S. HRG. 115–801

DEFENDING THE HOMELAND: DEPARTMENT OF DEFENSE'S ROLE IN COUNTERING WEAPONS OF MASS DESTRUCTION

HEARING

BEFORE THE

SUBCOMMITTEE ON
EMERGING THREATS AND CAPABILITIES

OF THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

ONE HUNDRED FIFTEENTH CONGRESS

SECOND SESSION

FEBRUARY 7, 2018

Printed for the use of the Committee on Armed Services

Available via http://www.govinfo.gov

U.S. GOVERNMENT PUBLISHING OFFICE
40–404 PDF WASHINGTON : 2020

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WEDNESDAY, FEBRUARY 7, 2018

U.S. SENATE,
SUBCOMMITTEE ON EMERGING
THREATS AND CAPABILITIES,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:30 p.m. in Room SR–232A, Russell Senate Office Building, Senator Joni Ernst (chairman of the subcommittee) presiding.

Members present: Senators Ernst, Fischer, Sullivan, Heinrich, Shaheen, and Peters.

OPENING STATEMENT OF SENATOR JONI ERNST

Senator ERNST. Good afternoon, everyone. I'd like to call this Subcommittee meeting on Emerging Threats and Capabilities to order.

I'll start with an opening statement. Senator Heinrich, we'll have an opening statement from you. Then we'll move on to our witnesses. So, thank you, gentlemen, for being here.

The Subcommittee on Emerging Threats and Capabilities meets today to receive testimony on the Department of Defense efforts to counter weapons of mass destruction. We welcome Kenneth Rapuano, Assistant Secretary for Defense of Homeland Defense and Global Security—that's a very long title; you have long business cards, I'm sure—and Lieutenant General Joseph Osterman, Deputy Commander of United States Special Operations Command, SOCOM, and thank them for appearing before us today.

This hearing comes at an important time. We are witnessing a troubling increase in the proliferation of WMDs [Weapons of Mass Destruction] by rogue states and terrorist organizations that pose a direct and growing threat to our national security. While we are familiar with, and concerned by, the growing size the capabilities of North Korea's nuclear program, we should also be mindful of its efforts to expand its chemical and biological weapons capabilities.

The Washington Post reported in December that North Korea is moving steadily to acquire the essential machinery that could potentially be used for an advanced bioweapons programs, from factories, by the ton, to laboratories specializing in genetic modification. Similarly, ISIS [Islamic State of Iraq and Syria] has dem-

onstrated its ability to develop and use chemical weapons like chlorine and mustard warfare agents in Iraq and Syria. As fighters flee the region after the fall of the physical caliphate, we must be aware of the potential for their technical knowledge to spread. Additionally, there are new reports of Syrian dictator Bashar al-Assad's continued use of chemical agents, like sarin, and attacks against his own people. All of these troubling developments vividly show the global nature of the WMD [Weapons of Mass Destruction] threat and, in turn, underscore the need for a global strategy to combat the threat.

I note that the most recent DOD [Department of Defense] counter-WMD strategy was released in June of 2014. As I have just laid out, the scope and complexity of the problem has only increased since that time. This requires the DOD to reassess its strategy and ensure that we are postured appropriately, in terms of organization, authorities, and capabilities, to most effectively confront this threat, from preventing the development of new WMD threats and mitigating existing ones to responding in the event of a WMD incident. I look to our witnesses to provide the subcommittee with their candid assessment of how they view the WMD threat, as well as provide recommendations on any changes to our current approach that may be warranted.

Additionally, while our preference will always be to deal with a threat before it reaches our shores, we must ensure that we are prepared to respond quickly and effectively to a WMD event in the Homeland. I note that, while DOD is not necessarily the lead organization for the Homeland response mission, it—in particular, the National Guard—plays a key role in providing unique support to civil authorities, like the Federal Emergency Management Agency, the Department of Homeland Security, and local authorities. We would appreciate an update on DOD planning and related efforts to fulfill its vital support mission in the event of a WMD attack on the Homeland.

Lastly, it has been over one year since the unified campaign plan was updated to assign SOCOM with responsibility for synchronizing DOD's counter-WMD mission, which entails drafting a new global campaign plan, establishing intelligence priorities, and monitoring global counter-WMD operations.

General Osterman, we look to you to provide an update on how SOCOM is managing its new responsibilities, the steps they have been—taken to date, and a description of any issues that could challenge the ability of SOCOM to successfully execute this important mission.

Thank you for being here with us this afternoon. We look forward to your testimony on this important topic.

I'll call on my Ranking Member to make his opening statement.

STATEMENT OF SENATOR MARTIN HEINRICH

Senator HEINRICH. Let me—when all else fails, improvise.

[Laughter.]

Senator HEINRICH. How's that? Let me start over.

Let me begin by thanking Senator Ernst for holding this hearing on the Department of Defense's role in countering weapons of mass destruction. I certainly look forward to working with you again this

year to examine key emerging threats and to craft the subcommittee's contribution to the Fiscal Year 2019 National Defense Authorization Act.

The Department of Defense has a wide array of measures to control the spread of WMD, ranging from nonproliferation programs that help set international norms and export controls to other efforts that are designed to stop the development of WMDs by noncooperative nations.

Assistant Secretary Rapuano, your portfolio includes policy oversight responsibilities for these efforts, and I look forward to better understanding how they are achieving their objectives and also what challenges they may be encountering.

U.S. Special Operations Command, or SOCOM, has played a key role in supporting DOD's role in countering the proliferation of weapons of mass destruction for more than 25 years now. As a force provider, SOCOM educates, trains, and equips special operators tasked with interdicting and rendering safe WMDs, should they fall into the wrong hands. As a combatant command, SOCOM has also been tasked with synchronizing DOD's global plans and operations for countering WMDs.

Today, I hope our witnesses will share their candid views on how SOCOM is fulfilling these critical responsibilities while also retaining its focus on countering violent extremist groups. As we all know, Special Operations Forces are a finite resource, and it is important that we maintain sufficient readiness to address any contingencies in these no-fail counter-WMD mission areas.

I look forward to hearing your testimony, both of you.

Senator ERNST. Okay. We'll go ahead and start with our witness testimony.

Secretary Rapuano, why don't we start with you, sir.

STATEMENT OF HONORABLE KENNETH P. RAPUANO, ASSISTANT SECRETARY OF DEFENSE FOR HOMELAND DEFENSE AND GLOBAL SECURITY

Secretary RAPUANO. Thank you, Chairman Ernst, Ranking Member Heinrich, and members of the subcommittee. I'm pleased to be here today to testify about the Department of Defense's efforts to counter chemical, biological, radiological, and nuclear [CBRN] threats both at home and abroad.

The United States faces a range of complex and multidimensional CBRN challenges. Over the past year, the North Korean regime has increased its dangerous and provocative behavior and continued to test nuclear weapons and ballistic missiles, in clear violation of multiple United Nations Security Council resolutions. We've also seen the continued use of chemical weapons by both the Syrian regime and the Islamic State of Iraq and Syria, further eroding the international norm against their use.

More broadly, rapid technological advancements and increased access to dual-use technologies, expertise, and materials that can be used for both peaceful and military purposes heighten the risk that adversaries can more easily seek or acquire WMD. It has never been more difficult to prevent adversaries from acquiring the materials or expertise necessary to develop WMD or use CBRN materials in intentional attacks.

Additionally, the speed, volume, and coverage of international travel means that naturally occurring pathogens of security concern can spread worldwide in days, potentially having the same catastrophic consequences of a deliberate biological attack.

These diverse threats require multifaceted approaches that keep up with and adapt to the current threats while looking ahead to mitigate further risks. The intelligence community, Department of State, DHS [Department of Homeland Security], DOE [Department of Energy], and the Department of Justice all play critical roles in detecting threats, preventing attacks on the Homeland, and working with foreign partners to stop and respond to incidents. DOD supports these efforts through both domestic and overseas activities, and works closely with allies and partners to counter the wide range of CBRN threats that exist today.

Close cooperation with the other U.S. Departments and agencies and allies and partners is crucial, since DOD must prioritize capabilities and efforts that counter operationally significant WMD risks and activities that are best executed by the Department. We do this by ensuring we have a layered approach to detecting and mitigating CBRN threats at the source, preventing them from reaching the Homeland, and, when necessary, responding militarily.

The Department's strategic approach to the CWMD mission focuses on three lines of effort: preventing acquisition of WMD, containing and reducing WMD threats, and, when necessary, responding to and mitigating the consequences of their use.

For example, to prevent the transfer of CBRN or dual-use materials to and from North Korea, the Department works closely with interagency partners to encourage states to impede and stop illicit shipments, including through efforts to build partner capacity and spread an understanding of international norms and obligations through the Proliferation Security Initiative. We also engage with partners through the DOD Cooperative Threat Reduction, or CTR, program to detect, secure, or eliminate CBRN materials and pathogens of security concern. Despite our best efforts at prevention, we must be prepared to contain and reduce CBRN threats once they have developed. DOD is postured to isolate, identify, neutralize, and dispose of CBRN threats before they can reach our borders.

The Department also supports the government's efforts to deter adversaries and ensure that those actors that already possess WMD do not use them against the United States or our allies and partners.

For example, DOD continues to support State Department-led efforts to work with international allies and partners to hold the Assad regime accountable for using chemical weapons. We remain concerned about reports of ongoing use, and will continue to ensure the President has all the options available to respond, as necessary. In addition, to contain and reduce the threat from ISIS, the U.S. and our coalition partners continue to exploit opportunities on the ground to better understand and disrupt their CW networks.

Ultimately, though, should deterrence or efforts to contain and reduce threats fail and an adversary attacks the United States or our allies, the Department of Defense's top military priority is to respond and prevent future attacks. This may require U.S. forces

to operate in a contaminated environment, which makes it critical that we safeguard the force and ensure U.S. personnel can sustain effective operations in the event of war or other contingencies. This is why DOD works closely with allies and partners to ensure that we are prepared to respond to CBRN incidents overseas.

In Asia, for example, DOD is working with key regional allies, the Republic of Korea and Japan, to ensure that our forces remain prepared to respond to CBRN contingencies on, or emanating from, the Korean Peninsula.

Elsewhere, complementing those engagements, the CBRN Preparedness Program trains and equips partner nations to enhance their capabilities to respond to, and mitigate the effects of, a CBRN incident.

In addition to being prepared to respond to events overseas, DOD must ensure we are ready to support the Federal response to a domestic CBRN incident at home. While most incidents begin and end locally, significant events, such as a WMD attack, will likely require additional support from neighboring jurisdictions, State governments, and, as necessary, the Federal Government. DOD's role to assist the Federal Government's support of the State and local response, when necessary, is an important one.

