

Testimony of W. Seth Carus
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It is an honor to testify before this committee. The subject of this hearing, assessing the threat from terrorism and the appropriate responses to it, is an important one, and I am grateful for this opportunity to present my views. My remarks today will concentrate on the threats and responses associated with the potential terrorist use of chemical, biological, radiological, and nuclear weapons (or CBRN weapons).

Before continuing, let me note that my testimony reflects my personal views and does not necessarily reflect the views of the National Defense University or the Department of Defense.

In the next few minutes, I will address two main subjects. First, I will make a few observations about the nature of threat assessments and the relationship that they have to the consideration of responses. Second, I will discuss the nature of the appropriate responses to the challenges posed by CBRN weapons, including a few comments specifically aimed at the role of the Department of Defense.

Threat Assessments

Assessing the threat posed by terrorist use of CBRN weapons has proven to be a remarkably difficult process. During the past year, a contentious debate has developed over the likelihood and potential magnitude of the threat from terrorist use of CBRN weapons. Some analysts argue that there is no identifiable CBRN terrorist threat, while others contend that there is an imminent risk of catastrophic use of such weapons. This is not an academic debate, but, rather, one that has very concrete implications. How the policy community assesses the threat is likely to have profound consequences for calculating the appropriate level of resources needed to respond to CBRN use. For that reason, our answers must facilitate efforts to define the types and levels of resources that need to be devoted to CBRN responses. Unfortunately, the debate has provided remarkably few insights to help the policy community in its efforts to determine the appropriate level of investment in preparing for CBRN responses.

Misconceptions About the Threat

Understanding of the threat from CBRN weapons continues to be undermined by the persistence of certain misconceptions about the nature of the threat. Specifically, many people appear to believe that the sole source of CBRN threats to the territory of the United States comes from terrorist groups. Thus, they seem to believe that we can determine the investments required for response capabilities simply by assessing the threat posed by terrorists. In addition, many people appear to believe that threat assessments are the same as intelligence analysis. While it is clear that intelligence forms

an essential part of a threat assessment, it is not the only significant input and may not even be the most important.

Terrorists Are Not The Main Threat

Let me start by addressing the misconception that terrorists are the only relevant threat.

The primary threat from CBRN weapons comes not from terrorists but from hostile states. While there is considerable controversy about the prospects for terrorists use of CBRN weapons, we know for certain that hostile states have acquired these weapons to threaten and/or use against the U.S. military and the territory of the United States. The Soviet Union had a massive biological weapons program targeted at the United States, including pathogens aimed at both our people and our agricultural sector. Currently, there are at least a dozen countries with BW programs, including several that the United States could face as military adversaries. For example, North Korea, Iran, and Iraq are all assessed to have offensive biological weapons programs.

For the Department of Defense, the acquisition of chemical and biological weapons capabilities by hostile states in regions of vital interest to the United States has profound implication. Defense now believes that the use of such weapons will be a likely condition of future warfare. Even if there were no terrorist threat, Defense would still need to make substantial investments in CBRN protection and mitigation capabilities. These include passive and active defenses, as well as counterforce capabilities designed to defeat the CBRN threat.

It is highly unlikely that hostile states will restrict their use of chemical and biological agents to targets outside the territory of the United States. There are numerous circumstances where it would make sense for a state to attack or threaten to attack targets within the United States. It is possible, for example, that an adversary might attack air and sea ports of embarkation to prevent the United States from responding to attacks in distant theaters of operation. Thus, the 1999 Pope-Bragg Study demonstrated that a chemical or biological agent attack on Fort Bragg and Pope Air Force Base would significantly delay the ability of U.S. power projection forces to deploy overseas. Similarly, a hostile state might believe that credible threats to employ CBRN weapons, especially against U.S. territory, could deter the United States from intervening in their regions - making it safe for them to pursue aggression. Moreover, North Korea might view threats to employ CBRN weapons as a regime survival mechanism in the event that it saw itself losing a war on the Korean peninsula.

