal of Advanced Nursing* (2012) 68:12.
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Sample Articles about the Rutgers Course on Terror Medicine

Cole, et al. "Terror Medicine As Part of the Medical School Curriculum," *Frontiers in Public Health: Disaster and Emergency Medicine*, September 12, 2014.
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Kitchenman, "Medical School Students Gain Insight into Harsh Reality of 'Terror Medicine'," *NJ Spotlight*, April 4, 2014.
<http://www.njspotlight.com/stories/14/04/03/medical-school-students-gain-insight-into-harsh-reality-of-terror-medicine-issues/>

Sample Statements from Student Evaluations of the Course on Terror Medicine

"A fantastic introduction to terror medicine, an area we would otherwise never learn about."

"The course explored topics that have not been touched on in previous medical school classes but are very relevant to every medical student."

"It was great, informative, and relevant."

"Very interesting and valuable lessons in a short amount of time and I would recommend to every medical student."

"This course provides an in-depth introduction to terror medicine and is a valuable springboard to a field that future doctors should be aware of and comfortable with."