DOD has developed a wide range of domestic CBRN response elements, and continuously trains and exercises to employ these capabilities, which can be used to support civil authorities to help save and sustain lives in the aftermath of a CBRN incident. While a large-scale nuclear, chemical, or biological attack is something we hope will never occur, we cannot be complacent or wait until a threat is imminent to act.

As I said earlier, the complexity of this mission area requires a whole-of-government approach and strong unity of effort. I work closely with the Joint Staff and the combatant commanders and other DOD components to ensure the Department prioritizes its efforts and fully leverages DOD's unique authorities, resources, and capabilities to protect the Nation.

U.S. Special Operations Command, in its new role as coordinating authority for CWMD, has brought a renewed focus and sense of enthusiasm to this mission, and is playing a critical role in ensuring that combatant commands are taking a transregional approach to countering these challenges and are developing the tactical capability, capacity, and plans to operationalize CWMD efforts.

In closing, we must anticipate that our adversaries will continue to evolve and develop increasingly sophisticated methods to pursue, develop, or deploy CBRN weapons. The diversity of these challenges makes it imperative that DOD be rigorous in prioritizing its efforts and work closely with other U.S. departments and agencies and international partners to continue and—to confront the threats posed by WMD at home and abroad.

As CBRN-related challenges continue to emerge, your continued support for the Department and the efforts described today are critical to our ability to understand, anticipate, and mitigate these threats.

Thank you for the opportunity to appear before you today, and I look forward to your questions.

[The prepared statement of Mr. Rapuano follows:]

PREPARED STATEMENT BY MR. KENNETH P. RAPUANO

INTRODUCTION

Chairman Ernst, Ranking Member Heinrich, and Members of the Subcommittee, I am pleased to testify today about Department of Defense (DOD) efforts to counter chemical, biological, radiological, and nuclear (CBRN) threats both at home and abroad. The recently released National Security Strategy (NSS) makes clear that this Administration recognizes preventing nuclear, chemical, radiological, and biological attacks as a key priority and an essential component of the U.S. Government's efforts to protect the American people, the Homeland, and the American way of life. Achieving success across the CBRN-threat spectrum requires a whole-of-government approach, and the DOD has an important role to play in support of this mission. That is why today I would like to talk about both DOD's roles and responsibilities within the countering-weapons of mass destruction (CWMD) mission, and where DOD plays a supporting role to other departments and agencies, including the U.S. Department of State, the Department of Energy (DOE), the Department of Homeland Security (DHS), the Federal Bureau of Investigation (FBI), the Centers for Disease Control and Prevention (CDC), the U.S. Department of Agriculture (USDA), and the U.S. Agency for International Development (USAID).

THREAT ENVIRONMENT

The use, or threatened use, of CBRN weapons poses a significant threat to U.S. national security and peace and stability around the world. In the past year, North Korea has accelerated its relentless pursuit of nuclear and advanced missile delivery capabilities and threatened to use nuclear weapons against the United States and our allies in the region. Further, its conventional, chemical, biological, and cyber capabilities continue to threaten the United States and our allies. Russia has expanded and improved its strategic and non-strategic nuclear forces. China's military modernization has resulted in an expanded nuclear force. The Organization for the Prohibition of Chemical Weapons-United Nations Joint Investigative Mechanism confirmed that the Syrian regime and the Islamic State of Iraq and Syria (ISIS) usedchemical weapons in Syria. Additionally, we know ISIS has used chemical weapons in Iraq. Iran has agreed to constraints on its nuclear program in the Joint Comprehensive Plan of Action (JCPOA). Nevertheless, Iran retains the technological capability and much of the capacity necessary to develop enough fissile material for a nuclear weapon within one year of a decision to do so.

More broadly, rapid technological advancements and increased access to dual-use goods (i.e., items that can be used for both peaceful and military purposes), expertise, and materials, heighten the risk that adversaries will seek or acquire weapons of mass destruction (WMD). It has never been more difficult to prevent adversaries from acquiring the materials or expertise necessary to develop WMD, or use CBRN materials in intentional attacks. Emerging technologies are increasingly lowering the threshold for a range of adversaries, including non-State actors, to develop WMD. This trend is accelerating. Additionally, the speed and volume of the international transportation system means that naturally occurring pathogens of security concern can spread worldwide in days—potentially having the same catastrophic consequences of a deliberate biological attack.

These diverse threats require multifaceted approaches that keep up with and adapt to the current threats while remaining postured to mitigate future risks. The Department of State, the Department of Homeland Security, the Department of Energy, the Department of Justice, the Department of Commerce, the Department of the Treasury, and the Intelligence Community, among others, all play critical roles in detecting threats, preventing attacks on the Homeland, and working with foreign partners to stop and respond to incidents. DOD supports these efforts through both domestic and overseas activities and works closely with allies and partners to counter the wide range of CBRN threats that exist today.

DOD ROLES AND RESPONSIBILITIES

As the Assistant Secretary of Defense for Homeland Defense and Global Security ASD (HD&GS), I am responsible for the Department's CWMD strategy and policies,

as well as the Homeland Defense [1] mission. My office develops and oversees DOD's policies and guidance to protect the U.S. Armed Forces, the Homeland, and other U.S. interests from a CBRN attack or any type of destabilizing CBRN-related event, including the natural or intentional spread of dangerous pathogens and toxins, and represents DOD's interests on traditional counter-proliferation and non-proliferation policy issues. I am also responsible for the coordination of DOD assistance to Federal, State, and local officials in responding to threats involving nuclear, radiological, biological, chemical weapons, or high-yield explosives or related materials or technologies, including assistance in identifying, neutralizing, dismantling, and disposing of these weapons and materials.

I work closely with the joint staff and the combatant commanders, including the U.S. Special Operations Command (USSOCOM) in its new role following the January 2017 Unified Command Plan (UCP) change, and U.S. Northern Command (USNORTHCOM) and U.S. Pacific Command (USPACOM) with their Homeland Defense and Defense Support of Civil Authorities (DSCA) missions. USSOCOM has brought a renewed sense of enthusiasm to the CWMD mission, and is playing a critical role in ensuring that the Combatant Commands are fully integrated into the broader CWMD mission and taking a transregional approach to countering these challenges. We also work closely with our partners in Acquisition, Technology, and Logistics ("Acquisition and Sustainment" as of February 1, 2018) to ensure that DOD has the capabilities necessary to protect our forces and leverage partners' capabilities in countering global threats.

DOD's efforts to prevent, counter, and respond to CBRN threats and incidents are carried out by a number of dedicated and hardworking airmen, sailors, marines, soldiers, coast guardsmen, and civilians. DOD's cadre of CWMD experts supports a diverse range of activities, including countering WMD-related planning, research and development, programming, exercising, analysis, technical reach-back support, and mission execution. Experts are positioned throughout the Services and DOD, including at the Defense Threat Reduction Agency (DTRA); the U.S. Army 20th Chemical, Biological, Radiological, Nuclear, and Explosives Command; the U.S. Army Edgewood Chemical and Biological Center (ECBC); and the Air Force Technical Applications Center (AFTAC). This mission is a team effort, and it is an honor to work with such dedicated professionals.

STRATEGIC APPROACH FOR COUNTERING TODAY'S CBRN CHALLENGES

Given the scale and complexity of threats facing the United States and its partners today, DOD pursues three lines of effort to counter WMD threats: prevent acquisition, contain and reduce threats, and respond to crises. Close cooperation with the other U.S. departments and agencies, and our allies and partners, is crucial to all of these activities since DOD must prioritize capabilities and efforts that counter operationally significant WMD risks and activities that are best executed by the Department. Ultimately, DOD seeks to ensure that the United States and its allies and partners are neither attacked nor coerced by actors with WMD. We do this by ensuring that we have a layered approach to detecting and mitigating CBRN threats at the source, preventing them from reaching the Homeland and, if attacked, responding militarily to disrupt ongoing and preclude additional attack, and providing support to domestic and international consequence response efforts as requested.

PREVENTING ACQUISITION

A critical element of efforts to counter WMD threats is preventing those that do not possess WMD from obtaining them. Although the majority of activities in this space are led by other U.S. departments and agencies, DOD works closely with our interagency partners to leverage DOD authorities, resources, and capabilities where possible to prevent adversaries from acquiring the technologies, materials, and expertise needed to develop WMD. For example, DOD works closely with the intelligence community and other agencies to ensure DOD understands the threat environment and maintains situational awareness of the location, quantity, and vulnerability of global materials and stockpiles, and of the intentions and capabilities of actors of concern. This is foundational to all DOD CWMD efforts, particularly efforts to prevent State and non-State actors from acquiring WMD.

DOD has the authority to work with foreign partners to secure or eliminate threats at the source and build partner capacity to prevent proliferation. For exam-

[1] DOD defines "Homeland Defense" as "[t]he protection of United States sovereignty, territory, domestic population, and critical infrastructure against external threats and aggression or other threats as directed by the President."

ple, the DOD Cooperative Threat Reduction (CTR) Program is engaged in more than 30 countries, helping partners to detect, secure, or eliminate CBRN and related materials and pathogens of security concern.

Working with the Department of State, DOD also continues to raise the barriers to acquiring WMD material through the Proliferation Security Initiative (PSI). Over the nearly 15 years since its inception, PSI has brought together 105 nations to build political will to stop the trafficking of WMD, delivery systems, and related materials. By supporting and participating in numerous bilateral and multilateral exercises, and through leadership in the PSI's Operational Experts Group, DOD works alongside the Department of State and experts from other U.S. departments and agencies to engage with partners to address all aspects of the proliferation threat from enhancing partners' CBRN defense capabilities, to preventing access to dual-use materials, to interdicting shipments of proliferation concern.

In addition, DOD supports State and other U.S. departments and agencies that lead efforts to implement and monitor international treaties and agreements, including the Nuclear Nonproliferation Treaty (NPT), the Biological Weapons Convention (BWC), and the Chemical Weapons Convention (CWC). DOD also supports efforts to prevent the misuse of sensitive dual-use technologies through its support to the Nuclear Suppliers Group, Australia Group, and other key regimes. As part of these efforts, DOD works with partners to monitor over-the-horizon threats and consider the implications of emerging and disruptive technologies, such as synthetic biology, for multilateral treaties and regimes, as well as for ways to ensure that our forces remain protected in the face of what may be emerging threats.

CONTAINING AND REDUCING THREATS

For States that already possess WMD programs, DOD supports efforts to deter use and contain and reduce threats. The use of chemical weapons by ISIS in Iraq and Syria and by the Syrian regime in Syria over recent years has reinforced the importance of containing and reducing CBRN threats and the risks posed by extant WMD.

