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On
Department of Defense Countering Weapons of Mass Destruction Programs

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INTRODUCTION

Chairwoman Stefanik, Ranking Member Langevin, and distinguished members of the Subcommittee, I appreciate the opportunity to testify on the United States Department of Defense's efforts to counter threats posed by weapons of mass destruction (WMD).

I serve as the Principal Deputy Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs, and currently, Acting Assistant Secretary.

Our office focuses on ensuring the safety, security, and reliability of our nuclear deterrent; developing capabilities to prevent the spread of, protect against, and respond to weapons of mass destruction threats; and ensuring DoD compliance with nuclear, chemical, and biological treaties and agreements. Our four organizational elements are Nuclear Matters, Chemical and Biological Defense Programs, Threat Reduction and Arms Control, and the Defense Threat Reduction Agency.

Our Nuclear Matters Office supports the Nuclear Weapons Council and is the focal point for DoD capabilities that sustain a safe, secure, and effective nuclear deterrent and counter threats from nuclear terrorism and nuclear proliferation. The President has directed the Secretary of Defense to conduct a new Nuclear Posture Review, led by OSD Policy and the Joint Staff. My office will be involved in all discussions on our future nuclear posture in view of changes in the global security environment.

We are also responsible for oversight, integration, and coordination of the Department's Chemical and Biological Defense Program. This program develops capabilities to enable the Warfighter to deter, prevent, protect, mitigate, respond to, and recover from traditional and emerging chemical and biological threats. These activities cover the full spectrum of defining requirements, developing science and technology solutions, and acquiring materiel to protect warfighters.

Our Threat Reduction and Arms Control Office oversees the implementation of WMD threat reduction programs and manages the Department's treaty implementation activities to ensure compliance with nuclear nonproliferation agreements, the Chemical Weapons Convention, and the Biological and Toxin Weapons Convention. We also manage the Department's governance process for the U.S. domestic Chemical Demilitarization Programs, as well as efforts to develop Countering Weapons of Mass Destruction Situational Awareness capabilities.

Finally, we oversee the Defense Threat Reduction Agency (DTRA). Their mission is to safeguard the United States and its allies by providing capabilities to counter, reduce, and eliminate WMD and improvised threats and mitigate their effects. As a combat support agency, DTRA provides operational support to Combatant Commands.

While each component has unique responsibilities, we operate as a team, sharing intelligence, technologies and best practices to help ensure efficiency and effectiveness of products and services.

To be successful, we must continue to innovate, not only in the technologies and operational solutions that we provide, but also in how we work together as an enterprise. Today, I would like to highlight some of the enduring and emerging challenges and threats, the ongoing activities we are conducting to address those challenges, as well as our priorities moving forward.

CHEMICAL AND BIOLOGICAL DEFENSE

Assessment of Emerging Threats

The Department continues to focus its chemical and biological defense efforts to protect against both state (e.g., North Korea) and non-state (e.g., ISIS) threats. We have developed and fielded protective equipment, detection systems, and countermeasures to protect against traditional chemical agents (e.g. Mustard and VX nerve agent).

Looking toward the future, advancements in biology and chemistry (e.g., synthetic biology), and contributing technologies, such as improvised delivery systems, additive manufacturing, gene editing, and unmanned aerial systems, present potential new threats that the nation must anticipate and be prepared to counter.

Synthetic biology is revolutionizing many sectors of our economy, from traditional biology and disciplines such as agriculture and medicine, to totally different areas like materials science and data storage. With advances in technology come potential risks, such as the development of new viruses and novel toxins. The Department continues to assess this field to understand the possibilities for potential emerging threats. We engage with the broader stakeholder community to help identify mitigation strategies. We are taking an agile, platform-based, approach to medical countermeasure development in order to rapidly defeat emerging biological threats.