Many argue that no adversary would dare target the United States, apparently believing that the leaders of hostile states would fear the potential U.S. response to such use. While it is true that the United States has military capabilities, including its nuclear deterrent, that will give pause to any aggressor, there is legitimate reason to worry that we may not be able to deter use of CBRN weapons. The conditions for deterrence are significantly different today than they were during the Cold War. The states of current concern, such as North Korea or Iraq, differ in significant ways from the Soviet

Union. Their leaders may be more prone to risk taking than was the Soviet leadership. Certainly, an adversary who believed that we threatened the very survival of their regime is likely to have few qualms about threatening to attack U.S. territory. A hostile state might also calculate that it possessed escalation options of its own, and thus come to believe that it could deter the United States from retaliation involving a full range of military responses.

Threat assessments focused exclusively on terrorism provide a skewed view of the challenge and are of little value in determining the appropriate level of resources required for resources. Many critics of current CBRN response efforts appear to believe that since they can identify no CBRN terrorism threat, responses must be a waste of money. This view is clearly misguided, and potentially dangerous. CBRN response capabilities do not change depending on the character of the perpetrator. A terrorist use of a biological agent may look identical to a covert release engineered by operatives of a state. Hence, steps taken to deal with the terrorist threat will also deal with the state challenge, just as efforts aimed primarily at state threats will have utility in dealing with terrorist actions.

Threat Assessments Are Not Just Intelligence Assessments

Let me now turn my attention to a second misconception about CBRN threat assessments, that the primary focus of threat assessments is intelligence analysis.

Clearly, we want to rely on accurate and detailed intelligence analyses to guide decision making. Unfortunately, the intelligence community cannot always provide that type of information. This problem becomes more evident in specific areas where the intelligence community may find it difficult to collect critical types of data. CIA Director George Tenet made some significant observations on this point in Congressional testimony earlier this year. He told the Senate Foreign Relations Committee, "Biological and chemical weapons pose, arguably, the most daunting challenge for intelligence collectors and analysts." For this reason, he added, "There are, and will remain, significant gaps in our knowledge. As I have said before, there is continued and growing risk of surprise."

I cite these words because they provide some perspective on a key issue in this arena. Threat assessments consist of several components, reflecting both an understanding of adversary capabilities and intentions (which includes his understanding of his own capabilities) and an evaluation of the impact of those capabilities on friendly forces and intentions. Although the process necessarily includes intelligence collection and analysis, it encompasses additional elements, including analyses of response capabilities and an understanding of the potential impact of the adversary's activities. Finally, threat assessments cannot reflect a linear extrapolation from past possibilities. This is especially true in an area as scientifically dynamic as biological warfare. There is little doubt that the challenges we will face in the coming decades will differ radically in important respects from the ones that we have had to deal with to this time.

Threat assessments always involve analyses that go beyond the data that the intelligence community is able to provide. When the intelligence information is insufficiently robust to prevent the possibility of surprise, those other inputs grow in importance. In terms of addressing the new kinds of threats that we expect to face in the future, we also need to incorporate three other kinds of assessment: scenarios, scientific bench-marking, and red teaming.

Scenarios are often used to help understand the potential impact of CBRN use. They permit exploration of alternative means of using such weapons, and help bound the problem, including by development of "worst plausible cases."

Scientific research can help establish a technical basis for evaluating the potential threat posed by particular capabilities developed by adversaries. This would include microbiological and medical research into the activities of particular organisms, as well as engineering research into the practicality of particular means for disseminating organisms. Scientific forecasting efforts would be needed to extrapolate the likely evolution of the threat out through the long-term planning horizons of DoD.

Finally, red teaming studies make it possible to assess the kinds of capabilities that groups may be able to obtain given certain constraints. Thus, by providing indications of what a terrorist group could credibly accomplish with CBRN weapons under different circumstances, it is possible to provide an indication of what types of response capabilities may be needed.