In an effort to leverage the capabilities of foreign allies and partners, one of Secretary Mattis's top priorities, DOD engages multilaterally through the North Atlantic Treaty Organization (NATO) and bilaterally with other countries such as the United Kingdom on a number of CWMD issues. We also work with partners to strengthen their ability to detect, interdict, and mitigate threats at and within their borders. For example, the DOD CTR Program works with partners in the Middle East and North Africa, as well as along vulnerable borders in Eastern Europe to prevent the proliferation of CBRN capabilities.

Other U.S. Government departments and agencies have key roles preventing illicit trade and technology transfers relevant to WMD, including the Department of State's role in negotiating and implementing export control regimes, the Department of Treasury's authorities to sanction proliferators, the Department of Homeland Security's responsibilities to prevent and screen for dangerous exports, and the Department of Commerce's efforts to ensure that U.S. goods are not available to dangerous actors. DOD is prepared to support interdiction options authorized by United Nations Security Council Resolutions if there are no other options available. We also engage with domestic interagency partners including the Department of Homeland Security, the Federal Bureau of Investigation, and the Department of Health and

Human Services to leverage unique DOD capabilities in support of U.S. Government efforts to prevent and, if necessary, interdict CBRN weapons and materials from crossing our nation's borders into the Homeland.

Where hostile actors persist in making significant progress toward acquiring WMD, DOD will be prepared to undertake or support kinetic and non-kinetic actions to prevent such capabilities from being fully realized. DOD is postured to counter imminent WMD threats and maintains specialized plans and capabilities to isolate, intercept, seize, and secure lost or stolen items and manage CBRN threats from hostile or fragile States. DOD maintains the ability to conduct specialized pathway and WMD defeat missions. This involves developing and fielding tailored kinetic and non-kinetic capabilities to neutralize or destroy weapons and agents; delivery systems; and materials, facilities, and processes, including the functional or structural defeat of hardened targets. DOD also has the authority to work cooperatively with foreign partners to dismantle and dispose of CBRN weapons and materials. This includes deliberate technical processes that reduce or dismantle production methods, materials, stockpiles, and technical infrastructure; the redirection of an actor's capabilities and expertise towards peaceful productive activities; and the establishment of monitoring regimes to ensure a WMD program is not reconstituted.

Finally, a cornerstone of U.S. efforts to contain and reduce threats is our ability to deter coercion or use. The United States maintains a range of capabilities, both conventional and strategic, to deter adversaries and ensure that those actors that already possess WMD do not use them against the United States or its allies and interests. Defenses in depth, including passive countermeasures, enhanced border security, and missile defenses, also help to deter the transfer or use of WMD. Although strategic deterrence and missile defense are not a function of the ASD (HD&GS), building resilient capabilities both overseas and in the Homeland supports deterrence, and my office helps ensure that we are prepared to respond to an attack.

To decrease incentives for retention and employment of WMD arsenals, DOD supports the creation and implementation of effective arms-control initiatives, including measures to enhance security and safety practices. As noted in the recently released Nuclear Posture Review (NPR), the United States intends to work to create the conditions for disarmament by pursuing transparency measures, engaging in confidence and security-building measures with adversaries, and pursuing new arms-control measures when conditions permit that would improve the security of the United States and its allies and partners.

RESPONDING TO WMD USE

As the National Defense Strategy makes clear, should deterrence or efforts to contain and reduce threats fail, the Joint Force must be prepared to prevail. Our top Military CWMD priority is to attack the source of the WMD attack to prevent ongoing or further attacks. To guarantee DOD's warfighting capabilities, DOD must safeguard the force and mitigate the hazards and effects of use to ensure U.S. military and other mission-critical personnel can sustain effective operations in the event of war or other contingencies. This includes recovering casualties rapidly, decontaminating personnel and equipment, and establishing a protective posture while continually monitoring the force.

DOD works closely with allies and partners to ensure that we are prepared to respond to international CBRN incidents. For example, supported by other U.S. departments and agencies, the Office of the Secretary of Defense, USPACOM, and U.S. Forces Korea work closely with our Republic of Korea and Japanese counterparts to ensure that our regional alliances are prepared to respond to WMD contingencies on, or emanating from, the Korean Peninsula. This includes the conduct of semi-annual CWMD-focused bilateral engagements, support to regional exercises, and providing policy guidance to enable effective CWMD operations. The U.S. Army's 20th Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) Command also continues to develop and refine the extensive capabilities and technical expertise necessary to deploy rapidly in support of U.S. forces around the world and conducts regular training exercises to operate in highly challenging realistic operational environments. In addition, DOD works with foreign military and civilian first-responders through the CBRN Preparedness Program to help strengthen our partners' ability to respond to and mitigate the effects of a CBRN incident. Building partner nation response capabilities promotes regional security cooperation and bilateral and multilateral interoperability and reduces the potential for a large U.S. Government requirement to provide assistance to international CBRN incident-response operations.

From the Homeland perspective, I work closely with the commanders of USNORTHCOM and USPACOM to ensure DOD forces remain ready to deter, defend against, and, when required, defeat nation-State or terrorist WMD or CBRN attacks on the Homeland in the air, maritime, and land domains. As noted, DOD's primary responsibility is to employ our warfighting capabilities to prevent, interdict, and respond militarily to preclude further WMD attacks; however, DOD also plays an important supporting role in the national response system.

As provided in the National Response Framework, the national response system and its protocols provide tiered levels of support when additional resources or capabilities are needed. Most incidents begin and end locally and are managed at the local level. Some may require additional support from neighboring jurisdictions, State governments, and, as necessary, the Federal Government. The Federal Government's role is to support State and local emergency assistance efforts to save lives, protect property and public health and safety, and lessen or avert the threat of a catastrophe. DOD's role is to assist the Federal Government's support of the State and local response.

The Federal Emergency Management Agency (FEMA) is responsible for coordinating the Federal Government's response to major disasters, including WMD attacks. DOD supports this response, providing DSCA—using available capabilities

developed for DOD's warfighting mission—in support of FEMA or another lead Federal agency, when directed by the President or when the Secretary of Defense has approved a request for assistance pursuant to the Stafford Act[2] or the Economy Act.[3] This arrangement is absolutely critical to ensuring that DOD capabilities are utilized as effectively and efficiently as possible to save and sustain lives, particularly incidents involving multiple States.

DOD supports its Federal- and State-partner preparedness efforts to respond to CBRN incidents in the Homeland, such as integrated regional planning, training, and exercises in coordination with DHS, FEMA, the Department of Health and Human Services, the FBI, and other Federal partners. DOD is postured to assist civil authority efforts to detect, identify, neutralize, dismantle, and dispose of CBRN threats before they can reach our nation's borders and, if they succeed in penetrating our borders, before they can be employed against our nation. DOD has developed a wide range of CBRN-response capabilities and continuously trains and exercises to employ these capabilities rapidly in support to civil authorities to help save and sustain lives in the aftermath of a CBRN incident.

The DOD CBRN Response Enterprise—almost 18,735 military personnel strong—currently consists of:

- National Guard Weapons of Mass Destruction Civil Support Teams (one in each State and territory and two in California, Florida, and New York);
- 17 National Guard CBRN Enhanced Response Force Packages (stationed in Alabama, Colorado, Florida, Hawaii, Illinois, Indiana, Kentucky, Louisiana, Maine, Minnesota, Nebraska, Nevada, Oregon, Puerto Rico, Virginia, West Virginia, and Wisconsin);
- 10 National Guard Homeland Response Forces (one stationed in each of the 10 FEMA regions);
- One Defense CBRN Response Force; and
- Two Command and Control CBRN Response Elements.

The CBRN Response Enterprise provides such critical capabilities as detection and assessment of CBRN hazards; casualty search and extraction; casualty decontamination; emergency medical, patient triage, trauma care, and surgical and intensive medical care; fatality recovery; ground and rotary-wing air patient movement; security; command and control; engineering; logistics; transportation; and aviation lift.

CONCLUSION

We must anticipate that our adversaries will continue to evolve and develop increasingly sophisticated methods to pursue, develop, or deploy CBRN weapons. The diversity of these threats makes it imperative that DOD be rigorous in prioritizing its efforts and work closely with other U.S. departments and agencies and international partners to confront the threats posed by WMD at home and abroad. As WMD-related crises continue to emerge, your continued support in the areas described today are critical to our ability to understand, anticipate, and mitigate these threats.

Chairman Ernst, Ranking Member Heinrich, Members of the Subcommittee: We appreciate your leadership and your continued support for the Department of Defense. Thank you for the opportunity to appear before you today. I look forward to your questions.

Senator ERNST. Thank you very much, Secretary.

General Osterman?

STATEMENT OF LIEUTENANT GENERAL JOSEPH L. OSTERMAN, USMC, DEPUTY COMMANDER, UNITED STATES SPECIAL OPERATIONS COMMAND

Lieutenant General OSTERMAN. Chairwoman Ernst, Ranking Member Heinrich, distinguished members of the subcommittee, thanks for the opportunity to address you today.

It is an honor to testify with Assistant Secretary of Defense Rapuano, whose office is critical in providing the policy and stra-

[2] The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93–288), as amended.

[3] 31 U.S.C. §1535.

tegic guidance for the Department of Defense's support to countering weapons of mass destruction, or WMD.

During his posture testimony to the full Senate Armed Services Committee last February, General Thomas outlined the U.S. Special Operation Command, or USSOCOM's, initial goals for our new role following the UCP change of January 2017. We're proud to report significant strides in increasing communication, information-sharing, and operational coordination with other U.S. Government agencies, as well as allies and partners who are working in this mission space.

USSOCOM has decades of experience preparing and providing U.S. Special Operations Forces to execute counter-WMD tasks. The role of coordinating authority, as directed by the Unified Command Plan, broadens USSOCOM's scope of responsibility from traditional Special Operations Forces' specific roles to the planning of Department of Defense counter-WMD efforts in support of other combatant commands, Department priorities, and, as directed, other U.S. Government agencies. As in other mission areas in which coordinating authority has been established, this enables a more strategic approach and enhanced integration of Department of Defense plans and intelligence priorities.

Since the transfer of Defense lead responsibility for this mission set for U.S. Strategic Command and the establishment of USSOCOM's coordinating authority, we've focused on three major areas of effort:

First, we're developing a functional campaign plan, in coordination with the geographic combatant commands. The campaign plan takes a transregional perspective and emphasizes preventing new WMD development in existing programs and precluding aspiring actors from obtaining a WMD.