While synthetic biology is important to consider within the threat landscape, we should not constrain the technologies themselves as a means of risk mitigation, or we risk stalling our own research and development programs. Many of our own Chemical and Biological Defense Programs use elements of synthetic biology. Examples include the development of filovirus vaccines and therapeutics, development of the recombinant plague vaccine, novel approaches to overcome antibiotic resistance, and the rapid development of monoclonal antibody therapies.

The proliferation of non-traditional agents such as Pharmaceutical-Based Agents is also of concern. While these are currently law enforcement and public health challenges, the Department is assessing the potential for these agents to impact warfighters. Pharmaceutical-Based Agents, initially developed and intended for legitimate uses, have proliferated and can be highly toxic at very low doses. Knowledge of how to develop these agents has expanded to a point that they could be used for nefarious purposes by both state and non-state actors.

Efforts to Address Current and Emerging Threats

To counter current and emerging threats, the Chemical and Biological Defense Program is developing new strategies to more rapidly respond, especially in the area of medical countermeasures. This new medical strategy encompasses earlier engagement in product development with the Services to ensure that we are responsive to operational priorities. Additionally, we are strengthening our partnership with the Food and Drug Administration and developing new incentives for industry engagement in developing medical countermeasures. From a product development perspective, the Chemical and Biological Defense Program is shifting toward platform capability development, which leverages synthetic biology and other emerging technologies to build medical countermeasures more efficiently and at a lower cost. The intent is to integrate these platform capabilities into a Department of Defense-dedicated production facility.

To support the development and manufacturing of medical countermeasures and effective therapeutics, the Department has invested in a new, agile manufacturing capability through the Advanced Development and Manufacturing facility in Alachua, Florida. This facility provides the capability to rapidly develop and produce medical countermeasures for our unique population, on a smaller scale than those needed for the public health sector. We are pursuing novel manufacturing capabilities, which allow for modular and flexible approaches to meet the Department's needs more rapidly and cost effectively.

The Department continues to engage with our interagency partners in the development of both physical and medical protection. We are a part of a broad interagency effort known as the Public Health Emergency Medical Countermeasures Enterprise, which leverages our capabilities as well as those of the Department of Health and Human Services and the Department of Homeland Security to develop and deliver innovative medical countermeasures and effective therapeutics.

The Department's development of chemical defense capabilities is a key component of an integrated national effort to address both traditional and non-traditional threats. We continue to invest in physical science programs, conduct research, and develop technologies for a range of chemical defense capabilities, including detection, medical countermeasures, decontamination, and protection. We are coordinating with several international partners to leverage their approved medical countermeasures against pharmaceutical-based agents. Enhanced warning, protection, and countermeasures will save lives and enable more effective consequence management.

CHEMICAL DEMILITARIZATION

The Department continues to make significant progress in domestic chemical weapons destruction programs. Our office oversees programs to meet U.S. commitments under the Chemical Weapons Convention and eliminate the remaining U.S. chemical weapons stockpile. In September of last year, the Department initiated agent destruction operations at the Pueblo Chemical Agent-Destruction Pilot Plant located at the Pueblo Chemical Depot in Colorado, using a neutralization destruction technology. More than 18,000 munitions containing approximately 90 tons of chemical agent have already been destroyed. Between March 2015

and February 2016, the Explosive Destruction System, a supplemental destruction system, destroyed 560 munitions at the Pueblo Chemical Depot that were unsuitable for processing in the Pueblo main plant, equating to nearly two tons of chemical agent.

While this is a significant milestone for the program, rapid progress after the completion of the pilot testing is needed to demonstrate the reliability, availability, and maintainability of the many first-of-a-kind systems and equipment at the Pueblo facility early next year. The Pueblo facility will be used to destroy nearly 780,000 mustard agent-filled projectiles and mortars.