Assessing CBRN Terrorist Threats

Let me now turn to the problem posed by terrorist use of CBRN weapons. This is an area rife with disagreements. Some analysts totally discount the threat, and argue that as a result the United States is grossly overspending on response efforts. Others contend that the challenge is far greater than often considered, and that insufficient resources are being devoted to the problem. The available evidence does not support either perspective. *The Absence of Evidence is Not the Absence of Threat*

Some experts have argued that there is no hard evidence to suggest that any terrorist is interested in CBRN weapons, and for this reason discount the whole threat. This argument is misguided. The absence of evidence is not proof of the absence of threat. The available evidence suggests that it is extremely difficult to collect intelligence on such matters. Even when state programs are involved, the intelligence community finds it extremely difficult to assess the scope of the threat to the United States. This is starkly evident from our experience with Iraq during the past decade. Especially in the biological weapons arena, but even in areas associated with chemical and nuclear weapons, it proved extraordinarily difficult to get an accurate picture of Iraqi activities. To this date, it is unclear that we know what capabilities Iraq possesses in the biological arena. The available evidence would tend to suggest that the difficulties are even great when non-state actors are involved. The U.S. government only recognized Aum Shinrikyo's activities after the event. Indeed, even though it now appears that Aum

targeted U.S. military installations in Japan, intelligence sources apparently provided no warning of the threat.

There is a real risk that we will expect too much from the intelligence community. Certainly, we hope that they would discover reliable and complete information about terrorist involvement with CBRN. And it is clear that the U.S. government is doing a much better job of addressing this problem today than it did prior to the Aum Shinrikyo attack. Hence, there is a greater probability that activities like Aum's would now be detected. But given the difficulties associated with collection in this arena, we must expect surprises. Hence, the right answer is to develop policies that do not depend on the ability of the intelligence community to accurately assess what is almost certainly a low probability, but very high consequence event.

Lessons From the History of Bioterrorism

My views on this subject are largely molded by my research during the past three years into the illicit use of biological agents by terrorists and criminals. While the arguments apply in part to the other so-called weapons of mass destruction, they are primarily focused on the problem of bioterrorism.

First, it is clear that in the past there was limited interest by terrorist groups in use of biological weapons. Thus, fewer than 25 terrorist groups are known to have shown any interest in biological agents, no more than eight are known to have acquired biological weapons, and only five are believed to have employed them. There are only two instances in which groups caused harm. In total, only 751 people have been harmed in bioterrorism attacks; no one is known to have died. The simple reality is that most terrorists have never been interested in biological weapons.

Second, while most terrorists are not interested in causing mass, indiscriminate casualties, there have been a few terrorists who wanted to kill large numbers of people. These terrorists were not constrained by moral or political imperatives. Rather, they failed to achieve their goals because they lacked the necessary technical imperatives. In this sense, the mere existence of a group like the Aum Shinrikyo, which was responsible for the Tokyo sarin attack, demonstrates that groups can exist that will want to inflict mass casualties.

Third, technical limitations have been the real barrier to past use of biological agents. Contrary to views often expressed that biological agents are trivially easy to employ, it is still extremely difficult to develop an effective biological weapon. The technical information needed to produce an effective weapon is not widely available on the Internet, as often claimed. Clearly it is possible to create such capabilities, and the technology involved is not new: the United States had effective biological weapons capable of mass casualties in the 1960s. Yet, there is no reason to believe that such capabilities are currently available to non-state actors.

This experience appears to suggest that those attempting to generate threat assessments face particularly difficult challenges. Only a small percentage of terrorist groups are likely to develop an interest in CBRN weapons, and the groups that do may have unconventional characteristics that make it difficult to identify them.

There is also the possibility that state sponsors of terrorism could provide capabilities to terrorist organizations. Significantly, five of the seven countries on the State Department list of state sponsors of terrorism are known to have offensive biological weapons programs, and there are serious concerns about the other two. There is no evidence to suggest that any state has transferred CBRN capabilities to a terrorist group. Moreover, concerns about potential misuse of such weapons will tend to limit the willingness of most states to provide such types of assistance. On the other hand, there are suggestions that some state sponsors of terrorism have been willing to provide terrorists with training on subjects related to CBRN weapons. And, it is possible to imagine certain circumstances in which a state might believe it to be in their interest to support terrorist capabilities against the West, especially if they believed it could be done without being traced back to the source. Syrian support for those responsible for attacking the Marine barracks in Lebanon certainly indicates that some countries are willing to support terrorist activities intended to inflict mass casualties on Americans.