Second, we've conducted a baseline assessment to determine geographic combatant command counter-WMD capabilities and capacities. The assessment has identified shortfalls and will inform recommendations of future capability development and resource allocation.

Third, we're increasing our understanding of the operating environment by enhancing integration of intelligence, planning, and assessments. To this end, we've established a Counter-WMD Fusion Center dedicated to coordinating information flow and planning, fusing intelligence and operations, and providing the WMD community of action a single point of contact for DOD operational capability.

While much progress has been made in the past year, a tremendous amount of work remains to finalize and fully implement these efforts. We look forward to continuing to collaborate closely with the Office of the Secretary of Defense, the Joint Staff, Defense Threat Reduction Agency, other combatant commands, and the rest of the counter-WMD community.

Thank you for the subcommittee's continued support to the counter-WMD mission, to our servicemen, and to our families.

Thank you.

[The prepared statement of Lieutenant General Osterman follows:]

PREPARED STATEMENT BY LIEUTENANT GENERAL JOSEPH L. OSTERMAN, U.S. MARINE CORPS

Chairwoman Ernst, Ranking Member Heinrich and Members of the Subcommittee, thank you for the opportunity to address you today. It has been just under a year since General Thomas' testimony to the full Senate Armed Services Committee. During that address, he unveiled the U.S. Special Operations Command's (USSOCOM) goals in our new role as DOD's Coordinating Authority (CA) for Countering Weapons of Mass Destruction (CWMD), on which this testimony is focused. I am proud to say that we have made tremendous strides in enhancing the dedicated CWMD community of action, including: heightened operational coordination within and among entities; the development of a center dedicated to coordinating information flow and executing planning efforts; and further refinement, and thus improvement, of our initial goals. A tremendous amount of work remains. We must finalize and continue to refine an active campaign plan. To that end, we must expand and refresh efforts to assess and understand the environment in which we operate, and regularly measure how our capabilities map to these assessments. The reality is that the CWMD mission is highly dynamic and constantly evolving, requiring unity of effort and constant vigilance.

The WMD threat has evolved beyond state-sponsored programs, and its transregional nature challenges regionally focused planning efforts and operations. The danger from state and non-state actors attempting to acquire, proliferate, or use WMD is increasing and the technology, materials, and expertise to develop WMD are more readily available than ever before. There is a need for robust monitoring of potential sources of supply and expertise, whether witting or unwitting, while also focusing on emerging threats and capabilities. Advances in, as well as the dual use nature of, science and technology further exacerbate this problem. Differentiating between peaceful scientific research and nefarious intent requires exquisite access into adversary leadership decision-making. The United States and our partners face a persistent threat against our citizens and interests.

One year ago, USSOCOM assumed responsibilities as DOD's CA for CWMD. This role broadens USSOCOM's scope of responsibility from its traditional Special Operations Forces (SOF)-specific CWMD roles to encompass CWMD planning efforts for the Department. As such, we aim to bridge the gap between policy guidance and tactical capability and capacity by actively supporting Combatant Command (CCMD) planning efforts, Departmental priorities, and, as directed, other U.S. Government agencies. We are doing this, as directed in the Unified Command Plan (UCP) by integrating DOD plans and intelligence priorities to support operations against state and non-state networks that possess or seek WMD and executing global operations against the same, in coordination with other Combatant Commands.

USSOCOM's traditional role in the tactical aspects of CWMD likely contributed to the Department's decision to transfer many of the U.S. Strategic Command's (USSTRATCOM) responsibilities to USSOCOM, though not all missions were included. USSTRATCOM remains the lead for strategic deterrence, nuclear operations, Global Strike, and missile defense. Similarly, U.S. Northern Command (USNORTHCOM) and U.S. Pacific Command (PACOM) maintain responsibility for Defense Support to Civil Authorities (DSCA) and Chemical, Biological, Radiological and Nuclear (CBRN) response. Other ancillary missions associated with WMD are assigned to appropriate staff agencies, such as the capabilities development portfolio, assigned to the Joint Staff. The shift in responsibility exposed gaps that the community continues to resolve, underscoring the need to continue to build and foster a strong and efficient CWMD team. In coordination with the Defense Threat Reduction Agency (DTRA), we are gaining greater fidelity on shortfalls with respect to CWMD capabilities within the Geographic Combatant Commands (GCC).

Given both the complexity of this mission and our role as the CA, USSOCOM established the CWMD Fusion Center (FC) located at both HQUSSOCOM at MacDill Air Force Base and at Ft. Belvoir, collocated with DTRA. The FC is a nexus of CWMD awareness, active planning, and operational advocacy across functional and geographic missions. The FC accomplishes its mission by coordinating planning, integrating intelligence, assessing campaign progress, advocating for CWMD operations with the Services and CCMDs, and—when directed—supporting execution. Operating within broader national and Department policy guidance, as conveyed by the Office of the Secretary of Defense for Policy (OSD–P) and the Joint Staff, the FC combines the strengths and perspectives of CWMD stakeholders in order to achieve a comprehensive understanding of the threat environment as well as partner capabilities. In turn, the FC identifies opportunities for action against adversary vulnerabilities and advocates for intelligence priorities. In doing so, we facilitate an

operational construct that is active and responsive to the dynamic CWMD environment, while maintaining a persistent strategic focus.

The CWMD mission space is broad and varied. In pre-crisis scenarios, other Departments and agencies have traditionally maintained primacy with DOD playing a supporting role. These efforts span from export license reviews to interdiction of specialized WMD components. The CWMD FC is working with OSD and the Joint Staff to enhance DOD's operational relationships across the interagency and Intelligence Community, in order to optimize DOD support. Within DOD, we are engaging with OSD, the Joint Staff, the GCCs, Theater Special Operations Commands (TSOCs), and other DOD elements to ensure we share a collective understanding of the threat and are making best use of existing resources. The CWMD FC has also improved our ability to assess DOD's CWMD requirements and drive unity of effort.

During our first year, we conducted a baseline assessment of the draft Functional Campaign Plan Strategic Objectives with significant input from the GCCs. The primary finding is that the GCCs lack sufficient capacity and, therefore, assume risk in CWMD. This finding is based on a number of factors which include: resource competition with other priority mission areas; gaps in understanding the threat—a global and evolving threat; unconnected data sources—absence of a complete picture; traditional prevalence of Interagency/Intelligence Community (IA/IC) in preventing proliferation—prevention not viewed as a primary military task; and lack of clear tasks in support of a strategy—perhaps the primary cause for the CWMD-related risks we have assumed. In addition, the baseline assessment identified the difficulties with anticipating the emergence of new WMD programs, and that analysis remains important to understanding the networks supporting WMD pathways. As we conduct future baseline assessments, we will expand our analysis to include the Services, the rest of the Interagency, and Partner Nations. Finally, we will highlight any gaps in policy, authorities, or other strategic issues that may be illuminated through our assessments with our teammates in the Joint Staff and OSD.

In addition to the baseline assessment, we have focused efforts on writing a Joint Staff-directed Functional Campaign Plan for CWMD as an engine for change. The Functional Campaign Plan for Countering WMD (DOD FCP–CWMD), which is being developed in coordination with the Combatant Commands, translates policy into strategic guidance that can be further refined into GCC-specific operational planning. Close coordination with GCCs—who conduct the majority of campaign activities—enables us to assess and, when appropriate, adjust guidance in light of operational effectiveness and changing intelligence. We have established collaborative forums among CCMDs, combat support agencies, Military Services, other U.S. Government agencies with CWMD equities, allies, and partner nations. The plan opens the operational aperture of how DOD sees the WMD problem with a transregional perspective, emphasizing active prevention of new WMD development, and precluding aspiring actors from attaining WMD.

The FCP is crosscutting with the Department's threat-specific Global Campaign Plans (GCPs) and has three Lines of Effort (LOE): Prevent, Protect, Respond. It nests with, supports, and complements the National Defense Strategy, DOD Strategy to Counter WMD and other strategic guidance documents. The FCP focuses heavily on the Prevent LOE, given the strategic imperative to operate as early in the WMD threat spectrum as possible. Actors of concern, in accordance with priorities set by the National Security Strategy and National Defense Strategy, are addressed individually in the campaign plan's supporting annexes, which in turn, provide operational constructs that guide the GCCs operational planning.

The central idea driving the FCP's strategic approach to preventing proliferation is disrupting or defeating WMD pathways. Pathways represent the way actors of concern move from the notion of WMD to development, delivery, or use. Examining pathways through the lens of people, places, and things—coupled with monitoring movement of WMD-related technology, materials and equipment—illuminates emerging WMD actors and identifies opportunities to disrupt. Disrupting pathways at the far left of the continuum includes affecting the decision making of aspirants as well as the means to acquire infrastructure and expertise. Disrupting progress as early as possible ensures that those undeterred lack the means to produce WMD. The FCP prioritizes intelligence collection, analysis, and production to outline adversaries' objectives concerning research and development and highlights potential vulnerabilities along the continuum. We are applying this model in close coordination with the CWMD community of action and, as a result, are already seeing progress in implementing a more active campaign. In support of this model, the FCP provides a guidepost for GCCs to prepare supporting plans or to integrate campaign activities into existing plans to meet objectives and accomplish tasks outlined in the base plan and annexes.

Through recurring battle rhythm events, we aim to coordinate DOD operational activities across the spectrum of the strategic and operational space. The cornerstone of this battle rhythm is the semi-annual CWMD Global Synchronization Conference (GSC). The GSC serves as a venue for the CWMD community to address and advance activities to prepare, deny, defeat, and respond to the threats posed by WMD. These conferences emphasize the interoperability between USG assets and international partners to succeed in the global environment. While previous GSCs focused on broad sets of topics applicable across the entire spectrum of the mission, we have focused the next one—scheduled for this February—on identifying detailed requirements and describing how the FCP is implemented for a specified WMD actor of concern.

In closing, I would like to emphasize our priorities going forward. First, we will finalize the Department's Functional Campaign Plan for Countering WMD in an inclusive manner that builds and strengthens established partnerships. Second, we will improve our assessment process in order to measure more holistically how we can best operate and achieve our objectives in this complex environment. In addition, we will continually update our approach as our understanding of the myriad adversaries, threats, and capabilities evolves. Thank you for your interest in our role as Coordinating Authority and your continued support of USSOCOM and our people.

Senator ERNST. Outstanding.

Thank you, gentlemen, very much.

We will open with questions, and we will do those in 5-minute iterations. Should we be joined by other members of the subcommittee, we'll allow their questions, as well.

I would like to start with you, Mr. Rapuano. Which WMD threat concerns you most at this stage, based on your work within the Department and your insights across our interagencies?