With construction of the Blue Grass Chemical Agent-Destruction Pilot Plant substantially complete in Kentucky, the preparation and testing of the people, procedures, equipment, and systems, known as systemization, is about 68 percent complete. The Blue Grass facility is scheduled to begin destruction operations in April 2020 after completing systemization. The facility will destroy nearly 87,000 nerve agent-filled projectiles and rockets. A supplemental technology, called a Static Detonation Chamber, will be used to destroy all 15,492 mustard-filled munitions stored at the Blue Grass Army Depot. Current plans are to begin Static Detonation Chamber operations after completion of destruction operations in the Blue Grass main plant.

COUNTERING WEAPONS OF MASS DESTRUCTION SITUATIONAL AWARENESS

The Countering WMD Systems portfolio provides funding for development of situational awareness capabilities for the Combatant Commands, in response to requirements approved by the Joint Requirements Oversight Council. This year will be a transition year for the Department's approach. We have been engaged closely with USSOCOM to understand their mission needs for countering weapons of mass destruction situational awareness. We are currently working with USSOCOM to develop a countering weapons of mass destruction common intelligence and operating picture, using existing software applications as well as the expertise resident in two small fusion cells at the Defense Threat Reduction Agency and the Defense Intelligence Agency. These fusion cells provide planning and analytical support to USSOCOM and other Combatant Commands.

In accordance with the Fiscal Year 2017 National Defense Authorization Act, we have commissioned a Federally-Funded Research and Development Center to conduct an independent review of countering weapons of mass destruction situational awareness requirements and the prototype information system known as "Constellation." The results of this study will also inform future development of countering weapons of mass destruction situational awareness capabilities. Development and fielding of the Constellation prototype was discontinued in October 2016 due to the limitation in the NDAA and reduced funding in the Defense Appropriations bill. We learned valuable lessons from the development of the Constellation prototype, which will be incorporated into our support to U.S. Special Operations Command.

Our office is also responsible for the report required by Section 1070 of the FY17 NDAA, which requires the Secretary to list and assess the Defense Department's existing and proposed capabilities and technologies that support U.S. nonproliferation and counterproliferation policies. We are collaborating with USSOCOM, the Joint Staff, and other parts of the Defense Department to produce a report that will meet the Congressional requirements, and provide

useful information for the Department's assessments of the countering weapons of mass destruction mission and required capabilities.

WMD THREAT REDUCTION

Globally, WMD threats continue to evolve. Potentially vulnerable stockpiles of nuclear, chemical, and biological materials remain at risk, with trafficking networks that span the globe and an expanding set of state and non-state actors interested in acquiring, developing, or using WMD. The use of chlorine and sulfur mustard as weapons in Iraq and Syria highlights that the knowledge, technologies, and materials are accessible to adversaries.

To address these challenges, DTRA implements a number of WMD threat reduction activities, including the Cooperative Threat Reduction Program; Chemical, Biological, Radiological, and Nuclear (CBRN) Preparedness Program; International Counterproliferation Program; and engagements supporting the Proliferation Security Initiative. Collectively, these programs constitute some of the Department's most effective and flexible tools for addressing WMD threats.

The Department's efforts continue to reduce the threat of WMD around the world, from activities to detect and prevent WMD proliferation in the Middle East, Southeast Asia, and North Africa, to facilitating the transportation and removal of highly enriched uranium in Europe, to consolidating and securing collections of dangerous pathogens in Sub-Saharan Africa, to strengthening partners' capabilities to detect and mitigate biological threats and disease outbreaks in Southeast Asia. These programs help to build partners' capacities to secure WMD materials, detect and interdict proliferation, and respond to CBRN events, helping to strengthen the security of the U.S. and our allies.

Our office provides programmatic guidance and oversight of these activities to accomplish mission objectives, ensure synchronization with other DoD and interagency programs and activities, and optimize the WMD threat reduction value of investments.

CONCLUSION

WMD threats are real and increasing in complexity. The Department's activities address the full spectrum of CWMD threat reduction, from preventing acquisition to containing and reducing threats, to responding to crises. We act in collaboration and coordination with numerous Department, interagency, and international partners to ensure effectiveness and efficiency.

Thank you for this opportunity to testify.