How to Assess the Threat

What to make of these observations about the nature of the terrorism threat?

It is impossible to precisely delineate the bounds of the threat through traditional intelligence means. While a threat clearly exists, there is no way to reliably estimate the probabilities of use. For this reason, policy makers must be willing to make decisions regarding investments in responses without precise threat assessments. This leads to a danger that we will either spend too little, and thus not have the required response capabilities, or spend too much and thus divert resources from other underfunded programs.

Responding to the Challenge

How should the United States as a nation respond to a threat of uncertain dimensions? There are two aspects to this problem: calculating the extent of the resources needed, and determining the character of responses that ought to be developed. There are methods for thinking about the problem even in the absence of robust threat assessments.

Invest in Dual Use Capabilities

As a starting point, we should emphasize investments that will prove beneficial even in the absence of a CBRN terrorist attack. The model for such a program is the Epidemic Intelligence Service (EIS), a component of the Centers for Disease Control and Prevention that investigates disease outbreaks in support of state and local

governments. The EIS was created fifty years ago because of concerns that the United States might be subjected to biological weapons attacks. Hence, it was thought that an ability to investigate unusual disease outbreaks was essential. Since its creation, the EIS has never detected a biological warfare attack on the United States, yet it has conducted thousands of investigations that have strengthened public health. While it remains an integral component of our national response to biological agent use, the EIS more than justifies its existence by its contributions to the nation's health.

As it happens, much of the investment in CBRN response is being made in areas where it appears similar benefits will accrue. The Domestic Preparedness Program, which was created to enhance the ability of cities to respond to chemical and biological threats, has enhanced the ability of those cities to address any incident that causes mass casualties. Moreover, it has enhanced the readiness of the cities to respond to hazardous materials incidents. Similarly, much of the spending by the Department of Health and Human Services will go to create capabilities that will benefit the country on a regular basis. Hence, CDC's Bioterrorism Preparedness and Response Program is devoting considerable resources to enhancing disease surveillance systems and public health laboratories. Strengthening these components of the public health infrastructure is certain to have a positive impact on the national capacity for responding to disease outbreaks. Similarly, the National Disaster Medical System has been strengthened by the investments in CBRN response, which means that it is better able to address other kinds of medical emergencies. These types of investments are not dependent on the specific character of the CBRN terrorism assessment, and many could be justified simply on the basis of the benefit that they will provide to the public on a routine basis.

In addition to activities that will have public benefit even in the absence of bioterrorism attacks, there are capabilities that are needed to respond to the potential use of CBRN weapons by state adversaries. A classic example is provided by the Department of Agriculture's bioterrorism response program. In the past, the United States virtually ignored this threat. Hence, it is ironic that during the Cold War the United States devoted virtually no resources to protecting agriculture from biological attacks, even though we now know that the Soviet Union had a massive anti-agriculture program. Since other states are also known to have worked on biological agents for use against agriculture, it could be argued that a response program is needed even without a terrorist justification.

In the final analysis, many of the investments being made to respond to CBRN threats are actually addressing fundamental deficiencies in the national infrastructure. Accordingly, many of the investments will provide significant benefits even in the absence of a terrorism threat.

Admittedly, there are some investments being discussed that cannot be justified on the basis of providing dual-use capabilities. The pharmaceutical stockpile program clearly falls into this category. Thus, it is difficult to find a rationale for resuming production of smallpox vaccine on the basis of dual-use requirements. The vaccine is needed if and only if someone releases smallpox back into human populations. Although there has

been considerable attention given to the danger that terrorists might take such steps it is clearly an extremely low probability event, but with extremely high consequences.