Secretary RAPUANO. Thank you, Senator.

I think it depends on the filter that you look through. But, if we're looking at the near term, clearly North Korea is a primary concern and focus of the Department. A combination of destabilizing behaviors and very aggressive testing program for their ICBMs [Intercontinental Ballistic Missiles], aggressive statements about their nuclear weapons program and capabilities, give cause for great concern. And we've got a lot of efforts focused on that.

I think that we also put a lot of concern, in terms of that evolving capability, beyond the primary Russia-China focus, which you're well familiar with from the NPR [Nuclear Posture Review] and National Defense Strategy, is Iran, that they are developing missile and weapons capabilities, in contravention of U.N. security resolutions, and are a threat that we are monitoring closely and looking to address in a variety of ways.

Then, finally, in terms of developments that create growing concern over time, is biotechnology, just the rapid advances and ubiquitous availability of biotechnology today. Things that you can buy on the Web now, and essentially do a paint-by-numbers instruction, were the province of Nobel prize-winning scientists, only decades ago. That really levels the playing field for any actor looking to develop biotechnology, biological agents, and novelty engineer agents that could present a real threat.

Senator ERNST. Certainly. Thank you. You mentioned North Korea, of course, the nuclear tests. We've all followed that with great interest. But, something that we just don't talk about a lot, but was pointed out in a Washington Post—and I mentioned it in my remarks—is North Korea acquiring different mechanical pieces that potentially could allow them to develop chemical or biological weapons. Is—has that been a focus, as well, of the agency?

Secretary RAPUANO. Yes. We and the rest of the interagency community have significant concerns about North Korean chemical and biological programs that we believed are focused on developing weapons. So, we are tracking that very closely. There are a variety of export control, Australia Group and other organizations, for which we look to limit the export, the further proliferation of agents of particular concern. But, we do have concerns about biotechnology and the ability to innovate agents and develop them without that kind of seed stock over the longer term.

Senator ERNST. Okay. Then, in regards to the biological and chemical weapons, as well, Secretary or General, when we talk about nation-states, we know that they have the capabilities out there. What are the assessments, when it comes to various terrorist organizations and/or including ISIS? Do they have the ability to deliver those types of weapons?

Secretary RAPUANO. So, we understand that both al Qaeda and ISIS are interested in chemical, biological—nuclear, they certainly would be if they have opportunity to acquire the materials and know-how. More details, in terms of understanding of those capacities, we'd need to go to closed session, Senator.

Senator ERNST. Yes, I'm sorry.

Do you have anything——

Secretary RAPUANO. I'm sorry.

General Osterman?

Senator ERNST.—to add?

Lieutenant General OSTERMAN. The only thing I'd like to add, Senator, is the fact that part of our functional campaign planning that we associate with this is to allow us, not only the state, but nonstate actors, to look at the threats, if you will, in vertical columns, and then as the functional campaign plan crosscuts those, so we can observe where the technology transfer may occur between state/nonstate actors, also where one nonstate actor perhaps is working with another nonstate actor in a different geographic location or in a functional capacity. So, we try to weave that in with the translation of our strategy and policy to actual tactical application of interdiction in order to, basically, reinforce the larger protocol efforts that are in place.

Senator ERNST. Okay. Thank you very much.

Senator Heinrich.

Senator HEINRICH. Thank you, Madam Chair.

Secretary Rapuano, I want to go back to the issue you were talking about, in terms of rapid innovation with respect to biological resources, and with technologies like CRSPR and others, just changing that landscape at a rate that we could just—has never occurred within the field before. Are there things that we should be thinking about now that can create some level of obstruction or raise barriers to entry to make sure that we're doing an adequate job of what we apply with respect to export controls and other tools in other fields? How can we make sure that, you know, we're not just missing some very big developments that could be happening under our nose with off-the-shelf Internet-purchased items, for example?

Secretary RAPUANO. Senator, that is something that we're very focused on with our interagency partners, in term—there are a number of norms, in terms of internationally, nationally, with re-

gard to research being done in the bio area, where you look to not do certain things. But, well-established norms that get at——

Senator HEINRICH. That works great for the folks who follow the norms. It's the——

Secretary RAPUANO. That's exactly——

Senator HEINRICH. I'm wondering if we shouldn't have some sort of track-and-trace technology that makes sure that people are following the standards in the research community.

Secretary RAPUANO. There are efforts in that area. I didn't come prepared to speak in detail about them today. It's very difficult, though, because it's very widespread. The research is going on all over the world. It's not like more select research that's only being done in highly developed nations. It's proliferated to where it's being done, places that would have been unimaginable decades ago.

Senator HEINRICH. Well, that wasn't the answer I was hoping for.

Secretary RAPUANO. Me either.

Senator HEINRICH. I think we really need to put some thought into this, because this is a situation that feels like it could get ahead of all of us very quickly.

I want to shift gears for a minute and ask you, General OSTERMAN. With respect to Special Forces and how they have led the effort, in places like Syria and Iraq, in reining in development of chemical or biological weapons from groups like ISIS, you know, these are specialized missions. They're uniquely tailored for SOF [Special Operations Forces] capabilities. But, I wanted to ask, how would Special Forces perform this sort of a mission in a more conventional forces environment? Take a force environment like North Korea, where you have a very different battlespace than you would in Iraq or Syria, a lot of very heavily secured WMD sites. I'm just trying to get—without a specific locational answer, I want to understand how you apply that same mission set in a more traditional battlespace environment.

Lieutenant General OSTERMAN. Okay. Senator, I think I would probably answer that one from a standpoint of a reactive or proactive approach to it. Really, when you look at the proactive ways of being able to interdict things like that, it really is associated with a pathway approach. I think you alluded to that in one of your opening statements about, you know, components of different types of WMD that are required as precursors, or even technology requirements associated with, you know, missile or other type activity. And so, understanding pathways is important.

I guess, when I would look at that from a—what we've done in Iraq and Syria, versus what we've actually—you know, would be looking at with a state actor, really the process is very similar. You look at that—for example, we could easily translate the human capital that is associated with the knowledge for these things, and that becomes a—an opportunity for targeting, whether it be kinetically or nonkinetically. So, I think there's a lot of similar things that way that can be done.

When it comes to secure facilities, all those, I'd probably have to get with you offline on that one. But, the—as far as the details—but, I would say that the approach is very, very similar, in the sense that there's always human capital, resourcing, and tech-

nology that's associated with these type things. And just really depends on what scope it's actually being applied. But, the fundamentals still apply from—example, as I mentioned with our Fusion Center—the opts-intel fusion, to understand what is that indication of warning that things may be coming along, and, you know, how do you matrix that with the different threats that are out there, versus viability of the threat?

If that answers the question.

Senator HEINRICH. Thank you, General.

Lieutenant General OSTERMAN. Sure.

Senator ERNST. Senator Shaheen.

Senator SHAHEEN. Thank you, Madam Chair.

Thank you both for your testimony. I'm sorry I wasn't here to hear it.

But, can you—perhaps this is for you, Secretary Rapuano—how do we describe "weapons of mass destruction"?

Secretary RAPUANO. Senator, that's a great question. In different quarters, it's described in very different ways. If you look at domestic law, the Department of Justice defines "weapon of mass destruction" essentially from a firecracker to a thermonuclear bomb.

When we look at it in an international perspective, we have a much higher threshold. So, it is a weapon that causes significant effects. But, you still see a very wide range. Chlorine, for example, which is an industrial chemical, can be used, and has been used, as we know, by the Syrians and ISIS as a chemical weapon. It doesn't have near the level of effect of nerve gas and other agents.

It's a pretty wide spectrum, but it's essentially a chemical, biological agent, or nuclear device that creates significant consequence.

Senator SHAHEEN. Do we consider cyberattacks as potential weapons of mass destruction?

Secretary RAPUANO. We have not defined, to date, in terms of how we, in the U.S. Government, use the term "WMD"—we have not defined that to include cyber.

Senator SHAHEEN. Should we? I notice that the Nuclear Posture Review contemplated that there might be situations in which the massive use of cyberattacks could result in, potentially, a nuclear response. So, should we be thinking about them in those terms? Cyberattacks?

Secretary RAPUANO. So, Senator, my reading of the NPR, it doesn't define "cyber use," it defines——

Senator SHAHEEN. Boy, it leaves a pretty big hole——

Secretary RAPUANO. It——

Senator SHAHEEN.—there, though.

Mr. RAPUANO.—defines the effects——

Senator SHAHEEN. Right.

Mr. RAPUANO.—of any use of any technique that would be extreme and disastrous for the Nation, that could result in our response with nuclear weapons. So, it's not the means, it's the end.

Senator SHAHEEN. Right. But, anything that might produce that sort of end has to be pretty disruptive. And so, the question I'm raising is, Should we be thinking about cyber in the same way that we're thinking about these other weapons of mass destruction? Because certainly they have the potential to create the same amount

of chaos and potentially the same amount of fatalities, depending on how they're used.

Secretary RAPUANO. Senator, I think the challenge with that is, cyber is a domain from which there is zero negative effect all the way to "could be very high" potential effect. With the WMD classification, one of the distinctions has been the threshold of even lower use is significant enough to characterize it as a class of weapon.

Senator SHAHEEN. Isn't part of the issue with cyber is that we don't really have a well-defined body of law and response, proactively—"response" is the wrong term—that we don't have a proactive way to address the potential of cyberattacks, and that that's part of what makes it very difficult for us to figure out how to categorize those?

Secretary RAPUANO. I believe the challenge with any means, whether it's cyber or other avenues of attack, is, What is a threshold that will warrant what level of response? It's a threshold of the consequence that I believe is a deciding factor to determine what level and what significant the response would be.

Senator SHAHEEN. I appreciate what you're saying. I don't think that really responds to the question that I'm raising, however.

I want to go to another issue around cyber, though, because I appreciated the Department's response to my inquiry regarding the work that the Department does with IT companies and the issue around sharing sensitive source-code data with Russia and other hostile governments. I wonder if you can tell me why DOD doesn't require companies to disclose information about whether they have released their source-code information to hostile governments, and whether we should be doing that.

Secretary RAPUANO. Senator, I don't come here to today's hearing with details on that, but I can get those answers for you.

[The information referred to follows:]

The Department of Defense does not currently monitor whether commercial information technology vendors share source code or other (non-controlled) commercial intellectual property. There are cost and efficiency advantages for the Department in procuring commercial off-the-shelf software. The Department is currently exploring the feasibility of such a disclosure requirement and how we might implement the process without undermining the advantages of relying on commercial software.

Senator SHAHEEN. I would appreciate that. Thank you.

Senator ERNST. Okay. We'll start our second round of questioning.

Secretary, in the Department's strategy for countering weapons of mass destruction, DOD states that it will dissuade pursuit and possession of WMD by demonstrating layered defenses based on active and passive capabilities. You had made those comments, as well, in your opening statement. Can you—in this opening setting, can you describe what those capabilities are? What are those layered defenses?

Secretary RAPUANO. So, Senator, that—there's a range of defenses, depending on the type of weapon used and the consequences of the effect, starting with the passive—that's inclusive of resilience, to deny the adversary the intended benefit of the use; so the better defended or the more resilient the targets of their attacks, the less inclination on our—their part to employ it; active military

operations, or a range of other activities that are not necessarily kinetic military operations, from a whole-of-government perspective—it's a well-known list, as you know: sanctions, there are diplomatic actions, there are financial penalties; and then, getting into the military space, there's a full range of what the total force brings, in terms of capabilities for response.

Senator ERNST. Okay. As Secretary of Homeland Defense and Global Security, you coordinate the CWMD policy and oversee defense support to civilian authorities. How is DOD postured to respond to a CBRN incident in the Homeland? Can you give us an example and walk us through that?

Secretary RAPUANO. Senator, we have what we call the CBRN Response Enterprise. It's almost 19,000—a combination of National Guard and title 10 military who are formed into a variety of teams. We have the WMD CSTs, the Civil Support Teams. We have the Enhanced Response Teams. We have a range of teams with a different mix of capabilities that go from decontamination, detection, medical effects, medical treatment. There is air transportation, ground transportation—the whole package that can be integrated, that can either be commanded by the State National Guards—and there's at least one team in every State—or they can be authorized under title 10 and under DOD command.

Senator ERNST. I appreciate it. Thank you for the shout-out for our CSTs. I'm intimately familiar with the CST existing in our Iowa National Guard; Air Guard, as well. We have both—both Air Guard and National—Army National Guard that combine their forces as a joint force. They work very proactively.

Just for the public's information, can you describe their proactive stance and where they might be stationed during large events—perhaps they were around the Super Bowl this past weekend—just so people understand how we utilize those teams?

Secretary RAPUANO. Yes. As you imply, Senator, we use them on a routine basis, starting with national special security events—the Super Bowl, other large events, 4th of July. These assets will be predeployed in the vicinity of activities for which there may be some concern that they would be the target of an attack that might include WMD. And they are prepared to respond, in concert with all the other assets that are typically deployed for those events, law enforcement and others.

Senator ERNST. I appreciate that. Just to make it clear for our public that we are not just reactive in certain situations, but we're also very proactive in making sure that our public is safe here on the Homeland.

Secretary RAPUANO. Absolutely.

Senator ERNST. Thank you very much for that.

We'll go on to Senator Sullivan, if you would like to take an opportunity to ask some questions.

Senator SULLIVAN. Thank you, Madam Chair.

Gentlemen, good to see you. General, Semper Fi.

I don't know if the Chair already asked it, so, if she did, I apologize for the repetition. But, how is the transition going from STRATCOM [United States Strategic Command]? Are there assets that—or authorities that you need right now from us that can help with this mission? I actually think, from a broader national-secu-

rity mission, the counter-WMD mission is kind of the evergreen mission. We might be going after ISIS for a couple more years, or al Qaeda, but, as long as we're a republic, the counter-WMD mission is the evergreen mission—in my view, the most important mission in the U.S. military. We want to make sure it's resourced. I actually think it made sense to transfer it over to SOCOM, but I'm sure the transition hasn't been flawless. And it's not like, General, you guys don't have other missions that you're currently focused on. I'm wondering how it's going.

Lieutenant General OSTERMAN. Senator, thanks for the question. Actually, the transition and assumption of the duties went exceptionally well, very close and good relationship with U.S. STRATCOM [United States Strategic Command]. It was well coordinated, well defined. Frankly, we—everyone came to the table with an understanding—a basic understanding of what the resource requirements were. And so, before—actually before assumption of the mission, we actually worked through all that.

We're actually at a point right now where I'd—the way the plan was set up and General Thomas approved the—essentially, our transition plan—was that at the 1-year mark, where we are right now, we would reevaluate, kind of, how things went over the last year: Do we have the right people in the right places and the right resources aligned to the mission set? I think we're real close to what we need. We probably need to tweak it internally to optimize it. But, everyone was very, very supportive that way. So, right now, any additional resources we've put into the normal budgeting cycle, and I'm very confident they'll be represented in there.

The—as far as the authorities, right now everything is moving along well, no problems with the geographic combatant commands and helping to work with them, nor with the interagency.

Senator SULLIVAN. Great.

Secretary RAPUANO. Senator, if I could add that SOCOM really—having been someone who's tilled in this field most of my career, that—SOCOM brings a unique blend of experience, skills, capabilities, and relationships that make them uniquely well-equipped, particularly in terms of the relationship with the COCOM [combatant command], the operational equipage of the capabilities necessary. They have a visceral appreciation of that from their experience. And then working the entire threat or kill chain associated with CB [chemical biological] WMD, all the way from ideation to consequence management, and focusing the Department and the COCOMs in those areas that we have the most impact on getting at WMD.

Senator SULLIVAN. Great. Thanks.

Both in my capacity here and in—General, as you know, in my Reserve duties—spent a lot of time focused on this issue. Just recently, within the last six months, there's both been, kind of, exercises, kind of, at the very large scale, you know, the counter-WMD SINC conference, and then, more tactical in nature, the Bronze RAM exercise, are there—do you have after-actions and, kind of, lessons learned from those operations, that are either classified or unclassified, that you could share with the committee, that, kind of—again, so we're having good visibility on how things are developing, what you see as strengths and weaknesses?

Lieutenant General OSTERMAN. Yes, Senator. We definitely have the after-actions. We use those to feed, you know, successive iterations. In the case of the field exercises there, we obviously adjust those in stride, based on, you know, emerging threats that are out there. So, probably not best that I say those here. And I—you know, in a closed session or——

Senator SULLIVAN. Yeah;.

Lieutenant General OSTERMAN.—afterwards, we could get the classified information to you.

Senator SULLIVAN. Great.

And then, I'll just—and, Madam Chair, on the North Korean threat and the network that they've developed, you know, there's a lot of us who are, you know, very curious on how much—and I've asked a lot of the intel community on this issue—but, how much the North Korean proliferation network has helped with regard to not only what they're looking at, in terms of proliferation, but how—the advances they've made, particularly with regard to intercontinental ballistic missile testing. You know, it's hard for some of us to believe that that's all organic advancements. Because they've clearly made a lot of advancements, not only on the nuclear side, but on the missile side. Do we have a sense—and, again, maybe it's better for a classified session—are they getting help on the outside with regard to how quickly they're advancing? And are we confident that our networks are able to battle their networks on a country that almost certainly—certainly has a record of proliferation, but I think we should—we would be fools if we weren't assuming that they're going to try to continue to proliferate, even with this very strong, kind of, sanctions net around them.

Secretary RAPUANO. Senator, I would simply say, in open session, that this is something that we and the rest of the intelligence community are intensely focused upon. That's probably all I can say here.

Senator SULLIVAN. Okay. Well, I'm glad you're intensely focused on it.

Thank you.

Madam Chair.

Senator ERNST. Thank you.

Senator Heinrich.

Senator HEINRICH. General Osterman, I wanted to ask you: Obviously, ISIS has lost, geographically been defeated, but would you still consider them a WMD threat, even in that scenario? Because, obviously, this is about talent as much as anything, and intellectual capacity. What's your analysis of that at this point?

Lieutenant General OSTERMAN. Senator, I—my analysis is, yes, they are still as threat, to put it simply. Really, when we look at pathways, we're looking at intent, infrastructure, and expertise, to your point, production, weaponization, delivery systems, and use. They've demonstrated not only that capability over time, but, even though the—as they lose the geographic caliphate, that those individuals that have the technical knowledge and, frankly, the level at which they were working, and have been working, is not one that, you know, would—by loss of that geographic caliphate, that it would undermine their ability to continue to pursue weapons-of-mass-destruction——

Senator HEINRICH. Yeah.

Lieutenant General OSTERMAN.—capability.

Senator HEINRICH. Secretary Rapuano, one of our greatest challenges in countering, particularly, biological WMD is being able to, at scale, develop vaccines and other potential specialized medicines and pharmaceuticals for our troops or for populations that are impacted by those. And, you know, a good example is, when Ebola began to emerge, there was a DOD vaccine that hadn't gone through the FDA [Federal Drug Administration] full process, but there's not an obvious way to scale those up in a for-profit pharmaceutical company, in many cases, and we haven't found partners to do that. Have you thought about how to address this so that we don't get caught behind the eight ball, the way that we did with the Ebola crisis?

Secretary RAPUANO. Yes, Senator. We work very closely with HHS [Health and Human Services]—BARDA [Biomedical Advanced Research and Development Authority], over at HHS—DHS, to look at biothreats, in general, including naturally occurring, to sync our research with them to ensure that we're covering the full landscape of what's naturally occurring and what perhaps could be intensified or developed for malevolent use. So, we're looking at ways that we can get quick production, just in time. But, that's very difficult, because you need that base, in terms of that manufacturing base.

Senator HEINRICH. Right.

Secretary RAPUANO. We've done that in certain areas. In other areas, it's been more challenging. But, that's a priority. That's a priority that's also reflected in the still draft, but almost complete, National Biodefense Strategy.

Senator HEINRICH. I look forward to seeing that, because it seems to me that, you know, setting bioweapons aside for a moment, even with just zoonotic outbreaks, that we typically have not had the capacity to be able to manufacture things. We may know, through research, what would or might work, but getting that to scale in any sort of meaningful way, we just—we don't have a mechanism to do that right now.

Secretary RAPUANO. Absolutely.

Senator HEINRICH. I've got a few seconds left, and then I'll turn it over to my colleagues. The—can you talk just a little bit, from either of you, on—talking about how communities collaborate and leverage relative strengths across the counter-WMD mission, in terms of: How do you bring all the different talents that different agencies and labs and et cetera have together? You mentioned the Fusion Center. Like, what has worked, when it comes to effectively leveraging the intellectual talent that is in different places?

Secretary RAPUANO. I'll take a start at that, Senator, and then hand it over to General Osterman.