There is, however, a second way to look at the dual-use criteria. Capabilities that are needed to respond to known and likely state biological weapons capabilities also should fall into this category. The Soviet Union is known to have adopted smallpox as a biological agent, and there is every reason to believe that Russia may retain it as a military weapon. In addition, other states are suspected of possessing smallpox and some are thought to have adopted it for use as a military weapon. Hence, there is a clear need to maintain response capabilities against smallpox that have nothing to do with the terrorist threat.

The Role of DoD

Let me conclude with a few observations concerning the Defense Department's CBRN response role.

During the past four years, Defense has become increasingly concerned about its ability to respond to use of CBRN weapons. Consequence management activities in support of civilian authorities have received growing attention. The Department has created the Office of the Assistant to the Secretary of Defense for Civil Support and has established a Joint Task Force for Civil Support. It has also organized Civil Support Teams within the National Guard. In addition, many Defense organizations possess specialized capabilities that would contribute to consequence management responses.

There is a real danger, however, that resources devoted to support for civil authorities may come at the cost of capabilities needed to execute Defense's core warfighting mission. Defense developed CBRN capabilities to support its warfighting activities and, in the view of at least some observers, has insufficient capabilities to address the challenges it may face from hostile military forces. Given that chemical and biological weapons are now seen to be likely conditions of future conflict, diversion of CBRN response assets to support the domestic consequence management responses could undermine the ability of the military to fight wars. In addition, it is important to recognize that while Defense can make significant contributions to civilian needs, the military also may need to call on civilian resources.

In particular, the focus of future Defense Department investments in consequence management should be installation preparedness. Many military bases are unprepared to respond to CBRN attacks, especially those located in the United States. Indeed, many are less well prepared than nearby communities. Should adversaries target certain key installations, the ability of the United States to support overseas operations could be severely degraded. It is critical that we address this deficiency with the same urgency assigned to the Domestic Preparedness Program that has enhanced the capabilities of the country's largest cities. Such a program would have ancillary benefits for nearby civilian communities, because it would enhance the ability of Defense to execute consequence management responses in support of civil authorities.

Conclusion

In conclusion, let me reiterate four points.

First, the threat from CBRN weapons is not limited to terrorists. Thus, the development of responses should not be based solely on the assessment of the terrorist threat. From this perspective, those who argue that we are spending too much to enhance CBRN responses are wrong. The United States must worry about the potential state use of CBRN weapons. For that reason, we have a clear need to develop robust CBRN response capabilities independent of the terrorism threat.

Second, it is difficult to precisely define the probability that terrorists may acquire and use CBRN weapons. We know that some terrorists have shown interest in such weapons, and that some have unsuccessfully tried to use them in the past. It appears that technical constraints have been the key factor accounting for the failure of such groups to cause mass casualties. There is reason for concern that this will not remain the case. In addition, it is possible that terrorists might obtain CBRN capabilities from state sponsors of terrorism.

Third, many of the responses to use of CBRN weapons depend on the capabilities of federal, state, and local emergency management agencies and public health organizations. As a result, investments needed to address consequence management requirements usually reflect underlying weaknesses in government response capabilities. For this reason, much of the funding for consequence management activities, whether aimed at chemical or biological terrorism, will have benefits even if such attacks never occur. Moreover, consequence management capabilities to address CBRN terrorist incidents will also be available to tackle attacks mounted by hostile states.

Finally, the Department of Defense plays a critical role in supporting national efforts to respond to CBRN terrorism. It possesses unique capabilities for dealing with such threats. It is appropriate that such capabilities be viewed as part of a national system for confronting CBRN threats. At the same time, we must be careful that we do not undermine Defense's critical warfighting role. While there are many agencies at the federal, states and local level that have capabilities to respond to CBRN events within the territory of the United States, only Defense is capable of fighting hostile military forces. At the same time, Defense needs the resources to enhance the preparedness of key military installations. Targeted investments in installation-based consequence management capabilities would enhance Defense's ability to support its wartime missions and provide support to civil authorities. Unless efforts are made to target Defense investments in such programs, there is a real danger that Defense assets essential to support the warfight might be diverted, unnecessarily, to domestic response missions. This is clearly not in our national interest.