When you look at that spectrum of activities, all the way from intent and desire for WMD through use and response to, it is a very wide spectrum. When we look at any one agency, including the Department of Defense—roles responsibilities, authorities, capacity, scope—there's no one that can do it all. In fact, if you start to specialize and say, "What tools, techniques, weapons can be applied to getting most return on investment, in terms of preventing,

denying, responding"—so, if you start all the way to the left on the pathways, that's primarily export-control-driven, intel community, understanding what those pathways are. So, that's very heavy Department of Commerce, Department of State. But, there are still opportunities. For example, COCOMs are operating with partner nations. The militaries of other nations do things very differently than they do here. Some of them manage export controls. Developing an understanding of the individuals, characters, leaders, and what their level of interest is, it all forms a composite, in terms of our understanding.

So, what SOCOM, for example, is doing with the Fusion Center is just improving that add mixture, that integration of intelligence, both from a national and a military intelligence perspective. As you go further right to a point of use or threatened use to response, our activities get much more kinetic, both in terms of military operational kinetic as well as the dynamics of a response, which really needs then to be an integrated whole-of-government response.

We're very focused, in the past several years, on national-scale events, intentional events, nuclear events. So, that obviously is a major challenge, in terms of: How do we achieve the unity of effort in crisis from—in real time? But, we are making progress in that area, as well.

Senator ERNST. Very good.

Senator Sullivan.

Senator ERNST. I think we're doing Democrat, Republican, Democrat.

Senator SULLIVAN. Okay.

Senator ERNST. Yeah.

Senator SULLIVAN. Thank you, Madam Chair.

I wanted to get back to—and, again, if we've touched on this, I apologize—but, in terms of countries—so governments—that you see as the biggest threats, from the perspective of counter-WMD threats, which ones would you put in the top category?

Secretary RAPUANO. From a strategic perspective, we——

Senator SULLIVAN. Just a country that has capability and has a history of proliferation.

Secretary RAPUANO. Obviously, we need to start with the two countries who have existential WMD capability with regard to potential impact on the United States. That's Russia and China.

Senator SULLIVAN. But, I mean, is there a history of China, with regard to proliferation, to bad actors; or Russia, the same? Like, for example, North Korea clearly, you know, helped Syria build a nuclear reactor, which the Israelis ended up bombing. Have we seen that kind of activity from——

Secretary RAPUANO. When we're looking at those countries that are of greatest proliferation concern, you know, again, depending—if you're talking the dual-use commodity size—side of the equation, it is more mixed, but then it's not entirely always clear where those dual-use items are going, whether they're going into an—WMD program, potentially, or a conventional program. But, Iran and Syria are two very significant nonproliferation actors, in terms of proliferating technologies. Iran has done it. There are a number of other countries that we have concerns and issues with that we would probably be better handling in closed——

Senator SULLIVAN. And North Korea, of course?

Secretary RAPUANO. And North Korea, of course.

Senator SULLIVAN. Let me ask another question related to that.

Secretary RAPUANO. Although, just on the point of North Korea, I wouldn't say in the context of proliferating WMD, per se. The dual-use piece is a lot more gray.

Senator SULLIVAN. Well, they've built the reactor in Syria. That's about as dramatic as it gets, isn't it?

Secretary RAPUANO. It is a concern, but, really, depending on how you want to draw the threshold of, "Are they knowingly and deliberately looking to provide WMD capability to another actor?"—again, that's better left to a closed session.

Senator SULLIVAN. I had once heard a—I'll just describe it as a senior national security official—say that the JCPOA [Joint Comprehensive Plan of Action]—the Iran nuclear deal with the United States—was—had enabled us to kind of take our eye off that proliferation threat, because of the fact of the agreement. That's not the current view of the U.S. military or others, is it, General?

Secretary RAPUANO. That is not.

Senator SULLIVAN. Mr. Secretary?

Lieutenant General OSTERMAN. I guess I'm from——

Senator SULLIVAN. It was a shocking statement that I heard. I actually couldn't believe it, where somebody had mentioned, "Well, because we have the agreement now," which I was very opposed to, "we don't have to look at them so much with regard to a proliferation nuclear-development problem." I think that's—I think that's just incorrect, and I just wanted to get that out there.

Secretary RAPUANO. You're correct, that——

Senator SULLIVAN. So, both of you, that——

Mr. RAPUANO.—that is not the view of this administration.

Senator SULLIVAN. Okay. Or the U.S. military as part of the administration.

Secretary RAPUANO. Or the U.S. military.

Senator SULLIVAN. Let me ask one final question. With regard—we had Secretary Mattis testify in front of the full committee yesterday on the National Defense Strategy, which I think he got a lot of bipartisan compliments on for the thoughtfulness of the document, for what its focus is. But, in particular, one of the areas of focus in the document is the emphasis on our allies with regard to our National Security Strategy. In this effort, the ally participation with regard to counter-WMD would seem to me really important. Do you—are we getting cooperation? Do we have regular deep consultations with our NATO [North Atlantic Treaty Organization] allies or other bilateral allies who have similar capabilities that we have, in terms of counter-WMD? Or is there more that we can do to help encourage some of these important countries to coordinate more with our counter-WMD efforts?

Secretary RAPUANO. We have a variety of programs—I mentioned the CTR—but a number of proliferation programs, where we're developing capacity, on the part of allies, to operate in CBRN environments. We're assisting them, in terms of understanding dual-use commodities and the potential risks. We're working with them, for example, in the maximum pressure campaign, with regard to illicit shipments to North Korea, ship-to-ship transfers. So, we are

very active. The Secretary is very serious about partnerships being a critical element. It's—from the Secretary, you've heard it from him—lethality, partnerships, and reform. That partnership component of our WMD approach is a mainstay.

Senator SULLIVAN. Right. Thank you.

Thank you, Madam Chair.

Senator ERNST. Senator Shaheen.

Senator SHAHEEN. Thank you, Madam Chair.

So, I wanted to follow up on that a little bit, because I understand that we're a participant under the Proliferation Security Initiative, and that that works with our international partners to interdict shipments of WMD-related items. Can you talk about that a little more than you just did with Senator Sullivan? And also, talk about its importance in addressing situations like North Korea, in terms of the potential to interdict shipments of nuclear-related materials.

Secretary RAPUANO. Yes, Senator. The Proliferation Security Initiative is not an operational coordination process. It's really about developing a common understanding and prioritization of proliferation consequences and impacts, and working together. What flows from that oftentimes are operational coordination. For example, the hail and queries of ships at sea. But that's not done with NPSI, per se. It's more about having that worldwide cooperation, discussing, agreeing conceptually; but actual operational coordination happens bilaterally in small groups. Another topic that would be best addressed in a closed hearing.

Senator SHAHEEN. With respect to its importance in addressing the situation in North Korea, can you speak to that in this open session?

Secretary RAPUANO. Simply to say that we have a growing number of partners and allies who are looking to cooperate with us on addressing illicit shipments, including ship-to-ship.

Senator SHAHEEN. Does that include states like Russia and China?

Secretary RAPUANO. Well, I just wouldn't go into detail, in this session, talking about individual relationships and agreements that—at this point.

Senator SHAHEEN. General Osterman, as you have both pointed out, we have a multitude of threats of WMD around the world. Can you talk about how our military assesses the severity of each threat and the potential resources that it would require to respond?

Lieutenant General OSTERMAN. Yes, Senator. There's—I kind of described that pathway framework earlier. Most of the assessments are addressed in our functional campaign planning. So, in other words, we look at it from a wide variety of criteria, from their—you know, what is their intent, what is their ability, all the way through that. Then, really, from a transregional perspective, some of that threat is, you know, how are they looking to work this in a transregional fashion? Are they exporting? Is it, you know, a singular small node? Is it—what are the viability of chemicals that they may be capable of producing, for example? Or, as was mentioned earlier, the biological-agent aspect of things, et cetera. That's basically how we get into the assessments of that risk.

Really, what we do is, we define that prioritization, if you will, of threats, and then, as I mentioned, matrix that with the actors that are out there to kind of come up with recommendations, up through the Department, about: How do we prioritize, and how do we set policy, you know, for those? That's really about it. Most of that's based on our intelligence and our technical means of looking at things. We translate that internally, just to make sure that we have the response and protective-force capability within the military to operate in that environment and/or, you know, counter the particular WMD we may be working with.

Senator SHAHEEN. You were talking—Senator Heinrich, earlier, raised the question of ISIS and whether they continue to have the capacity to inflict major damage through WMD. You talked about the—and we've all read about the reduction of their caliphate, and that they're on the run. There have been several news reports recently that have talked about the fact that they—there are significant numbers of ISIS fighters who have gone underground and are reappearing in other places, and have the potential to reorganize. Since we saw that in Syria, and that's how ISIS reconstituted itself from al Qaeda, what are we doing about that? How much of a concern is that?

Lieutenant General OSTERMAN. Senator, what we're doing with that is that, even though the writ-large ISIS has a number of people that are basically moving to counterinsurgency—or to an insurgency type of mode, or whatever, the actual number of individuals that are associated with WMD production—and a—this goes back to your definitional question about "What is WMD?" You know, the ability to put, you know, low toxicity into something, is that really WMD? It's a very, very finite technical capability and human-capital issue. It's—and they are generally not front-line fighters. They're—these are—they are folks that were not necessarily easy to track, but they're ones that we've been working on for a number of years, here, and have ideas where they are, if we haven't already, you know, basically, taken them off the battlespace.

That's where my concern is and where we watch very closely, again, through the transregional approaches, to make sure that they're not leaving that area of operations and perhaps then becoming an export or, as we term it, an ex-ops threat to the United States, proper.

Senator SHAHEEN. Thank you.

Thank you, Madam Chair.

Senator ERNST. I believe we have time for one more brief round of questions. If we can just maybe ask one final question in this last round, and then we'll wrap our subcommittee hearing.

I appreciate, Mr. Secretary, the discussion about the different agencies that you interact with, whether it's Department of Energy, Homeland Security, other entities. Being the junior Senator from the great State of Iowa, one agency that I did not hear was the USDA [United States Department of Agriculture]. One thing that we don't often discuss is the fact that, yes, we want to protect our human capital, but part of that is also protecting our feedstocks here in the United States. We have had an active discussion, in the Agriculture Committee, about offshore vaccine banks for things like foot-and-mouth disease that would impact agriculture at large with

livestock, other diseases that could be introduced into plant varieties of agriculture. What are the discussions, when it comes to working on—with the USDA and protecting agriculture?

Secretary RAPUANO. Thank you very much, Senator. That was a major omission on my part. Agriculture is the lead Federal agency——

Senator ERNST. Okay, thank you.

Mr. RAPUANO.—for threats to agriculture, livestock. They play a very important role, because that is a critical commodity, in terms of our economy and our population's needs. So, they are part of that team, and a core member of that team, helping evaluate potential threats to agriculture, and developing approaches either to forestall or respond to events that threaten U.S. agriculture.

Senator ERNST. Okay. I appreciate that. Thank you very much.

Senator Heinrich?

Senator HEINRICH. Thank you, Madam Chair.

Secretary Rapuano, you mentioned the draft National Biodefense Strategy that was actually required back in the Fiscal Year 2017 NDAA [National Defense Authorization Act]. A number of members of this committee, including the Chair and the Ranking Member of the full committee, have been sort of waiting with bated breath for that. What is the holdup? When will we see that document, do you think?

Secretary RAPUANO. So, that is at the White House. We've been participating in the NSC [National Security Council] and DHS-led review of the biostrategy. I met with the Director and the NSC staff, two weeks ago, on that topic. To my understanding, it is just about there, but——

Senator HEINRICH. Okay.

Mr. RAPUANO.—I don't have the latest——

Senator HEINRICH. Because we're——

Mr. RAPUANO.—and I'm not——

Senator HEINRICH. And the reason being, we're hoping to use that for the Fiscal Year 2019 NDAA. So——

Secretary RAPUANO. Absolutely.

Senator HEINRICH.—the sooner, the better.

Secretary RAPUANO. Understood.

Senator ERNST. Senator Sullivan.

Senator SULLIVAN. Thank you, Madam Chair.

Gentlemen, I just want to ask one final question on interagency cooperation, which I'm sure—I think we all would agree is really essential to defeating the networks that you're—the proliferation networks that you're focused on.

Do you see that there is, in terms of this mission, sufficient cooperation between, say, the intel community, DOD, SOCOM, Department of Energy, Department of Agriculture, and others? Or are there statutory improvements that we could help you with that could help make sure that the mission and the interagency coordination is not stovepiped, and it brings together all the agencies?

Secretary RAPUANO. Senator, I don't see any statutory obstacles. In my experience, the interagency community working CWMD is very collaborative, works very well together. We are constantly looking for ways we can improve the process and focus and prioritize those threats that are most extant to us. Also, looking

ahead at evolving technology and actors to better understand where the most significant threats will come from. That's part of the great work that SOCOM is doing in their new coordinating authority role for the COCOMs. So, we're—I would just, speaking for myself, from my perspective, say that we're on the right road, but we definitely have room to improve, and we're moving out.

Senator SULLIVAN. Thank you.

Lieutenant General OSTERMAN. Senator, if I could onto that.

I—with all the different functional areas and different units and everything else I've worked with in the military, to be honest with you, entering the counter-WMD realm here, I've never found a community that works more closely together. It's literally an open door everywhere you go, from not only a—an interagency, but also an IC perspective, and then also from an allied perspective.

Some of those tangible examples are routinely meeting with the various intel agencies affiliated with this. And there are some organizations collaboratively working on tools and intel assessments, as well as getting tangible technical means on certain things.

From an allied perspective, that question earlier, we actually bring in allied partners to our twice-a-year Global SINC [Strategic Information Networking Conferences] Conference that come in there to participate and sit in as participating members.

It really is a—in my view, a tremendous community. Frankly, just having forums to bring them together, which is a big responsibility on SOCOM as a coordinating authority, to be able to convene those meetings, bring everyone together, and then get concerted effort in a particular direction, based on departmental guidance, has actually—that hasn't been the problem. You know, it's—everybody's willing to help. It's just trying to—getting everything moving in the same direction. And very, very positive responses, so far.

Senator SULLIVAN. Great.

Thank you.

Senator ERNST. Well, thank you.

I'd like to thank my colleagues and Senator Heinrich for coordinating this meeting for us today.

As well, Secretary and General, thank you for your wonderful expertise and your commitment to the men and women of our uniformed services, as well as our civilian population citizens of the great United States, for all that you do. We look forward to seeing how SOCOM progresses during this transition, and we look forward to working with you on any initiatives that you deem necessary. Thank you very much for joining us today.

We will conclude this subcommittee meeting.

[Whereupon, at 3:40 p.m., the committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR MARTIN HEINRICH

WMD THREATS

1. Senator HEINRICH. Secretary Rapuano, how does DOD plan to address WMD threats posed by convergence of emerging technologies such as artificial intelligence and advanced health research capabilities such as CRISPR gene manipulating technology?

Secretary RAPUANO. Artificial intelligence, synthetic biology, and other technologies that lower the barriers to entry for potential adversaries are the very technologies that may help ensure we win the wars of the future. For this reason, the Department takes a balanced approach to addressing these technologies. DOD seeks to maximize opportunities provided by these technologies to advance our capabilities, while seeking to minimize the risks they could pose to our national security. As a matter of course, we actively monitor the emergence and convergence of new technologies to inform our risk assessments and capability requirements. For example, DOD recently funded the National Academies of Sciences, Engineering, and Medicine to review the changing nature of the biodefense threats in the age of synthetic biology and to develop a strategic framework to guide an assessment of associated potential security vulnerabilities. Additionally, DOD continues to leverage these types of technologies in the development of capabilities to address current and emerging WMD threats.

2. Senator HEINRICH. Secretary Rapuano, how does DOD's counter-WMD efforts collaborate with the civilian Counter WMD efforts at DHS? Does the recent formation of a CWMD office at DHS present greater opportunities for collaboration or challenges?

Secretary RAPUANO. DOD coordinates and collaborates with the Department of Homeland Security (DHS) on a number of issues related to our counter-WMD missions, including the BioWatch Program, the National Biodefense Strategy, and the National Technical Nuclear Forensics Center. DOD also collaborates with the Domestic Nuclear Detection Office's efforts to enhance the Global Nuclear Detection Architecture (GNDA), which serves as a framework for detecting, analyzing, and reporting on nuclear and other radioactive materials outside of regulatory control. DOD looks forward to continuing this coordination and collaboration with the new DHS Countering Weapons of Mass Destruction (CWMD) Office. We also welcome any improvements in efficiency and effectiveness that may result from the establishment of this new office.

RADIATION EXPOSURE

3. Senator HEINRICH. Secretary Rapuano, over the past year, we've heard news reports highlighting problems facing servicemembers and veterans seeking treatment at the Department of Veterans Affairs whose radiation exposure was not recorded or tracked. Unfortunately, this spans across exposure at Pacific island nuclear test sites in the 1950s, in Desert Shield and Desert Storm, around the Fukushima nuclear disaster, and via depleted Uranium use in current operations. These examples demonstrate the urgent need and application for modern personal dosimeters that provide a legal record of radiation exposure for each servicemember.

I commend the Army Reserve and Army National Guard for ensuring that 100 percent of their soldiers have the most modern and capable personal dosimeters. I understand, however, that the Active Army currently has a significant readiness shortfall in this area, having supplied only 50% of their soldiers with personal dosimeters that provide a legal record of any radiation exposure.

What is DOD's plan to ensure each of the military serves can field similar personal dosimeters?

Secretary RAPUANO. The U.S. Army is closely collaborating with the U.S. Navy on the acquisition of the Joint Personal Dosimeter—Individual (JPD–I), which will eventually replace the legacy dosimetry systems for Active Duty, Reserve, and National Guard personnel. The U.S. Army plans to test the U.S. Navy's newly acquired Battlefield Dosimeter based on the lessons learned from DOD's response to the 2011 Fukishima Reactor disaster (Operation Tomodachi).

The U.S. Marine Corps plans to maintain a squad-level dosimeter.

The U.S. Air Force intends to maintain the commercially available Thermofisher Electronic Personal Dosimeters (EPD), which were procured prior to Operation Tom odachi. The U.S. Air Force expects to start replacing those in the middle of the next decade and is observing the U.S. Army and U.S. Navy test results for the JPD–I as well as costs in its evaluation of the Thermofisher EPD.

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

DOD CYBERSECURITY

4. Senator SHAHEEN. Secretary Rapuano, could you explain why DOD does not require companies that it contracts with to disclose instances where they have shared source code with foreign countries?

Secretary RAPUANO. DOD does not currently require DOD contractors to disclose when they share source code or other (non-controlled) commercial intellectual property. DOD accepts that among the risks associated with acquiring commercial, non-controlled technology is the possibility that such disclosures may occur or that an adversary may acquire the technology for test and evaluation.

In efforts to mitigate risks associated with the use of commercial products, the Department's current risk management approach considers all source intelligence information, hardware and software evaluation results, known vulnerability information, and the criticality of product in the system. If a risk is discovered, the Department has established practices and a variety of system analysis tools it can employ to determine the existence of vulnerabilities. If a vulnerability is discovered, the Department will take the appropriate action to remediate and reduce negative impacts on critical systems.

5. Senator SHAHEEN. Secretary Rapuano, if DOD does not ask companies directly about their interactions with foreign governments overseas how can we be sure that hostile governments do not obtain source codes and other data that may give them access to U.S. Government systems?

Secretary RAPUANO. The Department employs a comprehensive approach to product acquisition. In general, the Department is aware of countries that require organizations to submit source code for review for certain types of security products. DOD, however, assumes that a capable adversaries have the capability to discover latent vulnerabilities in commercial applications without access to source code. To mitigate this risk, DOD participates in Government-wide strategic efforts to protect commercial technology through a controlled risk management process, has an established approach to supply chain risk management that uses clearly defined process and functions to acquire products. These risk management processes may consider all source intelligence information, vulnerability information, results of hardware and software test and evaluation, and criticality of product in the system.

6. Senator SHAHEEN. Secretary Rapuano, the FY18 NDAA contains a provision that directs the President to establish a national policy with respect to matters pertaining to cyberspace, cybersecurity and cyber warfare. Do you believe it is important that the administration articulates such a policy and have you been consulted in its drafting?

Secretary RAPUANO. It is essential for the United States Government to have a holistic strategy to address the range of challenges and threats confronting the Nation in cyberspace. My staff and I work in close collaboration with the National Security Council (NSC) and our interagency partners at the State Department, Department of Homeland Security (DHS), the Federal Bureau of Investigation (FBI) and other departments and agencies, to ensure the Federal Government has the necessary policies and is taking appropriate actions to address the critical issues and potential threats in cyberspace.

Over the past year, the Department has participated in the Administration's efforts to articulate clear policies and priorities for cyberspace. These policies include Executive Order 13800 Strengthening the Cybersecurity of Federal Networks and Critical Infrastructure, which directed concrete actions to address cyber risks across the Federal Government; The National Security Strategy (NSS), which furthers the Federal Government's cyber posture by prioritizing and directing action to ensure the security of the domain; and the National Defense Strategy (NDS), which refines, clarifies, and prioritizes missions for DOD in and through cyberspace.